HANFORD SITE AIR OPERATING PERMIT

2006 RENEWAL

In the matter of the compliance by the	)	Number: 00-05-006 Renewal 1
U.S. Department of Energy – Hanford Operations, with	)	Issue Date: December 1, 2006
Section 70.94.161 RCW, Operating Permits for Air	)	Effective Date: January 1, 2007
Contaminant Sources, and the applicable rules and	)	Expiration Date: December 31, 2011
regulations of Ecology and Health.	)	

In accordance with the provisions of Washington Administrative Code (WAC) Chapter 173-401, Operating Permit Regulation, the permittee, U.S. Department of Energy (DOE) at the Hanford Site is required to comply with provisions within this air operating permit, including provisions contained in all the Attachments, identified below.

Attachments 1, 2, and 3 are integral and enforceable provisions of this permit.

Attachment 1 contains the State of Washington Department of Ecology (Ecology) permit terms and conditions.

Attachment 2 contains the State of Washington Department of Health (Health) Radioactive Air Emissions License (FF-01) as permit terms and conditions.

Attachment 3 contains the Benton Clean Air Authority (BCAA) permit terms and conditions applicable to the regulations of open burning and asbestos.

The regulatory agency relationships are described in the Statement of Basis (Statement). The Statement is issued by the permitting agencies as a separate supporting reference document to this air operating permit. The Statement contains non-enforceable legal and factual basis for AOP conditions. The Statement also includes references to the applicable statutory or regulatory provisions, technical supporting information on specific emission units, and clarifications of specific requirements. [WAC 173-401-700(8)]

The Hanford Site and facilities are managed by two DOE offices in Richland, Washington. The Office of River Protection (ORP) oversees the Hanford Site's tank waste remediation system at the 200 Area. The Richland Operation Office (RL) is responsible for the Hanford Site's environmental cleanup activities and the site-wide infrastructure support. The Pacific Northwest Site Office (PNSO), located in Richland, Washington, of the DOE Office of Science provides programmatic, operational, and institutional stewardship and oversight of the Pacific Northwest National Laboratory (PNNL) operations on the PNNL Site, which is adjacent to the Hanford Site. The PNSO also provides oversight of some Hanford Site facilities utilized by PNNL, located in the 300 area and in conjunction with RL who is the owner and steward of these

facilities. This joint oversight is conducted in accordance with a memorandum of agreement (MOA) between RL and PNSO. The official addresses are listed below:

Department of Energy-RL P.O. Box 550 825 Jadwin Ave. Richland, WA 99352	Department of Energy-ORP P.O. Box 450 2440 Stevens Ave. Richland, WA 99352

The Hanford Air Operating Permit (AOP) was initially issued in 2001, and shall be renewed toward the end of each five-year term. The AOP Renewal of 2006 is issued for a fixed term of 5 years from January 1, 2007 to December 31, 2011. Before the expiration date of December 31, 2011, the permittee shall apply for another five-year renewal according to WAC 173-401-500 and WAC 173-401-710 requirements. Ecology will notify the permittee at least 18 months in advance of the expiration date by sending an application for renewal which details the necessary data required to have a complete application submitted at least 9 months prior to the expiration date.

All terms and conditions (or underlying applicable requirements where regulations are paraphrased) are enforceable by the U.S. Environmental Protection Agency (EPA) and United States citizens unless specifically designated as not federally enforceable or listed as an inapplicable requirement in Table 5.1. (WAC 173-401-625). Any paraphrasing of regulations or other applicable requirements is for the convenience of the reader. The underlying applicable requirement is the enforceable requirement**.**

_____ _____

Jane Hedges, Program Manager
Nuclear Waste Program
Department of Ecology
State of Washington

Date

_____ _____

Gary Robertson, Director
Division of Radiation Protection
Department of Health
State of Washington

Date

_____ _____

David Lauer, Ph.D.
Control Officer
Benton Clean Air Authority

Date

_____ _____

Oliver Wang, Environmental Engineer
Nuclear Waste Program
Department of Ecology
State of Washington

Date

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1. Emission Standards
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1.0 ACRONYMS

ALARACT – as low as reasonably achievable control technology
AOP - Air Operating Permit
BACT - best available control technology
BCAA - Benton Clean Air Authority
CAA - Clean Air Act
CERCLA - *Comprehensive Environmental Response, Compensation and Liability Act of 1980*
CFR - Code of Federal Regulations
DOE - U.S. Department of Energy, Hanford Operations
DOE-ORP - U.S. Department of Energy, Office of River Protection
DOE-RL - U.S. Department of Energy, Richland Operations Office
DST - double-shell tanks
Ecology - State of Washington Department of Ecology
EFSEC – Energy Facility Site Evaluation Council
EPA - U.S. Environmental Protection Agency
FCAA - Federal Clean Air Act
Health - State of Washington Department of Health
HEPA – high-efficiency particulate air (filter)
IEU - insignificant emission unit
MEI – maximally exposed individual
MOA – memorandum of agreement
MOU - memorandum of understanding
NAAQS - National Ambient Air Quality Standards
NESHAP - National Emission Standard for Hazardous Air Pollutants
NOC - notice of construction
NRC - Nuclear Regulatory Commission
NSR - new source review
ORP - U.S. Department of Energy, Office of River Protection
PCHB - Pollution Control Hearings Board
PM-10 or PM_{10} – particulate matters 10 microns or less
PNNL - Pacific Northwest National Laboratory
PSD - prevention of significant deterioration
PTRAEU – portable/temporary radioactive air emission units
R&D - research and development
RACT - reasonably available control technology
RCHC - Richland Central Area
RCHN - Richland North Complex
RCW - Revised Code of Washington
RL - U.S. Department of Energy, Richland Operations Office
Statement – Statement of Basis
TAPs - toxic air pollutants
TSD - treatment, storage and/or disposal
VOC – volatile organic compound
WAC - Washington Administrative Code

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2.0 GENERAL PROCESS INFORMATION

The Hanford Site was acquired by the federal government in 1943 and for many years was dedicated primarily to the production of plutonium for national defense and the management of the resulting waste. With the shutdown of the production facilities in the 1970s and 1980s, missions were redirected to decommission and site cleanup, and diversified to include research and development in the areas of energy, waste management, and environmental restoration. Decommissioned facilities or emission units are those that can not be operated as is, and are not planned to operate again. In an extremely unlikely event that a decommissioned facility or emission unit is reactivated, an applicable requirements assessment must be completed first.

The Hanford Site, located in south central Washington State, occupies about 1,450 square kilometers (approximately 560 square miles) of semi-arid shrub and grasslands just north of the confluence of the Snake and Yakima Rivers with the Columbia River. This land, with restricted public access, provides a buffer for the smaller areas historically used for the production of nuclear materials, waste storage, and waste disposal. About 6% of the land area has been disturbed and actively is used or excluded from this permit under documented CERCLA authority. This 6% used land is divided into the following five operational areas:

- 100 Area, including 100-B/C, 100-D, 100-DR, 100-F, 100-H, 100-K, and 100-N Areas, which lie along the south shore of the Columbia River in the northern portion.

- 200 Area, including 200 East and 200 West Areas, which lie in the center near the basalt outcrops of Gable Mountain and Gable Butte.

- 300 Area, near the southern border of the Hanford Site.

- 400 Area, between the 300 and 200 Areas.

- 600 Area, land between the other operational areas located on the Central Plateau.

Other areas and facilities that support Hanford Site activities can be found in the nearest cities (i.e., Richland, Kennewick, and Pasco). The facilities in these areas are not considered part of the Hanford Site major source because these areas are not considered contiguous or adjacent to the Hanford Site. These areas include, but are not limited to, the following facilities:

- 700 Area in Richland, i.e., 825 Jadwin, 748 Building, and 712 Building on Jadwin Avenue.

- Richland Central (RCHC) Area, i.e., Butler Loop facilities and the Hanford Technical Training Center.

- 1100 Area, Stevens Center, Evergreen Facilities, Hammer, Cold Test Facility, various PNNL facilities (as specified herein), Benton County Sheriffs Facilities including firing range and training

The Major stationary source covered by this permit includes the following North American Industry Classification System (NAICS) categories:

541710	Research and Development in the Engineering and Life Sciences
562210	Waste Treatment and Disposal
562910	Remediation Services
924110	Administration of Air and Water Resource and Solid Waste Management Program
999999	Unclassified Establishments.

This AOP specifically excludes facilities that do not meet the criteria for inclusion in a major source subject to the Air Operating Permit Regulation (i.e., WAC 173-401); the criteria are described in the Statement of Basis. Examples of facilities excluded at the time of AOP renewal in 2006 are the following:

- Pacific EcoSolution Corporation, Richland facility
- Interstate Nuclear Services laundry
- Battelle Richland North facilities
- Applied Process Engineering Laboratory
- Laser Interferometer Gravitational-Wave Observatory
- all Energy Northwest facilities
- all Port of Benton facilities
- US Ecology, Inc. commercial low-level radioactive waste burial site
- Kaiser Aluminum and Chemical Corporation extrusion press located in an 1100 Area Building
- Areva
- Livingston Rebuild Center, Inc. located in an 1100 Area Building
- PN Services
- Environmental Molecular Science Laboratory
- Oasis Physical Therapy located at the Stevens Center
- Montessori School located at the Stevens Center
- Corporate Health Facility located at the Stevens Center
- Bulk Vitrification Testing Facility located across from Hammer in Richland.

3.0 STANDARD TERMS AND CONDITIONS

Standard terms and conditions are provided in the following sections.

3.1 DUTY TO COMPLY

The permittee must comply with all conditions of this Chapter 401 permit. Any AOP noncompliance constitutes a violation of Chapter 70.94 Revised Code of Washington (RCW) and, for federally enforceable provisions, a violation of the FCAA. Such violations are grounds for enforcement action; for AOP termination, revocation and re-issuance, or modification; or for denial of an AOP renewal application. WAC 246-247 and WAC 173-460 are state-only enforceable requirements. [WAC 173-401-620(2)(a)]

3.2 NEED TO HALT OR REDUCE ACTIVITY NOT A DEFENSE

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [WAC 173-401-620(2)(b)]

3.3 PERMIT ACTIONS

This AOP may be modified, revoked, reopened, reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition. [WAC173-401-620(2)(c)]

3.4 PROPERTY RIGHTS

This AOP does not convey any property rights of any sort, or any exclusive privilege. [WAC 173-401-620(2)(d)]

3.5 DUTY TO PROVIDE INFORMATION

The permittee shall furnish to Ecology, Health, or BCAA, within a reasonable time, any information that Ecology, Health, or BCAA may request in writing to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit or to determine compliance with the permit. On request, the permittee also shall furnish to Ecology, Health, or BCAA copies of records required to be kept by the permit or, for information claimed to be confidential, the permittee may furnish such records directly to the administrator along with a claim of confidentiality. Ecology, Health, or BCAA shall maintain confidentiality of such information in accordance with RCW 70.94.205. [WAC 173-401-620(2)(e)]

[Note: The permittee shall afford access to requested copies of records containing classified information provided the Ecology, Health or BCAA representatives reviewing the documents possess (1) the appropriate access authorizations (security clearances) for the level and category of information involved, (2) all required formal access approval(s), and (3) a legitimate need-to-know. WAC 246-247-080(10) (state only)]

3.6 PERMIT FEES

The permittee shall pay fees as a condition of this AOP in accordance with the permitting authority's fee schedule. Failure to pay fees in a timely fashion shall subject the permittee to civil and criminal penalties as described in Chapter 70.94 RCW. [WAC 173-401-620(2)(f)]

Per WAC 246-247-065 [Fees], fees for airborne emissions of radioactive materials shall be submitted in accordance with WAC 246-254-160. The permittee shall pay costs associated with direct staff time of the air emissions program in accordance with WAC 246-254-120 (1)(e). In any case where the permittee fails to pay a prescribed fee or actual costs incurred during a calendar quarter, Health (1) shall not process an application and (2) may suspend or revoke any license or approval involved; or (3) may issue any order with respect to licensed activities as Health determines appropriate or necessary to carry out the provisions of WAC 246-254-170. [WAC 246-247-065 (state only), WAC 246-254-120 (1)(e) (state only), WAC 246-254-170 (state only)]

3.7 EMISSIONS TRADING

No AOP revision shall be required under any approved economic incentives, marketable permits, emissions trading, and other similar programs or processes for changes that are provided in this permit. [WAC 173-401-620(2)(g)]

3.8 SEVERABILITY

If any provision of this AOP is held to be invalid, all unaffected provisions of the permit shall remain in effect and be enforceable. [WAC 173-401-620(2)(h)]

3.9 PERMIT APPEALS

This AOP or any condition in the AOP, including the attachments or any conditions in the attachments, may be appealed only by filing an appeal with the Pollution Control Hearings Board (PCHB) and serving the appeal on the permitting authority within 30 days of receipt pursuant to RCW 43.21B.310. This provision for appeal in this section is separate from and in addition to any federal rights to petition and review under Section 505(b) of the FCAA. [WAC 173-401-620(2)(i), WAC 173-401-735]

3.10 PERMIT CONTINUATION

This AOP and all terms and conditions contained therein, including any permit shield provided under WAC 173-401-640, shall not expire until renewal permit has been issued or denied if a timely and complete application has been submitted. An application shield granted pursuant to WAC 173-401-705(2) shall remain in effect until the renewal permit has been issued or denied if a timely and complete application has been submitted. [WAC 173-401-620(2)(j)]

3.11 CERTIFICATIONS

Any application form, report, or compliance certification submitted to Ecology, Health, BCAA or EPA pursuant to this AOP shall contain a certification of truth, accuracy, and completeness by a responsible official. All certifications shall be in accordance with the requirements of WAC 173-401-520 and WAC 173-401-615.

No person shall make any false material statement, representation or certification in any form, notice or report required under chapter 70.94 or 70.120 RCW, or any ordinance, resolution, regulation, permit or order in force pursuant thereto. [WAC 173-400-105(7)]

No person shall render inaccurate any monitoring device or method required under chapter 70.94 or 70.120 RCW, or any ordinance, resolution, regulation, permit or order in force pursuant thereto. [WAC 173-400-105(8)]

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4.0 GENERAL CONDITIONS

4.1 PERMIT RENEWAL AND CONDITIONS

This AOP is issued for a fixed term of 5 years from its effective date. The permittee's right to operate this Chapter 401 source terminates with the expiration of this AOP unless a timely and complete renewal application is submitted at least 6 months but no earlier than 18 months before the date of AOP expiration. On receipt of a timely and complete application for renewal, this source may continue to operate subject to final action by Ecology, Health, and BCAA on the renewal application. This protection shall cease to apply if, subsequent to a completeness determination, the applicant fails to submit by the deadline specified in writing by Ecology, Health, or BCAA any additional information identified as being needed to process the renewal application. The application for renewal shall include the current AOP number, description of AOP revisions and off-permit changes that occurred during the permit term, any applicable requirements that were promulgated and not incorporated into the AOP during the permit term, and information listed in the renewal application sent to the applicant no later then 18 months prior to the expiration date by Ecology and coordinated with the Health and BCAA. The renewal application should be sent to:

Program Manager
Nuclear Waste Program
State of Washington Department of Ecology.
3100 Port of Benton Blvd.
Richland, WA 99354

and

Section Head
State of Washington Department of Health
The Division of Environmental Health
The Office of Radiation Protection
Air Emissions and Defense Waste
111 Israel Road, Town Center 2
P.O. Box 47827
Olympia, WA 98504-7827

and

Control Officer
Benton Clean Air Authority
114 Columbia Point Drive, Suite C
Richland, WA 99352

or other address, as directed by the agencies.
[WAC 173-401-610, WAC 173-401-710(1), WAC 246-247-060(6) (state only)]

4.2 TRANSFER OF OWNERSHIP OR OPERATION

This AOP is nontransferable by the DOE, the owner and operator. Future owners and operators must obtain a new AOP. A change of ownership or operational control of this source shall be treated as an administrative permit amendment if no other changes in this AOP are necessary and provided that a written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to Ecology, Health, and BCAA. [WAC 173-401-720(1)(d)]

4.3 SUBMITTALS

Reports, test data, monitoring data, notifications, and compliance certifications regarding nonradioactive air emissions, except asbestos and open burning, shall be submitted as specified in Attachment 1 to:

Program Manager
Nuclear Waste Program
State of Washington
Department of Ecology
3100 Port of Benton Blvd
Richland, WA 99354

or other address as directed by Ecology.

Reports, test data, monitoring data, notifications, and compliance certifications regarding radioactive air emissions shall be submitted as specified in Attachments 2 to:

Section Head
State of Washington Department of Health
The Division of Environmental Health
The Office of Radiation Protection
Air Emissions and Defense Waste
111 Israel Road, Town Center 2
P.O. Box 47827
Olympia, WA 98504-7827

or other address as directed by Health.

Reports, test data, monitoring data, notifications, and compliance certifications required to be sent to the EPA shall be submitted to:

U.S. EPA Region 10 Administrator
Air Permits, MS: OAQ-107
1200 Sixth Avenue
Seattle, WA 98101

or other address as directed by the EPA.

Reports, notifications, and compliance certifications regarding regulated asbestos and open burning activities shall be submitted as specified in Attachment 3 to:

Control Officer
Benton Clean Air Authority
114 Columbia Point Drive, Suite C
Richland, WA 99352

or other address as directed by the BCAA.

The permittee shall promptly, on discovery, report to Ecology, Health, BCAA or EPA, any material error or omission in these records, reports, plans, or other documents.

Any submittal under this section shall comply with Section 3.11 Certifications.

4.3.1 Annual NESHAP Report

The annual report shall consist of the annual Radionuclide Air Emissions Report for the Hanford Site required by 40 CFR 61.94:

(a) Compliance with this standard shall be determined by calculating the highest effective dose equivalent to any member of the public at any offsite point where there is a residence, school, business or office. The owners or operators of each facility shall submit an annual report to both EPA headquarters and the appropriate regional office by June 30 which includes the results of the monitoring as recorded in DOE's Effluent Information System and the dose calculations required by § 61.93(a) for the previous calendar year.

(b) In addition to the requirements of paragraph (a) of this section, an annual report shall include the following information:

"(1) The name and location of the facility.
(2) A list of the radioactive materials used at the facility
(3) A descriptions of the handling and processing that the radioactive materials undergo at the facility.
(4) A list of the stacks or vents or other points where radioactive materials are released to the atmosphere.
(5) A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each device.
(6)Distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat.
(7) The values used for all other user supplied input parameters for the computer models (e.g., meteorological data) and the sources of these data.
(8) A brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under § 61.96 and associated documentation developed by DOE to support the waiver. EPA reserves the right to require that DOE send to

EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation.
(9) Each report shall be signed and dated by a corporate officer or public official in charge of the facility and contain the following declaration immediately above the signature line: ‘‘I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001.”

and shall include the following information per WAC 246-247-080(3):

1. Results of emission measurements for those emission units subject only to periodic confirmatory measurements

2. Wind rose or joint frequency table

3. Annual average ambient temperature

4. Annual average emission unit gas temperature, if available

5. Annual total rainfall

6. Annual average emission unit flow rate and total volume of air released during the calendar year.

If the additional information is available in another annual report, the permittee may provide a copy of that report along with the listed information requirements.
[WAC 246-247-080(3) (state only)]

4.3.2 Annual Air Emission Inventory

The permittee shall upon notification by the director of Ecology, maintain records on the type and quantity of emissions from the source and other information deemed necessary to determine whether the source is in compliance with applicable emission limitations and control measures. The annual emission inventory shall be submitted to Ecology on forms provided by Ecology. When submittal of emission inventory information for criteria pollutants is requested by Ecology, the emissions inventory shall be submitted no later than 105 days after the end of the calendar year. The annual air emissions inventory report will minimally contain information on air emissions:

- for emission unit composites, as requested and listed in AOP Attachment 1, *Tables 1.3, 1.4, and 1.5*.

- for emission units where there is a specific approval condition that requires tracking in the report, and

- for other emission units as directed by Ecology on forms provided to the permittee.

[WAC 173-400-105]

4.3.3 Semiannual Reports

Semiannual reports shall be submitted by September 15th and by March 15th. The semiannual report submitted by September 15th shall contain information for the period from January 1 through June 30. The semiannual report submitted by March 15th shall contain information for the period from July 1 through December 31. The semiannual reports shall be in addition to the currently submitted reports. Submittal of the information required in Section 4.3.1 Annual NESHAPs Report will meet the semiannual reporting requirements of diffuse and fugitive sources in Table 2.1 and point source emission unit specific information (i.e.; height, diameter, velocity, temperature, and operational status) of the FF-01 License. There are no semiannual reporting requirements for insignificant emission units (IEUs) defined by WAC 173-401-530. Each semiannual report shall be certified consistent with WAC 173-401-520.

Each semiannual report shall contain the following information for the applicable reporting period (January 1 through June 30, or July 1 through December 31).

1. Each semiannual report will provide a reference to reports submitted to the regulatory agencies as required by General Conditions Section 4.5, “Permit Deviation Reporting”.

2. Each semiannual report will consist of reports of any required monitoring not submitted according to Section 4.3 or reference to reports of required monitoring that were submitted previously during the reporting period.

3. Each semiannual report will contain a summary of any substantiated air emission complaint investigation(s) required in Table 1.2 of Attachment 1 and issued during the reporting period.

4. For all minor radioactive emission units (potential to emit <0.1 mrem to the maximally exposed individual (MEI) listed in Attachment 2, each semiannual report will contain a general statement confirming that any required monitoring was conducted to verify low emissions during the reporting period for those emission units with specific periodic monitoring required during that period. For all emission units with continuous monitoring, a general statement will be provided stating that required monitoring operated continuously.

5. For an emission unit(s) that operated for any part of the calendar year, and was not closed per WAC 246-247-080(6) (reference to FF-01 Attachment 2), monitoring data will be reported in the annual NESHAP report (Section 4.3.1). Diffuse and Fugitive minor emission units listed in Attachment 2 are not required to be reported on except annually as a composite portion of the annual NESHAP report.

6. Each semiannual report will list any new regulatory orders, (e.g., Notice of Construction) imposed during the reporting period by Ecology or Health.

[WAC 173-401-615(3)(a)

4.3.4 Annual Compliance Certification

The annual compliance certification will be certified consistent with WAC 173-401-520 requirements, and submitted by July 31 for the previous calendar year. The report is to be certified for truth, accuracy, and completeness by a Responsible Official [WAC 173-401-200(29)]. The compliance certification will consist of the following:

1. Each emission unit-specific term or condition listed in Attachments 1 and 2, as well as Attachment 3 for asbestos and open burning compliance, pursuant to the source's or emission unit's operational portion of the calendar year. Source(s) or emission unit(s) closed per request letter (Ecology) or pursuant to WAC 246-247-080(6) (WDOH), prior to the January 1 of the reporting period will not be included in the calendar year certification report.

2. The compliance status

3. Whether compliance was continuous, intermittent, or not applicable.

4. The method(s) used to determine the compliance status of the source over the reporting period consistent with WAC 173-401-615(3)(a)

5. Such other facts as Ecology, Health, or BCAA may require to determine the compliance status of the source.

All compliance certifications shall be submitted to Ecology, Health, or BCAA with a copy to EPA at the address shown in Section 4.3 by July 31 of the following calendar year.

No certification shall be required for IEUs per WAC 173-401-530(2)(d) .
[WAC 173-401-630(5)]

Submittal of the information required in Section 4.3.1 Annual NESHAPs Report will meet the annual compliance certification requirements of diffuse and fugitive sources in Table 2.1 and point source emission unit specific information (i.e.; height, diameter, velocity, temperature, and operational status) of the FF-01 License.

4.4 INSPECTION AND ENTRY

On presentation of appropriate credentials and equipped with appropriate personal protective equipment, the permittee shall allow Ecology, Health, BCAA, or an authorized representative to perform the following:

1. Enter, at reasonable times, upon the permittee’s premises where a Chapter 401 source is located or emissions related activity is conducted, or where records must be kept under the conditions of this permit.

2. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit.

3. Inspect, at reasonable times, any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under this AOP. Health may require a demonstration of as low as reasonably achievable control technology (ALARACT) at any time. Where controlled access areas will be entered, Ecology, Health, or BCAA shall provide a reasonable advance notice and enter in the presence of a facility representative.

4. Sample or monitor, at reasonable times, substances or parameters for the purpose of assuring compliance with the permit.

5. The permittee shall respond in writing in a timely manner, or within a time limit set by Health per WAC 246-247-080(11) (state only), to inspection results that require a facility to implement corrective actions or any other actions so directed by Health.

Nothing in this condition shall limit the ability of EPA to inspect or enter the premises of the permittee under Section 114 or other provisions of the FCAA.

No person shall obstruct, hamper, or interfere with any such authorized representative while in the process of carrying out their official duties. In the event the hazards associated with accessibility to a unit require training and/or restrictions or requirements for entry, the permittee shall inform Ecology, Health, or BCAA before arrival of those restrictions or requirements. The permittee shall be responsible for providing the necessary training, escorts, and support services to allow Ecology, Health, or BCAA to inspect. [WAC 173-401-630(2), WAC 246-247-080(1) (state only), and WAC 246-247-080(9) (state only)]

4.5 PERMIT DEVIATION REPORTING

The permittee shall report deviations from permit conditions, including those attributable to upset conditions as defined below, the probable cause of such deviations, and any corrective actions or preventative measures taken.

4.5.1 Potential Threats to Human Health or Safety

Deviations, which represent a potential threat to human health or safety, shall be reported promptly or as soon as possible. Promptly, as defined here, means as soon as possible following discovery[1], but in no case later than 12 hours after discovery[1] of a potential threat to human health or safety. This notice shall contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This notice fulfills the immediate reporting requirements of WAC 173-401-615(3)(b), WAC 173-400-107(3) and WAC 246-247-080(5) (state only).

[1] Qualitative determination that a potential threat to public health or safety exists or existed after an evaluation of pertinent information.

4.5.2 Non-Health or -Safety Related Deviations

Other deviations from AOP requirements or excess emissions shall be reported within 30 days after the end of the month during which the deviation is discovered or as part of routine emission monitoring reports. [WAC 173-401-615(3)(b) and WAC 173-400-107(3)]

Additional written reports may be required by either Ecology or Health, according to the requirements of WAC 173-400-107(3) or WAC 246-247-080(5) (state only) respectively.

Notification must be given to Health within 24 hours (or during the course of the next normal business day) from the time of discovery of the condition or emission that would require notification pursuant to WAC 246-247-080(5) (state only). Such notification shall be required for other than normal operations when a potential or actual release of radionuclides to the air is due to any one or more of the following:

1. Non-routine bypass or failure of required abatement control technology identified in Tables 1.1 and 1.2 of Attachment 2

2. Non-routine and/or unexpected operational changes affecting emissions

3. An excess of the dose standard of 10 mrem/yr for the Hanford Site

4. An excess of emission limits or conditions in a regulatory order (e.g., NOC, enforcement actions, or License).

The permittee may seek to establish that excess emissions were unavoidable because of startup or shutdown conditions, maintenance, or upset conditions, in accordance with WAC 173-400-107. The permittee also may seek to establish that noncompliance with a technology-based[2] emission limitation under this AOP was because of an emergency[3], in accordance with WAC 173-401-645. To do so, the permittee shall demonstrate the affirmative defense of emergency through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An emergency occurred and that the permittee can identify the cause(s) of the emergency;

2. The permitted facility was at the time being properly operated;

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[2] Technology-based emission limits are those established on the basis of emission reductions achievable with various control measures or process changes (e.g., a new source performance standard) rather than those established to attain a health based air quality standard.

[3] An “emergency” means any situation arising from sudden and reasonably unforeseeable events beyond the control of this source, including acts of God, which situation requires immediate corrective action to restore normal operation, and that causes this source to exceed a technology-based emission limitation under this permit, due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

3. During the period of the emergency the permittee did not allow the condition to persist and took all reasonable steps to minimize levels of emissions that exceeded the emissions standards, or other requirements in this permit; and

4. The permittee submitted notice of the emergency to Ecology (non-radiological emissions) and Health (radiological emissions) within 24 hours of the time when emission limitations were discovered exceeded due to the emergency, and within 12 hours when there is a threat to human health. This notice must contain a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken. This notice fulfills the requirements of WAC 173-401-615.

[WAC 173-400-107, WAC 173-401-615, WAC 173-401-645, WAC 246-247-080 (state only)]

4.6 REOPENING FOR CAUSE

The Ecology, and/or Health, or BCAA, acting through Ecology, shall re-open and revise this AOP, as necessary, in the following circumstances.

1. Additional requirements become applicable to the Hanford Site three or more years before the expiration date of this AOP. Such a re-opening shall be completed no later than 18 months after promulgation of the applicable requirement. No such re-opening is required if the effective date of the requirement is later than the expiration date of this AOP, unless the original AOP or any terms and conditions have been extended pursuant to WAC 173-401-620(2)(j).

2. Ecology, Health, BCAA, or the EPA determines that this AOP contains a material mistake or inaccurate statements were made in establishing the emissions standards or other terms or conditions.

3. Ecology, Health, BCAA, or the EPA determines that the AOP must be revised or revoked to ensure compliance with the applicable requirements.

Re-openings shall not be initiated before a notice of intent to re-open is provided to the permittee by Ecology at least 30 days in advance of the date that this AOP is to be re-opened, except that Ecology, Health, or BCAA may provide a shorter period in the case of an emergency.

All AOP conditions remain in effect until such time as Ecology takes final action. Respective regulatory agencies may take temporary corrective measures in cases of material mistakes or potential negative impact to public health.
[WAC173-401-730]

4.7 MONITORING

Under the requirements of WAC 246-247-075(9), Health may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. Health may require the operator of an emission unit to

conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040.

4.8 NEW SOURCE REVIEW APPLICABILITY

The permittee shall not be allowed to construct or operate new or modified emission units without previous approval pursuant to the new source review requirements except as allowed by regulations. Additionally, before a deactivated emission unit is re-activated, an applicable requirements assessment shall be performed. This applicable requirements assessment shall include a determination of the applicability of the new source review requirements. [WAC 173-400-110, -560 and -700, WAC 173-460-040 (state only), and WAC 246-247-060 (state only)]

4.9 EMISSION STANDARDS AND CONTROLS FOR SOURCES EMITTING GASOLINE VAPORS

Stage 1 requirements are applicable to 20 eastern Washington counties (including Benton County) with new gasoline dispensing facilities greater than 10,000 gallons storage capacity (Table 1.7 in Attachment 1). Total annual throughput records shall be maintained for the most recent 2- year period. [WAC 173-491]

4.10 STRATOSPHERIC OZONE PROTECTION

The permittee shall comply with the labeling, procurement, maintenance, service, repair, and disposal standards relevant to stratospheric ozone protection under 40 CFR 82. Records shall be maintained as required. [40 CFR 82]

4.11 ACCIDENTAL RELEASE PREVENTION REQUIREMENTS: RISK MANAGEMENT PROGRAMS UNDER THE CLEAN AIR ACT, SECTION 112(R)(7).

The Hanford Site is subject to Part 68 and shall certify compliance with all requirements of 40 CFR 68 as part of the annual compliance certification as required by 40 CFR 70.6(c)(5). This requirement applies to the 283-W Water Treatment Plant for the risk management of potential accidental release of chlorine (Table 1.7 in Attachment 1). [40 CFR 68.215]

4.12 APPROVAL ORDER TERMS AND CONDITIONS THAT BECOME IRRELEVANT DURING THE TERM OF THIS PERMIT.

Nothing herein shall be construed to preclude the permittee from making changes consistent with Chapter 401 that would render existing AOP compliance terms and conditions irrelevant. [(WAC 173-401-725(4)(a)]

4.13 MONITORING AND ASSOCIATED RECORDKEEPING FOR EMISSION UNITS WITHOUT CONTINUOUS OPERATION

1. For Emission Units with Nonradioactive Air Emissions Conditions

The permittee is not required to conduct the monitoring and associated recordkeeping for any emission unit if the emission unit did not operate at any time between required monitoring events (e.g., if the monitoring requires recording pressure drop daily, such readings would not be required on any full day in which the emission unit did not operate), provided the following conditions are met.

(a) In the case of a permanent shut down of the emission unit:

(i) the permittee makes a contemporaneous record in a log or file maintained on site of the date and time that the emission unit ceased operation.

(ii) the permittee shall provide written notice to Ecology within a reasonable time.

(b) In the case of a temporary shut down of the emission unit:

(i) the permittee makes a contemporaneous record in a log or file maintained on site of the date and time that the emission unit ceased operation and the reason why the emission unit did not operate.

(ii) the permittee makes a contemporaneous record in a log or file maintained on site of the date and time that the emission unit resumed operation.

(iii) the periodic report of monitoring required by Standard Terms and Conditions Section 4.3.3, “Semiannual Reports”, and/or the specific permit condition includes a summary of the period or periods when the emission unit did not operate.

2. For Emission Units with Radioactive Air Emission Conditions

The permttee is not required to conduct the monitoring and associated recordkeeping for any emission unit if the emission unit did not operate at any time between required monitoring events (e.g., if the monitoring requires continuous sampling, such readings would not be required on any full day in which the emission unit did not operate), provided the following conditions are met.

(a) In the case of a permanent shut down of the emission unit:

(i) the permittee completes the monitoring and associated recordkeeping for that period before the shutdown.

(ii) The facility shall file a report of closure with Health whenever operations producing emissions of radioactive material permanently are ceased at any

emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC shall be required, as applicable, in accordance with WAC 246-247-080(6).

Note: These conditions do not apply to temporary radioactive emissions units [e.g., high-efficiency particulate air (HEPA) vacuums or portable/temporary radioactive air emission units (PTRAEUs), etc].

5.0 PERMIT SHIELD

5.1 APPLICABLE REQUIREMENTS

Compliance with the AOP conditions that are identified specifically in the "Standard Terms and Conditions" and "General Conditions" sections (Sections 3.0 and 4.0) and Attachments 1 and 2 shall be deemed compliant with the applicable requirements on which that condition is based, as of the date of AOP issuance. The permit shield does not apply to IEUs or activities identified in WAC 173-401-530.

Exclusions:

Nothing in this AOP shall alter or affect the liability of the permittee for the following.

- The provisions of Section 303 of the FCAA (emergency orders), including the authority of the administrator under that section
- The liability of the permittee for any violation of applicable requirements prior to or at the time of permit issuance
- The applicable requirements of the acid rain program, consistent with Section 408(a) of the FCAA
- The ability of EPA to obtain information from a source pursuant to Section 114 of the FCAA
- The ability of Ecology to establish or revise requirements for the use of reasonably available control technology (RACT) as provided in Chapter 252, Laws of 1993.

[WAC 173-401-640(1)]

5.2 INAPPLICABLE REQUIREMENTS

Ecology has determined that the Hanford Site, including all sources, is not subject to certain requirements. In accordance with the provisions of WAC 173-401-640(2), inapplicable requirements at the time of AOP issuance are shown in Table 5-1. The permit shield shall apply to these inapplicable requirements.
[WAC 173-401-640(2)]

5.3 STATEMENT OF BASIS

The Statement of Basis (Statement) is issued by the permitting agencies as a separate supporting reference document to this air operating permit. This Statement is non-enforceable and sets forth the legal and factual basis for AOP conditions. The Statement includes references to the

applicable statutory or regulatory provisions, technical supporting information on specific emission units, and clarifications of specific requirements.
[WAC 173-401-700(8)]

Table 5-1. Inapplicable Requirements.

Requirement	Reason for inapplicability
WAC 173-400-040(3)(b) Fugitive emissions in a nonattainment area	The site is not located in a nonattainment area.
WAC 173-400-040(8)(b) Fugitive dust in a PM-10 nonattainment area	The site has not been indicated as a significant contributor to a PM-10 nonattainment area.
WAC 173-400-060 Emission Standards for General Process Units	No general process units have been identified on the Hanford Site.
WAC 173-400-070 Emission Standards for Certain Source Categories	None of the facilities described exist on the site.
WAC 173-400-105(5)(b)(c)(d) Continuous monitoring and recording for Sulfuric acid plants, fluid bed catalytic cracking units and wood residue fuel-fired steam generators	No facilities as described exist on the Hanford Site.
WAC 173-400-112 Preconstruction permits issued under Title I Part D Plan Requirements for Nonattainment Areas.	The site and surrounding areas have never been determined to be in nonattainment of NAAQS's, therefore permits under this provision have not been required.
WAC 173-400-151 Retrofit Requirements for Visibility Protection	The Hanford Site has not been identified as a cause or contributor to visibility impairment in any mandatory Class I area.
WAC 173-400-190 Requirements for Nonattainment Areas	The Hanford Site is not located in a nonattainment area.
WAC 173-400-210 Emission Requirements for Prior Jurisdictions	The Hanford Site always has been regulated by Ecology. No local authority previously has regulated the Hanford Site.
WAC 173-421, Motor Vehicle Emission Control Systems	The site is not located in a noncompliance area or emission contributing area requiring a vehicle inspection program.
WAC 173-422, Motor Vehicle Emission Inspection	The site is not located in a noncompliance area or emission contributing area requiring a vehicle inspection program.
WAC 173-490, Emission Standards and Controls for Sources Emitting Volatile Organic Compounds	This supplements WAC 173-400 and applies to VOC sources in ozone nonattainment areas. The site is not located in a designated ozone nonattainment area.
WAC 173-492, Motor Fuel Specifications for Oxygenated Gasoline	The site is not located in the control areas requiring oxygenated gasoline use.
WAC 246-247-060(10) Commercial nuclear power plants	The permittee does not operate a commercial nuclear power plant.
WAC 246-247-075(5) and (7) Facilities licensed by NRC	The permittee does not have point source emissions from NRC licensed facilities. Any NRC license would be to handle a specific sealed source term.
WAC 463-39, General Regulations for Air Pollution Sources	The site emission sources are not subject to EFSEC jurisdiction/authority.
40 CFR 72–78 WAC 173-406 Acid Rain Regulation	Steam generators on the site are not included in the acid rain control program and the site does not opt in at this time.
40 CFR 79 Registration of Fuels and Fuel Additives	DOE does not manufacture or import fuel on the Hanford Site.
40 CFR 63, Subpart IIII	40 CFR 63, Subpart IIII does not apply to surface coating that

Table 5-1. Inapplicable Requirements.

Requirement	Reason for inapplicability
National Emission Standards for Hazardous Air Pollutants: Surface Coating of Automobiles and Light Duty Trucks	Occurs during research or laboratory activities or that is part of janitorial, building, and facility maintenance operations, including maintenance spray booths used for painting production equipment, furniture, signage, etc., for use within the plant.
40 CFR 63, Subpart JJJJ National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating of the Federal Code of Regulations	DOE does not use paper and other web coating lines.
40 CFR 63, Subpart KK National Emission Standards for Printing and Publishing Industry	DOE does not use flexographic or rotographic presses.
40 CFR 60, Subpart MM Standards of Performance for Automobile and Light Duty Truck Surface Coating Operations	40 CFR 60, Subpart MM only applies to assembly plants.
40 CFR 63, Subpart MMMM National Emission Standards for Hazardous Air Pollutants for Surface Coating of Miscellaneous Metal Parts and Products	Not applicable to facility maintenance.
WAC 173-407 Carbon Dioxide Mitigation Program for Fossil-Fueled Thermal Electric Generating Facilities	No new or modified fossil-fueled thermal electric generating facilities.
BCAA, Regulation 1, Articles 1, 2, 3, 4, 6, 7, 9	Authority to regulate Hanford Site air emissions pre-empted by Ecology (Statement of Basis), except for Articles 5 and 8.
Hazardous Waste Combustion (40 CFR 63, Subpart M)	None of the facilities described exist on the site.
Site Remediation (40 CFR 63, Subpart GGGGG)	The facility is exempt from the requirement.
Reciprocating Internal Combustion Engines (40 CFR 63, Subpart ZZZZ)	The facility is exempt from the requirements except initial notifications.
Industrial/Commercial/Institutional Boilers and Process Heaters (40 CFR 63, Subpart DDDDD)	The facility is exempt from the requirements except initial notifications.

Statement of Basis

For
Hanford Site Air Operating Permit No. 00-05-006
2006 Renewal

State of Washington Department of Ecology
State of Washington Department of Health
Benton Clean Air Authority

BACKGROUND

The Statement of Basis (Statement) is issued by the permitting agencies as a separate supporting reference document to the Hanford Air Operating Permit (AOP). The Statement sets forth the legal and factual basis for the AOP conditions, and is not intended for enforcement purposes. The Statement includes references to the applicable statutory or regulatory provisions, technical supporting information on specific emission units, and clarifications of specific requirements. [Washington Administrative Code (WAC) 173-401-700(8)]

In 1990, U.S. Congress amended the federal Clean Air Act (CAA). One change was to create air operating permits for industrial sources of air pollution (codified in Title 5 of the CAA). Prior to the creation of these permits, facility managers, regulators and the public had to look through many separate requirements to find those that applied to a certain facility. An air operating permit brings all applicable requirements into one place and requires the manager of the source to certify that it complies with all the applicable requirements. Further, the burden of proof for compliance changed from the regulating agencies to the sources.

In 1991, the Washington State Legislature updated the Washington Clean Air Act [Chapter 70.94 of the Revised Code of Washington (RCW)] to make it consistent with the new federal program. In 1993, Ecology developed Washington's operating permits regulation to comply with federal regulations [Part 70 of Title 40 of the Code of Feral Regulations (40 CFR 70), or Title 5 of the federal CAA], and applied to the federal Environmental Protection Agency (EPA) for program approval. In November 1994, EPA granted Washington State Department of Ecology (Ecology) interim approval for the operating permit program [Chapter 173-401 of the Washington Administrative Code, or WAC 173-401]. However, EPA also directed the state to correct several issues including insignificant emission units (IEUs). Over disagreement with the IEU issue, it took many years' negotiation and litigation to resolve the differences. Finally, full approval of the state program and IEU language was issued to the State of Washington by EPA effective on January 2, 2003.

The Washington State Clean Air Act requires Ecology and the local air authorities to establish a program of renewable air operating permit [RCW 70.94.161 and Appendix A to Part 70 of Title 40 of the Code of Feral Regulations (40 CFR 70)]. Ecology is the leading agency for the Hanford AOP. Through memorandum of understanding and delegation, the Hanford AOP is

regulated and enforced by three agencies. Ecology regulates non-radioactive toxic and criteria air emissions, Washington State Department of Health (Health) regulates radioactive air emissions, and Benton Clean Air Authority (BCAA) regulations asbestos and outdoor burning. The memorandum of understanding between Ecology and Health and delegation letter between Ecology and BCAA are documented in the Appendices of this Statement.

The Hanford Site AOP was initially issued on June 18, 2001, in accordance with WAC 173-401, covering the 5-year operating period from July 2, 2001 to July 1, 2006. Ecology, Health and BCAA initiated AOP renewal activities approximately 18 months before the July 2006 expiration date. Department of Energy submitted several application materials from April to December 2005, and on December 21, 2005, the agencies accepted the renewal application as complete. The AOP renewal processes are subject to the same procedural requirements that apply to initial permit issuance, including those for public participation, affected state and EPA reviews. [WAC 173-401-710(2)]

The Hanford AOP is comprised of four enforceable parts. The first part includes *Standard Terms and* General *Conditions*. The *Standard Terms* are standard provisions for all AOPs in the State of Washington [WAC 173-401-620], and the *General Conditions* are general requirements applicable to all emission units within the Hanford Site. The second part is *Attachment 1* which includes all applicable operating conditions and limits enforced by Ecology rules and regulations. The third part is *Attachment 2* which includes all applicable operating conditions and limits enforced by Health rules and regulations. The fourth and last part of the Hanford AOP is *Attachment 3* which includes regulatory requirements for asbestos and outdoor burning enforced by BCAA. This Statement of Basis is organized in the same fashion corresponding to the table of content of the AOP. The detail of the description in the Basis depends on the background of the regulatory requirements and the complexity of the topic. If an AOP condition is self-explanatory, no lengthy statement is provided.

Definitions used in this AOP are incorporated by reference as contained in WAC 173-401-200, WAC 173-400-030, WAC 173-460-020, WAC 246-247-030, and those specified under BCAA Regulation 1 (and/or incorporated by reference therein). Specific definitions unique to this AOP include the following.

<u>Discovery</u> – qualitative determination that a potential threat to public health or safety exists or existed after an evaluation of pertinent information.

<u>Permitting Authority</u> – in the Hanford Site AOP are the Ecology, the Health, and the BCAA; with Ecology acting as the lead agency. Health and BCAA regulatory authority pursuant to the terms and conditions of the Hanford Site AOP is described in Sections 3.0 and 4.0 of this Statement.

<u>Significant emission unit or activity</u> - for regulated air pollutants, excluding radionuclides, this is an emission unit that does not meet the criteria of IEUs as described in WAC 173-401-530.

The Ecology and Health Statements of Basis are non-enforceable, but supporting reference documents that provide a rationale for the development of the permit and offers clarification where deemed necessary. For purposes of this Chapter 401 AOP, the terms “permit” and “license” are synonymous, when a requirement pertains to compliance with the AOP the term “permit” will be used, while when a requirements references a WAC 246-247 action the term “license” will be used.

The effective period of the 2006 AOP renewal covers the five-year period from January 1, 2007 to December 31, 2011. [WAC 173-401-610]

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1. Emission Standards and Limitations
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ATTACHMENT 2 ..... Health Permit

1. Emission Standards
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1.0 ACRONYMS

This section is self-explanatory.

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2.0 GENERAL PROCESS INFORMATION

The Hanford Site is included in the *Federal Clean Air Act* (FCAA) Title V AOP Program because it is a "major source" as defined in WAC 173-401-200(19). Specifically, it meets applicability under WAC 173-401-300 because portions of the Hanford Site are:

1. a stationary Source (or group of stationary sources),
2. located on one or more contiguous or adjacent properties,
3. under common control of the same person (or persons under common control),
4. belonging to a single major industrial grouping, **and**
5. described in WAC 173-401-200(19)(a),(b), or (c).

For the purposes of defining "major source," a stationary source or group of stationary sources are considered part of a single industrial grouping if all of the pollutant emitting activities at such source or group of sources on contiguous or adjacent properties all have the same two-digit NAICS (North American Industry Classification System) code categories.

When a facility or entity is located on the Hanford Site, the presumption is that the facility or entity is under the control of one of the DOE Hanford Site operations offices that control waste management and restoration operations on the Hanford Site, specifically, under the control of the Richland Operation Office (RL), the Office of River Protection (ORP), or the Office of Science (DOE-SC). Several entities operating on or near the Hanford Site under a contract or lease and are not under DOE control. The presumption of common control may be overcome and DOE Hanford Site operations offices may seek to exclude an entity from the Hanford Site AOP on a case-specific basis. The final decision is made and approved by Ecology with agreement from EPA.

In general, the following criteria will be used by Ecology and/or EPA to determine whether a source is to be included in the Hanford Site AOP.

1. Is the percentage of the entity's output provided to DOE Hanford Site operations offices greater than 50%?

2. Do the lease/contract terms indicate that DOE Hanford Site operations offices will control the entity?
   a) What do the lease/contract terms indicate with regard to pollution control/permitting responsibilities?
   b) Who accepts responsibility for compliance with air quality control requirements?
   c) What about for violations of the requirements?
   d) Does DOE have the power to issue a stop-work order to the entity for incidents or conditions harmful to the environment?
   e) Does DOE exercise directing influence over the entities economic or other pollutant-emitting activities?
   f) Does DOE have the power to make or veto decisions to implement major emission-control measures or to influence production levels or compliance with environmental regulations?

g) Does DOE control the performance of the entity?

3. Can DOE Hanford Site operations offices make decisions that affect the entity's pollution control technologies?

4. Does the entity share products, byproducts, equipment, other property, or pollution control equipment with DOE?

5. Does the entity share a common workforce, plant manager, security forces, corporate executive officers, payroll activities, employee benefits, health plans, retirement funds, insurance coverage, or other administrative functions?

There are a number of privatized commercial facilities, including a nuclear power plant, a research facility to study gravitational waves, and a commercial low-level radioactive waste burial site located within the boundaries of the Hanford Site. Ecology has concluded these activities are not under the common control of DOE Hanford Site operations offices, and, consequently these facilities are not part of the Hanford Site. [WAC 173-401-200(17)]

The following is provided to support the determination to exclude those facilities and activities listed in Section 2.0 of the "Standard Terms and Conditions" portion of the Hanford Site AOP. All future excluded facilities and activities will be guided by the process outlined in Section 2.0 of this Statement and current regulatory interpretative guidance and precedents.

For sites with multiple types of entities and relationships, the EPA has provided additional interpretive guidance for determining which sources are to be included as part of the major source to be addressed in an air operating permit[1]. The following have been determined to not be part of the Hanford major source.

- **Pacific EcoSolution Corporation, Richland Facility**

  The Pacific EcoSolution Corporation (PEcoS), formerly Allied Technology Group Corporation (ATG), operates a low-level radioactive waste decontamination, super compaction, and packaging disposal facility. The percentage of PEcoS service output provided to DOE is less than 50% in terms of shipment or gross weight. A private entity outside the Hanford Site would not be considered a 'support facility' to DOE under the guidance on 'common control' if the percentage of the entity's output or service provided to DOE is less than 50%. Based on the current mode of operation, PEcoS shall not be added to the Hanford Site Title V AOP.

- **Interstate Nuclear Services Laundry**

  Interstate Nuclear Services (INS) provides cleaning and decontamination services for personnel protection clothing and respirator masks. INS was dependent on DOE as a

[1] EPA Guidance "Questions and Answers on the Requirements of Operating Permits Program Regulations, July 7, 1993," and later correspondences on common control issues.

Hanford Site spin-off operation in 1992 and 1993. However, INS solicited business from other DOE sites including the Idaho National Environmental Engineering Laboratory and the Sandia National Laboratory. The percentage of the entity's service output provided to the Hanford Site currently is less than 50%; and the trend appears to be stabilizing for the foreseeable future at about 30%. An entity outside the Hanford Site would not be considered a 'support facility' to DOE under the guidance on 'common control' if the percentage of the entity's output provided to the Hanford Site is less than 50%. Based on the current mode of operation, INS shall not be added to the Hanford Site Title V AOP.

- **Battelle Richland North Facilities**

  Battelle Pacific Northwest operates a multiprogram laboratory research and development (R&D) center. Both investigative research and design development activities are conducted within the Richland North Complex (RCHN). Activities are distributed among analytical studies (paper studies); software development; hardware development; hardware design, development, and testing [e.g., instrumentation, robotics, sensors, laser systems, nondestructive examination (NDE), etc.]; energy systems design, analysis and monitoring; and laboratory-based investigative scientific research. The RCHN accommodates a client base that involves both government agencies and private business as well as foreign and domestic clients. The percentage of the entity's service output provided to the Hanford Site is currently less than 50%. An entity outside the Hanford Site would not be considered a 'support facility' to DOE under the guidance on 'common control' if the percentage of the entity's output provided to the Hanford Site is less than 50%. Based on the current mode of operation, the RCHN shall not be added to the Hanford Site Title V AOP.

- **Applied Process Engineering Laboratory**

  The Applied Process Engineering Laboratory (APEL) was a joint project with the DOE, the City of Richland, the Port of Benton, and Energy Northwest. Currently APEL is owned and operated by Energy Northwest, has its own RCRA Part B permit, and obtains its own BCAA permits. APEL tests and develops new technologies that can be used in Hanford Site cleanup, as well as provides an incubator for entrepreneurs who want to establish technology-based businesses. APEL is not under the 'common control' of DOE.

- **The Laser Interferometer Gravitational-Wave Observatory**

  The Laser Interferometer Gravitational-Wave Observatory (LIGO) is a research facility on the Hanford Site funded by the National Science Foundation (NSF). LIGO was designed and is being constructed by a team of scientists from the California Institute of Technology and the Massachusetts Institute of Technology for the purpose of detecting cosmic gravitational waves and harnessing these waves for scientific research. LIGO does not supply any DOE related services, and is not under the 'common control' of DOE.

- **All Energy Northwest Facilities**

Energy Northwest is a commercial producer of electrical power. It does not supply any direct DOE related services, and is not under the 'common control' of DOE.

- **All Port of Benton Facilities**

  The Port of Benton is an economic development agency in Benton County. DOE has transferred ownership of several parcels of land and several facilities in the 3000, 400, and 1100 Areas of the Hanford Site to the Port of Benton. The Port of Benton will make the existing infrastructure and buildings available for new business and industry. The Port of Benton is not under the 'common control' of DOE.

- **US Ecology, Inc. Commercial Low-Level Radioactive Waste Burial Site**

  US Ecology operates a commercial low-level radioactive waste burial site for the State of Washington on land leased from DOE. This burial site receives low-level waste from commercial organizations, does not supply any DOE related services, and is not under the 'common control' of DOE.

- **Kaiser Aluminum and Chemical Corporation Extrusion Press Located in the 1100 Area**

  This facility produces aluminum baseball bats for sale to the general public, does not supply any DOE related services, and is not under the 'common control' of DOE.

- **Areva**

  Areva, formerly Framatome-ANP and Siemens Power Corporation before that, operates a commercial nuclear fuel fabrication facility near the southern boundary of the Hanford Site. The Areva facility does not supply any USDOE related services, and is not under the 'common control' of DOE.

- **Livingston Rebuild Center, Inc.**

  DOE signed a lease in March 1998 with Livingston Rebuild Center, Inc., a major railroad locomotive repair firm from Livingston, Montana, for about one quarter of the Hanford Site 1171 Transportation Maintenance Building. Livingston Rebuild Center rebuilds locomotives and locomotive components for customers throughout the U.S., Canada, and Mexico. The company is not under the 'common control' of DOE.

- **PN Services**

  PN Services is a subsidiary of Westinghouse Electric Company, specializing in chemical cleaning, chemical decontamination, and related chemical and waste processing services for the nuclear industry. PN Services originally was formed in May 1983 as the PN Services division of Pacific Nuclear. In January 1992, Pacific Nuclear was renamed VECTRA Technologies and the PN Services division became the Plant Services Group of VECTRA. On June 30, 1995, the Plant Services Group was acquired by Westinghouse. This acquisition merged the chemical decontamination and chemical cleaning capabilities of Westinghouse and VECTRA Plant Services Group into a single company, PN Services. The company has an executive engineering office, service facility, and chemical laboratory in Richland, and a sales office and service facility in Spartanburg, South Carolina. The company is not under the 'common control' of DOE.

- **Environmental and Molecular Science Laboratory**

  The Environmental and Molecular Sciences Laboratory (EMSL) is a DOE Office of Science (SC) national scientific user facility and research laboratory operated by Battelle Pacific Northwest in Richland, Washington. EMSL activities fall under the 87 major industrial grouping code, which is not the same as activities on the Hanford Site that are within the AOP. More than 60% of the 122 million annual budget is currently funded by DOE-SC, and only 6% is in support of Hanford Site related activities. The remainder is funded by private sources. EMSL is located on the DOE Office of Science Site and is under the control of the Office of Science. The SC site is not on the Hanford Site. It is bounded on the West by Stevens Drive, on the east by George Washington Way, and on the south by Horn Rapids Road, but also includes the EMSL property south of Horn Rapids Road.

- **Oasis Physical Therapy located at the Stevens Center**

  This facility provides a service for workers of Hanford contractors and to the general public, does not supply any DOE related services, and is not under the 'common control' of DOE.

- **Montessori School located at the Stevens Center**

  This facility is a school for the general public, does not supply any DOE related services, and is not under the 'common control' of DOE.

- **Corporate Health Facility located at the Stevens Center**

  This facility provides a service for workers of Hanford contractors and to the general public, does not supply any DOE related services, and is not under the 'common control' of DOE.

- **Bulk Vitrification Testing Facility located across from Hammer in Richland**

  A research and test demonstration facility was built by a contractor in pursuit of obtaining full approval a method to treat low activity waste at the Hanford site. The facility was permitted by BCAA and is under its jurisdiction because the work was outside of the Hanford site. The test demonstrations facility is near the southern boundary of the Hanford Site across from Hammer. The facility does not supply any USDOE related services, and is not under the 'common control' of DOE.

- **Non-road engines**, as defined under WAC 173-400-030(55) as a general insignificant emission unit category supporting Hanford Site operations, but not subject to WAC 173-401 inclusion.

Regulations promulgated under statutory authority other than the FCAA [e.g., *Resource Conservation and Recovery Act* (RCRA) *of 1976* and *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA) *of 1980*] are not Title V applicable requirements and are not included in this AOP. Therefore, portions of emission units already in compliance with Subparts AA, BB, and CC of 40 Code of Federal Regulations (CFR) 264 and 265 are exempt from CAA requirements. In addition, actions taken pursuant to CERCLA are exempt from permitting and other administrative requirements. The CERCLA/CAA integration is described later in Section 5.0.

3.0 STANDARD TERMS AND CONDITIONS

All emission units within the Hanford Site AOP shall comply with all standard terms and conditions in WAC 173-401-620(2). The standard terms and conditions are applicable to all Chapter 401 (WAC 173-401) sources, including insignificant emission units, in the State of Washington.

Subsection 3.3 on *Permit Actions* describes the conditions for a permit modification. The AOP modification process and permit change determination key is documented in Appendix D of this Basis.

Subsection 3.5 on *Duty to Provide Information* ensures that the records to demonstrate compliance are available within a reasonable time. Reasonable time for most records that are kept at an emission unit should be available with 24 to 48 hours, while records maintained at central repository at the Hanford Site or within a contractor's record management system should be made available upon a written request from the agency with a deadline listed based on volume, age and type of record requested, (electronic versus hard copies).

The permittee shall provide requested classified documents to representatives of Ecology, Health or BCAA who have the appropriate security clearance and a demonstrable need to know. The records will be processed through the clearance process established by DOE and submitted to the agency within a reasonable time after they are cleared.

Subsection 3.10 on *Permit Continuation* describes the condition for AOP continuation in case that the renewed AOP has not been issued on or before the expiration date. All terms and conditions of the existing AOP, including any permit shield provided under WAC 173-401-640, shall not expire until renewal permit has been issued if a timely and complete application has been submitted. An application shield granted pursuant to WAC 173-401-705(2) shall remain in effect until the renewal permit has been issued if a timely and complete application has been submitted.

A timely and complete application for the first renewal of the AOP was submitted and accepted by the agencies in December 2005, therefore the application shield was granted and the Hanford Site can continue operations under the existing AOP until the new permit is issued and approved pursuant to WAC 173-401-710.

Subsection 3.11 on *Certification* describes the requirements for any, form, application, notice, report, or compliance certification required under chapter 70.94 or 70.120 RCW, or any ordinance, resolution, regulations, permit, or order in force pursuant thereto. The permittee should not tamper, make false statements, and ensure truth, accuracy and completeness in every document submitted to the regulatory agencies that has a regulation applicable under this permit.

Approval orders applicable to activities will end at activity completion, as described in the notice of construction (NOC) application. The permittee is not required to continue to comply with approval order terms and conditions after these become irrelevant. Examples are initial testing requirements and completed and closed NOCs and emission units. Appendix A lists Ecology

Completed or closed NOC Approvals, Terms and Conditions or Emission Units, Appendix B lists Health Obsolete NOC Approvals or Licenses, and Appendix C lists Health Obsolete or Closed Emission Units.

4.0 GENERAL CONDITIONS

General conditions (including monitoring, compliance inspection, recordkeeping and reporting requirements) are applicable to all emission units in the Hanford Site AOP.

Subsection 4.1 on *Permit Renewal and Conditions* describes the obligations of the permitting agencies and the permittee. The DOE submitted AOP renewal application on October 28, 2005, with supplemental submittals of the Diffuse and Fugitive report on November 28, 2005, and the Insignificant Emission Units report on December 20, 2005. The application is deemed complete according to the criteria in WAC 173-401-500. This renewal application is submitted more than 6 months before the date of AOP expiration on July 1, 2006, and hence regarded as timely application. The permittee's rights to operational continuity and permit shield are described in WAC 173-401-620 and -640.

This AOP renewal will cover the 5 year period from January 1, 2007, to December 31, 2011. The next renewal application will be submitted by DOE no later than 6 months from the AOP expiration date. The "complete" renewal application shall outline the information required for the three agencies (Ecology, Health, and BCAA) to update their respective attachments.

Subsection 4.2 on *Transfer of Ownership or Operation* describes DOE, not the contractors, as the owner and operator of the Hanford Site; therefore, any change to contractors that occur to contracting process under DOE review and approval does not constitute a change required to modify the AOP.

Subsection 4.3.3 on *Semiannual Report* describes the semiannual report content and required data to be submitted every six months. The semiannual report will not include IEUs for Ecology and will not include Diffuse and Fugitive minor emission units and ALARACTs for Health. The reporting of Diffuse and Fugitive minor emission units in the annual NESHAPS report will ensure adequate compliance to the specific terms and conditions and the Standards Terms and Conditions applicable to emission generation for these types of emission units. In addition to these diffuse and fugitive emission units, it is understood per agreement with Health that the "Emission Unit Information" section of emission units listed in the Health License will not be required to be certified under the annual compliance certification.

Health has consolidated the Hanford Site radiological Licenses into a single License as such the revision process to the License should be the only requirement to report on for semiannual reports. As such, each license revision letter number will be listed in the semiannual reports, along with any notice of construction approvals issued by either Ecology or Health.

For all approvals, License activities, and emission units that are closed and considered irrelevant and the applicable AOP modification is submitted to the agency under Section 4.12 the permittee is not required to report.

Subsection 4.3.4 on *Annual Compliance Certification* describes the annual compliance certification content and required data to be submitted every year for the previous year's operations of the emission units listed in the AOP. The annual compliance certification will not

include IEUs for Ecology and will not include Diffuse and Fugitive minor emission units and ALARACTs for Health. The reporting of Diffuse and Fugitive minor emission units in the annual NESHAPS report will ensure adequate compliance to the specific terms and conditions and the Standards Terms and Conditions applicable to emission generation for these types of emission units. In addition to these diffuse and fugitive emission units, it is understood per agreement with Health that the "Emission Unit Information" section of emission units listed in the Health License will not be required to be certified under the annual compliance certification.

For all approvals, License activities, and emission units that are closed and considered irrelevant and the applicable AOP modification is submitted to the agency under Section 4.12 the permittee is not required to include in the annual compliance certification.

Subsection 4.12 on *Approval Order Terms and Conditions that Become Irrelevant during the Term of this Permit* describes actions that the permittee may take when an emission unit, condition, term, limit or other requirement not related to monitoring or recordkeeping becomes irrelevant during the term of the AOP.

Approval orders/License applicable to activities will end at activity completion, as described in the NOC application. The permittee is not required to continue to comply with approval order terms and conditions after they become irrelevant. For example, many approval orders contain the requirement to conduct an initial, one time only, startup test. Once that initial startup test requirement has been satisfactorily completed, that condition is deemed irrelevant, and the permittee is no longer bound by that particular requirement. An approval or license activity that is closed pursuant to the agency's regulations is considered irrelevant. In addition, the permittee may remove the approval order or license activity and associated terms and conditions from the AOP by submitting a change not requiring a permit revision AOP modification to the applicable agency and Ecology.

Subsection 4.13 on *Monitoring and Associated Recordkeeping for Emission Units without Continuous Operation* describes the process for ensuring the monitoring and associated recordkeeping for any emission unit if the emission unit did not operate at any time between required monitoring events (e.g., if the monitoring requires continuous sampling or recording pressure drop daily, such readings would not be required on any full day in which the emission unit did not operate).

For all approvals, license activities, and emission units that are closed and considered irrelevant and the applicable AOP modification is submitted to the agency under Section 4.12 the permittee is not required to conduct the monitoring and associated recordkeeping.

5.0 PERMIT SHIELD

The Part 70 (i.e., 40 CFR 70) permit shields the liability of an owner or operator of a source for approved operating conditions if the certified permit applications were true and accurate. Nothing in any Part 70 permit shall alter or affect the liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance. [40 CFR 70.6(f)(3)(ii)].

The 1997 EPA Guidance [EPA Guidance on Title V Permit Shield Implementation, 4APT-ARB May 23, 1997, by EPA-4 Air & Radiation Technology Branch Chief R. Douglas Neeley] summarized EPA's position on the appropriate implementation of the Title V permit shield. The State of Washington maintains the same position as indicated in WAC 173-401-640 regarding applicable requirements, inapplicable requirements, omissions and exclusions.

A source seeking a determination of non-applicability for new source review (NSR) requirements to a particular change would need to provide the permit authority with detailed information regarding that change. The inapplicable requirements are identified in Table 5.1 of the AOP. Before the permit shield can extend to requirements that are not imposed on the source in the permit, the permit authority must specifically determine, based on information provided by the source in the permit application, that such other requirements do not apply to the source. A request to extend the permit shield to requirements deemed inapplicable to the source may be made either in the original permit application or in an application for a permit modification.

Regulations promulgated under statutory authority other than the FCAA [e.g., *Resource Conservation and Recovery Act* (RCRA) *of 1976* and *Comprehensive Environmental Response, Compensation and Liability Act* (CERCLA) *of 1980*] are not Title V applicable requirements and are not included in this AOP, e.g., Subparts AA, BB, and CC of 40 Code of Federal Regulations (CFR) 264 and 265. In addition, actions taken pursuant to CERCLA, after proper documentation and verification of removal and remediation activities, are exempt from clean air permitting requirements. There are two key considerations to satisfy in the transition process: (1) proper public notice and review, and (2) no lapse from CAA permitting requirements to onset of CERCLA activities. The process to implement the CERCLA transition through application of Notice of Transition (NOT) from CAA to CERCLA is described below.

To initiate the CERCLA transition of a facility or an activity, DOE must prepare an EE/CA (Engineering Evaluation/Cost Analysis) for stakeholders and public review. The transition from CAA approvals to CERCLA shall be addressed in the EE/CA document for public review. If not, a separate public notice and review for AOP transition is required.

After EE/CA is successfully reviewed and approved, DOE will prepare a Remedial Action Work Plan (RCWP) for each facility (or activity) under CERCLA transition. The Air Monitoring Plan (AMP) is an integral part of the RCWP. Concurrently, DOE shall submit a Notice of Transition (NOT) from CAA to CERCLA to request ceasing CAA permits/certifications and starting CERCLA remediation and monitoring activities. With the approval of the NOT, AOP permitting conditions will become obsolete at the onset of CERCLA remediation activity in the field. At that time, the permittee is no longer required to certify to AOP requirements. Ecology will

revise the AOP to reflect the facility transition to CERCLA status.

The following process delineates the steps to remove AOP permitting conditions/certifications for facilities or activities under CERCLA transition:

- Permittee will prepare Engineering Evaluation/Cost Analysis (EE/CA) or equivalent CERCLA documentation for a facility (or activity) identified for CERCLA transition. Thisdocument shall be reviewed by regulators, stakeholders, and the public.
- This document will clearly identify general CAA requirements to be transitioned to CERCLA. In consistent with WAC 173-401-800 requirement, the public review period shall be a minimum of 30 days with proper notification on the AOP Permit Register and local newspaper. The notice on the AOP permit register will state that the facility's air permits will be discontinued upon onset of remediation activity in the field.
- After the EE/CA or equivalent is approved, permittee will prepare a RAWP or equivalent ARAR implementation document, such asan Air Monitoring Plan (AMP) to identify method to meet the substantive portions of existing air permit conditions, and describe the transition plan for CERCLA air monitoring. EPA, Ecology, and Health will review the ARAR implementation document, as directed by the lead agency.
- Concurrently, permittee will submit to Ecology, Health and/or EPA an NOT (from CAA to CERCLA) for review and approval. The NOT shall reference the CERCLA authority documentation, identify any/all documentation of agency air approvals (EPA/Health/Ecology) in place prior to and after CERCLA transition.
- Ecology/Health/EPA will review the NOT. If the NOT is contested by an agency, an issue resolution process will be initiated between the lead agency and the lead regulatory agency. For actions not contested, the effective date (not the approval date) will coincide with the onset of the CERCLA remediation activity in the field. The facility's air permits can be discontinued after the effective date of the NOT.
- Via formal correspondence, permittee will notify affected agencies of date to begin remediation activity. It is important to notify Ecology and/or Health that physical fieldwork of the CERCLA action has commenced. Upon receiving the notice of fieldwork commencement, Ecology will then notify the public that the previously applicable permits, licenses, NOC and AOP requirements have now been supplanted by the ARAR implementation document (e.g., RAWP and AMP). Permittee is no longer required to certify to AOP requirements after the onset of the actual D&D activity.
- Ecology and Health will delete the affected licenses/NOCs from the enforceable list, and remove permitting conditions from the AOP as an administrative modification at the next significant modification.
- The CAA transition to CERCLA process is deemed complete at this point.

Subsection 5.1 on *Applicable Requirements* describes how compliance with the terms and conditions of the AOP is deemed compliant with the applicable requirements on which that condition is based as the date of the AOP issuance.

WAC 173-401-530 establishes several criteria for determining if an emission unit is insignificant. The Hanford Site AOP Application (DOE/RL-97-07) contains a list of IEUs. WAC 173-401 defines how lists should be maintained during the application phase and following permit issuance. The applicant is required to amend their application if an IEU, based on actual emissions, subsequently will exceed an actual emission threshold, and the IEU must be listed in the AOP. This requirement extends until the draft permit is issued. The AOP regulations do not require that each IEU be listed in the AOP. Following AOP issuance, no emission unit that qualifies as an IEU based on actual emissions can exceed the emission thresholds in WAC 173-401 without first obtaining a permit modification.

Attachment 1 of AOP, Table 1.6, "Emission Limits and Periodic Monitoring Requirements for Emission Units With NOC Approval Conditions", includes only the emission limits and conditions identified in the "Approval Conditions" section of the regulatory orders. Information included in other sections of the orders, such as "Findings", "Background", "Description", or similarly titled sections are not included in Table 1.6. Table 1.6 is intended to capture the periodic monitoring, emission limit and other approval conditions for all emission units with NOC approval orders. However, Table 1.6 does not list all conditions included in the approval order as "Approval Conditions." Most of the excluded conditions have been captured elsewhere in the AOP as applicable requirements. The categories of excluded approval conditions include the following:

- Conditions and requirements addressed in Section 3.0, Standard Terms and Conditions, of the Hanford Site AOP
- Conditions and requirements addressed in Section 4.0, General Requirements, of the Hanford Site AOP, such as the condition to send reports to the Ecology office or the requirement to allow access to the facility for inspection
- Conditions and requirements that re-state portions of applicable codified regulations
- The requirement to prepare and maintain an Operation and Maintenance Manual

Subsection 5.2 on *Inapplicable Requirements* describes how some requirements are not subject to certain requirements. Inapplicable requirements at the time of AOP issuance are shown in Table 5-1.

Acceptable source impact levels (ASILs) as defined in WAC 173-460, "Controls For New Sources of Toxic Air Pollutants", are not emission standards or limitations applicable to the Hanford Site. ASILs are a concentration of a toxic air pollutant in the outdoor atmosphere used to evaluate the air quality impact of a new or modified toxic air pollutant emission source for new source review purposes.

An approval to construct the WSCF was submitted to Ecology. In a letter dated September 17, 1990, Ecology concurred with the determination that radioactive emissions from the proposed WSCF would be offset by decreased emissions from 200-C Plant, Strontium Semi-Works, which ceased operation in July of 1987. It further was determined that the proposed WSCF would not increase radionuclide emissions on the Hanford Site, and therefore was not subject to prevention of significant deterioration (PSD) review (40 CFR 52). This approval to construct pre-dated the effective date of both WAC 173-460 ("Controls for New Sources of Toxic Air Pollutants",

effective 06/18/91) and WAC 246-247 ("Radiation Protection Air Emissions", effective 01/31/91), and imposed no terms or conditions. For this reason, the September 17, 1990 approval from Ecology is not considered an AOP applicable requirement and therefore is not listed in the AOP.

Subpart AA of 40 CFR Part 264 and 265 applies to process vents that treat organic waste using designated treatment technologies. Subpart AA requires organic emissions from all affected process vents on the Hanford Site be less than 1.4 kilograms per hour and 2.8 megagrams per year, or control devices must be installed to reduce organic emissions by 95%. Currently the 200 Area Effluent Treatment Facility (ETF) and the 242-A Evaporator are operating treatment, storage, or disposal (TSD) units contributing to the Hanford Facility volatile organic emissions under 40 CFR 264 and 265, Subpart AA. For process vents emitting organic toxic air pollutants (TAPs) currently regulated under NOCs and RCRA Subpart AA, Ecology is deferring regulation of the organic emissions from process vents to RCRA, Subpart AA.

ATTACHMENTS

Attachment 1: Ecology Permit

The permittee is authorized to operate the non-radioactive portion of the air emission units identified in this attachment and all insignificant emission units not specifically identified in this permit.

Attachment 2: Health Permit

The permittee is authorized to operate the radioactive portion of the air emission units identified in this attachment.

Attachment 3: Benton Clean Air Authority Permit

The permittee is authorized to operate the air emission units identified as open burning and asbestos-related activities. Because these requirements could be triggered at various places on the Hanford Site major stationary source, the emission units are not listed individually in the air operating permit.

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APPENDIX A

Ecology Completed or Closed NOC Approvals, Terms and Conditions or Emission Units

Discharge Point	NOC or Point Type	Approval or Discharge Point	Actions
200 P-296P032-001	Rotary Mode Core Sampling System (RMCS) #2	NOC-93-04	Obsolete NOC
200 P-296P032-001	Rotary Mode Core Sampling System (RMCS) #2	Letter	Obsolete NOC
200 P-296P033-001 & 200 P-296P034-001	Rotary Mode Core Sampling System (RMCS) 3 & 4 and Modification2	NWP95-RMCS(3)	Obsolete NOC
200E C-106 Sluicing	241-C-106 Tank Sluicing, Phase II	97NM-001	(Obsolete) 50 ppm measured as total organic carbon
200E P-296A042-001	241-AZ-101 Tank Waste Retrievieval and 241-AY/241-AZ Tank Farms Ventilation Upgrades, Project W-151 and Project W-030	NOC 94-07	Obsolete. VOCs 0.001 ib/hour.
200E P-296C007-001	C-103 Ventilation Upgrades	NWP 95-TK C-103	Obsolete NOC.
200E P-296C007-001	C-103 Ventilation Upgrades, Approval for Alternate Sampling and Analysis method.	NWP 95-TK C-103 Modification	Obsolete NOC.
200 P-296P034-001	Rotary Mode Core Sampling System (RMCS) 3 & 4 and Modification2	NWP95-RMCS(3)	Obsolete NOC
200E P-296P041-001	241-A-101 Tank Portable Exhauster		Obsolete NOC
200W P-296S021 001	222s Hot Cell Expansion	Letter	Conducted actual tests on the existing units to prove xylene, tolulene, and ethanol air emissions are below etection
200W P-296P028 001	Backup Exhauster for 200W P-296SY 001	Discharge point	Removed from AOP becaue the unit is non-operational.
200W P-296SX 001	SX Farm (Exhauster)	Discharge point	Remove because the discharge point is inactive because saltwell pumping activities are complete for SX Farm, and waste retrieval activies will be completed using portable exhausters.
200 P-296P033-001 & 200 P-296P034-001	Rotary Mode Core Sampling System (RMCS) 3 & 4 and Modification2	DE98NWP-005	Closed NOC
200W P-296S021 001	222s Hot Cell Expansion	Letter	Remove from AOP because actions have been completed.

Discharge Point	NOC or Point Type	Approval or Discharge Point	Actions
W-PORTEX 020, 024, and 025	Portable Exhausters	DE98NWP-006	Closed NOC
200E P-244CR 001 (CR Vault)	Exhauster	Discharge Point	Facility exhauster has been isloated and is inactive.

The NOC or the approval conditions identified in the following have been completed.

Emission Point	Reference	Permit No.	Conditions
100 J-NONPOINT 006	100-N Emergency Dump Basin	NWP 95-1300N EDB	Obsolete NOC
100K Cold Vac. Drying	Cold Vacuum Drying - Phase I	96NM-091	Obsolete NOC
100N S-RCF-EX 001	Environmental Analytical Lab (EAL)	NWP 95(8)-100N/EAL	Obsolete NOC
200 P-296P032-001	Rotary Mode Core Sampling (RMCS) System #2	NOC-93-04	Obsolete NOC
200 P-296P032-001	Rotary Mode Core Sampling (RMCS) Systems #2	Letter	Obsolete NOC
200 P-296P033-001& P-296P034-001	Rotary Mode Core Sampling (RMCS) Systems 3 & 4 and Modification to 2	NWP 95-RMCS(3)	Obsolete NOC
200E C-106 Sluicing	241-C-106 Tank Sluicing, Phase II	97NM-001	(obsolete) VOC 50 ppm measured as total organic carbon
200E Hot Condt. Annex	Hot Conditioning Annex	96NM-092	Obsolete NOC
200E P-2025E ETF	Effluent Treatment Facility (ETF) (2025 E), Approval of NOC Application for Nonradioactive Air Emissions	NOC-93-3	Obsolete. VOCs now regulated under RCRA Subpart AA) VOC emissions from stream number G6 shall not exceed 0.50 gram per minute. VOC emissions of the G6 stream shall also not exceed 0.55 gram per cubic meter at standard conditions. Compliance shall be determined by computing the arithmetic mean of three one-hour periods using EPA Reference Method 25A or Method 18 as described in 40 CFR Part 60 dated July 1, 1992.

200E P-2025E ETF	Effluent Treatment Facility (ETF) (2025 E), Approval of NOC Application for Nonradioactive Air Emissions	NOC-93-3	Obsolete. Within 180 days of start-up of the facility, Energy shall conduct performance tests for VOC at the location G6. Based on the initial results of the performance tests, the department may require Energy to conduct a periodic performance test for these pollutants. Testing must be performed by an independent testing firm, and results must be reported to the department within 60 days after the test completion. Energy shall submit a test plan for the department's approval at least 45 days before the testing. Testing shall occur only after the department approves the plan. Energy shall notify the department at least 7 days before each test date.
200E P-2025E ETF	Effluent Treatment Facility (ETF) (2025 E), Approval of NOC Application for Nonradioactive Air Emissions	NOC-93-3	Opacity from each stack shall not exceed 5 percent as measured by EPA Reference Method 9 as described in 40 CFR Part 60, Appendix A, dated July 1, 1992.
200E P-2025E ETF	Effluent Treatment Facility (ETF) (2025 E), Approval of NOC Application for Nonradioactive Air Emissions	NOC-93-3	Obsolete. This final approval shall become void if construction of this unit is not commenced within eighteen (18) months after issuance of this final approval, or if construction or operation of these units is discontinued for eighteen (18) consecutive months.
200E P-296A042-001	241-AZ-101 Tank Waste Retrieval and 241-AY/241-AZ Tank Farms Ventilation Upgrades, Project W-151 and Project W-030	NOC 94-07	Obsolete. VOCs 0.001 lb/hour.
200E P-296C007-001	C-103 Ventilation Upgrades	NWP 95-TK C-103	Obsolete NOC.
200E P-296C007-001	C-103 Ventilation Upgrades, Approval for Alternate Sampling and Analysis Method.	NWP 95-TK C-103 Modification	Obsolete NOC.
200E P-296P034-001	Rotary Mode Core Sampling (RMCS) Systems 3 & 4 and Modification to 2	NWP 95-RMCS(3)	Obsolete NOC.
200E P-296P041-001	241-A-101 Tank portable exhauster		Obsolete NOC.

Emission Point	Project	Permit No.	Conditions
200W P-296S021 001	222S Hot Cell Expansion	Letter	Conduct actual tests on the existing units to prove xylene, toluene, and ethanol air emissions are below detection
200W F-284WB 001	Backup Package Boiler	NOC-94-06	Obsolete NOC
200W F-284WB 001	Backup Package Boiler	NOC-94-06A	Obsolete NOC
200W P-WRAP1 001	Waste Receiving and Processing (WRAP Facility)	NOC 93-05	After start-up of the facility, RL shall conduct performance tests for VOCs. After these tests, Ecology may require RL to conduct an annual test(s) for those pollutants.
200W P-WRAP1 001	Waste Receiving and Processing (WRAP Facility)	NOC 93-05	After start-up of the facility, RL shall conduct performance tests for particulates. After these tests, Ecology may require RL to conduct an annual test(s) for those pollutants.
200W P-WRAP1 001	Waste Receiving and Processing (WRAP Facility)	NOC 93-05	Opacity 5 %
200W P-WRAP1 001	Waste Receiving and Processing (WRAP Facility)	NOC 93-05, Revision Approval	(obsolete, not a requirement as only mentioned in a letter) RL shall notify Ecology at least 14 days prior to initial processing of retrieved waste at WRAP.
300 300 Area Fuel Supply	300 Area Fuel Supply Shutdown Facilities, Building 303F and 334A	DE 98NWP-001	Obsolete NOC.
300 EP-3020-02-S through –06-S	Environmental Molecular Sciences Lab (EMSL)	NOC 94-08 (Effective: 9-13-1994)	Obsolete 1-5-1999/complete. The emission limits for ammonia and VOC are 0.01 and 0.24 pound per hour, respectively, from the sum of the five chemical stacks. Energy shall demonstrate initial compliance for ammonia and VOC through source tests conducted not later than 180 days after start-up of the laboratory. EPA Reference Methods shall be followed for testing. A test plan will be submitted for Ecology's approval at least 30 days prior to the testing. Ecology shall be invited to participate in these test activities at least one week before the tests. If the concentration is too low to detect, compliance through mass balance will be accepted.

[illegible]	[illegible]	[illegible]	[illegible]
300 EP-3020-07-S through –11-S	Environmental Molecular Sciences Lab (EMSL)	NOC 94-08 (Effective: 9-13-1994)	Obsolete 6-9-2000. Energy shall use good combustion practice for boilers operation by optimizing excess air variations to ensure that gas-fired boilers operate at 15 percent excess air or 3 percent excess oxygen in the flue gas. Per Ecology's request, Energy shall demonstrate the effectiveness of GCP to Ecology during normal operation of the boilers.
300 EP-3020-01-S through –12-S	Environmental Molecular Sciences Lab (EMSL)	NOC 94-08 (Effective: 9-13-1994)	Obsolete 6-9-2000. Operating and maintenance manuals for all equipment that has the potential to affect emissions to the atmosphere shall be developed and followed. Copies of the manuals shall be available to Ecology.
300 EP-3020-02-S through –06-S	Environmental Molecular Sciences Lab (EMSL)	NOC 94-08 (Effective: 9-13-1994)	Complete. Energy shall submit normal emissions and revised maximum emissions for all TAP released from each of five chemical stacks to Ecology within 15 months after the EMSL starting operation.
300 EP-3020-01-S through –12-S	Environmental Molecular Sciences Lab (EMSL)	NOC 94-08 (Effective: 9-13-1994)	Complete. Energy shall notify Ecology in writing at least 30 days before operational start-up of these proposed air emission control systems.
300 EP-3020-01-S through -12-S	Environmental Molecular Sciences Lab (EMSL)	NOC 94-08 (Effective: 9-13-1994)	Obsolete 6-9-2000. Environmental Molecular Sciences Laboratory (EMSL) research projects, supporting operations, and building equipment additions and changes including control systems, can be made to accommodate changing research and support requirements. These changes can be made without filing a Notice of Construction.
300 EP-306W-03-V	Operation of Material Development Laboratory and Catalytic Electrochemical Oxidation Unit (CEO)	DE 98NWP-002	Obsolete NOC.
300 EP-324-01-S	324 Building Modification	NWP 95-300/324 Lab	Obsolete NOC.
300 EP-324-01-S	Operation of a Plasma Arc Furnace in the 324 Building	NWP-96-2	Obsolete NOC.

Supplement 1 of the Hanford Site AOP Application, DOE/RL-95-07, contains one emission unit that is not included in the proposed Hanford Site AOP, NWP-AOP-99-l. That unit is 300-EP-306W-03-V.

Emission Point	Project	Permit No.	Condition
300 EP-325-01-S	325 Hazardous Waste Treatment Unit (HWTU)	DE 98NWP-004	Condition completed 10/17/01. General Testing Requirements: Perform initial source test for Volatile Organic Compounds (VOCs). DOE-RL shall demonstrate initial compliance for Volatile Organic Compounds (VOC) through source tests conducted no later than 180 days after start-up of the proposed HWTU/SAL activities. EPA Reference Method 25A shall be followed for testing, the test plan shall be submitted to Ecology upon request. After source tests are completed, mass balance calculations will be accepted for compliance purposes.
300 EP-3020-01-S through -12-S	Environmental Molecular Sciences Lab (EMSL)	NOC 94-08	Obsolete 9-10-2003. Replaced by DE03NWP-003.
Fossil Fuel Fired Steam Generating Units	ESPC Boilers	97NM-138	Initial source testing was partially completed. First 5 year retesting completed in August, 2003.

APPENDIX B

Health Obsolete NOC Approvals or Licenses

WDOH has been provided comments under the FF-01 license comments on the latest list. WDOH has decided to only include NOCs that were obsolete for the time period representing the orginal time period of July 2001 through present time. Ecology needs to contact WDOH to obtain a word or electronic version since their review consisted of PDF files only.

APPENDIX C

Health Obsolete or Closed Emission Units

WDOH has been provided comments under the FF-01 license comments on the latest list. WDOH has decided to only include NOCs that were obsolete for the time period representing the orginal time period of July 2001 through present time. Ecology needs to contact WDOH to obtain a word or electronic version since their review consisted of PDF files only.

APPENDIX D

AOP Modification Process

Attached is a copy of the AOP Change Determination Key for all AOP modifications allowed in WAC 173-401.

AOP CHANGE DETERMINATION KEY

(Select the correct form and follow the processes described for each type of modification or revision to the Hanford Site AOP. These forms and process are not to be used for any type of NOC approval or License revisions submitted to the agencies.)

This AOP change determination key is revised at the time of renewal to provide a streamlined reflection of the codified requirements for administrative changes to WAC 173-401 major stationary sources. Forms, decisions points, and processes described herein, including appropriate verbatim language from the regulation, are intended to supersede all previous internal DOE/Contractor guidance for processing AOP modifications at the Hanford Site pursuant to AOP #00-05-006, Renewal 1.

Each of WAC 173-401 permit modifications and revisions have been listed in a format that provides the requirements, then a method to be used to determine if a modification or revision should or should not be used, followed by the form that should be completed, and the responsibilities of the permittee and the agency. It should be noted that although this document deals with permit modifications and revisions there is an association with the NOC approval and Licenses revision process that the user should be aware of and hopefully in the future would be integrated with this document.

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ADMINISTRATIVE PERMIT AMENDMENT (AA) PROCESS (WAC 173-401-720)

This change is allowed pursuant to WAC 173-401-720(1) and WAC 173-401-720(2):
1) Definition. An "administrative permit amendment" is a permit revision that:
(a) Corrects typographical errors,
(b) Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source,
(c) Requires more frequent monitoring or reporting by the permittee,
(d) Allows for a change in ownership or operational control of a source where the permitting authority determines that no other change is necessary, provided that a written agreement containing the specific information of the transfer between the current and new permittee has been submitted to the permitting authority,
(e) Incorporates into the chapter 401 permit the terms, conditions, and provisions from orders approving notice of construction applications processed under an EPA-approved program; provided that such a program meets procedural requirements substantially equivalent to the requirements of WAC 173-401-700, 173-401-725, and 173-402-800 that would be applicable to the change if it were subject to review as a permit modification, and compliance requirements substantially equivalent to those contained in WAC 173-401-600 through 173-401-650.
2) Acid Rain provisions. [This requirement is not applicable to the Hanford Site per Table 5-1 of the AOP.]

Method

[Note: It is possible an AA maybe used for something not listed below, check with the site contractor responsible for the AOP.]

Using the requirements listed above in the box, an AA for the Hanford Site AOP would be developed and submitted for any of the following:

- Correct typographical errors to any section, requirement, term, definition, conditions, standard, abatement, monitoring, statement of basis, etc.
- Change of DOE personnel/POCs, contractors, name of business, agency POCs, etc.
- Change increases the frequency of monitoring and/or reporting for an emission unit. This increase could be a change to a program or a particular emission unit procedure, etc.
- Change of ownership and operation of emission units currently listed in the AOP under the applicable DOE Offices: Richland, Office of River Protection, and Office of Science.
- If a NOC approval and/or Licenses is processed through public review(EPA-approved) that meets substantially procedural and compliance requirements of cited requirements in WAC 173-401-720(1)((e) as part of the agency approving process for the document, then the conditions and limitations for operating the emission unit may be incorporated into the AOP by an AA.

The AA is not used for making changes to the AOP statement of basis, NOC approvals or Licenses listed in the AOP, notifying the agency of changes to applicable requirements, decreasing the frequency of monitoring and/or reporting, change in contractor under DOE contracts, adding new NOC approvals or Licenses requirements that are not approved per procedural and compliance requirements.

Combining emission units under a single AA should be considered only if the change is the same for multiple emission units, i.e., abatement technology is missed spelled for more then one unit, or a condition and limitation listed for a project has a typographical error and is listed for multiple emission units. Otherwise it is preferred that separate forms are used for each identified error/change per emission unit.

If this modification is not what is required to change the Hanford Site AOP, please review the following other types of modifications and revisions.

Responsibilities

Hanford Site Actions

1. Develop the AA by emission unit by using the form following this section.
2. Seek consensus with the site contractor for the AOP prior to submittal of the request.
3. Submit an AA to the AOP via a letter to DOE and request DOE to submit the AA to the agencies.
4. On the submittal request, copy organizations that retain a copy of the AOP or request the lead agency to notify AOP holders per WAC 173-401-720(3)(a).
5. Permittee can make change immediately to the AOP on submittal of the request to Ecology and WDOH. [WAC 173-401-720(3)(c)]
6. Although not required by regulation, the permittee should retain a copy of the AA either in a record file or attach to the AOP for tracking incorporation into the AOP by the next modification.

Agency Actions

1. Permitting authority (Ecology) shall take no more than 60 days from receipt of a request for an AA to take final action on such request, and may incorporate such changes without providing notice to the public or affected states provided that it designates any such AOP revisions as having been made pursuant to this paragraph [WAC 173-401-720(3)(a)]
2. Ecology will submit a copy of the revised AOP to the Administrator (EPA).
3. Ecology shall upon taking final action granting a request for an AA, allow coverage by the permit shield in WAC 173-401-640 for AAs made pursuant to subsection WAC 173-401-720(1)(e).
4. Notify other permit holders with copies of the AA.

HANFORD SITE AIR OPERATING PERMIT

Notification of Administrative Permit Amendment

This notification is provided to the Washington State Department of Ecology, Washington State Department of Health, and the U.S. Environmental Protection Agency as notice of an administrative permit amendment described as follows.

This change is allowed pursuant to WAC 173-401-720(1) and WAC 173-401-720(2):
1. Corrects typographical errors,
2. Identifies a change in the name, address, or phone number of any person identified in the permit, or provides a similar minor administrative change at the source,
3. Requires more frequent monitoring or reporting by the permittee,
4. Allows for a change in ownership or operational control of a source where the permitting authority determines that no other change is necessary, provided that a written agreement containing the specific information of the transfer between the current and new permittee has been submitted to the permitting authority,
5. Incorporates into the chapter 401 permit the terms, conditions, and provisions from orders approving notice of construction applications processed under an EPA-approved program; provided that the program meets procedural requirements listed in WAC 173-401, and
6. Changes addressed in the administrative permit amendment can be implemented immediately upon submittal.

Permit Number: 00-05-006

Provide the following information pursuant to WAC-173-401-720:

Description of the change:	
Submittal Date of Change:	
Describe the emissions from orders approving notice of construction applications processed under an EPA-approved program; provided that the program meets procedural requirements listed in WAC 173-401:	
List the terms, conditions, and provisions from orders approving notice of construction applications processed under an EPA-approved program; provided that the program meets procedural requirements listed in WAC 173-401:	
For Hanford Site Use Only:	
AOP Change Control Number:	**Date:**

CHANGES NOT REQUIRING A PERMIT REVISION (CNRR) PROCESS (WAC 173-401-722)

This change is allowed pursuant to WAC 173-401-722(1), WAC 173-401-722(2) and WAC 173-401-722(5):
1) General
(a) A chapter 401 source is authorized to make the changes described in this section without a permit revision, providing the following sections are met:
(i) The proposed changes are not a Title I modifications;
(ii) The proposed changes do not result in emissions which exceed those allowable under the permit, whether expressed as a rate of emissions, or in total emissions;
(iii) The proposed changes do not alter permit terms that are necessary to enforce limitations on emissions from units covered by the permit; and
(iv) The facility provides the administrator and permitting authority with written notifications at least seven days prior to making the proposed changes except that written notification of a change made in response to an emergency shall be provided as soon as possible after the event.
(b) Permit attachments. The source and permitting authority shall attach each notice to their copy of the relevant permit.
(2) Section 502(b)(10) changes. Pursuant to the conditions in subsection (1) of this section, a chapter 401 source is authorized to make section 502(b)(10) changes (as defined in WAC 173-501-200) without a permit revision.
(a) For each such change, the written notification required under subsection (1)(a)(iv) of this section shall include a brief description of the change within the permitted facility, the date on which the change will occur, any change in emissions, and any permit term or conditions that is no longer applicable as a result of the change.
(b) The permit shield authorized under WAC 173-401-640 shall not apply to any change made pursuant to this paragraph.
(3) SIP authorized emission trading. [This requirement is not applicable to the Hanford Site per Table 5-1 of the AOP.]
(4) Emissions cap. [This requirement is not applicable to the Hanford Site per Table 5-1 of the AOP.]
(5) A source making a change under this section shall comply with applicable preconstruction review requirements established pursuant.

Method

[Note: It is possible a CNRR maybe used for something not listed below, check with the site contractor responsible for the AOP.]

Using the requirements listed above in the box, a CNRR for the Hanford Site AOP would be developed and submitted for any of the following:

- Changes that decrease emission rates or total emission for an emission unit or Hanford Site,
- Changes that remove irrelevant terms and conditions
- Changes that remove terms and conditions of either a closed emission unit or NOC approval or License section,
- Changes to abatement technology which do not impact the enforcement limitation of the permit to control emissions, such as but not limited to, adding new abatement, changing the required number of units, as long as the new condition is more stringent; clarifying additional descriptions, as long as the change does not change the actual field configuration and the change has no direct impact on emission; etc.
- A change under 502(b)(10) allows for any change that does not violate permit terms and conditions, therefore a change to conditions and limitations such as but not limited to: description, operations that are not associated with emission generation, flow rate, temperature, dimensions, equipment, etc, are acceptable under 502(b)(10).
- Changes to monitoring and sampling for individual emission units as long as the Hanford monitoring and sampling program is not changed and the change follows the site programs, i.e., a 4 week per year sampling is changed to a one 4 week sample per year condition. The method and equipment is not changed and compliance is still enforced.

- Adding changes to the WDOH License as long as the changes do not impact emission rates, or monitoring, recordkeeping, and other requirements, as listed above, this would include removing terms and conditions that have been approved via the license revision, NOC approval process or closure process and the changes does not require public comment.

The CNRR is not used for making a Title I (Standards of Performance for New Stationary Sources, Hazardous Air Pollutants, Prevention of Significant Deterioration, and Plan Requirements for Nonattainment Areas) modification is not allowed see WAC 173-401-100(35) for complete definition, change to increase either an emission rate or total emission listed for an emission unit or the Hanford Site, a change to alter terms or conditions of enforcement limitations of emission for an emission unit or the Hanford Site.

Combining emission units under a single CNRR should be considered only if the change is the same for multiple emission units, i.e., abatement technology needs to be changed for more then one unit, or a new approval is applicable or a condition and limitation listed for a project is irrelevant and is listed for multiple emission units. Otherwise it is preferred that separate forms are used for each identified change per emission unit.

A CNRR requires a seven day notification prior to implementing or making a change to the AOP, and the CNRR must be attached to the AOP following the affective date of the change. Any change made through the CNRR process is not covered by the AOP permit shield, therefore there is risk associated with the change to be challenged and new applicable requirements being amended to the AOP by a CNRR.

If this revision is not what is required to change the Hanford Site AOP, please review the following other types of modifications and revisions.

Responsibilities

Hanford Site Actions

1. Develop the CNRR by emission unit by using the form following this section. The form, if filled out correctly and completely shall furnish the information required of a CNRR notification.
2. Seek consensus with the site contractor for the AOP prior to submittal of the request.
3. Submit a CNRR to the AOP via a letter to DOE and request DOE to submit the CNRR to the agencies.
4. On the submittal request, copy organizations that retain a copy of the AOP or request the lead agency to notify AOP holders.
5. Permittee can make change to the AOP seven days following submittal of the request to administrator (EPA) and permitting authority (Ecology). [WAC 173-401-722(1)(a)(iv)]
6. Attach each notice to the record copy of the relevant AOP.
7. Comply with applicable preconstruction review requirements for any CNRR.

Agency Actions

1. Review and concur (or deny) proposed changes prior to the implementation date, which is a minimum of seven days from the date of submittal. Ecology has agreed to a three working day approval of this type of AOP revision/modification.
2. Ecology will attach each notice to its copy of the relevant AOP
3. Notify other permit holders with copies of the CNRR.

HANFORD SITE AIR OPERATING PERMIT

Notification of Changes Not Requiring Permit Revision

Section 502(b)(10) Change*

This notification is provided to the Washington State Department of Ecology, Washington State Department of Health, and the U.S. Environmental Protection Agency as notice of a change not requiring permit revision described as follows.

This change is allowed pursuant to WAC 173-401-722(1), WAC 173-401-722(2) and WAC 173-401-722(5):
1. Change is not a Title I modification,
2. Change does not result in emissions that exceed those allowable under the permit, whether expressed as a rate of emissions, or in total emissions,
3. Change does not alter permit terms that are necessary to enforce limitations on emissions from units covered by the permit,
4. Notification is provided to Ecology, WDOH, and EPA at least 7 days before making the change, and
5. Change does not violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.
6. A source making a change under this section shall comply with applicable preconstruction review requirements established pursuant.

Permit Number: 00-05-006

Provide the following information pursuant to WAC-173-401-722(2)(a):

Description of the change:	
Date of Change:	
Describe the emissions resulting from the change:	
List any permit term or condition that is no longer applicable as a result of the change:	
For Hanford Site Use Only:	
AOP Change Control Number:	**Date:**

* WAC 173-401-200(30) states that "Section 502 (b)(10) changes" are changes that contravene an express permit term. Such changes do not include changes that would violate applicable requirements or contravene enforceable permit terms and conditions that are monitoring (including test methods), recordkeeping, reporting, or compliance certification requirements.

OFF-PERMIT CHANGE PROCESS (OPC) (WAC 173-401-724)

This change is allowed pursuant to WAC 173-401-724(1), WAC 173-401-724(2), and WAC 173-401-724(6):
(1) The source shall be allowed to make changes not specifically addressed or prohibited by the permit terms and conditions, without requiring a permit revision provided that the proposed changes do not weaken the enforceability of the existing permit conditions. Any change that is a Title I modification or is a change subject to the acid rain requirements under Title IV of the FCAA must be submitted as a permit revision.
(2) Each such change shall meet all applicable requirements and shall not violate any existing permit term or condition.
(4) The change shall not qualify for the permit shield under WAC 173-401-640.
(6) A source making a change under this section shall comply with applicable preconstruction review requirements established pursuant to RCW 70.94.152.

Method

[Note: It is possible an OPC maybe used for something not listed below, check with the site contractor responsible for the AOP.]

Using the requirements listed above in the box, an OPC for the Hanford Site AOP would be developed and submitted for any of the following:

- Changes that are similar to the type of emission units and terms and conditions listed in the AOP.
- Add new emission units and approvals/license requirements issued by the agencies. Most agency issued NOC approvals/Licenses are considered OPC.

The OPC is not used for changes that are specifically prohibited by the AOP and weaken the enforceability of existing terms, or Title I modification or is a change subject to acid rain requirements under Title V of the FCAA.

Combining emission units under a single OPC should be considered only if the change is the same for multiple emission units, i.e., abatement technology needs to be changed for more then one unit, or a new approval is applicable or need to be listed for multiple emission units. Otherwise it is preferred that separate forms are used for each identified error/change per emission unit.

The source shall be allowed to makes changes not specifically addressed or prohibited by the permit terms and conditions without requiring a permit revision, provided that the Any change made through the OPC process is not covered by the AOP permit shield, therefore there is risk associated with the change to be challenged and new applicable requirements being amended to the AOP by an OPC.

If this revision is not what is required to change the Hanford Site AOP, please review the following other types of modifications and revisions.

Responsibilities

<u>Hanford Site Actions</u>

1. Develop the OPC by emission unit by using the form following this section. The form, if filled out correctly and completely shall furnish the information required of an OPC notification. In addition, a NOC/License revision, or new source permit application, or can be used or attached to the OPC as a mechanism to complete the form.
2. Seek consensus with the site contractor for the AOP prior to submittal of the request.
3. Submit an OPC to the AOP via a letter to DOE and request DOE to submit the OPC to the agencies.

4. On the submittal request, copy organizations that retain a copy of the AOP or request the lead agency to notify AOP holders.
5. Permittee can make the change to the AOP following submittal of the request to administrator (EPA) and permitting authority (Ecology). [WAC 173-401-724(1)]
6. Keep records describing changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the AOP, and the emissions resulting from those changes.
7. Comply with applicable preconstruction review requirements for any OPC.
8. Although the permittee can make change immediately upon submittal of the request to Ecology and EPA, and, as appropriate, WDOH, final changes are to be implemented after agency review/concurrence

Agency actions

1. Review and concur (or deny) proposed changes upon receipt of submittal. Ecology has agreed to a three working day approval of this type of AOP revision/modification.
2. Notify other permit holders with copies of the OPC.
3. Changes will be incorporated into the AOP at the next AOP revision/modification subject to public review.

Notification of Off-Permit Change

Permit Number: 00-05-006

This notification is provided to Washington State Department of Ecology, Washington State Department of Health, and the U.S. Environmental Protection Agency as a notice of an off-permit change described as follows.

This change is allowed pursuant to WAC 173-401-724(1), WAC 173-401-724(2), and WAC 173-401-724(6):

1. Change is not specifically addressed or prohibited by the permit terms and conditions,
2. Change does not weaken the enforceability of the existing permit conditions,
3. Change is not a Title I modification or a change subject to the acid rain requirements under Title IV of the FCAA,
4. Change meets all applicable requirements and does not violate an existing permit term or condition,
5. Change has complied with applicable preconstruction review requirements established pursuant to RCW 70.94.152.

Provide the following information pursuant to WAC-173-401-724(3):

Description of the change:	
Date of Change: (To be provided in the agency approval order.)	
Describe the emissions resulting from the change:	
Describe the new applicable requirements that will apply as a result of the change: (To be provided in the agency approval order.)	
For Hanford Use Only:	
AOP Change Control Number:	Date Submitted:

MINOR PERMIT MODIFICATION (MM) PROCESS (WAC 173-401-725(2))

Minor permit modifications are allowed under WAC 173-401-725(2):
(1) Definition. A permit modification is any revision to a chapter 401 permit that cannot be accomplished under provisions for administrative permit amendments under WAC 173-401-720.
(2) Minor permit modification procedures.
(a) Criteria.
(i) Minor permit modification procedures shall by used for those permit modifications that:
(A) Do not violate any applicable requirement;
(B) Do not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit;
(C) Do not require or change a case-by-case determination of an emission limitation or other standard, or a source-specific determination for temporary sources of ambient impacts, or a visibility or increment analysis;
(D) Do not seek to establish or change a permit term or condition for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject. Such terms and conditions include:
(I) A federally enforceable emission cap assumed to avoid classification as a modification under any provision of Title I of the FCAA; and; [This requirement is not applicable to the Hanford Site per Table 5-1 of the AOP.]
(II) An alternative emission limit approved pursuant to regulations promulgated under Section 122(i)(5) of the FCAA; . [This requirement is not applicable to the Hanford Site per Table 5-1 of the AOP.]
(E) Are not modifications under any provision of Title I of the FCAA;
(ii) Notwithstanding (a)(i) of this subsection, and subsection (3)(a) of this section, the permitting authority may allow the use of the minor modification procedures for permit modifications involving the use of economic incentives, marketable permits, emission trading, and other similar approaches, to the extent that the use of such minor permit modifications procedures are explicitly provided for in the Washington state implementation plan or in applicable requirements promulgated by EPA and in effect on April 7, 1993. [This requirement is not applicable to the Hanford Site per Table 5-1 of the AOP.]

Method

[Note: It is possible a MM maybe used for something not listed below, check with the site contractor responsible for the AOP.]

Using the requirements listed above in the box, a MM for the Hanford Site AOP would be developed and submitted for any of the following:

- Any modification that could not be processed as an AA. This does not address revisions that could be processed as a CNRR or OPC.
- Changes that do not violate any of the applicable requirements of the current AOP, such as but not limited to regulations identified as being applicable, NOC approvals listed in the AOP and associated terms and conditions, WDOH licenses and associated terms and conditions,
- Any change that is not significant to existing monitoring, reporting or recordkeeping, defined as but not limited to: changing a sampling requirement (including method and analysis), changing reporting of emissions, test data, etc that does not change the Hanford program, but provides clarification and standardization of such reporting for all emissions listed in the AOP, changes recordkeeping in which the compliance determination method listed in the annual certification is a system or program and the change does not affect the overall system or program but provides clarification and standardization of the requirements to all emission units listed in the AOP.
- Add new emission units and approvals/license requirements issued by the agencies.

The MM is not used for Title I modifications of the FCAA, a revision to the permit that should be addressed under a CNRR or OPC, a significant modification (a significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions), best way to define a MM is examples such as: {Examples to be developed at a later date.}

A MM change can be made following submittal of the request to administrator (EPA) and permitting authority (Ecology). If the MM is associated with a NOC approval or application for a new emission unit, then the permittee must ensure that the NOC application has been reviewed and approved by the agency before implementation. In addition, until such time that the NOC approval or application is approved by the applicable agencies, the permittee must comply with both the applicable requirements governing the change and the proposed terms and conditions until the agency take final action. Any change made through the MM process is not covered by the AOP permit shield, therefore there is risk associated with the change to be challenged and new applicable requirements being amended to the AOP by a MM.

If this revision is not what is required to change the Hanford Site AOP, please review the following other types of modifications and revisions.

Responsibilities

Hanford Site

1. Develop the MM by emission unit by using the form following this section. The form, if filled out correctly and completely shall furnish the information required of an MM notification. In addition, a NOC/License revision, or new source permit application, or can be used or attached to the MM as a mechanism to complete the form.
2. Determine if the modification request is for group processing (refer to Group Processing Discussion)
3. Seek consensus with the site contractor for the AOP prior to submittal of the request.
4. Submit a MM to the AOP via a letter to DOE and request DOE to submit the MM to the agencies. On the submittal request, copy organizations that retain a copy of the AOP or request the lead agency to notify AOP holders. Prepare and submit forms for Ecology to use to notify the Administrator, tribes, and affected states as required under WAC 173-401-810 and 173-401-820
5. Ensure the MM form/request has a signed certification per WAC 173-401-520.
6. Permittee can make the change following submittal of the request to administrator (EPA) and permitting authority (Ecology). [WAC 173-401-725(2)(f)]. If the MM is associated with a NOC approval or application for a new emission unit, then the permittee must ensure that the NOC application has been reviewed and approved by the agency before implementation. In addition, until such time that the NOC approval or application is approved by the applicable agencies, the permittee must comply with both the applicable requirements governing the change and the proposed terms and conditions until the agency takes final action

Agency Action

1. Review and concur (or deny) proposed changes within 90 days of Ecology's receipt of a MM application or 15 days after the end of the Administrator's 45 day review period, whichever is later, Ecology will:
    - Issue the AOP modification as proposed,
    - Deny the AOP modification application,
    - Determine that the requested modification does not meet the AOP MM criteria and should be reviewed under the significant modification procedures or
    - Revise the draft AOP modification and transmit to the Administrator the new proposed AOP modification as required by WAC 173-401-810.
2. Within 5 working days of receipt of a complete AOP MM, Ecology will meet its obligation under WAC 173-401-810 and 173-401-820 to notify the Administrator, tribes, and affected states of the requested AOP modification. Ecology promptly will send any notice required under WAC 173-401-820(2) to the Administrator.

3. Concurrent with the notice to the Administrator, tribes and affected states, Ecology will submit to the AOP register a notice of each proposed minor AOP modification. Publication in the next available issue of the AOP register will signal the beginning of a public comment period of 21 days. Each notice must describe the proposed revisions and specify the deadline to file comments with Ecology on the proposed modification (Figure 3).
4. At the conclusion of 21 day public comment period, resolve comments if any, and submit to EPA for its 45 day review.
5. The permit shield under WAC 173-401-640 shall not extend to minor permit modifications.

GROUP PROCESSING OF MMS DISCUSSION [WAC 173-401-725(3)]

Minor permit modifications are allowed under WAC 173-401-725(3): Group processing of minor permit modifications. Consistent with this subsection, the permitting authority may process groups of a source's applications for certain modifications eligible for minor permit modification processing. (a) Criteria. (i) That meet the criteria for minor permit modification procedures under subsection (2)(a) of this section; and (ii) That collectively are below ten percent of the emissions allowed by the permit for the emissions unit for which the change is requested, twenty percent of the applicable definition of major source in WAC 173-401-200, or five tons per year, whichever is least.

Method

[Note: It is possible a MM maybe used for something not listed below, check with the site contractor responsible for the AOP.]

Using the requirements listed above in the box, a MM for the Hanford Site AOP would be developed and submitted for any of the following:

- A Group Processing can only contain more than one MM either being submitted or which an agency has received and is agreed by the permittee to process as a group.
- The group as a single application (grouping of MM, more then one) must be below the least/lowest one of the following:
    - Ten percent of the emissions allowed for the emissions unit for which the change is being requested, means that if I have two MMs for two emission units and the emissions allowed for these two emission units is 10 pounds per year, then the group MM change in emissions must be less than 1 pound per year, or
    - Twenty percent of the applicable definition of major source [10 tons per year for hazardous air pollutants, 25 tons per year or more of any combination of such hazardous air pollutants], or [100 tons per year or more of any air pollutant), means 20 percent of either 10 tons per year, 25 tons per year or 100 tons per year {or more means if Hanford is a major source because it emits more then 25 or 100 tons per year you would then use that number} the group process MM would be less than 2.5, 5 or 20 tons per year, respectively, or
    - The group MM would have emission less then five tons per year,

Responsibilities

In addition to the requirements for filing a Minor Modification request (previously discussed) the group processing request needs to include a list of the permittee's other pending applications (i.e. notice of construction applications or notice of construction revision forms plus the completed forms) awaiting group processing, and a determination of whether the requested modification, aggregated with these other applications, equals or exceeds the threshold. The group processing requires a certification and notification forms for the administrator, tribes and affected states.

The advantage of group processing is that the modifications are held by the agency and added to the AOP as a single action, thus avoiding several, and possibly overlapping, public reviews. The permittee is still allowed to make the change immediately after a complete application is filed, provided that any regulatory agency approval/license has been reviewed and approved by the agency [WAC 173-401-725(2)(f)]. Concurrent with the notice to the Administrator, tribes and affected states, Ecology will submit to the AOP register a notice of each proposed minor AOP modification. Publication in the next available issue of the AOP register will signal the beginning of a public comment period of 21 days.

The agency must complete the group processing AOP modification process within 180 days after receipt of the first group modification request or 15 days after the end of the Administrator's 45 day review/approval, whichever is later.

Any change made through the Group MM process is not covered by the AOP permit shield, therefore there is risk associated with the change to be challenged and new applicable requirements being amended to the AOP by a Group MM.

If this revision is not what is required to change the Hanford Site AOP, please review the following other types of modifications and revisions.

HANFORD SITE AIR OPERATING PERMIT

Minor Permit Modifications Request

Permit Number 00-05-006

Attach the completed Notification of Permit Modification Request Form to the EPA/Tribes/Affected States.

Minor permit modifications are allowed under WAC 173-401-725(2):
- Does not violate any applicable requirement,
- Does not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit,
- Is not a Title I modification.

Provide the following information pursuant to WAC-173-401-725(2)(b)

Description of the change:
Describe the emissions resulting from the change:
Describe the new applicable requirements that will apply as a result of the change:
Suggested Draft Permit Language: *For example:* ▪ *Monitoring/PCM that will be used to support compliance determination/certification.* ▪ *Description of air pollution control equipment (abatement technology).* ▪ *Other controls such as limits on inventory; process limits such as throughput, hours of operation, or acceptance criteria; or other assumptions used in potential to emit calculations.* ▪ *Other process descriptions that constitute a term or condition, such as reporting or recordkeeping requirements.*

CERTIFICATION

Provide certification pursuant to (WAC 173-401-725(2)(b)(iii))

I certify that based on information and belief formed after reasonable inquiry of the person or persons who perform activities, or those persons directly responsible for gathering the information, the statements and information provided in this modification request are true, accurate, and complete. I also certify that the proposed modification meets the criteria for use of minor permit modification procedures, as hereby requested.

Responsible Official:	
Title:	
Signature:	Date:
For Hanford Site Use Only:	
AOP Change Control Number:	Date Submitted:

HANFORD SITE AIR OPERATING PERMIT

Group Processing of Minor Permit Modifications Request

Permit Number 00-05-006

Attach the completed Notification of Permit Modification Request Form to the EPA/Tribes/Affected States.

Group processing of minor permit modifications are allowed under WAC 173-401-725(3):

- That meet the criteria for minor permit modification procedures under subsection (2)(a) of this section; and
- That collectively are below ten percent of the emissions allowed by the permit for the emissions unit for which the change is requested, twenty percent of the applicable definition of major source in WAC 173-401-200, or five tons per year, whichever is least.

Provide the following information pursuant to WAC-173-401-725(3)(b):

Description of the change:
Describe the emissions resulting from the change:
Describe the new applicable requirements that will apply as a result of the change:
Suggested Draft Permit Language: *For example:* ▪ *Monitoring/PCM that will be used to support compliance determination/certification.* ▪ *Description of air pollution control equipment (abatement technology).* ▪ *Other controls such as limits on inventory, process limits such as throughput, hours of operation, or acceptance criteria, or other assumptions used in PTE calculations.* ▪ *Other process descriptions that constitute a term or condition, such as reporting or recordkeeping requirements.*
List all other pending applications waiting group processing: (WAC 173-401-725(3)(b)(iv))
Determination that group is below emission threshold: (WAC 173-401-725(3)(b)(iv))
Do the emissions stated in this permit modification request added to the emissions from the minor modification requests listed below equal or exceed the group processing thresholds? (Y or N)
CERTIFICATION *Provide certification pursuant to (WAC 173-401-725(3)(b)(v))*
I certify that based on information and belief formed after reasonable inquiry of the person or persons who perform activities, or those persons directly responsible for gathering the information, the statements and information provided in this modification request are true, accurate, and complete. I also certify that the proposed modification meets the criteria for use of group processing of minor permit modification procedures, as hereby requested.

Responsible Official:	
Title:	
Signature:	Date:
For Hanford Site Use Only:	
AOP Change Control Number:	Date:

Notification of Permit Modification request to the U.S. Environmental Protection Agency, Region 10, the Tribes, and Affected States

Attached is a request to revise the Hanford Site Air Operating Permit. This form serves as notification to EPA, tribes, and affected states of a request for an Air Operating Permit Modification per WAC 173-401-725(2), (3) and (4).

Air Operating Permit Number: 00-05-006	
Source: U.S. Department of Energy, Hanford Site	
Mailing Address:	**Physical Address:**
Brief Description:	
Contact Name:	**Phone:**
Title: Manager U.S. Department of Energy,	
For Hanford Site Use Only:	
AOP Change Control Number:	**Date Submitted:**
FOR ECOLOGY USE ONLY	
Application Number:	**Date Received:**
Ecology Contact:	
Date of Publication in Permit Register:	**Public Comment Period Ends:**

SIGNIFICANT MODIFICATION (SM) PROCESS (WAC 173-401-725(4))

Significant permit modifications are allowed under WAC 173-401-725(4) for those modifications that do not meet the requirements for a minor permit modification or an administrative amendment.

Method

[Note: It is possible a SM maybe used for something not listed below, check with the site contractor responsible for the AOP.]

The SM is not used for a revision to the permit that should be addressed under a CNRR or OPC, or a MM. SM procedures shall be used for applications requesting permit modifications that do not qualify as minor permit modifications or as administrative permit amendments. Every significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions shall be considered significant.

SM shall meet all requirements of WAC 173-401, including those for applications, public participation, review by affected states, and review by EPA, as they apply to permit issuance and permit renewal. A SM can be implemented on the date of its approval. Any change made through the SM process is covered by the AOP permit shield.

Responsibilities

Hanford Site Actions

1. Develop the SM by emission unit by using the form following this section. The form, if filled out correctly and completely shall furnish the information required of an MM notification. In addition, a NOC/License revision, or new source permit application, or can be used or attached to the SM as a mechanism to complete the form.
2. Seek consensus with the site contractor for the AOP prior to submittal of the request.
3. Submit a SM to the AOP via a letter to DOE and request DOE to submit the SM to the agencies. On the submittal request, copy organizations that retain a copy of the AOP or request the lead agency to notify AOP holders. Prepare and submit forms for Ecology to use to notify the Administrator, tribes, and affected states as required under WAC 173-401-810 and 173-401-820
4. Ensure the SM form/request has a signed certification per WAC 173-401-520.
5. Permittee can make change only after issuance of the permit revision by the agency.

Agency Actions

1. Provide EPA a copy of permit application.
2. Maintain and update permit register.
3. Determine notice of construction application completeness.
4. Prepare and publish public notices and/or public hearing.
5. Conduct 30 day public and affected states review period
6. Respond to any public and affected state's comments, prepare responsiveness summary, and revise application accordingly
7. Provide to EPA for 45 day review
8. Issue within 15 days after EPA review/approval or deny change
9. Update and publish modified AOP as required
10. Complete review on the majority of significant AOP modifications within 9 months after receipt of a complete notice of construction application

HANFORD SITE AIR OPERATING PERMIT

Significant Permit Modification Request

Permit Number 00-05-006

Significant permit modifications are allowed under WAC 173-401-725(4) for those modifications that do not meet the requirements for a minor permit modification or an administrative amendment.

Provide the following information pursuant to WAC-173-401-725(4)

Description of the change:
Describe the emissions resulting from the change:
Describe the new applicable requirements that will apply as a result of the change: (To be provided in the agency approval order.)
Suggested Draft Permit Language: *For example:* ▪ *Monitoring/PCM that will be used to support compliance determination/certification.* ▪ *Description of air pollution control equipment (abatement technology).* ▪ *Other controls such as limits on inventory, process limits such as throughput, hours of operation, or acceptance criteria, or other assumptions used in Potential-to-Emit calculations.* ▪ *Other process descriptions that constitute a term or condition, such as reporting or recordkeeping requirements.*

CERTIFICATION

Provide certification pursuant to (WAC 173-401-520)

I certify that based on information and belief formed after reasonable inquiry of the person or persons who perform activities, or those persons directly responsible for gathering the information, the statements and information provided in this modification request are true, accurate, and complete.	
Responsible Official:	
Title:	
Signature:	Date:
For Hanford Site Use Only:	
AOP Change Control Number:	Date Submitted:

Notification of Permit Modification Request to the U.S. Environmental Protection Agency, Region 10, the Tribes, and Affected States

Attached is a request to revise the Hanford Site Air Operating Permit. This form serves as notification to EPA, tribes, and affected states of a request for an Air Operating Permit Modification per WAC 173-401-725(2), (3) and (4).

Air Operating Permit Number: 00-05-006	
Source: U.S. Department of Energy, Hanford Site	
Mailing Address:	**Physical Address:**
Brief Description:	
Contact Name:	**Phone:**
Title: Manager U.S. Department of Energy,	
For Hanford Site Use Only:	
AOP Change Control Number:	**Date Submitted:**
FOR ECOLOGY USE ONLY	
Application Number:	**Date Received:**
Ecology Contact:	
Date of Publication in Permit Register:	**Public Comment Period Ends:**

Attachment 1

Number: 00-05-006 (Hanford AOP 2006 Renewal)

State of Washington Department of Ecology (Ecology)
Nuclear Waste Program
3100 Port of Benton Blvd.
Richland, Washington 99354

The permittee is authorized to operate the air emission units identified in this Air operating Permit Number 00-05-006 and all insignificant emission units not specifically identified in this permit.

Dated at Richland, Washington this XXth day of XXXXX 2006.

Reviewed by:

_____ _____

Oliver Wang, PE Date
Title V Permit Professional Engineer Reviewer
State of Washington Department of Ecology

Approved by:

_____ _____

Jane Hedges Date
Program Manager, Nuclear Waste Program
State of Washington Department of Ecology

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1.0 EMISSION STANDARDS AND LIMITATIONS

Emission standards and limitations for non-radioactive air pollutants are included in the following sections.

1.1 Insignificant Emission Units

A list of insignificant emission units (IEUs) is listed in the Statement of basis for this attachment. Compliance with the cited applicable requirements in Table 1.2. General Standards for Maximum Emissions (Section 1.3) is required. However, the periodic monitoring, testing, recordkeeping, or reporting requirements listed in Table 1.2 are not required. Also the compliance certification is not required for IEUs.

All emission units not identified in Table 1.1 (List of Significant Emission Units) that are subject to 40 CFR 61, Subpart H in Attachment 2, Health License, have been determined to represent insignificant sources of non-radioactive regulated air pollutants. For these emission units no additional monitoring, reporting, or recordkeeping is necessary to determine compliance with the requirements in Table 1.2. All requirements identified in Attachment 2, Health License, for this category of emission unit continue to apply, as well as the requirement to annually certify compliance to any applicable requirements identified in Attachment 2, Health License.

These insignificant emission units need not be listed individually in the annual compliance certification unless there were observed, documented, or known instances of non-compliance during the certification period. Ecology has authority to establish case-by-case monitoring requirements as set forth in WAC 173-400-105 or other provisions of law.
[WAC 173-401-530(2)(b) and (2)(c)]

1.2 Emission Units and Activities subject to Monitoring, Reporting, Recordkeeping, and Compliance Certification

Table 1.1 identifies those emission units on the Hanford Site subject to the requirement to annually certify compliance with the terms and conditions of this Permit. The emission units listed in Table 1.1 are subject to the generally applicable requirements in Table 1.2, General Standards for Maximum Emissions (Section 1.3) unless replaced by another requirement in Tables 1.3, 1.4, 1.5, 1.6 or 1.7. Emission unit-specific requirements for these emission units are found in Tables 1.3, Emission Limits and Periodic Monitoring Requirements for Steam Generating Units, Table 1.4, Internal Combustion Engines: 500 Horsepower and Greater, Table 1.5, Processes and Emission Units Exceeding IEU Thresholds, Excluding Combustion Processes, Table 1.6, Emission Limits and Periodic Monitoring Requirements for Emission Units with NOC Approval Conditions, or Table 1.7, Miscellaneous Emission Units.

Table 1.1. List of Significant Emission Units.

Emission unit	Requirements	Description
200CC, Boiler 1	Table 1.3	80 HP fuel oil boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
225-B, Boiler 1	Table 1.3	150 HP fuel oil boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
275-E, Boiler 1	Table 1.3	80 HP fuel oil boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
272-W, Boiler 1	Table 1.3	250 HP fuel oil boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
222-S, Boilers 1 & 2	Table 1.3	200 HP fuel oil boilers, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
283-W, Boiler 1	Table 1.3	200 HP fuel oil boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
283-E, Boiler 1	Table 1.3	200 HP fuel oil boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
234-5Z, Boilers 1, 2, & 3	Table 1.3	350 HP fuel oil boilers, subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
242-A, Boiler 1	Table 1.3	200 HP fuel oil boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
242-A, Boilers 2 & 3	Table 1.3	700 HP fuel oil boilers, subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
318, Boiler 1	Table 1.3	30 HP natural gas boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
320, Boilers 1 & 2	Table 1.3	100 HP natural gas boilers, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
323, Boiler 1	Table 1.3	50 HP natural gas boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
324, Boilers 1 & 2	Table 1.3	300 HP natural gas boilers, subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
325, Boilers 1 & 2	Table 1.3	125 HP natural gas boilers, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
326, Boilers 1 & 2	Table 1.3	100 HP natural gas boilers, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
327, Boiler 1	Table 1.3	200 HP natural gas boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
328, Boiler 1	Table 1.3	30 HP natural gas boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
329, Boilers 1, 2, 3 & 4	Table 1.3	50 HP natural gas boilers, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
331, Boilers 1 & 2	Table 1.3	300 HP natural gas boilers, subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
337-B, Boilers 1 & 2	Table 1.3	60 HP natural gas boilers, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
382-A-D, Boiler 1	Table 1.3	200 HP natural gas boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
3709A, Boiler 1	Table 1.3	15 HP natural gas boiler, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).

Table 1.1. List of Significant Emission Units.

Emission unit	Requirements	Description
300 EP-3020-07-S, 300 EP-3020-08-S, 300 EP-3020-09-S	Table 1.6	5mmBTU/hr natural gas (fuel oil backup) boilers, not subject to 40 CFR 60 Subpart Dc (WAC 173-400-115).
200E E-225BC 001	Table 1.4	500 HP or greater internal combustion engine.
200E E-225BG 001	Table 1.4	500 HP or greater internal combustion engine.
200E E-282ED 001, Engine E	Table 1.6	500 HP or greater internal combustion engine.
200W E-282WD 001, Engine W	Table 1.6	500 HP or greater internal combustion engine.
300 E-900 001	Table 1.4	500 HP or greater internal combustion engine.
300 E-900 002	Table 1.4	500 HP or greater internal combustion engine.
300 E-900 003	Table 1.4	500 HP or greater internal combustion engine.
300 E-1000 001	Table 1.4	500 HP or greater internal combustion engine.
300 E-1450 001	Table 1.4	500 HP or greater internal combustion engine.
300 EP-3020-12-S	Table 1.4 & 1.6	500 HP or greater internal combustion engine.
300 EP-3020-13-S	Table 1.4 & 1.6	500 HP or greater internal combustion engine.
300 Emergency Diesel Generators, 325, 3709A, and 331	Table 1.6	Subject to NOC approval. 325 and 331 are greater than 500 HP internal combustion engines.
400 E-4250 001, G-3	Table 1.4	500 HP or greater internal combustion engine.
600 E WSCF 001	Table 1.4	500 HP or greater internal combustion engine.
200W P-296SY 001 (Exhauster)	Table 1.5	Exceeds insignificant emission unit threshold(s).
200E P-296AN 001 (Tank Exhauster)	Table 1.5	Exceeds insignificant emission unit threshold(s).
200E P-296AP 001 (Tank Exhauster)	Table 1.5	Exceeds insignificant emission unit threshold(s).
200E P-296AW 001 (Tank Exhauster)	Table 1.5	Exceeds insignificant emission unit threshold(s).
200E P-296A042 001 (Tank Exhauster)	Table 1.5 & 1.6	Exceeds insignificant emission unit threshold(s) and NOC approval for 241-AZ-101 Tank Waste Retrieval and 241-AY/241-AZ Tank Farms ventilation upgrades, Project W-151 and project W-030.
100K P-296K142 001	Table 1.6	NOC approval for Cold Vacuum Drying - phase II.
N-1724K 001	Table 1.6	NOC approval for 1724K Building Maintenance Shop.
Integrated Disposal Facility (200E)	Table 1.6	NOC approval for 200E Integrated Disposal Facility (IDF)
Ventilation Systems for 241-AN and 241-AW Tank Farms (200E)	Table 1.6	NOC approval for 200E Ventilation Systems for 241-AN and 241-AW Tank Farms
Bulk Vitrification Demonstration Facility (200W)	Table 1.6	NOC approval for 200W Bulk Vitrification Demonstration Facility
200 Area SST Categorical Waste Retrieval	Table 1.6	NOC approval for 200 Area SST Categorical Waste Retrieval
200 Area Emissions	Table 1.6	NOC for installation and operation of a waste retrieval system in double-shell tanks.

Table 1.1. List of Significant Emission Units.

Emission unit	Requirements	Description
P-241U107-001 P-241S102-001 P-241S112-001	Table 1.6	NOC approval for construction and operation of the 241-U-107, 241-S-102, 241-S-112 waste retrieval system.
C-106 Sluicing	Table 1.6	NOC approval for 241-C-106 Tank Sluicing, phase II.
P-2025E ETF	Table 1.6	NOC approval for 200 Area Effluent Treatment Facility (ETF).
P-WTP-001	Table 1.6	NOC approval for Waste Treatment and Immobilization Plant.
Concrete Batch Plant	Table 1.6	NOC approval for Waste Treatment and Immobilization Plant.
P-2706T-001	Table 1.6	NOC approval for T Plant Complex.
P-291Z001-001	Table 1.6	NOC approval for Plutonium Finishing Plant.
J-CWC 001	Table 1.6	NOC approval for storage of vented waste containers at Central Waste Complex.
P-296W004	Table 1.6	NOC approval for Waste Receiving and Processing Facility (WRAP1).
EP-331C 01-V	Table 1.6	NOC approval for 331-C Building gas cylinder management process.
EP-325-01-S	Table 1.6	NOC approval for 325 Building Hazardous Waste Treatment Unit (HWTU).
EP-329-01-S	Table 1.6	NOC approval for Chemical Sciences Laboratory, 329 Building modification and ventilation upgrades.
EP-331-01-V	Table 1.6	NOC approval for Life Sciences Laboratory I (Building 331) modifications.
P-340NTEX-001	Table 1.6	NOC approval for 340-A Building tank solids removal.
Hanford Site Asbestos Landfill	Table 1.7	Miscellaneous emission unit.
600 G-6290 (600 Area Gasoline Distribution)	Table 1.7	Miscellaneous emission unit.
283-W Water Treatment Plant (Chlorine Tank)	Table 1.7	Miscellaneous emission unit.

1.3 General Standards for Maximum Emissions

The following general regulatory requirements, emission limits, or work practice standards apply to all emission units [refer to definition of emission units in WAC 173-401-200(12)] on the Hanford Site.

The general standards in Table 1.2 are the applicable requirement, emission limit, or work practice standard unless replaced by another requirement in Tables 1.3, 1.4, 1.5, 1.6 or 1.7.

Table 1.2. General Standards For Maximum Emissions.

Requirement citation (WAC or Order Citation)	Regulatory requirement, emission limit, or work practice standard	State-Only enforceable	Periodic monitoring	Periodic monitoring provisions	Test method[1]
WAC 173-400-040(1)	20% Opacity. Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water.	N (Section 2.8)	Visible emission surveys	2.1	EPA Method 9.
WAC 173-400-040(2)	Fallout. Prohibits emissions of particulate matter from any source to be deposited beyond the facility boundaries in sufficient quantity to interfere unreasonably with the use and enjoyment of the property upon which the material was deposited.	Y	Recordkeeping of complaint investigation.	2.2	
WAC 173-400-040(3)(a)	Fugitive emissions. The Permittee shall take reasonable precautions to prevent the release of air contaminants from any emissions unit engaging in materials handling, construction, demolition, or any other operation that is a source of fugitive emissions.	N	Pre-job planning to determine reasonable control measures[2].	2.3	

Table 1.2. General Standards For Maximum Emissions.

Requirement citation (WAC or Order Citation)	Regulatory requirement, emission limit, or work practice standard	State-Only enforceable	Periodic monitoring	Periodic monitoring provisions	Test method[1]
WAC 173-400-040(4)	Odor. Requires any facility causing an odor that unreasonably interferes with another person's use and enjoyment of their property to use recognized good practices and procedures to reduce odors to a reasonable minimum.	Y	Recordkeeping of complaint investigations.	2.2	
WAC 173-400-040(5)	Emissions detrimental to persons or property. Prohibits emissions of any air contaminant from any source that is detrimental to the health, safety, or welfare of any person, or causes damage to property or business	N	Recordkeeping of complaint investigation.	2.2	
WAC 173-400-040(6)	1,000 ppm SO_2 @ 7% O_2 on a dry basis. Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1,000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any period of 60 consecutive minutes.	N (Section 2.9)	For fossil-fuel combustion units: recordkeeping or certification.	2.7	EPA Method 6 or 6C of 40 CFR 60, App. A.

Table 1.2. General Standards For Maximum Emissions.

Requirement citation (WAC or Order Citation)	Regulatory requirement, emission limit, or work practice standard	State-Only enforceable	Periodic monitoring	Periodic monitoring provisions	Test method[1]
WAC 173-400-040(7)	Concealment and masking. Prohibits the installation or use of any device or use of any means that conceals or masks an emission of an air contaminant that would otherwise violate any provision of WAC 173-400.	N	Recordkeeping of complaint investigation.	2.2	
WAC 173-400-040(8)(a)	Fugitive dust. Requires reasonable precautions be taken to prevent fugitive dust from becoming airborne and to minimize dust generation.	N	Pre-job planning to determine reasonable control measures[2].	2.3	
WAC 173-400-040 1st Paragraph	Reasonably available control technology (RACT).	N	Permit terms considered RACT[3].	2.4	

[1] The test methods identified in this table are used as compliance verification tools. A frequency is not applicable unless specified in the table.

[2] These requirements do not apply to emissions that pass through a stack, chimney, vent, or other functionally equivalent opening.

[3] Applies only to regulatory order approval conditions determined to be less than RACT (RCW 70.194.154).

1.4 Emission Unit Specific Applicable Requirements

The following sections contain emission unit specific requirements for steam generating units (Table 1.3), internal combustion units (Table 1.4), emission units exceeding insignificant emission unit thresholds (Table 1.5), individual NOC approval orders (Table 1.6), and miscellaneous emission units (Table 1.7).

1.4.1 Process: Fossil Fuel Fired Steam Generating Units.

Table 1.3. Emission Limits and Periodic Monitoring Requirements for Steam Generating Units.

Boiler Annex	Unit	>5mmBTU/hr input	Fuel
200CC	Boiler 1	No	fuel oil
225-B	Boiler 1	Yes	fuel oil
275-E	Boiler 1	No	fuel oil
272-W	Boiler 1	Yes	fuel oil
222-S	Boiler 1	Yes	fuel oil
	Boiler 2	Yes	fuel oil
283-W	Boiler 1	Yes	fuel oil
283-E	Boiler 1	Yes	fuel oil
234-5Z	Boiler 1	Yes	fuel oil
	Boiler 2	Yes	fuel oil
	Boiler 3	Yes	fuel oil
242-A	Boiler 1	Yes	fuel oil
	Boiler 2	Yes	fuel oil
	Boiler 3	Yes	fuel oil
305	Boiler 1	No	natural gas
306-E	Boiler 1	Yes	natural gas
318	Boiler 1	No	natural gas
320	Boiler 1	No	natural gas
	Boiler 2	No	natural gas
323	Boiler 1	No	natural gas
324	Boiler 1	Yes	natural gas
	Boiler 2	Yes	natural gas

Table 1.3. Emission Limits and Periodic Monitoring Requirements for Steam Generating Units.

Boiler Annex	Unit	>5mmBTU/hr input	Fuel
325	Boiler 1	Yes	natural gas
	Boiler 2	Yes	natural gas
326	Boiler 1	No	natural gas
	Boiler 2	No	natural gas
327	Boiler 1	Yes	natural gas
328	Boiler 1	No	natural gas
329	Boiler 1	No	natural gas
	Boiler 2	No	natural gas
	Boiler 3	No	natural gas
	Boiler 4	No	natural gas
331	Boiler 1	Yes	natural gas
	Boiler 2	Yes	natural gas
337-B	Boiler 1	No	natural gas
	Boiler 2	No	natural gas
382-A-D	Boiler 1	Yes	natural gas
3705	Boiler 1	No	natural gas
3706	Boiler 1	No	natural gas
3709A	Boiler 1	No	natural gas
3720	Boiler 1	Yes	natural gas

Table 1.3. Emission Limits and Periodic Monitoring Requirements for Steam Generating Units (cont).

Description	Requirement citation (WAC or Order Citation)	Regulatory requirement, emission limit or work practice standard	State-Only enforceable	Periodic monitoring	Test method[1]
Steam generating units <5mmBTU/hr listed previously	WAC 173-400-040(1)	20% Opacity. Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water.	N (Section 2.8)	Fuel-oil fired boilers Method: Visible emission surveys, Section 2.1,Tier 1 Frequency: At least once per calendar year quarter Natural gas-fired boilers Method: Visible emission surveys, Section 2.1, Tier 2 Frequency: At least once per quarter	Method: EPA 9 Frequency: not applicable.
Fossil-fuel fired steam generating units less than 5 mmBTU/hr	WAC 173-400-040(6)	1,000 ppm SO_2 @ 7% O_2 on a dry basis. Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any period of 60 consecutive minutes.	N (Section 2.9)	Fuel-oil fired units: Method: Section 2.7, Tier 1. Frequency: At least annually.	EPA Method 6 or 6C of 40 CFR 60, App. A.
	WAC 173-400-050(1) & (3)	Particulate matter #0.23 gram per dry cubic meter at standard conditions (0.1 grain/dscf) adjusted for volumes, corrected to 7% O_2 .	N	Recordkeeping. Section 2.5	EPA Method 5 or approved procedure in "*Source Test Manual - Procedures for Compliance Testing*", 7/12/90.

Table 1.3. Emission Limits and Periodic Monitoring Requirements for Steam Generating Units (cont).

Description	Requirement citation (WAC or Order Citation)	Regulatory requirement, emission limit or work practice standard	State-Only enforceable	Periodic monitoring	Test method[1]
Standards of performance for new sources. Small industrial-commercial-institutional steam generating units 234-5Z Boiler 1 234-5Z Boiler 2 234-5Z Boiler 3 242-A Boiler 2 242-A Boiler 3	40 CFR 60 Subpart Dc WAC 173-400-115	#0.5 weight percent sulfur fuel (NOC 97NM-138 condition listed below).	N	Fuel supplier certifications and monthly records reported annually. Refer to Recordkeeping. Section 2.5	
No. 2 Distillate fuel-oil fired steam generating units greater than or equal to 5 mmBTU/hr.	97NM-138	0.05% sulfur distillate fuel oil will be used in the 200 Areas; natural gas will be used in the 300 Area.	N	Recordkeeping. Section 2.5	
		NO_x shall not exceed 0.150 lb/mmBTU and 115 ppm @ 3% O_2.	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 7E of 40 CFR 60, App. A.
		SO_2 shall not exceed 0.051 lb/mmBTU.	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 6 or 6C of 40 CFR 60, App. A.

Table 1.3. Emission Limits and Periodic Monitoring Requirements for Steam Generating Units (cont).

Description	Requirement citation (WAC or Order Citation)	Regulatory requirement, emission limit or work practice standard	State-Only enforceable	Periodic monitoring	Test method[1]
No. 2 Distillate fuel-oil fired steam generating units greater than or equal to 5 mmBTU/hr. (cont.)	97NM-138 (cont.)	CO shall not exceed 0.071 lb/mmBTU and 90 ppm @ 3% O_2.	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 10 of 40 CFR 60, App. A.
		Particulate matter (PM_{10}) shall not exceed 0.011 lb/mmBTU.	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 5 of 40 CFR 60, App. A.
		VOC shall not exceed 0.013 lb/mmBTU and 30 ppm @ 3% O_2.	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 25 or 25A of 40 CFR 60, App. A.
Natural gas-fired greater than or equal to 5 mmBTU/hr	97NM-138	NO_x shall not exceed 0.037 lb/mmBTU and 30 ppm @ 3% O_2.	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 7E of 40 CFR 60, App. A.
		CO shall not exceed 0.225 lb/mmBTU and 300 ppm @ 3% O_2.	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 10 of 40 CFR 60, App. A.
		Particulate matter (PM_{10}) shall not exceed 0.012 lb/mmBTU.	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 5 of 40 CFR 60, App. A.

Table 1.3. Emission Limits and Periodic Monitoring Requirements for Steam Generating Units (cont).

Description	Requirement citation (WAC or Order Citation)	Regulatory requirement, emission limit or work practice standard	State-Only enforceable	Periodic monitoring	Test method[1]
Natural gas-fired greater than or equal to 5 mmBTU/hr (cont.)	97NM-138 (cont.)	VOC shall not exceed 0.013 lb/mmBTU and 30 ppm @ 3% O_2.	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 25 or 25A of 40 CFR 60, App. A.
		SO_2 shall not exceed 0.0006 lb/mmBTU	N	Recordkeeping. Section 2.5	
			N	See Section 2.6	EPA Method 6 or 6C of 40 CFR 60, App. A.

General Conditions:

- Operation and maintenance manuals will be obtained from the manufacturer(s) and made available for review by Ecology on request.
- 'Good combustion practices' will be applied to all boilers. Good combustion practices include but are not limited to the following:

Daily	Monthly	Semi-annually	Annually	Every two years
Visually check combustion.	Inspect burner.	Visually inspect air supply system, and clean and repair if necessary.	Conduct boiler tuneups on large boilers (>5mmBTU/hr heat input) by manufacturer trained technicians or other qualified personnel. Section 2.5 Recordkeeping.	Conduct boiler tuneups on smaller boilers (<5 mmBTU/hr heat input) by manufacturer trained technicians or other qualified personnel. Section 2.5 Recordkeeping.
Record available operating data.	Inspect boiler exteriors	Clean and check fuel supply system (visually inspect and replace filters if necessary).	Clean fireside surfaces and breaching for power boilers.	Inspect refractory for low pressure boilers.
	Check combustion controls.			
	Check for leaks.		Inspect refractory for power boilers.	Clean fireside surfaces and breaching for low pressure boilers.
	Check for unusual noise, vibrations, etc.			

[1] The Test Methods identified in this table are used as compliance verification tools. A frequency is not applicable unless specified in the table.

1.4.2 Process: Internal Combustion Engines (without specific permit/approval conditions).

Table 1.4. Internal Combustion Engines: 500 Horsepower and Greater.

Discharge point number	Requirement citation (WAC or Order Citation)	Regulatory requirement, emission limit or work practice standard	State-Only enforceable	Periodic monitoring	Test method[1]
200E E-225BC 001 200E E-225BG 001 300 E-900 001 300 E-1000 001 300 E-900 002 300 E-1450 001 300 E-900 003 300 EP-3020-12S 300 EP-3020-13S 400 E-4250 001, G-3 600 E WSCF 001	WAC 173-400-040(1)	20% Opacity. Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water.	N (Section 2.8)	Method: Section 2.1, Tier 1. Frequency: At least once per calendar quarter if operated.	EPA Method 9.
	WAC 173-400-040(6)	1,000 ppm SO_2 @ 7% O_2 on a dry basis. Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1,000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any period of 60 consecutive minutes.	N (Section 2.9)	Section 2.7, Tier 1.	EPA Method 6 or 6C of 40 CFR 60, App. A.

[1] The test methods identified in this table are used as compliance verification tools. A frequency is not applicable unless specified in the table.

1.4.3 Process: Emission Units Exceeding Insignificant Emission Unit Thresholds.

Table 1.5. Processes and Emission Units Exceeding Insignificant Emission Unit Threshold, Excluding Combustion Processes.

Discharge point number	Requirement citation (WAC or Order Citation)	Regulatory requirement, emission limit or work practice standard	State-Only enforceable	Periodic monitoring	Test method[1]
Units with HEPA filtration 200W P-296SY 001 (Exhauster) 200E P-296AN 001 (Tank Exhauster) 200E P-296AP 001 (Tank Exhauster) 200E P-296AW 001 (Tank Exhauster) 200E P-296A042 001 (Tank Exhauster)	WAC 173-400-040(1)	20% Opacity. Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water.	N (Section 2.8)	Units with HEPA filtration: Section 2.1, Tier 3.	EPA Method 9.
	WAC 173-400-040(6)	1,000 ppm SO_2 @ 7% O_2 on a dry basis. Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1,000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any 60 consecutive minutes.	N (Section 2.9)	Section 2.7, Tier 2.	EPA Method 6 or 6C of 40 CFR 60, App. A.

[1] The test methods identified in this table are used as compliance verification tools. A frequency is not applicable unless specified in the table.

1.4.4 Process: NOC Approval Order Conditions.

Table 1.6. Emission Limits and Periodic Monitoring Requirements for Emission Units with NOC Approval Conditions.

The emission units identified in this table are those emission units that have received an Ecology approval order to operate under WAC 173-400-110 New Source Review and/or WAC 173-460-040.

Discharge Point **All emission units identified in Table 1.6 below**[1]

General requirements where more stringent conditions do not exist

Requirement Citation (WAC or Order Citation): WAC 173-400-040(1)

Condition Approval

Condition:	20% opacity: Prohibits visible emissions exceeding 20% opacity for more than 3 minutes in any 1 hour of an air contaminant from any emissions unit or within a reasonable distance of the emission unit except for scheduled soot blowing/grate cleaning or due to documented water.
Periodic Monitoring:	Section 2.1, unless an alternative visible emissions, opacity, or particulate matter emission limit is identified in Table 1.6 below.
Test Method:	EPA Method 9.
Test Frequency:	Not applicable.
Required Records:	As specified in Section 2.1.
State-Only Enforceable:	No.
Calculation Model ID:	Not applicable.

Requirement Citation (WAC or Order Citation): WAC 173-400-040(6)

Condition Approval

Condition:	1000 ppm SO_2 @ 7% O_2 on a dry basis. Prohibits emission of a gas containing sulfur dioxide from any emissions unit in excess of 1000 ppm of a dry basis, corrected to 7% oxygen for combustion sources, and based on the average of any period of 60 consecutive minutes.
Periodic Monitoring:	Section 2.7, Tier 2, unless an alternative SO_2 emission limit is identified in Table 1.6 below.
Test Method:	EPA Method 6 or 6C of 40 CFR 60, App. A.
Test Frequency:	Not applicable.
Required Records:	As specified in Section 2.7.
State-Only Enforceable:	No.
Calculation Model ID:	Not applicable.

[1] The Test Methods identified in this table are used as compliance verification tools. A frequency is not applicable unless specified in the table.

Discharge Point: **Integrated Disposal Facility (IDF)**

200E, General Standards

Requirement Citation
(WAC or Order Citation): WAC 173-400-040(8)(a)

Condition Approval: 05/31/2005

Condition: FUGITIVE DUST

Requires reasonable precautions be taken to prevent fugitive dust from becoming airborne and to minimize dust generation.

Periodic Monitoring: Pre-job planning to determine reasonable control measures.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: None listed.

State-Only: No.

Calculation Model: Not applicable.

Requirement Citation
(WAC or Order Citation): WAC 173-400-040(5)(a)

Condition Approval: 05/31/2005

Condition: FUGITIVE EMISSIONS

The permittee shall take reasonable precautions to prevent the release of air contaminants from any emissions unit engaging in materials handling, construction, demolition, or any other operation that is a source of fugitive emissions.

Periodic Monitoring: Pre-job planning to determine reasonable control measures.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: None listed.

State-Only: No.

Calculation Model: Not applicable.

Discharge Point: **Bulk Vitrification Demonstration** Facility

200W, General Standards

Requirement Citation (WAC or Order Citation): WAC 173-400-040(5)

Condition Approval: **12/15/2004**

Condition: EMISSIONS DETRIMENTAL TO PERSONS OR PROPERTY

Prohibits emissions of any air contaminant from any source that is detrimental to the health, safety, or welfare of any persons, or causes damages to property or business.

Periodic Monitoring: Recordkeeping of compliant investigations.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: None listed.

State-Only: No.

Calculation Model: Not applicable.

Requirement Citation (WAC or Order Citation): WAC 173-400-040(1)

Condition Approval: 12/**15/2004**

Condition: PROPOSED GENERAL APPROVAL CONDITIONS

Visible Emissions: The emissions from the retrieval and bulk vitrification activities shall not exceed 10% opacity. The emissions from the diesel generator exhaust shall not exceed 20% opacity. Visible emissions survey must be conducted during daylight hours and during periods when the emission unit is operating. . If the operator observes visible emissions for more than 10 consecutive minutes during the observation period, the cause of the visible emission will be determined and corrective actions taken as necessary or a visible determination of opacity will be performed using Ecology Method 9A or the United States Environmental Protection Agency (EPA) Method 9.

Periodic Monitoring: Maintaining proper abatement control technology as required by the Washington State Department of Health and visible emission surveys.

Test Method: Visible emission surveys and if necessary (EPA) Method 9.

Test Frequency: Shall be at least once per calendar quarter when operated.

Required Records: Records of corrective actions taken to reduce opacity.

State-Only: Yes.

Calculation Model: Not applicable.

Discharge Point: Ventilation Systems for 241-AN and 241 AW Tank Farms

200E, Tank Farms – Ventilation Systems for 241-AN and 241 AW Tank Farms

Requirement Citation (WAC or Order Citation): WAC 173-400-040(1)

Condition Approval:	2/**18/2005**
Condition:	EMISSION LIMITS Visible emissions from each stack shall not exceed five (5) percent.
Periodic Monitoring:	In accordance with the Hanford Air Operating Permit Section 2.1, Visible Emissions Surveys, Tier 3. Should visible emissions be observed which are not solely attributable to water condensation, compliance with Approval Condition shall be met by performing an opacity determination utilizing 40 Code of Federal Regulations (CFR) Part 60, Appendix A, Method 9, providing that such determination shall not place the visible emission observer in hazard greater than that identified for the general worker.
Test Method:	40 Code of Federal Regulations (CFR) Part 60, Appendix A, Method 9, as applicable.
Test Frequency:	None Specified
Required Records:	Visible emission surveys records in which a visible emission was observed, which are not solely attributable to water condensation.
State-Only:	Yes.
Calculation Model:	Not applicable.

Discharge Point: 200 Area SST Categorical Waste Retrieval

200 Area SST Categorical Waste Retrieval

Requirement Citation (WAC or Order Citation): WAC 173-400-040(1)

Condition Approval: **10/12/2005** Condition: EMISSION LIMITS

Visible emissions from each stack shall not exceed five (5) percent.

Periodic Monitoring: In accordance with the Hanford Air Operating Permit Section 2.1, Visible Emissions Surveys, Tier 3. Should visible emissions be observed which are not solely attributable to water condensation, compliance with Approval Condition shall be met by performing an opacity determination utilizing 40 Code of Federal Regulations (CFR) Part 60, Appendix A, Method 9, providing that such determination shall not place the visible emission observer in hazard greater than that identified for the general worker.

Test Method: 40 Code of Federal Regulations (CFR) Part 60, Appendix A, Method 9, as applicable.

Test Frequency: None Specified

Required Records: Visible emission surveys records in which a visible emission was observed, which are not solely attributable to water condensation.

State-Only: Yes.

Calculation Model: Not applicable.

Discharge Point 200 Area Diffuse/fugitive-Tank Farms

200 Area, Tank Farms - Mixer Pumps

Requirement Citation (WAC or Order Citation): DE00NWP-001[1]

Condition Approval 6/13/2000

Condition:	The data obtained in the course of monitoring worker exposure will be used by the Permittee as an administrative control measure to verify that VOC emissions do not exceed 500 parts per million (PPM). The 500 PPM level will be used as an indicator to facilitate field monitoring of potential VOC emissions, using the existing Industrial Hygiene equipment.
Periodic Monitoring:	VOC measurements from each stack.
Test Method:	Organic Vapor Analyzers (OVAs) or similar instruments.
Test Frequency:	At least once per year during mixer pump operations. If mixer pumps do not operate, no monitoring is required.
Required Records:	VOC measurement.
State-Only	No.
Calculation Model	Not applicable.

Requirement Citation (WAC or Order Citation): DE00NWP-001[1]

Condition Approval 6/13/2000

Condition:	Operation of the proposed boilers shall not exceed 720 hours per year per boiler, and be in accordance with good combustion practices (GCP) to minimize emissions, based on the manufacturer's recommendations, and require the use of fuel with a Sulfur content of 0.05% or less. Periodic preventive maintenance and combustion adjustments shall be made, as necessary, to maintain GCP, but at least annually.
Periodic Monitoring:	Recordkeeping. Frequency: Annually.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. Operating logs showing all hours of operation. 2. GCP - Preventive maintenance and combustion adjustment records. 3. Records of vendor documentation or fuel analysis documenting procurements of diesel fuel with sulfur content of 0.05% or less once per year.
State-Only	No.
Calculation Model	Not applicable.

[1] Condition found in DE00NWP-001R1 dated 2/15/2005.

Discharge Point **200 Area Diffuse/fugitive-Tank Farms**

200 Area, Tank Farms - Mixer Pumps

Requirement Citation (WAC or Order Citation): DE00NWP-001R1

Condition Approval 2/15/2005

Condition:	Tanks: A new Notice of Construction will be required, if total emissions of toxic air pollutants exceed the SQER, unless dispersion modeling demonstrates that emissions would continue to result in concentrations less than the ASILs. Results of any such dispersion modeling demonstrations/calculations will be maintained on file at the tank farms and made available upon inspection.
Periodic Monitoring:	Analyze each proposed change to determine if emissions would exceed an SQER or ASIL.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	Yes.
Calculation Model	Not applicable.

Requirement Citation (WAC or Order Citation): DE00NWP-001[1]

Condition Approval 6/13/2000

Condition:	An updated schedule of installation and operation activities will be made available upon request.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Copy of updated schedule.
State-Only	Yes.
Calculation Model	Not applicable.

[1] Condition found in DE00NWP-001R1 dated 2/15/2005.

Discharge Point **200 Area Diffuse/fugitive-Tank Farms**

200 Area, Tank Farms - Mixer Pumps

Requirement Citation (WAC or Order Citation): DE00NWP-001[1]

Condition Approval 6/13/2000

Condition:	Tanks: Notification will be made ten (10) days prior to initiating waste retrieval operations in each tank covered by this order.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Copy of notification.
State-Only	Yes.
Calculation Model	Not applicable.

[1] Condition found in DE00NWP-001R1 dated 2/15/2005.

Discharge Point C-106 Sluicing

200E Area, Tank Farms - Sluicing

Requirement Citation (WAC or Order Citation): NRA

Condition Approval 2/24/2003

Condition: VOC 500 ppm.

Periodic Monitoring: Instruments used to detect fugitive organic emissions as part of Hanford's Industrial Hygiene (IH) worker monitoring program will be used to monitor for VOCs during sluicing pump operations.

Test Method: Hanford's IH monitoring program.

Test Frequency: VOC monitoring as part of the routine industrial hygiene sampling program during and after the sluicing operation. Required Records: Records of VOC sample results.

State-Only No.

Calculation Model Not applicable.

Condition Approval 2/24/2003

Condition: Sluicing operations may only be conducted for up to 1800 hours per calendar year. Actions shall be taken prior to reaching 50 ppm to limit any excursions above that level. VOC readings may peak at restart of sluicing operations but then are expected to stabilize. A sluicing pump operations log shall show hours of operation.

Periodic Monitoring: Recordkeeping.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Operations log showing all hours of sluicing pump operation.

State-Only No.

Calculation Model Not applicable.

Discharge Point **Concrete Batch Plant**
200E Area, Vitrification
Requirement Citation (WAC or Order Citation): DE01NWP-003, Rev. 0

Condition Approval **9/24/2002**

Condition: Total Emission Limits
A. Particulate Matter - Particulates from the bag-house exhaust shall not exceed 0.01grains per dry standard cubic foot, with no visible emissions. Engineering
calculations or vendor information that the bag-house, when properly operated and maintained, will control emissions to less than 0.01 grains per dry standard cubic foot will be available at the facility. Periodic measurements shall consist of visible emission inspections per EPA Reference Method 22, Title 40 Part 60, Appendix A, July 1, 2000.
B. Fugitive Dust - Visible emissions from the sand and aggregate transfer points, truck loading station, the piles, or any other source shall not be allowed beyond 100 yards.

Periodic Monitoring: A. Recordkeeping
Test Method: B. EPA Method 22, Title 40 Part 60, App.A, July 1, 2000.
Test Frequency: Not applicable.
Required Records: A. Calculations, vendor information, baghouse maintenance logs, surveillance checklists.
B. Visible emission survey results.
State-Only Enforceable: No.
Calculation Model ID: Not applicable.

Condition Approval **9/24/2002**

Condition: Fugitive Dust
All unpaved areas at the CBP and quarry will be controlled by watering or chemical stabilization, or both. Means of chemical stabilization include the application of petroleum resins (EPA 1998). A water spray additive, (such as, "soil cement") will also be considered for application on unpaved roads. Soil cement has been previously used on the Hanford Site with effective results.

Vehicle speed limit signs will be posted to control speeds. Paved roads between the quarry and CBP will be kept clear of heavy accumulations of dust and debris. Front-end loaders will be used to pick up any significant spill of sand or aggregate material on the pave roads between the quarry and CBP. The sand and aggregate stockpiles will be kept sprinkled with water to prevent the movement of materials that may migrate because of wind erosion. Transfer points at conveyors, crushers, and screens will also be sprayed with water.

Periodic Monitoring: Recordkeeping
Test Method: Not specified.
Test Frequency: Not applicable.
Required Records: Surveillance checklists.
State-Only Enforceable: No.
Calculation Model ID: Not applicable.

Discharge Point **Concrete Batch Plant**
200E Area, Vitrification

Requirement Citation (WAC or Order Citation): DE01NWP-003, Rev.0

Condition Approval **9/24/2002**

Condition: Emission Control Monitors
Emission equipment control monitors shall include but not be limited to the following:
A. Bag-house - None required if there are no visible emissions per section 1.A. of the APPROVAL CONDITIONS, and maintenance records indicate proper maintenance practices and schedules.

Periodic Monitoring: Recordkeeping
Test Method: Not specified.
Test Frequency: Not applicable.

Condition Approval **9/24/2002**

Condition: General Conditions
A. Visible Emissions: No visible emissions shall be allowed beyond 100 yards of source. During periods of high winds, an assessment shall be made to suspend operations or initiate a more comprehensive plant watering scheme.

Periodic Monitoring: Visible Emission Surveys.
Test Method: Not specified.
Test Frequency: Not applicable.
Required Records: Results of visible emission surveys.
State-Only Enforceable: No.
Calculation Model ID: Not applicable.

Discharge Point **CWC**

200W Area, Central Waste Complex

Requirement Citation (WAC or Order Citation): DE00NWP-002

Condition Approval **6/30/2000**

Condition:	A new/modified NOC will be required, if total emissions of toxic air pollutants exceed the Small Quantity Emission Rates, unless dispersion modeling demonstrates that emissions would continue to result in concentrations less than the ASILs. Results of any such modeling demonstrations/calculations will be on file at the facility and made available upon inspection.
Periodic Monitoring:	Analyze total emissions to determine if an ASIL will be exceeded.
Frequency:	Not applicable (conservative worst case calculations were performed in the original NOC application).
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point **CWC**

200W Area, Central Waste Complex

Requirement Citation (WAC or Order Citation): DE00NWP-002

Condition Approval **6/30/2000**

Condition:	An annual assessment of SWITS shall be conducted to document compliance that no monitoring and/or sampling systems are needed. This assessment will be reported annually beginning as part of the Calendar Year 1999 nonradioactive inventory of airborne emissions.
Periodic Monitoring:	Conduct an assessment of SWITS data and publish results.
Frequency:	Annually.
Test Method:	Not specified.
Test Frequency:	Annually.
Required Records:	Analysis of SWITS data.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point E-282ED 001

200E Area, Emergency Fire Pump Generators

Requirement Citation (WAC or Order Citation): NWP-96-1

Condition Approval 4/30/1996

Condition: Engine E shall operate no more than 350 hours per year.
Periodic Monitoring: Recordkeeping.
Test Method: Not specified.
Test Frequency: Not applicable.
Required Records: Maintain records showing all hours of operation.
State-Only No.
Calculation Model Not applicable.

Condition Approval 4/30/1996

Condition: NOx 75.5 pounds per hour NOx.
Periodic Monitoring: Recordkeeping & average fuel consumption rate determination shall be performed at least once per 12 months.
Test Method: EPA Method 7A of 40 CFR 60, App. A.
Test Frequency: Not applicable.
Required Records: 1. Monthly fuel burned (this calculation is based on fuel added to supply tank).
2. Hours of operation logged.
State-Only No.
Calculation Model 2B.

Condition Approval 4/30/1996

Condition: Engine E shall burn only No. 2 fuel oil with sulfur content no more than 0.05 weight percent.
Periodic Monitoring: Recordkeeping for compliance with condition.
Test Method: Not specified.
Test Frequency: Not applicable.
Required Records: Vendor documentation of fuel purchase from retail outlet (i.e., for use in motor vehicles, see 40 CFR 80), or fuel analysis once per year showing $\leq$0.05wt% sulfur.
State-Only No.
Calculation Model Not applicable.

Discharge Point E-282ED 001

200E Area, Emergency Fire Pump Generators

Requirement Citation (WAC or Order Citation): NWP-96-1

Condition Approval 4/30/1996

Condition:	Opacity 10 %.
Periodic Monitoring:	See Section 2.1, Tier 1.
Frequency:	At least once per quarter, if operates.
Test Method:	EPA Method 9 of 40 CFR 60, App. A.
Test Frequency:	Not applicable.
Required Records:	Results of visible emissions survey or records of visual determination of the opacity.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point E-282WD 001

200W Area, Generators

Requirement Citation (WAC or Order Citation): NWP-96-1

Condition Approval 4/30/1996

Condition: 10 % Opacity.
Periodic Monitoring: See Section 2.1, Tier 1
Frequency: At least once per quarter, if operates
.
Test Method: EPA Method 9 of 40 CFR 60, App. A.
Test Frequency: Not applicable.
Required Records: Results of visible emissions survey or records of visual determination of the opacity.
State-Only No.
Calculation Model Not applicable.

Condition Approval 4/30/1996

Condition: NOx 42 pounds per hour.
Periodic Monitoring: Recordkeeping & average fuel consumption rate determination shall be performed at least once per 12 months.
Test Method: EPA Method 7A of 40 CFR 60, App. A.
Test Frequency: Not applicable.
Required Records: 1. Monthly fuel burned (this calculation is based on fuel added to supply tank).
2. Hours of operation logged.
State-Only No.
Calculation Model 2B.

Condition Approval 4/30/1996

Condition: Engine W shall burn only No. 2 fuel oil with sulfur content no more than 0.05 weight percent.
Periodic Monitoring: Recordkeepingfor compliance with condition.
Test Method: Not specified.
Test Frequency: Not applicable.
Required Records: Vendor documentation of fuel purchase from retail outlet (i.e., for use in motor vehicles, see 40 CFR 80), fuel analysis once per year showing $\leq$0.05wt% sulfur.
State-Only No.
Calculation Model Not applicable.

Discharge Point **E-282WD 001**

200W Area, Generators

Requirement Citation (WAC or Order Citation): NWP-96-1

Condition Approval **4/30/1996**

Condition:	Engine W shall operate no more than 350 hours per year.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Maintain records showing all hours of operation.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point **Emergency Diesel Generators**

300 Area, Generators

Requirement Citation (WAC or Order Citation): DE02NWP-001

Condition Approval **1/15/2002**

Condition:	Total Emission Limits A. The activities described in the Notice of Construction application will be permitted without additional control technologies required, provided that the total emissions from all activities will not result in accidence of WAC 173-460 ASILs. B. A new Notice of Construction will be required, if total emissions of toxic air pollutants exceed the Small Quantity Emission Rates, unless dispersion modeling demonstrates that emissions would continue to result in concentrations less than the ASILs. Results of any such dispersion modeling demonstrations/calculations will be maintained on file and made available upon inspection. C. A new NOC also is required if total emissions of criteria pollutants would exceed the WAC 173-400-110 thresholds.
Periodic Monitoring:	Analyze each proposed change to determine if emissions would exceed an ASIL or NSR threshold.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	NSR thresholds - No; ASILs - Yes.
Calculation Model	Not applicable.

Condition Approval **1/15/2002**

Condition:	Emissions Control SOx emissions will be controlled through use of #2 Diesel Fuel with a sulfur content within the range of 0.2% to 0.5%.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Per fuel shipment.
Required Records:	Vendor documentation or fuel analysis showing sulfur content < 0.5%.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point **Emergency Diesel Generators**

300 Area, Generators

Requirement Citation (WAC or Order Citation): DE02NWP-001

Condition Approval **1/15/2002**

Condition:	Monitoring and Recordkeeping Specific records shall be kept on-site by the Permittee and made available for inspection by Ecology upon request. The records shall be organized in a readily accessible manner and cover a minimum of the most recent sixty (60) month period. The records to be kept shall include the following: A. Maintain records of the hours of operation.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. Hours of operation 2. Fuel consumption.
State-Only Calculation Model	Not applicable.

Discharge Point EP-331C-01-V Gas Cylinder Management Process

300 Area, Gas Cylinder Management Process

Requirement Citation (WAC or Order Citation): DE 98NWP-003

Condition Approval 9/1/1998

Condition:	General Conditions: Visible emissions - No visible emissions shall be allowed beyond the property line, as determined by opacity readings when warranted.
Periodic Monitoring:	Section 2.1, Tier 2.
Test Method:	EPA Method 9.
Test Frequency:	Frequency: At least once per quarter, or as prescribed for Tier2.
Required Records:	Operating log.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 9/1/1998

Condition:	GCMP Release Limits: The maximum total quantity of residuals that are allowed to be released under this Order per calendar year will not exceed two (2) tons/year. This shall include no more than one (1) ton/year of Class I and Class II ozone-depleting substances.
Periodic Monitoring:	Operator recording of release information. Frequency: for each release.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Daily volumes and concentrations emitted from each cylinder and operator signature.
State-Only	Yes.
Calculation Model	6.

Condition Approval 9/1/1998

Condition:	GCMP Release Limits: The above release limits and the ASILs shall not be exceeded until a revised NOC application is submitted to Ecology and approved by Ecology.
Periodic Monitoring:	Applicable if triggered.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. Chemical inventory if use rates are unavailable. 2. Volumes and concentrations in each cylinder. 3. Waste handling rates. 4. Chemical use rate. 5. Chemical inventory if use rates are unavailable.
State-Only	No.
Calculation Model	6.

Discharge Point EP-331-C-01-V Gas Cylinder Management Process

300 Area, Gas Cylinder Management Process

Requirement Citation (WAC or Order Citation): DE 98NWP-003, Amendment 1

Condition Approval 1/19/2006

Condition:	Total Building Emission Limits: GCMP process and emission controls, building research and waste handling projects and supporting operations, and building equipment additions and changes, including emission control systems, can be made to accommodate changing research and support requirements without filing a new Notice of Construction, providing the total emissions meet the ASILs and WAC 173-400-110 NSR thresholds.
Periodic Monitoring:	Recordkeeping Frequency: For each release.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	NSR thresholds - No; ASILs - Yes.
Calculation Model	7A and 7B.

Condition Approval 1/19/2006

Condition:	Total Building Emission Limits: A new NOC will be required if total building emissions of toxic air pollutants exceed the Small Quantity Emission Rates, unless a T-Screen analysis is run that shows that emissions would result in concentrations less than ASILs. Results of these analyses will be maintained on file at PNNL for inspection.
Periodic Monitoring:	Applicable if triggered.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. Chemical inventory if use rates are unavailable 2. Volumes and concentrations in each cylinder 3. Waste handling rates 4. Chemical use rate 5. Chemical inventory if use rates are unavailable.
State-Only	Yes.
Calculation Model	6, 7A & 7B.

Discharge Point EP-331-C-01-V Gas Cylinder Management Process

300 Area, Gas Cylinder Management Process

Requirement Citation (WAC or Order Citation): DE 98NWP-003, Amendment 1

Condition Approval 1/19/2006

Condition:	Total Building Emission Limits: A new NOC will be required if total building emissions of criteria pollutants would exceed the WAC 173-400-110 thresholds.
Periodic Monitoring:	Applicable if triggered.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. Chemical inventory if use rates are unavailable 2. Volumes and concentrations in each cylinder 3. Waste handling rates 4. Chemical use rate 5. Chemical inventory if use rates are unavailable.
State-Only	No.
Calculation Model	6, & 7A.

Condition Approval 1/19/2006

Condition:	Monitoring and Recordkeeping: Specific records shall be kept on-site by the permittee and made available for inspection by Ecology upon request. The records shall be organized in a readily accessible manner and cover a minimum of the most recent 60-month period.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. Logbook identifying individual cylinders. 2. Logbook identifying contents of the cylinders 3. The amount of residuals 4. The date and rate of release 5. Any other information pertaining to said release.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point EP-331-C-01-V Gas Cylinder Management Process

300 Area, Gas Cylinder Management Process

Requirement Citation (WAC or Order Citation): DE 98NWP-003, Amendment 1

Condition Approval 1/19/2006

Condition:	Should any of the emissions become subject to 40 Code of Federal Regulations (CFR) 264/265 Subparts AA, those emissions would be regulated under those parts and are then exempt from WAC 173-460. In that event, those exempted emissions would be excluded from ASIL and threshold evaluations.
Periodic Monitoring:	Applicable if triggered.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point EP-325-01-S Hazardous Waste Treatment Unit

300 Area, Hazardous Waste Treatment Unit

Requirement Citation (WAC or Order Citation): DE 98NWP-004

Condition Approval 9/1/1998

Condition:	A new Notice of Construction will be required if total building emissions of toxic air pollutants exceed the Small Quantity Emission Rates, unless a T-Screen analysis is run that shows the emissions would result in concentrations less than the ASILs.
Periodic Monitoring:	Recordkeeping and emission calculations.
Frequency:	Each proposed change.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	Yes.
Calculation Model	7A and 7B.

Condition Approval 9/1/1998

Condition:	Total Building Emission Limits: HWTU process and emission controls, building research and waste handling projects and supporting operations, and building equipment additions and changes, including control systems, can be made to accommodate changing research and support requirements without filing a new Notice of Construction, providing the total emissions meet the ASILs and WAC 173-400-110 NSR thresholds.
Periodic Monitoring:	Recordkeeping and emission calculations.
Frequency:	Each treatment process and proposed change.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	NSR thresholds - No; ASILs - Yes.
Calculation Model	7A and 7B.

Condition Approval 9/1/1998

Condition:	A new Notice of Construction also is required if total building emissions of criteria pollutants would exceed the WAC 173-400-110 thresholds.
Periodic Monitoring:	Applicable if triggered.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	
State-Only	No.
Calculation Model	Not applicable.

Discharge Point EP-325-01-S Hazardous Waste Treatment Unit

300 Area, Hazardous Waste Treatment Unit

Requirement Citation (WAC or Order Citation): DE 98NWP-004

Condition Approval 9/1/1998

Condition:	Monitoring and Recordkeeping: Specific records shall be kept on-site by the permittee and made available for inspection by Ecology upon request. The records shall be organized in a readily accessible manner and cover a minimum of the most recent 60-month period.
Periodic Monitoring:	Recordkeeping and emission calculations.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. HWTU unit feed rates for TAPS and NSR threshold listed criteria pollutants. 2. HWTU treatment process destruction efficiency data or engineering estimates. 3. Engineering estimates of the maximum emissions of reaction products of the HWTU treatment process. 4. Evaluations of each bench-scale treatment process or additions or changes not otherwise exempt.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 9/1/1998

Condition:	General Conditions: Visible Emissions - No visible emissions shall be allowed beyond the property line, as determined by opacity readings when warranted.
Periodic Monitoring:	See Section 2.1, Tier 3.
Test Method:	EPA Method 9.
Test Frequency:	Not applicable.
Required Records:	Operating log.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point EP-325-01-S Hazardous Waste Treatment Unit

300 Area, Hazardous Waste Treatment Unit

Requirement Citation (WAC or Order Citation): DE 98NWP-004

Condition Approval 9/1/1998

Condition:	HWTU Feed Rate: The process feed rate shall be limited to a rate that will control the WAC 173-460 listed Toxic Air Pollutants (TAPs) to meet the Acceptable Source Impact Level (ASIL), and in any case, not to exceed 8,000 kg of waste per calendar year total for the HWTU the permittee is proposing under this NOC application approval Order.
Periodic Monitoring:	Recordkeeping.
Frequency:	Daily when operating.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	HWTU daily feed rate (Total and WAC 173-460 TAPs).
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point EP-329-01-S Chemical Sciences Laboratory

300 Area, 329 Building Activities

Requirement Citation (WAC or Order Citation): NWP95-329/300A

Condition Approval 9/18/1996

Condition:	Opacity 5 %.
Periodic Monitoring:	See Section 2.1, Tier 3.
Test Method:	EPA Method 9 of 40 CFR Part 60, Appendix A.
Test Frequency:	Not applicable.
Required Records:	
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 9/18/1996

Condition:	VOC 0.8 lb/hr.
Periodic Monitoring:	Chemical inventory and usage records and emission calculations for each change.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	Yes.
Calculation Model	4B.

Discharge Point **EP-331-01-V Life Sciences Laboratory I**

300 Area, Life Sciences Laboratory Activities

Requirement Citation (WAC or Order Citation): 97NM-147

Condition Approval **11/10/1997**

Condition: A new Notice of Construction shall be filed if emissions of toxic air pollutants exceed the pounds per year Small Quantity Emissions Rates (SQER) of WAC 173-460-080(2)(e), or it shall be on file at the 331 Building that T-SCREEN was run and that emissions were less than the Acceptable Source Impact Level (ASIL), in accordance with 173-460-080(2) and (3). Results shall be on file at PNNL for inspection.

A new Notice of Construction shall be filed if emissions of criteria pollutants exceed the following thresholds:

Carbon Monoxide - 20 tons/year
Nitrogen Oxides - 8 tons/year
Sulfur dioxide - 8 tons/year
Volatile Organic Compounds - 8 tons/year
Particulate matter - 5 tons/year
PM-10 - 3 tons/year
Lead - 0.12 tons/year.

Periodic Monitoring:	Recordkeeping
Frequency:	For each change.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	Yes.
Calculation Model	7A and 7B.

Discharge Point N-1724K 001

100K Area, Work Activities

Requirement Citation (WAC or Order Citation): 97NM-551

Condition Approval 1/29/1998

Condition:	Volatile Organic Compounds: Use of an activated charcoal filter is required. The filter shall be examined and replaced when it becomes loaded.
Periodic Monitoring:	Filter maintenance inspections.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Maintenance records and schedules.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 1/29/1998

Condition:	Particulate Matter (PM): For welding, use of a commercially available portable fume exhauster is required containing a two stage electrostatic precipitator (filter) that removes 98 percent of the particulates. For abrasive blasting, use of a commercially available ventilation system containing a cloth bag filtration system. For sawdust, use of a cyclone separator and bag filter prior to discharge to the atmosphere.
Periodic Monitoring:	Startup inspection.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. Inspection records. 2. Work procedures.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point P-2025E ETF

200E Area, Effluent Treatment

Requirement Citation (WAC or Order Citation): 96NW-1-301

Condition Approval 10/16/1996

Condition:	Any addition of waste streams that do not meet the new source review exemption in WAC 173-460-040(2)(c) or that have previously unidentified constituents to the facility requires prior review and approval by the Department of Ecology.
Periodic Monitoring:	Analyze each waste stream to determine if emissions would exceed an SQER or ASIL.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analysis.
State-Only	Yes.
Calculation Model	7C.

Requirement Citation (WAC or Order NOC-93-3

Condition Approval 12/20/1993

Condition:	Energy shall notify the department in writing at least 45 days before start-up of any emission unit subject to this approval which could cause release of any air pollutants to the atmosphere.
Periodic Monitoring:	Not applicable.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 12/20/1993

Condition:	Energy shall not make any changes to the proposed air emission control system which may result in an increase; or change the types of air emissions without first notifying the department. Based on the notification, the department will make a determination whether a new approval or a modification of this final approval is required.
Periodic Monitoring:	Not applicable.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	
State-Only	No.
Calculation Model	Not applicable.

Discharge Point **P-2025E ETF**

200E Area, Effluent Treatment

Requirement Citation (WAC or Order Citation): NOC-93-3

Condition Approval **12/20/1993**

Condition:	Opacity at each stack 5%.
Periodic Monitoring:	See Section 2.1, Tier 3.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	As required in Attachment 2, Section 4.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point **P-241U107-001, P-241S102-001, P-241S112-001**

200W Area, Tank Farms - Waste Retrieval System

Requirement Citation (WAC or Order Citation): DE03NWP-001R1

Condition Approval 11/3/2004

Condition:	EMISSION CONTROL MONITORS Although all contaminant emissions are estimated below their respective small quantity emission rates (SQERS) or below their acceptable source impact levels (ASILs), during waste retrieval, the following sampling and monitoring will take place to verify emissions estimates and to ensure emission limits are not exceeded: Additional Suma sampling will be performed in accordance with the IH sampling plan to obtain a representative sample of standard target compounds. However, any spikes detected during analysis that are not on the target compound list will be noted and analyzed for if warranted. This sampling and analysis shall be functionally equivalent with standard EPA method 15A, including all Quality Assurance and Quality Control (QA/QC) protocols.
Periodic Monitoring:	Recordkeeping.
Test Method:	EPA Method 15A or functionally equivalent method.
Test Frequency:	Not applicable.
Required Records:	1. Suma sampling results. 2. IH sampling and analysis plan.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point **P-241U107-001, P-241S102-001, P-241S112-001**

200W Area, Tank Farms - Waste Retrieval System

Requirement Citation (WAC or Order Citation): DE03NWP-001R1

Condition Approval 11/3/2004

Condition:	EMISSION CONTROL MONITORS Although all contaminant emissions are estimated below their respective small quantity emission rates (SQERS) or below their acceptable source impact levels (ASILs), during waste retrieval, the following sampling and monitoring will take place to verify emissions estimates and to ensure emission limits are not exceeded: A grab sample will be drawn and analyzed for nitrosamines (N nitrosodimethylamine and related compounds) from the sampling port of the exhauster stack on each of the three tanks to be retrieved. Samples will be drawn within 15 minutes after the first start of an exhauster, approximately two hours after the first start of waste retrieval and again when approximately half of the waste has been transferred. This analysis is in addition to the list of compounds presented under item (C.) below. This sampling and analysis shall be functionally equivalent with standard EPA method 15A, including all Quality Assurance and Quality Control (QA/QC) protocols. The IH sampling and analysis plan (including a QA/QC plan) shall be provided to Ecology. Additional samples and analyses may be conducted but overall sampling must be sufficient to demonstrate compliance with emission limits of Condition 1, above, with consideration of practical quantitation limits.
Periodic Monitoring:	Recordkeeping.
Test Method:	EPA Method 15A or functionally equivalent method.
Test Frequency:	1. 15 minutes after the first start of an exhauster 2. Approximately two hours after the first start of waste retrieval 3. When approximately half of the waste has been transferred.
Required Records:	Results of sample analyses.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point P-241U107-001, P-241S102-001, P-241S112-001

200W Area, Tank Farms - Waste Retrieval System

Requirement Citation (WAC or Order Citation): DE03NWP-001[1]

Condition Approval 3/17/2003

Condition:	EMISSION CONTROLS The controls established under the site specific and general Health and Safety Plans, as they apply to minimizing the instantaneous mass emission rate from the tank, are hereby made part of this approval order. A list and description of these controls shall be provided to Ecology upon request.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	List and description of controls.
State-Only	Yes.
Calculation Model	Not applicable.

Requirement Citation (WAC or Order Citation): DE03NWP-001[1]

Condition Approval 3/17/2003

Condition:	GENERAL REQUIREMENTS An updated schedule of installation and operation activities will be made available upon request.
Periodic Monitoring:	Recordkeeping
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Copy of updated schedule.
State-Only	Yes.
Calculation Model	Not applicable.

[1] Condition found in DE03NWP-001R1 dated 3/17/2003.

Discharge Point **P-241U107-001, P-241S102-001, P-241S112-001**

200W Area, Tank Farms - Waste Retrieval System

Requirement Citation (WAC or Order Citation): DE03NWP-001[1]

Condition Approval **3/17/2003**

Condition:	EMISSION CONTROL MONITORS Although all contaminant emissions are estimated below their respective small quantity emission rates (SQERS) or below their acceptable source impact levels (ASILs), during waste retrieval, the following sampling and monitoring will take place to verify emissions estimates and to ensure emission limits are not exceeded: If the exhauster is not operated at all during the retrieval operation, alternative sampling and analysis methods to determine maximum emissions will be established under the IH Monitoring Plan. A sampling and analysis plan (including a QA/QC plan) shall be provided to Ecology upon request. The permittee will provide an alternative plan for measuring toxic emissions if the exhauster is not operated during retrieval. Ecology reserves the right to request a modification to this plan.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Alternative plan for measuring toxic emissions, if portable exhauster is not used.
State-Only	Yes.
Calculation Model	Not applicable.

Requirement Citation (WAC or Order Citation): DE03NWP-001[1]

Condition Approval 3/17/2003

Condition:	EMISSION CONTROL MONITORS Although all contaminant emissions are estimated below their respective small quantity emission rates (SQERS) or below their acceptable source impact levels (ASILs), during waste retrieval, the following sampling and monitoring will take place to verify emissions estimates and to ensure emission limits are not exceeded: Volatile Organic Compounds (VOCs), ammonia, and other air toxic levels, to include NDMA as necessary, will be monitored in accordance with the industrial hygiene worker safety program and site specific IH Monitoring Plan and this order. A plan for monitoring shall be submitted to Ecology upon request.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	IH Monitoring Plan.
State-Only	Yes.
Calculation Model	Not applicable.

[1] Condition found in DE03NWP-001R1 dated 3/17/2003.

Discharge Point **P-241U107-001, P-241S102-001, P-241S112-001**

200W Area, Tank Farms - Waste Retrieval System

Requirement Citation (WAC or Order Citation): DE03NWP-001[1]

Condition Approval **3/17/2003**

Condition:	GENERAL REQUIREMENTS Notification will be made ten (10) days prior to initiating waste retrieval operations covered by this Order.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Notification documentation.
State-Only	Yes.
Calculation Model	Not applicable.

Requirement Citation (WAC or Order Citation): DE03NWP-001[1]

Condition Approval 3/17/2003

Condition:	TOTAL EMISSION LIMITS A new NOC also is required if total emissions of criteria pollutants would exceed the WAC 173-400-110 thresholds.
Periodic Monitoring:	Recordkeeping and calculations.
Test Method:	Not specified.
Test Frequency:	At least once per calendar year, if NOC is used.
Required Records:	Calculations of criteria pollutants.
State-Only	Yes.
Calculation Model	Not applicable.

Requirement Citation (WAC or Order Citation): DE03NWP-001[1]

Condition Approval 3/17/2003

Condition:	EMISSION CONTROLS The portable exhausters may be used to control emissions. If the exhauster is in use, exhaust will be monitored for VOCs and ammonia until levels rise and fall off, or until the dome space VOC and ammonia concentrations are reduced to minimum levels (at which point the levels stop changing).
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Portable exhauster exhaust monitoring records for ammonia and VOCs.
State-Only	Yes.
Calculation Model	Not applicable.

[1] Condition found in DE03NWP-001R1 dated 3/17/2003.

Discharge Point P-2706T 001

200W Area, T Plant Complex

Requirement Citation (WAC or Order Citation): DE01NWP-002

Condition Approval 9/17/2001

Condition:	General Requirements An annual assessment shall be conducted to document compliance that no additional monitoring and/or sampling systems are needed. This assessment will be reported annually beginning as part of the Calendar Year 2001 non-radioactive inventory of airborne emissions.
Periodic Monitoring:	Conduct an assessment of SWITS data and publish results.
Test Method:	Not specified.
Test Frequency:	Annually.
Required Records:	Analysis of SWITS data.
State-Only	Yes.
Calculation Model	Not applicable.

Condition Approval 9/17/2001

Condition:	Emission Control Monitors A. No sampling is required for non-radioactive air emissions because all contaminant emissions are below their respective small quantity emission rates. B. However, organic vapor analyzers (OVAs), or other similar instruments for detecting fugitive organic emissions, as part of Hanford's Industrial Hygiene program to monitor worker exposure, will be used to monitor for VOCs. C. The data obtained in the course of monitoring worker exposure will be used by the Permittee as an administrative control measure to verify the VOC emissions do not exceed criteria set forth in Hanford's Industrial Hygiene Program for the chemical of concern during the work day.
Periodic Monitoring:	A. Not applicable B. & C. Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Worker Exposure records.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point P-2706T 001

200W Area, T Plant Complex

Requirement Citation (WAC or Order Citation): DE01NWP-002

Condition Approval 9/17/2001

Condition:	General Conditions A. Visible Emissions: No visible emissions shall be allowed beyond the property line.
Periodic Monitoring:	Section 2, Tier 3.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Maintenance records.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 9/17/2001

Condition:	Total Emission Limits A. The activities described in the Notice of Construction application will be permitted without additional control technologies required, provided that the total emissions from all activities will not result in exceedance of WAC 173-460 ASILs. B. A new Notice of Construction will be required, if total emissions of toxic air pollutants exceed the Small Quantity Emission Rates, unless dispersion modeling demonstrates that emissions would continue to result in concentrations less than the ASILs. Results of any such dispersion modeling demonstrations/calculations will be maintained on file in the T Plant Complex reference File and made available upon inspection. C. A new NOC also is required if total emissions of criteria pollutants would exceed the WAC 173-400-110 thresholds.
Periodic Monitoring:	Analyze each proposed changed to determine if emissions would exceed an ASIL or NSR threshold.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	NSR thresholds - No; ASILs - Yes.
Calculation Model	Not applicable.

Discharge Point P-291Z001-001

200W Area, Plutonium Stabilization and Handling

Requirement Citation (WAC or Order Citation): DE04NWP-001 (3/30/04)

Condition Approval 7/17/2001

Condition:	Total Emission Limits: A. The activities described in the NOC application will be permitted without additional control technologies required, provided that the total emissions from all activities will not exceed the Small Quantity Emission Rates (SQERs) for constituents where a SQER is listed. Constituents without a listed SQER cannot result in exceedance of WAC 173-460 ASILs. B. A new NOC will be required, if total emissions of toxic air pollutants exceed the SQERs, unless dispersion modeling demonstrates that emissions would continue to result in concentrations less than the ASILs. Results of any such dispersion modeling demonstrations/calculations will be maintained on file at the facility and made available upon inspection. C. A new NOC also is required if total emissions of criteria pollutants
Periodic Monitoring:	Analyze each proposed change to determine if emissions would exceed an ASIL or NSR threshold.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Results of analyses.
State-Only	NSR thresholds - No; ASILs - Yes.
Calculation Model	Not applicable.

Condition Approval 7/17/2001

Condition:	General Requirements: In accordance with the method(s) identified in Section 6 of this Order, an annual assessment shall be conducted to document compliance that no monitoring and/or sampling systems are needed. This assessment will be reported annually beginning as part of the Calendar Year 2001 nonradioactive inventory of airborne emissions report as specified in WAC 173-400-105.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Annually.
Required Records:	WAC 173-400-105 Report.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point P-291Z001-001

200W Area, Plutonium Stabilization and Handling

Requirement Citation (WAC or Order Citation): DE04NWP-001 (3/30/04)

Condition Approval 7/17/2001

Condition:	Monitoring and Recordkeeping: Facility operating records will be maintained on file to verify the low emission estimates stated in the notice of construction application have not been exceeded. Each batch of material from the total polycube inventory entering the furnaces will also be recorded (i.e., grams of polycube material per unit time) on the facility operating records, which are classified. The classified records shall be kept on-site by the Permittee and made available to cleared Ecology personnel, upon request. The records will cover a minimum of the most recent sixty-(60-) month period. Emissions from the polycube thermal stabilization process will be reported in the annual Hanford report, pursuant to WAC 173-400-105.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Per batch.
Required Records:	1. Emission estimates/calculations. 2. Operating log showing number of batches processed.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point P-296A042-001

200E Area, Tank Farms - Ventilation Upgrades

Requirement Citation (WAC or Order Citation): NOC 94-07-01

Condition Approval 12/22/1997

Condition:	VOC max emission limit, 50 ppm, measured as Total Organic Carbon.
Periodic Monitoring:	Recordkeeping and emission calculations.
Test Method:	EPA Method 25A or approved alternative.
Test Frequency:	Annually.
Required Records:	Organic vapor sampling data.
State-Only	No.
Calculation Model	4A.

Requirement Citation (WAC or Order Citation): NOC 94-07

Condition Approval 8/29/1994

Condition:	Ammonia, 0.05 lbs/hr.
Periodic Monitoring:	Recordkeeping and emission calculations.
Test Method:	Field instruments, which may include Draeger Tubes.
Test Frequency:	Annually.
Required Records:	1. Stack flow measurements. 2. Record field instrument or Draeger Tube ammonia concentrations.
State-Only	No.
Calculation Model	5.

Discharge Point **P-296K142 001**

100K Area, Cold Vacuum Drying

Requirement Citation (WAC or Order Citation): 97NM-022

Condition Approval **3/7/1997**

Condition:	Approval to construct and install process equipment.
Periodic Monitoring:	None.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	None.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point **P-296W004 001**

200W Area, Waste Receiving and Processing

Requirement Citation (WAC or Order Citation): DE03NWP-002

Condition Approval **5/21/2003**

Condition:	Emission Controls Monitors: Source data from an Organic Vapor Analyzer using a Photoionization detector (PID) with at least an 11.7eV lamp, or other device capable of detecting TAPs, was conducted by the facility in providing verification of de minimus (i.e., parts per million levels) fugitive emissions in the drum storage and NDE/NDA areas. The results of source test information, conducted on or at the source(s) locations in lieu of downstream at the stack, have been provided to the permit writer under separate cover. This information had been determined to satisfy the previous approval order condition for this source in performing one-time monitoring to demonstrate TAP emissions are below the estimates provided in the NOC application and T-BACT analysis for the drum storage and DNE/NDA areas. As such, no additional sampling or monitoring will be required under this approval order. The facility will continue to perform at least once every two years, and make available upon request or inspection, results from any Industrial Hygiene program measurements to further demonstrate compliance with limits contained herein. The test plan for conducting these measurements shall also be maintained on file and made available upon request and/or inspection by Ecology.
Periodic Monitoring:	IH Program measurements as specified in NOC, including alternative methods.
Test Method:	Not specified.
Test Frequency:	Once every two years.
Required Records:	Test plan. Measurement results.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point P-296W004 001

200W Area, Waste Receiving and Processing

Requirement Citation (WAC or Order Citation): DE03NWP-002

Condition Approval 5/21/2003

Condition:	Total Emission Limits: For toxic compounds not included in the T-BACT analysis, the emission limits shall be the Small Quantity Emission Rate (SQER). A modification submittal of a Notice of Construction (NOC) application will be required if the SQER limit would be exceeded for compounds not addressed under the T-BACT assessment. The calculation/measurement methods described n section 4 below, or other method as approved by Ecology, may be used to document compliance with the SQER limit.
Periodic Monitoring:	PID or other device capable of detecting TAPs measurements.
Test Method:	Not specified.
Test Frequency:	Once every 2 years.
Required Records:	1. IH Test Plan. 2. Results of measurements.
State-Only	Yes.
Calculation Model	Not applicable.

Condition Approval 5/21/2003

Condition:	An internal annual assessment of the facility container tracking system, such as SWITS of the data management system (DMS), shall be conducted by the facility to document/verify de minimus emissions from the source. This assessment will be maintained on file, made available for Ecology inspector requests, and compiled into emission estimates that will be reported annually beginning as part of the Calendar Year 2003 nonradioactive inventory of airborne emissions.
Periodic Monitoring:	Recordkeeping; Comparison to threshold.
Test Method:	Not specified.
Test Frequency:	Annually.
Required Records:	1. Throughput records, SWITs query evaluation if > 1,000 drums. 2. Nonradioactive air emissions inventory report required by WAC 173-400-105.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point P-296W004 001

200W Area, Waste Receiving and Processing

Requirement Citation (WAC or Order Citation): DE03NWP-002

Condition Approval 5/21/2003

Condition:	Total Emission Limits: The processing and repackaging activities described in the Notice of Construction application will be permitted without requiring additional emission controls, provided that the emissions form the stack, venting the 100 and 300 Series Waste Process Lines, the 200 and 400 Restricted Waste process Lines, the process area, and the storage areas are maintained below the level described in and meeting T-BACT (according to WRAP Module 1 Best Available Control Technology Assessment, WHC-SD-W026-TI-005, January 1993, Westinghouse Hanford Company, Richland, Washington).
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Documentation implementing T-BACT.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point P-340NTEX-001

300 Area, Tank Sludge Cleanout

Requirement Citation (WAC or Order Citation): 97NM-137

Condition Approval 5/5/1997

Condition:	Maintain negative pressure of tanks during solids removal.
Periodic Monitoring:	Not applicable.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Operations log showing negative air pressure was maintained during solids removal from tank.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 5/5/1997

Condition:	Implement temporary pollution controls during removal of solids and equipment from tanks. Temporary pollution controls implemented during solids removal will consist of temporary barriers installed between the tank access port and the surrounding area. Temporary pollution controls implemented during removal of equipment will consist of plastic sleeving to provide a barrier between the equipment and the surrounding work area and the environment.
Periodic Monitoring:	Not applicable.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	Operations log showing appropriate temporary pollution control was in place during solids removal and equipment removal.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 5/5/1997

Condition:	Control particulates with a prefilter and two banks of HEPAs. HEPAs are to be in-place tested to demonstrate removal efficiency of 99.95% for particulates with a 0.3 micron median diameter.
Periodic Monitoring:	Not applicable.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. Inspection records. 2. HEPA test results.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point P-WTP-001

200E Area, Vitrification

Requirement Citation (WAC or Order Citation): DE02NWP-002, Amendment 1 and Amendment 2

Condition Approval 11/24/2003

Condition:	1.1 Opacity from each exhaust stack from process facilities (Pretreatment, HLW, and LAW) shall not exceed 5%, other facility stacks shall not exceed 10 percent, over a 6 minute average as measured by EPA Reference Method 9, or an equivalent method approved in advance by Ecology. A certified opacity reader shall read and record the opacity concurrent with any source testing.
Periodic Monitoring:	For Pretreatment, HLW, and LAW See Section 2.1, Tier 3.
Test Method:	EPA Reference Method 9.
Test Frequency:	Initial test.
Required Records:	Test Records.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 11/24/2003

Condition:	1.1 Opacity from each exhaust stack from process facilities (Pretreatment, HLW, and LAW) shall not exceed 5%, other facility stacks shall not exceed 10 percent, over a 6 minute average as measured by EPA Reference Method 9, or an equivalent method approved in advance by Ecology. A certified opacity reader shall read and record the opacity concurrent with any source testing.
Periodic Monitoring:	For boilers, generators, and fire pumps See Section 2.1, Tier 1.
Test Method:	EPA Reference Method 9.
Test Frequency:	At least once per calendar quarter.
Required Records:	Test records.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 11/24/2003

Condition:	1.1 Opacity from each exhaust stack from process facilities (Pretreatment, HLW, and LAW) shall not exceed 5%, other facility stacks shall not exceed 10 percent, over a 6 minute average as measured by EPA Reference Method 9, or an equivalent method approved in advance by Ecology. A certified opacity reader shall read and record the opacity concurrent with any source testing.
Periodic Monitoring:	For other facility stacks See Section 2.1, Tier 3.
Test Method:	EPA Reference Method 9.
Test Frequency:	Initial test.
Required Records:	Test records.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point P-WTP-001

200E Area, Vitrification

Requirement Citation (WAC or Order Citation): DE02NWP-002, Amendment 1 and Amendment 2

Condition Approval 11/24/2003

Condition:	1.2 All boilers, generators and the diesel fire pump shall be fired on Ultra-Low Sulfur Fuel (ULSF). ULSF means natural gas, propane, or fuel oil with a sulfur content of 0.0030% or less. Compliance shall be monitored by maintaining and submitting records of fuel purchases.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not Specified.
Test Frequency:	Not Applicable.
Required Records:	Records of monthly fuel purchases and use and an annual certification, from the fuel distributor, stating the sulfur content of the fuel that was
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 11/10/2005

Condition:	1.3 The operation of the six steam generating boilers shall not exceed an annual aggregated fuel consumption limit of 13,400,000 gallons per year summed daily for the previous 365 days.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not Specified.
Test Frequency:	Daily.
Required Records:	Maintain fuel purchase records.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 7/8/2002

Condition:	1.4 Each of the 3 emergency generators shall not operate for more than 164 hours per year on a 12 month rolling summation calculated once per month. Compliance shall be monitored by installing and operating non-resetable totalizers on each generator.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not Specified.
Test Frequency:	Monthly.
Required Records:	Records showing all hours of operation.
State-Only	No.
Calculation Model	Not applicable.

Discharge Point P-WTP-001

200E Area, Vitrification

Requirement Citation (WAC or Order Citation): DE02NWP-002, Amendment 1 and Amendment 2

Condition Approval 11/24/2003

Condition:	1.5 Each of the diesel fire pumps shall not operate for more than 110 hours per year on a 12 month rolling summation calculated once per month. Compliance shall be monitored by installing and operating a non-resetable totalizer on the fire pump.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not Specified.
Test Frequency:	Not Applicable.
Required Records:	Monthly.
State-Only	No.
Calculation Model	Not applicable.

Condition Approval 11/24/2003

Condition:	2.2 A new NOC will be required, if total emissions of toxic air pollutants exceed the values specified in the tables in Attachment 1. These values shall be confirmed by emission calculations, for indicator constituents, derived from waste characterization data obtained through implementation of the Ecology approved Regulatory Data Objectives Supporting Tank Waste Remediation System Privatization Project (PNNL-12040). The mass feed rates for the indicator constituents will be verified to be less than or equal to the mass feed rates used in the Integrated Emissions Baseline Report for the Hanford Tank Waste Treatment and Immobilization Plant (24590-WTP-RPT-PO-03-008, Rev. 0). Results of any such calculations will be maintained on file and made available upon inspection/request.
Periodic Monitoring:	Recordkeeping
Test Method:	Not Specified.
Test Frequency:	At least once per calendar year.
Required Records:	1. Calculations of TAPs emissions derived from waste feed characterization. 2. Calculations of ammonia emissions from LAW and HLW.
State-Only	Yes.
Calculation Model	Not applicable.

Condition Approval 7/8/2002

Condition:	2.3 A new NOC also is required if total emissions of any criteria pollutants, derived from calculations/monitoring, would exceed the estimates listed under the Emissions section of this order.
Periodic Monitoring:	Recordkeeping
Test Method:	Not Specified.
Test Frequency:	At least once per calendar year.
Required Records:	Calculations of criteria pollutants.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point **P-WTP-001**

200E Area, Vitrification

Requirement Citation (WAC or Order Citation): DE02NWP-002, Amendment 1 and Amendment 2

Discharge Point **P-WTP-001**
200E Area, Vitrification
Requirement Citation (WAC or Order Citation): DE02NWP-002, Amendment 1 and Amendment 2

Condition Approval **11/24/2003**

Condition:	3.1 Within 180-days of achieving the optimized feed rate of simulant at which the facilities will be operated, the permittee shall demonstrate initial compliance through a performance demonstration conducted per an Ecology approved Performance Demonstration Plan. The permittee shall utilize the Performance Demonstration Plan requirements identified in the Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste Hanford Tank Waste Treatment and Immobilization Plant (DWP), condition III.10.H.5.f (LAW) and III.10.J.5.f (HLW).Ecology shall be notified at least 30 days prior to the test and invited to participate in the test activities at least one week prior to testing.
Periodic Monitoring:	Recordkeeping.
Test Method:	Not specified.
Test Frequency:	Not applicable.
Required Records:	1. Notification Documentation. 2. Performance Demonstration Plan.
State-Only	Yes.
Calculation Model	Not applicable.

Condition Approval **11/24/2003**

Condition:	3.2 Testing per the initial compliance testing identified in 3.1 shall be conducted in accordance with the frequency identified in the DWP, condition III.10.I.1.h (LAW) and II.10.K.1.h (HLW).
Periodic Monitoring:	Recordkeeping, measurements, and emission calculations.
Test Method:	As stated in DWP conditions III.10.I.1.h (LAW) and III.10.K.1.h (HLW).
Test Frequency:	At startup and at least once every 5 years thereafter.
Required Records:	Test records.
State-Only	Yes.
Calculation Model	Not applicable.

Discharge Point **P-WTP-001**
200E Area, Vitrification
Requirement Citation (WAC or Order Citation): DE02NWP-002, Amendment 1 and Amendment 2

Condition Approval **11/24/2003**

Condition: 3.5 Within 180 days of initial startup, boiler source testing shall be conducted according to the following methods, unless an alternate method has been proposed in writing by the permittee and approved by Ecology in writing in advance of the testing.

Carbon Monoxide - EPA Reference Method 10, 40 CFR 60, Appendix A, 7/1/00 Volatile Organic Compounds (VOC) - EPA Reference Method 18, 40 CFR 60, Appendix A, 7/1/00 Sulfur Dioxide - EPA Reference Method 6C, 40 CFR 60, Appendix A, 7/1/00.

Periodic Monitoring: Recordkeeping, measurements, and emission calculations.
Test Method: As stated in condition.
Test Frequency: Initial startup.
Required Records: Test Records.
State-Only No.
Calculation Model Not applicable.

Condition Approval **11/24/2003**

Condition: 3.6 During the boiler source testing, a direct-reading measurement device for carbon monoxide with a minimum measurement accuracy of five percent or less shall take readings according to methods proposed by the permittee and approved by Ecology in writing in advance of the testing. The direct-reading instrument shall be calibrated for future use, using the results of the source testing.
Periodic Monitoring: Recordkeeping, measurements, and emission calculations.
Test Method: Portable emissions analyzer calibrated during most recent source test.
Test Frequency: Initial startup.
Required Records: Logs of boiler tune-ups and significant boiler maintenance activities will be maintained.
State-Only Yes.
Calculation Model Not applicable.

Condition Approval **11/24/2003**

Condition: 4. Emissions from boilers and generators shall be monitored for CO, and Oxygen by means of a portable emissions analyzer (direct-reading measurement device) at initial startup and after routinely scheduled maintenance activities and burner/control adjustments such as fuel/air metering ratio control and oxygen trim control.

Periodic Monitoring: Recordkeeping, measurements, and emission calculations.
Test Method: Portable emissions analyzer calibrated during most recent source test.
Test Frequency: Initial startup and after routinely scheduled maintenance activities and burner/control adjustments such as fuel/air metering ratio control and oxygen trim control.
Required Records: Logs of boiler tune-ups and significant boiler maintenance activities will be maintained.
State-Only Yes.
Calculation Model Not applicable.

Discharge Point: **Integrated Disposal Facility**

200E, Tank Farms - Integrated Disposal Facility (IDF)

Requirement Citation
(WAC or Order Citation): DE05NWP-004

Condition Approval: **05/31/2005**

Condition: EMISSION LIMITS FOR WASTE COVERING OPERATIONS

During waste covering operations, aggregate will be used to cover the waste package at the IDF. Dust control for covering the waste package will consist of watering and/or chemical wetting agents. Waste covering operations will be curtailed during high winds in accordance with abnormal operating procedures for high winds. Prior to long periods of inactivity, an assessment shall be made to implement more comprehensive dust control methods, such as chemical stabilization, on disturbed areas. A reassessment will be made once per week.

Periodic Monitoring: Recordkeeping.
Test Method: Not specified.
Test Frequency: Not applicable.

Required Records: Daily activity reports, logs, pre-job reviews, management assessments, surveillances or similar documents.

State-Only: Yes.
Calculation Model: Not applicable.

Condition Approval: **05/31/2005**

Condition: EMISSION LIMITS FOR TRAVEL ON UNPAVED ROADS

Surface treatment for dust control will consist of watering and/or chemical stabilization. Minimize vehicle use on unpaved road. Perform regular maintenance of road surface. Reduce vehicle speed limit on unpaved roads.

Periodic Monitoring: Recordkeeping
Test Method: Not specified
Test Frequency: Not applicable.

Required Records: Daily activity reports, logs, pre-job reviews, management assessments, surveillances or similar documents.

State-Only: Yes
Calculation Model: Not applicable

Discharge Point: **Integrated Disposal Facility**

200E, Tank Farms - Integrated Disposal Facility (IDF)

Requirement Citation
(WAC or Order Citation): DE05NWP-004

Condition Approval: **05/31/2005**

Condition: EMISSION LIMITS FOR AGGREGATE COVER COMPACTING ACTIVITIES

A water truck will be provided, and operated as needed to spray water for compaction. Waste covering operations will be curtailed during high winds in accordance with abnormal operating procedures for high winds. Prior to long periods of inactivity an assessment shall be made to implement more comprehensive dust control methods, such as chemical stabilization, on disturbed areas. A reassessment will be made once per week.

Periodic Monitoring: Recordkeeping.
Test Method: Not specified.
Test Frequency: Not applicable.

Required Records: Daily activity reports, logs, pre-job reviews, management assessments, surveillances or similar documents.

State-Only: Yes.
Calculation Model: Not applicable.

Condition Approval: **05/31/2005**

Condition: EMISSION LIMITS FOR AGGREGATE STORAGE PILE

Watering will be utilized to minimize wind erosion during storage pile operation. Storage pile work will be curtailed during high winds in accordance with abnormal operating procedures for high winds. Prior to long periods of inactivity, an assessment shall be made to implement more comprehensive dust control methods, such as chemical stabilization, on disturbed areas. A reassessment will be made once per week. Minimize vehicle traffic. Minimize areas of disturbance.

Periodic Monitoring: Recordkeeping.
Test Method: Not specified.
Test Frequency: Not applicable.

Required Records: Daily activity reports, logs, pre-job reviews, management assessments, surveillances or similar documents.

State-Only: Yes
Calculation Model: Not applicable

Discharge Point: Bulk Vitrification Demonstration Facility

200W, Tank Farms – Bulk Vitrification Demonstration Facility

Requirement Citation (WAC or Order Citation): DE04NWP-002

Condition Approval: 12/**15/2004**

Condition: TOTAL EMISSION LIMITS

The activities described in the NOCA will be permitted with the control technologies proposed, provided that the total emissions from all activities will not result in exceedance of WAC 173-460 Small Quantity Emission Rates (SQERs) and Acceptable Source Impact Levels (ASILs) or the criteria pollutants estimates listed under the WAC 173-400 section of the completeness checklist.

Periodic Monitoring: Monitoring of VOCs emissions.

Test Method: In accordance with the Hanford Industrial Hygiene Monitoring Program.

Test Frequency: During waste retrieval operations.

Required Records: OGTS records, monitoring records.

State-Only: Yes.

Calculation Model: Not applicable.

Condition Approval: 12/**15/2004**

Condition: TOTAL EMISSION LIMITS

A modification submittal of an NOCA will be required if the total emissions of criteria and/or toxic air pollutants exceed the emissions estimated in the NOCA and/or other limits specified under this order.

Periodic Monitoring: Recordkeeping.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: OGTS records, monitoring records, and yearly emission estimates.

State-Only: Yes.

Calculation Model: Not applicable.

Condition Approval: 12/**15/2004**

Condition: TOTAL EMISSION LIMITS

NOx emissions shall not exceed 13 tons per rolling 12 month total.

Periodic Monitoring: Monitoring of NOx emissions

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: OGTS records, monitoring records.

State-Only: Yes.

Calculation Model: Not applicable.

Discharge Point: Bulk Vitrification Demonstration Facility

200W, Tank Farms – Bulk Vitrification Demonstration Facility

Requirement Citation (WAC or Order Citation): DE04NWP-002

Condition Approval: 12/**15/2004**

Condition: EMISSIONS CONTROL

The diesel-fired boiler shall not operate for more than 7,008 hours per year on a 2-month rolling summation calculated once per month.

Periodic Monitoring: Installing and operating a non-resetable totalizer on the boiler.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Monthly calculations.

State-Only: Yes.

Calculation Model: Not applicable.

Condition Approval: 12/**15/2004**

Condition: EMISSIONS CONTROL

During phase 1 of the project, the diesel generator shall not operate for more than 20 hours. During phase 2 the diesel generator shall not operate for more than 80 hours.

Periodic Monitoring: Installing and operating a non-resetable totalizer on the generator.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Phase 1 total hours and phase 2 total hours.

State-Only: Yes.

Calculation Model: Not applicable.

Condition Approval: 12/15/2004

Condition: EMISSIONS CONTROL MONITORS

Monitoring of NOx emissions from bulk vitrification processing.

Periodic Monitoring: Refer to Section 5.3.8 of Notice of Construction Application (NOCA).

Test Method: Refer to Section 5.3.8 of Notice of Construction Application (NOCA).

Test Frequency: Refer to Section 5.3.8 of Notice of Construction Application (NOCA).

Required Records: NOx monitoring records. Refer to Section 5.3.8 of Notice of Construction Application (NOCA).

State-Only: Yes.

Calculation Model: Not applicable.

Discharge Point: Bulk Vitrification Demonstration Facility

200W, Tank Farms – Bulk Vitrification Demonstration Facility

Requirement Citation (WAC or Order Citation): DE04NWP-002

Condition Approval: 12/15/2004

Condition: EMISSIONS CONTROL MONITORS

Monitoring of Volatile Organic Compound (VOC) is required during waste retrieval operations and is to be conducted in accordance with the Hanford Industrial Hygiene monitoring program for potential worker exposure.

Periodic Monitoring: Refer to Section 5.3.8 of Notice of Construction Application (NOCA).

Test Method: Refer to Section 5.3.8 of Notice of Construction Application (NOCA).

Test Frequency: Refer to Section 5.3.8 of Notice of Construction Application (NOCA).

Required Records: VOC monitoring records for once before exhauster operation begins, once during exhauster operation, and once after exhauster operations is completed. Refer to Section 5.3.8 of Notice of Construction Application (NOCA).

State-Only: Yes.

Calculation Model: Not applicable.

Discharge Point: Ventilation Systems for 241-AN and 241 AW Tank Farms

200E, Tank Farms – Ventilation Systems for 241-AN and 241 AW Tank Farms

Requirement Citation (WAC or Order Citation): DE05NWP-001

Condition Approval: 2/**18/2005**

Condition: EMISSION LIMITS

Primary tank ventilation exhauster systems for the 241-AN and for the 241-AW Double-Shell Tank (DST) farms shall not exceed 4,000 ft3/min (standard temperature and pressure).

Periodic Monitoring: Stack gas flow and temperature measurement.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Records of calibration of stack gas flow rate and temperature measurement devices. Exhauster system stack flow rates and temperatures records.

State-Only: Yes.

Calculation Model: Not applicable.

Condition Approval: 2/**18/2005**

Condition: EMISSION LIMITS

All TAPs, as submitted in the Permittee' s Notice of Construction Application, shall be below their respective ASIL or Screening Level of Table 1.

Periodic Monitoring: Monitoring of NOx emissions

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: All monitoring and operations records required to operate and maintain the emission control equipment which implements T-BACT as described in Section 1.0 of NOC approval. Laboratory analysis result summaries of any samples undertaken after the effective date of this ORDER from 241-AN or 241-AW tank farm tank headspaces or primary tank ventilation system exhaust which are examined for organic species or other TAPS.

State-Only: Yes.

Calculation Model: Not applicable.

Discharge Point: Ventilation Systems for 241-AN and 241 AW Tank Farms

200E, Tank Farms – Ventilation Systems for 241-AN and 241 AW Tank Farms

Requirement Citation (WAC or Order Citation): DE05NWP-001

Condition Approval: 2/**18/2005**

Condition: EMISSIONS LIMITS

Emissions of ammonia shall not exceed 0.22 pounds per hour (2.77E-02 gram/second) from either primary tank ventilation exhauster system. The term 'each exhauster system,' herein, shall mean each individual primary tank ventilation exhauster system within the 241-AN Tank Farm and 241-AW Tank Farm, where an exhauster system may be: operated in single-train or dual-train modes.

Periodic Monitoring: Conduct of ammonia concentration readings as described in Sections 3.1 and 3.2 of NOC approval, and applying these concentration readings with contemporaneous stack flow rate and temperatures to determine instantaneous mass release rate of ammonia.

Test Method: Ammonia sampling and analysis will be in accord with approved alternative sampling procedures including the use of Draeger tubes to measure stack gas concentration of ammonia providing such devices are spanned to appropriately measure the stack gas ammonia concentration. Stack flow rate and temperature will be applied with the ammonia stack gas concentration to report ammonia emission in terms of grams per second.

Test Frequency: In order to assess baseline emission concentrations from each exhauster system, emission levels of ammonia will be assessed:

1. During single train exhauster operation: Between 12 and 24 hours after initiation of single train exhauster operation, ammonia stack concentrations shall be sampled a minimum of three times.

2. During dual train exhauster operation: Between 12 and 24 hours after initiation of dual train exhauster operation, ammonia stack concentrations shall be sampled a minimum of three times.

Baseline Assessments

Baseline assessments shall be conducted within ninety (90) days of commencement of operations. Should dual exhauster train operation not be required by the Permittee during this ninety (90) day period, assessment of dual train operation emissions shall be conducted on the first occasion of dual train operation which is anticipated to exceed 24 hours duration.

Bi-Annual Emission Assessment

In order to maintain reasonable assurance of continued compliance with emission limitations from these exhauster systems, bi-annual assessment of ammonia stack emissions will be conducted beginning the second calendar year following completion of single train exhauster operation assessment under Section 3.1. A minimum of three samples shall be used to assess these emissions.

Required Records: Results of emission assessments , baseline and bi-annual emission monitoring results, supporting data and calculations to demonstrate compliance with ammonia limits,

State-Only: Yes.

Calculation Model: Not applicable.

Discharge Point: Ventilation Systems for 241-AN and 241 AW Tank Farms

200E, Tank Farms – Ventilation Systems for 241-AN and 241 AW Tank Farms

Requirement Citation (WAC or Order Citation): DE05NWP-001

Condition Approval: 2/**18/2005**

Condition: REPORTING

Visible emission surveys conducted and a report of the maintenance conducted to maintain the subject exhaust system's T-BACT operations.

Periodic Monitoring: Shall be submitted to Ecology within thirty (30) days of completion of the survey with an assessment of the cause of visible emissions.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Visible emission surveys conducted and a report of the maintenance.

State-Only: Yes.

Calculation Model: Not applicable

Condition Approval: 2/**18/2005**

Condition: REPORTING

Identification of any TAP not previously identified within the Notice of Construction Application or Supplement emissions estimates. shall be submitted to Ecology within ninety (90) days of completion of laboratory analyses which verify emissions of that toxic air pollutant from the project.

Periodic Monitoring: Shall be submitted to Ecology within ninety (90) days of completion of laboratory analyses which verify emissions of that toxic air pollutant from the project.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Laboratory analysis.

State-Only: Yes.

Calculation Model: Not applicable

Condition Approval: 2/**18/2005**

Condition: REPORTING

Results of emission assessments conducted.

Periodic Monitoring: Shall be submitted to Ecology within ninety (90) days of completion of such assessment.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Emission assessment results.

State-Only: Yes.

Calculation Model: Not applicable

Discharge Point: 200 Area SST Categorical Waste Retrieval

200 Area SST Categorical Waste Retrieval

Requirement Citation (WAC or Order Citation): DE05NWP-002[1]

Condition Approval: 2/18/2005

Condition: EMISSION LIMITS

Tank ventilation exhauster systems for the 241-C SST farm 100 series tanks (241-C-101 through 241-C-112) shall not exceed cumulative flow rates of 7,000 ft3/min (standard temperature and pressure) for three exhausters individually limited to1,000 ft3/min, 3,000 ft3/min, and 3,000 ft3/min, respectively.

Periodic Monitoring: Stack gas flow and temperature measurement.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Records of calibration of stack gas flow rate and temperature measurement devices. Exhauster system stack flow rates and temperatures records.

State-Only: Yes.

Calculation Model: Not applicable.

Requirement Citation (WAC or Order Citation): DE05NWP-002[1]

Condition Approval: 2/18/200**5**

Condition: EMISSION LIMITS

SST ventilation exhauster systems for the retrieval of wastes other than those of the 241-C tank farm 100 series tanks shall not exceed 1,000 ft3/min (standard temperature and pressure).

Periodic Monitoring: Stack gas flow and temperature measurement.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Records of calibration of stack gas flow rate and temperature measurement devices. Exhauster system stack flow rates and temperatures records.

State-Only: Yes.

Calculation Model: Not applicable

[1] Condition found in DE05NWP-002R1 dated 10/12/2005.

Discharge Point: 200 Area SST Categorical Waste Retrieval

200 Area SST Categorical Waste Retrieval

Requirement Citation (WAC or Order Citation): DE05NWP-002[1]

Condition Approval: 2/18/2005

Condition: EMISSION LIMITS

All TAPs, as submitted in the Permittee' s Notice of Construction Application, shall be below their respective ASIL or Screening Level of Table 1, per NOC approval DE05NWP-002.

Periodic Monitoring: Development and implementation of a sampling and analysis plan (SAP) for each tank retrieval. For each retrieval, the SAP shall address the emission of a, minimum of the three TAPs with the highest potential ambient concentration relative to their ASILs of WAC 173-460-150 and WAC 173-460-160 or relative to their Screening Level of Table 1, above. The TAPs addressed in the SAP shall be identified from Table 6 of the July 22, 2004, Notice of Construction application as supplemented with the December 1, 2004, Notice of Construction revision and based upon best engineering judgment and most current tank content data.

Test Method: Analytical methods for the analyses shall be the United States Environmental Protection Agency (EPA), OSHA, or NIOSH approved, or by approved equivalent method.

Test Frequency: Not applicable.

Required Records: All monitoring and operations records required to operate and maintain the emission control equipment which implements T-BACT as described in Section 1.0 of NOC approval. Laboratory analysis result summaries of any samples undertaken after the effective date of this ORDER from 241- AN or 241-AW tank farm tank headspaces or primary tank ventilation system exhaust which are examined for organic species or other TAPS. Sample and Analysis Plans developed for compliance demonstration.

State-Only: Yes.

Calculation Model: Not applicable.

Requirement Citation (WAC or Order Citation): DE05NWP-002[1]

Condition Approval: 2/18/2005

Condition: REPORTING

Visible emission surveys, conducted pursuant to Compliance Demonstration requirement 1.3.2, per NOC approval DE05NPW-002, and a report of the maintenance conducted to maintain the subject exhaust system's T-BACT operations.

Periodic Monitoring: Shall be submitted to Ecology within thirty (30) days of completion of the survey with an assessment of the cause of visible emissions.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Visible emission surveys conducted and a report of the maintenance.

State-Only: Yes.

Calculation Model: Not applicable

[1] Condition found in DE05NWP-002R1 dated 10/12/2005.

Discharge Point: 200 Area SST Categorical Waste Retrieval

200 Area SST Categorical Waste Retrieval

Requirement Citation (WAC or Order Citation): DE05NWP-002R1

Condition Approval: 10/12/2005

Condition: REPORTING

Identification of any TAP not previously identified within the Notice of Construction Application or Supplement emissions estimates as defined in Table 2, per NOC approval DE05NWP-002R1, shall be submitted to Ecology within ninety (90) days of completion of laboratory analyses which verify emissions of that toxic air pollutant from the project.

Periodic Monitoring: Shall be submitted to Ecology within ninety (90) days of completion of laboratory analyses which verify emissions of that toxic air pollutant from the project.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Laboratory analysis.

State-Only: Yes.

Calculation Model: Not applicable

Requirement Citation (WAC or Order Citation): DE05NWP-002[1]

Condition Approval: Registered Holiday Inn Promotion 6520 web-reservation between registration date of 6/7 and 8/15

2/18/2005

Condition: REPORTING

An annual schedule (Federal fiscal year basis) of anticipated operations and installations of exhauster systems.

Periodic Monitoring: Shall be submitted by November first of each year.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Annual Schedule

State-Only: Yes.

Calculation Model: Not applicable

Requirement Citation (WAC or Order Citation): DE05NWP-002[1]

Condition Approval: 2/18/2005

Condition: OPERATIONAL NOTICE

Notification shall be made at least ten (10) days prior to initial operation of any exhauster system covered by this ORDER when installed to ventilated a tank not previously actively ventilated under this ORDER.

Periodic Monitoring: Not applicable.

Test Method: Not specified.

Test Frequency: Not applicable.

Required Records: Not applicable.

[1] Condition found in DE00NWP-001R1 dated 2/15/2005.

State-Only:	Yes.
Calculation Model:	Not applicable

1.4.5 Miscellaneous Emission Units

Table 1.7. Miscellaneous Emission Units.

Discharge point number	Requirement citation	Regulatory requirement, emission limit, or work practice standard
Hanford Site Asbestos Landfill	40 CFR 61.151(a)	(1) Either discharge no visible emissions to the outside air from an inactive waste disposal site subject to this paragraph; or (2) Cover the asbestos-containing waste material with at least 15 centimeters (6 inches) of compacted nonasbestos-containing material, and grow and maintain a cover of vegetation on the area adequate to prevent exposure of the asbestos-containing waste material. In desert areas where vegetation would be difficult to maintain, at least 8 additional centimeters (3 inches) of well-graded, nonasbestos crushed rock may be placed on top of the final cover instead of vegetation and maintained to prevent emissions; or (3) Cover asbestos-containing waste with at least 60 centimeter of compacted nonasbestos-containing material, and maintain to prevent exposure.
	40 CFR 61.151(d)	Notify in writing at least 45 days prior to excavation. If construction will begin on a date other than the one in the original notice, notice of the new date must be provided at least 10 working days in advance. (1) Notice shall contain starting and completion dates. (2) Notice shall contain reason for disturbing the waste. (3) Notice shall contain procedures to be used to control emissions (4) Notice shall contain a location for any temporary storage site and the final disposal site.
	WAC 173-400-040(1)	Permittee is considered to be in compliance if no complaints are forwarded or generated by Ecology.
	WAC 173-400-040(6)	Monitor per Section 2.7, Tier 2.
600 Area Gas Distribution	WAC 173-491-040(4)(b)	All gasoline storage tanks shall be equipped with submerged or bottom fill lines and fittings to vapor balance gasoline vapors with the delivery transport tank.
	WAC 173-491-040(4)(d)	The owner or operator shall not permit the loading of gasoline into a storage tank equipped with vapor balance fittings from a transport tank equipped with vapor balance fittings unless the vapor balance system is attached to the transport tank and operated satisfactorily.
	WAC 173-491-040(6)(d)	Recordkeeping.
	WAC 173-400-040(1)	Permittee is considered to be in compliance if no complaints are forwarded or generated by Ecology.
	WAC 173-400-040(6)	Monitor per Section 2.7, Tier 2.

Table 1.7. Miscellaneous Emission Units.

Discharge point number	Requirement citation	Regulatory requirement, emission limit, or work practice standard
283-W Water Treatment Plant (Chlorine Tank)	40 CFR 68.190(b)(3)	Evaluate 283-W for compliance with newly regulated substances above the threshold (revise Risk Management Plan if needed).
	40 CFR 68.190(b)(7)	Evaluate 283-W for change in Program Level within 6 months after any change.
	40 CFR 68.190(c)	Evaluate 283-W for applicability of 40 CFR 68.
	40 CFR 68.190(b)(6)	Evaluate 283-W for change that requires a revised consequence analysis.
	40 CFR 68.95(a)	Confirm that the required emergency response program has been developed and implemented.
	40 CFR 68.95(a)(4)	Confirm that the required procedures are in place to review and update the emergency response plan to reflect changes at the stationery source.
	40 CFR 68.12(b)(3)	Confirm that emergency response actions have been coordinated with local emergency planning and response agencies.
	40 CFR 68.39(a) to (e)	Confirm that records are being maintained for the offsite consequence analysis.
	WAC 173-400-040(1)	Permittee is considered to be in compliance if no complaints are forwarded or generated by Ecology.
	WAC 173-400-040(6)	Monitor per Section 2.7, Tier 2.

2.0 COMPLIANCE AND PERIODIC MONITORING PROVISIONS

Compliance and periodic monitoring provisions are provided in the following sections.

2.1 Visible Emission Surveys

Visible emission surveys must be conducted during daylight hours and during periods when the emission unit is operating.

Tier 1

This method applies primarily to fossil-fuel combustion units and other emission units that might be a source of visible emissions. The method consists of operating personnel observing visible emissions from the emission unit according to the frequency identified in the table. If the operator observes visible emissions for more than 10 consecutive minutes during the observation period, the cause(s) of the visible emissions will be determined and corrective actions taken as necessary, or a visible determination of opacity will be performed using EPA Method 9. Records of corrective actions taken to reduce opacity shall be maintained and available for Ecology inspection. Visible emission surveys are to be conducted during daylight hours, after the unit has reached normal operating temperature and revolutions per minute, or 15 minutes after startup.

Provided the emissions observed during the Method 9 test were representative of normal operations and the Method 9 test shows the emission unit is compliant, no further observations are required until the next required periodic monitoring. Records of corrective actions taken to reduce opacity shall be maintained and available for Ecology inspection.

If after corrective actions have been taken and results from the Method 9 indicate visible emissions in excess of the limit, a deviation report will be filed with Ecology as required by Section 4.5.

Tier 2

Some emission units are unlikely sources of visible emissions and are not expected to exceed applicable opacity limit based on past operating experience and/or expected process behavior. These emission units include research and development laboratories, analytical laboratories, and small natural gas-fired boilers. For these emission units, a surveillance will be conducted and the results recorded. If visible emissions from one of these emission units are observed for more than 10 consecutive minutes, an attempt to identify the cause(s) of the visible emissions will be made and those results recorded. The recorded entry also will identify any corrective actions taken and the likely frequency of a future reoccurrence. If the event is likely to be re-occurring, and can not be demonstrated to consist of water vapor, a determination of opacity will be made using EPA Method 9. The frequency of the visible emission surveys shall be as required in the table unless the following procedure has been completed satisfactorily. Where no frequency is specified, visible emission surveys will be performed once per year.

The procedure for reducing visible emission survey frequencies is as follows.

If weekly visible emission surveys for 3 months are negative, quarterly measurements will be taken for the next 6 months. After 9 months of no visible emissions, visible emission surveys will be performed only when visible emissions are observed or expected (e.g., during startup, shutdown, or periods of malfunction). Visible emission surveys during these periods will be conducted for non-radionuclide-emitting stacks according to the process described in Tier 2.

Tier 3

Maintain abatement control technology as required in Attachment 2, Tables 1.1, 1.2 and 2.1, for that particular emission unit.

2.2 General Standards Complaint Investigations

Complaints forwarded by Ecology shall be addressed promptly and assessed for corrective action. An initial informal response shall be made to Ecology within 30 working days of the Permittee receiving the complaint. This initial response shall document preliminary investigation results and any planned or completed corrective actions. Follow-up report(s) shall be provided as directed by Ecology. The Permittee shall maintain records of complaints forwarded by Ecology.

2.3 Measures to Control Fugitive Emissions and Fugitive Dust

Construction projects with a potential to generate particulates will address fugitive emissions and fugitive dust control during prejob planning and job safety analysis. Measures to control fugitive emissions and fugitive dust may include but are not limited to:

1. Watering
2. Use of chemical stabilizers
3. Use of physical barriers and/or physical stabilization
4. Use of vegetative stabilization
5. Clearing only limited areas to reduce dust generation
6. Covering haul vehicles
7. Minimizing track-out
8. Controlling site traffic to decrease disturbance of soil and vegetation to decrease dust generated from unnecessary vehicular travel.

2.4 RACT

Emission standards and other requirements contained in rules or regulatory orders in effect at the effective date of this permit or subsequent renewals shall be considered RACT for purposes of permit issuance or renewal. RACT determinations made subsequent to the effective date of permit issuance or renewal shall be incorporated into this permit as provided by WAC 173-401-730. [WAC 173-401-605(3)].

2.5 Recordkeeping for Boilers

DOE and the contractor shall maintain appropriate monthly records of the fuel use on each individual boiler. These data, along with the emission factors presented in Ecology Regulatory

Order 97NM-138, will be used to determine monthly emission levels for individual boilers, and collectively for the 200 East, 200 West, and 300 Area. If Ecology or the Permittee determines that emission factors different than the factors specified in Regulatory Order 97NM-138 are appropriate, the public will be provided with an opportunity for review. WAC 173-400-115 compliance with the standard may be determine based on a certification from the fuel supplier containing the name of the oil supplier and a statement from the oil supplier that the oil complies with the specifications under the definition of distillate oil in 40 CFR 60.41b. An annual report including records of fuel supplier certifications and a certification by the owner or operator that the records of fuel supplier certifications submitted represent all of the fuel combusted during the year. Logs of boiler tuneups and significant boiler maintenance activities will be kept.

2.6 Steam Generating Units Source Tests

All source tests for the boilers regulated by Notice of Construction 97NM-138 have been conducted using EPA and Ecology approved procedures with the test boilers operating at full capacity. Tests were conducted on a maximum of five boilers selected on the basis of boiler capacity and fuel type. The procedure for selecting the test boilers were agreed to by Ecology and DOE before conducting the tests. A procedure for selecting a representative subset of boilers for testing once every 5 years were developed before the initial 5 year follow-up test. The public were provided an opportunity for review of the procedure as part of an AOP modification.

The following list is an inventory of the larger boilers that are subject to testing (maximum of 5 boilers):

Distillate oil-fired boilers	Number of units
200 BHP	5
350 BHP	3
700 BHP	2

Natural gas-fired boilers	Number of units
200 BHP	2
300 BHP	4

In 2005 the U.S. Department of Energy Richland Office (DOE-RL) requested the removal of Air Operating Permit compliance testing for the energy-saving fossil fuel fired boilers operated by the Johnson Control, Inc (JCI) since 1998 at the Hanford Site. JCI conducted the initial air compliance test in 1998, and the first 5-year follow-up test in 2003. Both tests demonstrated that the emissions were within the limits stated in the Notice of Construction (NOC) and Air Operating Permit (AOP). It is obvious that the same compliance can be maintained by continuously using low sulfur fuel and implementing good combustion practices. Ecology approved the request of eliminating future 5-year compliance tests on June 15, 2005. The emissions will be within the NOC and AOP limits as long as JCI continues to use low sulfur fuel, and maintain good combustion practice and maximum achievable control technology (MACT) standards.

2.7 SO_2 Emissions Compliance

Tier 1: Fuel-Oil Fired Combustion Units:

Required records	Calculation model (Section 3.1)
1. Amount and type of fuel burned 2. Vendor documentation or fuel analysis once per year.	Model 1

Tier 2: Other Significant Emission Units:

Ecology has determined, based on process knowledge, that these emission units do not emit significant levels of SO_2. The Permittee annually shall certify that the processes have not been modified to increase SO_2 emissions and no SO_2 monitoring is required.

2.8 Visible Emissions Enforceability

WAC 173-400-040(1)(a) and (1)(b) are federally enforceable sections. Soot blowing and grate cleaning are allowed if the operator can demonstrate that the emissions will not exceed 20% opacity for more than 15 minutes in any 8 consecutive hours.

2.9 SO_2 Enforceability

WAC 173-400-040(6) is enforceable federally.

3.0 RECORDKEEPING

The Permittee shall maintain records of all required monitoring data and support information. These records shall be maintained for a 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records, all original continuous monitoring records (such as strip charts or equivalent), and required reports. Most of these records are retained on-site in electronic format. Regulatory agencies accept electronic records as supporting information.
[WAC 173-401-615(2)(a), WAC 173-401-615(2)(c)]

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April 2006

Statement of Basis

For
Hanford Site Air Operating Permit No. 00-05-006
2006 Renewal
Attachment 1: Ecology Permits

State of Washington Department of Ecology

The Statement of Basis (Statement) is issued by the permitting agencies as a separate supporting reference document to the Hanford AOP. This Statement sets forth the legal and factual basis for the AOP conditions, and is not intended for enforcement purposes. The Statement includes references to the applicable statutory or regulatory provisions, technical supporting information on specific emission units, and clarifications of specific requirements. The Statement of Basis is non-enforceable, but supporting reference documents that provide a rationale for the development of the permit and offers clarification where deemed necessary.
[Washington Administrative Code (WAC) 173-401-700(8)]

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1.0 EMISSION STANDARDS AND LIMITATIONS

The purpose of this section is to identify emission standards and limitations for all non-radioactive emission units, including insignificant emission units (IEUs) on the Hanford Site.

1.1 INSIGNIFICANT EMISSION UNITS

A list of IEUs was submitted in the Hanford AOP renewal application. Compliance with the cited applicable requirements in Table 1.2 (Section 1.3 of AOP Attachment 1) is required; however, the periodic monitoring, testing, recordkeeping, or reporting requirements listed in Table 1.2 are not required. Also the semiannual reporting and annual compliance certification is not required for IEUs.

In the fall of 1993, Ecology developed Washington's original air operating permits regulation [WAC 173-401] to comply with federal regulation [40 CFR 70, or Title 5 of CAA]. At the same time, Ecology applied to the EPA for program approval. In November 1994, EPA granted Ecology interim approval for the air operating permits program. However, EPA also directed the state to correct several issues in order to be granted full approval for the program.

Ecology made the changes requested by EPA, with the exception of the change related to "IEUs". IEUs are small, minor pollution sources at industrial facilities that are subject to the operating permit regulation. They include such emissions as bathroom vents, lubricating-oil storage tanks, plastic pipe welding, and wet sand-and-gravel screening. Ecology disagreed with EPA about requiring IEUs to meet monitoring, record-keeping, and reporting (MRR) requirements of Title 5. Washington's state rule exempted IEUs from these requirements in order to focus on the larger sources of pollution, where the most important air quality gains can be made. Ecology believed that subjecting the insignificant units and activities to the same level of rigorous MRR would place more attention than necessary on small emissions.

As a result of the disagreement with EPA about IEUs, Ecology sued EPA in the 9th District Court of Appeals in the spring of 1995. The lawsuit had two main points. The first was that, since EPA's rules were silent on the issue of MRR for IEUs, Washington's approach should be acceptable to EPA. The second was that EPA was treating permitting authorities inconsistently by approving similar provisions in other states, while not approving the same kinds of provisions in Washington's program. In June 1996, the court ordered EPA to approve Washington's program with respect to IEUs.

In the meantime, EPA began revising the federal operating permit regulations. After a revision of this type takes place, states are required to revise their regulations to reflect the federal changes. Consequently, many states in the nation, including Washington, were faced with the prospect of revising their programs twice in a short period of time. To address this concern, EPA extended existing interim approvals of state programs for up to five years. However, because federal law expressly prohibits extending interim approvals, EPA was sued over this issue in the fall of 2000. The resulting settlement agreement provided that EPA would take comment on all 50 states' operating permit programs.

Just one commenter addressed Washington's operating permit program. One of the comments was that Washington's rules on IEUs did not meet requirements of the federal regulations. EPA agreed with this comment and issued a notice of deficiency (NOD) on December 14, 2001. Ecology then initiated a compromise with EPA over the issue of IEUs, which led to an agreement on new language for Ecology's regulation. Ecology proposed the new language in April 2002 for public participation and EPA review. As the result of the approval of this WAC 173-401-530 revision, full approval of the Washington operating program was granted on January 2, 2002.

WAC 173-401-530 establishes several criteria for determining if an emission unit is insignificant. The IEUs and activities must be listed in the permit application [WAC 173-401-530(1)(a)]. The applicant is required to amend their application if an IEU, based on actual emissions, subsequently will exceed an actual emission threshold. This requirement extends until the draft permit is issued. The AOP regulations do not require that each IEU be listed in the AOP. Following AOP issuance, no emission unit that qualifies as an IEU based on actual emissions can exceed the emission thresholds in WAC 173-401-530 and -531 without first obtaining a permit modification.

The IEU evaluation process and results supporting the Hanford Site AOP renewal application are documented below. The purpose of an IEU evaluation supplement for the Hanford Site Air Operating Permit (AOP) renewal application is to verify that:

- emission units and activities identified as insignificant in the initial AOP (i.e., DOE/RL 95-07) have remained insignificant, and

- emission units or activities not included in the initial application (because they commenced during the permit term) are appropriately permitted

The IEU evaluation process focuses on criteria/hazardous air pollutant emission units or activities subject to regulation under the Federal Clean Air Act with a potential to emit, but where operations have not increased, consistent with the regulatory definition of modification. As referenced in the transmittal letter, by agreement with Ecology, the following areas/activities on the Hanford Site were excluded from the WAC 173-401-530 evaluation process effort:

- Areas regulated under the *Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA)*. This includes sources and activities at a CERCLA Operable Unit(s).

- Areas regulated by the *Resource Conservation and Recovery Act, Subparts AA, BB, and CC*.

- Emission units that have been closed (e.g., power plants or package boilers) since the original application. This exclusion category generally has closure documentation in previous years' annual submittal report, pursuant to WAC 173-400-105, and/or in a previously transmitted AOP modification(s).

- Emission units and activities in an active Ecology notice of construction (NOC) approval (i.e., approval order) and/or listed in AOP Attachment 1.

- Emission units, activities, or portions of the Hanford Site: (1) that were evaluated in the IEU effort included in the initial AOP application, as supplemented, **and** (2) where current operations of such units, activities, or portions results in no increased potential to emit criteria/hazardous air pollutants (e.g., Fuel and Materials Examination Facility).

- Emission units, activities, or portions of the Hanford Site that are in surveillance and maintenance modes of operation (e.g., S Plant, U Plant, PUREX, B Plant, etc.).

Emission units or activities remaining after applying the above exclusion criteria were then evaluated for IEU status per the below five categories, as agreed with Ecology. Regulatory citations are referenced for these categories, which include:

1. Emission units or activities listed as categorically exempt in WAC 173-401-532 (i.e., paragraph 1 states that, "…The activities listed in this section may be omitted from the permit application.")

2. Fugitive emission sources, pursuant to WAC 173-401-530(1)(d), that are subject to no applicable requirement other than generally applicable requirements of the state implementation plan. Sources under this area were discussed in Chapter 4, pages IV-12 through IV-16 of the initial AOP application, as supplemented. By agreement with Ecology, no further discussion of emission units or activities generating fugitive emissions was required. For Ecology's convenience, the discussion from the initial AOP application, as supplemented, has been extracted and is included as Appendix A to this enclosure. While the discussion is still accurate, a few items have been added to the listing of fugitive emissions in Appendix A.

3. Emission units or activities defined as insignificant based on size and production rates are listed in WAC 173-401-533. These units are required to be listed in the application pursuant to WAC 173-401-533(1). Appendix B provides a table of WAC 173-401-533(2)(a)-(bb) activities; a "yes" or "no" response, as agreed with Ecology, indicates whether or not that unit exists on the Hanford Site major stationary source.

4. Emission units or activities not addressed in items 1 through 3, above, and for which a chemical inventory is readily available, were screened against the criteria/hazardous air pollutant thresholds listed in WAC 173-401-530(4) and WAC 173-401-531. Candidates above these thresholds would be considered as significant for inclusion in AOP Attachment 1, Table 1.1, "List of Significant Emission Units." Emission units or activities below the listed thresholds are listed by emission unit type in Appendix C of this enclosure.

5. Any remaining emission units or activities not addressed in items 1 through 4, above, that are insignificant will be listed by category type under a second table in Appendix B of this enclosure.

As a result of the above process, the IEUs required for inclusion as a supplement to the AOP renewal application are provided in Appendix B through C of this enclosure. Appendix A, as discussed in item 2 above, is provided for Ecology's convenience in drafting the statement of basis.

1.2 EMISSION UNITS AND ACTIVITIES SUBJECT TO MONITORING, REPORTING, RECORDKEEPING, AND COMPLIANCE CERTIFICATION

Table 1.1 of AOP Attachment 1 identifies those significant emission units on the Hanford Site subject to the requirement to annually certify compliance with the terms and conditions of this Permit.

All Chapter 401 permits shall contain compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. Any document, including reports, required by a Chapter 401 permit shall contain a certification by a responsible official that meets the requirements of WAC 173-401-520. (WAC 173-401-630)

Any application form, report, or compliance certification submitted pursuant to this chapter shall contain certification by a responsible official of truth, accuracy, and completeness. This certification and any other certification required under this chapter shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate, and complete. (WAC 173-401-520)

1.3 GENERAL STANDARDS FOR MAXIMUM EMISSIONS

WAC 173-400-040 requires all sources and emission units to meet the general emission standards for maximum emissions. The general standards for maximum emissions in Table 1.2 apply to all emission units on the Hanford Site. All emission units are required to use reasonably available control technology (RACT). Where current controls are determined to be less than RACT, Ecology shall define RACT for each source and issue a rule or regulatory order requiring the installation of RACT, as provided in RCW 70.94.154.

Table 1.2 of AOP Attachment 1, “General Standards for Maximum Emissions”, requires that the permittee use good practice and procedures to reduce odorous emissions to a reasonable minimum. Based on process knowledge and the lack of odor complaints filed with the regulatory agencies, Ecology has determined that the Hanford Site is not a source of odorous emissions to the surrounding public. For these reasons, the complaint response program for odor control described in Table 1.2 of AOP Attachment 1 is considered adequate to maintain odorous emissions at a reasonable minimum.

Table 1.2 also requires that the permittee use reasonable precautions to control fugitive emissions and fugitive dust. The Hanford Site generally is not a source of fugitive dust and emissions, except during construction and demolition activities. Most of the construction activities occur in areas of the Hanford Site remote from the Hanford Site boundaries. The

Hanford Site uses a system of pre-job planning and job safety analysis to reasonably control these emissions. Emissions that pass through a stack are not sources of fugitive emissions [WAC 173-400-030(32)] or fugitive dust [WAC 173-400-030(31)].

1.4 EMISSION UNIT SPECIFIC APPLICABLE REQUIREMENTS

This section contains emission unit specific requirements in addition to general standards for maximum emissions. Specific permitting requirements are listed in subsection 1.4.1 for steam generating units (Table 1.3), subsection 1.4.2 for internal combustion units (Table 1.4), subsection 1.4.3 for emission units exceeding insignificant emission unit thresholds (Table 1.5), subsection 1.4.4 for individual NOC approval orders (Table 1.6), and subsection 1.4.5 for miscellaneous emission units (Table 1.7).

Attachment 1 of the AOP, Table 1.3 identifies emission limits for fuel oil fired and natural gas fired steam generating units >5mmBTU/hr. These emission limits are the manufacturer's guaranteed maximum emission levels when the boilers are operated according to good combustion practices. The installed boiler configuration, when operated using good combustion practices identified in Table 1.3, will not exceed the emission limits.

Acceptable source impact levels (ASILs) as defined in WAC 173-460, "Controls For New Sources of Toxic Air Pollutants", are not emission standards or limitations applicable to the Hanford Site. ASILs are a concentration of a toxic air pollutant in the outdoor atmosphere used to evaluate the air quality impact of a new or modified toxic air pollutant emission source for new source review purposes.

In Attachment 1 of the AOP, Table 1.6 is intended to capture the periodic monitoring, emission limit and other approval conditions for all emission units with NOC approval orders. However, Table 1.6 does not list all conditions included in the approval order as "Approval Conditions." Most of the excluded conditions have been captured elsewhere in the AOP as applicable requirements. The categories of excluded approval conditions include the following:

- Conditions and requirements addressed in Section 3.0, Standard Terms and Conditions, of the Hanford Site AOP

- Conditions and requirements addressed in Section 4.0, General Conditions, of the Hanford Site AOP, such as the condition to send reports to the Ecology office or the requirement to allow access to the facility for inspection

- Conditions and requirements that re-state portions of applicable codified regulations

- The requirement to prepare and maintain an Operation and Maintenance Manual

Table 1.6 includes only the emission limits and conditions identified in the “Approval Conditions” section of the regulatory orders. Information included in other sections of the

orders, such as “Findings”, “Background”, “Description”, or similarly titled sections are not included in Table 1.6.

Certain approval orders become obsolete when the facilities cease to operate. Certain approval orders contain activities that will end at activity completion, as described in the notice of construction (NOC) application. The permittee is not required to continue to comply with approval order terms and conditions after these become irrelevant. For example, a number of approval orders for old coal-fired boilers at 200 Areas are irrelevant because the boilers were demolished. Many approval orders contain the requirement to conduct an initial, one time only, startup test. Once that initial startup test requirement has been completed satisfactorily, that condition is deemed irrelevant, and the permittee is no longer bound by that particular requirement.

An approval to construct the WSCF was submitted to Ecology. In a letter dated September 17, 1990, Ecology concurred with the determination that radioactive emissions from the proposed WSCF would be offset by decreased emissions from 200-C Plant, Strontium Semi-Works, which ceased operation in July of 1987. It further was determined that the proposed WSCF would not increase radionuclide emissions on the Hanford Site, and therefore was not subject to prevention of significant deterioration (PSD) review (40 CFR 52).

This approval to construct pre-dated the effective date of both WAC 173-460 (“Controls for New Sources of Toxic Air Pollutants”, effective 06/18/91) and WAC 246-247 (“Radiation Protection - Air Emissions”, effective 01/31/91), and imposed no terms or conditions. For this reason, the September 17, 1990 approval from Ecology is not considered an AOP applicable requirement and therefore is not listed in the AOP.

Subpart AA of 40 CFR Part 264 and 265 applies to process vents that treat organic waste using designated treatment technologies. Subpart AA requires organic emissions from all affected process vents on the Hanford Site be less than 1.4 kilograms per hour and 2.8 megagrams per year, or control devices must be installed to reduce organic emissions by 95%. Currently the 200 Area ETF and the 242-A Evaporator are operating treatment, storage, or disposal (TSD) units contributing to the Hanford Facility volatile organic emissions under 40 CFR 264 and 265, Subpart AA. For process vents emitting organic toxic air pollutants (TAPs) currently regulated under NOCs and RCRA Subpart AA, Ecology is deferring regulation of the organic emissions from process vents to RCRA, Subpart AA.

Hanford has a long operating history since 1943. Many processes and procedures are imbedded in the process knowledge. Process knowledge is knowledge of a particular process obtained from some documented source or sources. The documented source or sources can include a policy, operating procedure, manufacturer's recommendations or manuals, or other peer-reviewed documentation. Process knowledge also can include familiarity with analytical data.

2.0 COMPLIANCE AND PERIODIC MONITORING PROVISIONS

The permittee is authorized to operate the non-radioactive portion of the air emission units identified in this attachment and all insignificant emission units not specifically identified in this permit.

Compliance and periodic monitoring provisions are described in details in this section. Specific monitoring provisions include visible emission surveys (subsection 2.1), general standards complaint investigations (subsection 2.2), measures to control fugitive emissions and fugitive dust (subsection 2.3), RACT (subsection 2.4), recordkeeping for boilers (subsection 2.5), steam generating units source tests (subsection 2.6), SO_2 Emissions Compliance (subsection 2.7), visible emissions enforceability (subsection 2.8), and SO_2 enforceability (subsection 2.9).

The following sections identify opacity monitoring requirements.

2.1 VISIBLE EMISSION SURVEYS

Three methods (Tier 1 through 3) are used for visible emission surveys at Hanford. Tier 1 applies primarily to fossil fuel combustion units and other emission units that might be a source of visible emissions. The method consists of requiring personnel observation and EPA Method 9, if visible emissions are observed.

Tier 2 applies to “normally clean” emission units which are unlikely sources of visible emissions. This category of emission sources on the Hanford Site have little or no ability to emit visible emissions. For example, boilers firing natural gas and sources where particulate matter or other condensables are not expected to be present. Such sources are candidates for less frequent visible emission surveys. Tier 2 provide progressive survey requirements, including EPA Method 9, if visible emission is observed or the event is likely to re-occur.

Tier 3 applies to emission units with abatement control technology, such as HEPA filters. Ecology acknowledges that the opacity monitoring requirements from mixed (radioactive and non-radioactive) airborne effluent streams are not necessary due to the presence of high-efficiency particulate air (HEPA) filtration abatement technology required by Health under WAC 246-247. HEPA filters control particulate emissions to less than visible levels. Because of the particulate control effectiveness provided by HEPA filters, no additional opacity monitoring is required for those emission units required to have HEPA filters that are listed in Attachment 2, Tables 1.0, 1.1, or 1.2 (Health imposes significant monitoring requirements on HEPA filters).

This monitoring provision is for Tables 1.2, 1.3, 1.4, 1.5, and 1.6.

2.2 GENERAL STANDARDS COMPLAINT INVESTIGATIONS

This subsection specifies the requirements for DOE and contractors to respond to a complaint investigation. Ecology shall first assess the validity of a complaint. Once the validity is established, Ecology will contact DOE for formal investigation.

This monitoring provision is for Table 1.2.

2.3 MEASURES TO CONTROL FUGITIVE EMISSIONS AND FUGITIVE DUST

This subsection lists specific measures to control fugitive emissions and fugitive dust through pre-job planning and job safety analysis.

This monitoring provision is for Table 1.2.

2.4 REASONABLY AVAILABLE CONTROL TECHNOLOGY

The subsection on Reasonably Available Control Technology (RACT) compliance should be used in conjunction with agency issued policy and/or guidance..

This monitoring provision is for Table 1.2.

2.5 RECORDKEEPING FOR BOILERS

The subsection on recordkeeping for boilers is self-explanatory.

This monitoring provision is for Table 1.3.

2.6 STEAM GENERATING UNITS SOURCE TESTS

This subsection specifies all source tests for the boilers regulated by NOC 97NM-138. The removal of future 5-year follow-up AOP compliance testing and its justification is also included.

This monitoring provision is for Table 1.3.

2.7 SO_2 EMISSIONS COMPLIANCE

There are two tiers of SO_2 emission compliance for Hanford emission units, fuel-oil fired combustion units (Tier 1) and other significant emission units (Tier 2). The calculation model for Tier 1 is described in Section 3.1 (i.e., Model 1).

This monitoring provision is for Tables 1.2, 1.3, 1.4, 1.5, 1.6, and 1.7.

2.8 VISIBLE EMISSION ENFORCEABILITY

This subsection is self-explanatory.

This monitoring provision is for Tables 1.2, 1.3, 1.4, and 1.5.

2.9 SULFUR DIOXIDE ENFORCEABILITY

No person shall cause or permit the emission of a gas containing sulfur dioxide from any emissions unit in excess of 1,000.ppm of sulfur dioxide on a dry basis and based on the average of any period of sixty consecutive minutes, except for the limited conditions specified in WAC 173-400-40(6).

This monitoring provision is for Tables 1.2, 1.3, 1.4, and 1.5.

3.0 RECORDKEEPING

WAC 173-401-615(2) requires that the Permittee maintain records of all required monitoring data and support information for 5 years from the date of the monitoring sample, measurement, report, or application. Section 3.1 documents approved emission calculation methods, which are self-explanatory. In addition to these emission calculation methods, calculations methods listed in NOC approval applications are acceptable to the agency for compliance demonstration. These application should be kept as records.

3.1 EMISSION CALCULATIONS

The following section contains emission calculations for SO_2, nitrogen oxides, volatile organic compounds, ammonia, gas cylinders, chemical inventory, air concentrations, and TAPs. In addition to these models the NOC approval applications contains the calculation methods used to estimate SO_2, nitrogen oxides, volatile organic compounds, ammonia, gas cylinders, chemical inventory, air concentrations, and TAPs, as required for the discharge point or project/process being permitted.

3.1.1 MODEL 1 Description: Compliance with 1000 ppm SO_2 @7% O_2 Internal Combustion Engines >500 hp SO_2 Emission Calculations

Not listed in AOP as a model being used.
Stoichiometric calculations were done to show emissions for a specific diesel engine (2200 HP, with fuel consumption rate of 99.4 gal/hr) were well below the 1000 ppm SO_2 standard.

theoretical air required (ft^3/lb) = 1710 * (C/12+ H/2 + S/32)

multiply this by fuel consumption rate * fuel density to get ft^3/min

Assumptions: diesel fuel is predominantly $C_{16}H_{24}$

Fuel density = 7.107 lb/gal

Heat content diesel = 140000 BTU/gal

S concentration of 0.5%

AP-42 emission factors for large IC engines

CO = 0.81 lb/mmBTU

CO_2 = 165 lb/mmBTU

TOC (as CH_4) = 0.9 lb/mmBTU

NO_x (as NO_2) = 3.1 lb/mmBTU

Assuming complete combustion of the fuel, emissions were shown in the calculations below to be less than 250 ppm SO_2 at 7% O_2. Calculations were also done varying the fuel consumption rate. Since the theoretical air required was proportional to the fuel consumption rate, theoretical SO_2 emissions were independent of engine size or fuel consumption rate. Actual SO_2 emissions would be diluted by excess air.

Therefore, as a class, these engines cannot exceed the general standard when using fuel with S concentration < 0.5%.

Stoichiometric Calculations to Estimate SO2 Emissions Normalized to 7% O2 From Combustion of Diesel #2 Fuel Oil using AP-42 Factors For Large Internal Combustion Engines (> 500 HP)

Assumptions: Diesel #2 Fuel Oil (C16H24), 0.5wt% Sulfur; Heat Content = 140000 BTU/gal; Case 1: 2200 HP IC Engine; Fuel consumption rate = 99.4 gal/hr.

$MW_C := 12.01115 \frac{gm}{mole}$ $MW_O := 15.9994 \frac{gm}{mole}$ $MW_H := 1.0079 \frac{gm}{mole}$

$MW_S := 32.064 \frac{gm}{mole}$ $MW_N := 14.0067 \frac{gm}{mole}$ $P := 1 \cdot atm$ $MM := 1 \cdot 10^6$

$MW_{fuel} := 16 \cdot MW_C + 24 \cdot MW_H$ $MW_{fuel} = 216.36 \frac{gm}{mole}$

$MW_{SO2} := MW_S + 2 \cdot MW_O$ $MW_{SO2} = 64.063 \frac{gm}{mole}$

$MW_{Air} := 2 \cdot (.21 \cdot MW_O + .79 \cdot MW_N)$ $MW_{Air} = 28.85 \frac{gm}{mole}$

$MW_{CO} := MW_C + MW_O$ $MW_{CO} = 28.011 \frac{gm}{mole}$

$MW_{CO2} := MW_C + 2 \cdot MW_O$ $MW_{CO2} = 44.01 \frac{gm}{mole}$

$MW_{CH4} := MW_C + 4 \cdot MW_H$ $MW_{CH4} = 16.043 \frac{gm}{mole}$

$MW_{NO2} := MW_N + 2MW_O$ $MW_{NO2} = 44.013 \frac{gm}{mole}$

$S_f := 0.005$ $C_f := 16 \cdot \frac{MW_C}{MW_{fuel}}$ $H_f := 24 \cdot \frac{MW_H}{MW_{fuel}}$

$V_{th_air} := \left[1710 \cdot \left(\frac{C_f}{12} + \frac{H_f}{2} + \frac{S_f}{32} \right) \right] \frac{ft^3}{lb}$ $V_{th_air} = 222.424 \frac{ft^3}{lb}$

$V_{fuel} := 99.4 \cdot \frac{gal}{hr}$ $T_{SC} := 527.67 \cdot R$ $T_{SC} = 293.15 \cdot K$

$SO2_{conc} := \frac{71 \cdot lb}{1000 \cdot gal}$ $R_{gas} := \frac{P \cdot 22.4 \cdot liter}{mole \cdot T_{SC}}$ $R_{gas} = 0.076 \frac{liter \cdot atm}{mole \cdot K}$

$S_{fuel} := SO2_{conc} \cdot \frac{MW_S}{MW_{SO2}}$ $S_{fuel} = 0.036 \frac{lb}{gal}$

$\rho_{fuel} := \frac{S_{fuel}}{.005}$ $\rho_{fuel} = 7.107 \cdot \frac{lb}{gal}$

$Fuel := \frac{V_{fuel} \cdot \rho_{fuel}}{MW_{fuel}}$ $Fuel = 1.481 \cdot 10^{3} \cdot \frac{mole}{hr}$

$S := \frac{V_{fuel} \cdot S_{fuel}}{MW_{S}}$ $S = 49.969 \cdot \frac{mole}{hr}$ $SO2 := S$ $SO2 = 49.969 \cdot \frac{mole}{hr}$

$V_{air} := V_{th_air} \cdot \rho_{fuel} \cdot V_{fuel}$ $V_{air} = 2.619 \cdot 10^{3} \cdot \frac{ft^{3}}{min}$

Heat of combustion of fuel reported at 140,000 BTU/gal; however, based on AP-42 factors, results in using more fuel than what was supplied based on the stoichiometry for the combustion of fuel. By trial and error, adjusted the heat of combustion of the fuel so that the remaining amount of uncombusted carbon was essentially "zero."

$H_{c_fuel} := 138903.34 \frac{BTU}{gal}$ $H_{c_total} := H_{c_fuel} \cdot V_{fuel}$ $H_{c_total} = 1.381 \cdot 10^{7} \cdot \frac{BTU}{hr}$

$CO_{produced} := H_{c_total} \cdot .81 \cdot \frac{lb}{MM \cdot BTU}$ $CO_{produced} = 11.184 \cdot \frac{lb}{hr}$

$CO := \frac{CO_{produced}}{MW_{CO}}$ $CO = 181.104 \cdot \frac{mole}{hr}$

$CO2_{produced} := H_{c_total} \cdot 165 \cdot \frac{lb}{MM \cdot BTU}$ $CO2_{produced} = 2.278 \cdot 10^{3} \cdot \frac{lb}{hr}$

$CO2 := \frac{CO2_{produced}}{MW_{CO2}}$ $CO2 = 2.348 \cdot 10^{4} \cdot \frac{mole}{hr}$

$CH4_{produced} := H_{c_total} \cdot .09 \cdot \frac{lb}{MM \cdot BTU}$ $CH4_{produced} = 1.243 \cdot \frac{lb}{hr}$

$CH4 := \frac{CH4_{produced}}{MW_{CH4}}$ $CH4 = 35.134 \cdot \frac{mole}{hr}$

$NO2_{produced} := H_{c_total} \cdot 3.1 \cdot \frac{lb}{MM \cdot BTU}$ $NO2_{produced} = 42.802 \cdot \frac{lb}{hr}$

$NO2 := \frac{NO2_{produced}}{MW_{NO2}}$ $NO2 = 441.111 \cdot \frac{mole}{hr}$

$H2O := \frac{24 \cdot Fuel - 4 \cdot CH4}{2}$ $H2O = 1.77 \cdot 10^{4} \cdot \frac{mole}{hr}$

$Air_{actual} := \frac{P \cdot V_{air}}{R_{gas} \cdot T_{SC}}$ $Air_{actual} = 1.986 \cdot 10^{5} \cdot \frac{mole}{hr}$

$O_{actual} := 2 \cdot .21 \cdot Air_{actual}$ $O_{actual} = 8.343 \cdot 10^{4} \cdot \frac{mole}{hr}$

$N_{actual} := 2 \cdot .79 \cdot Air_{actual}$ $N_{actual} = 3.138 \cdot 10^{5} \cdot \frac{mole}{hr}$

$O_{remaining} := O_{actual} - 2 \cdot SO2 - NO2 - 2 \cdot CO2 - CO - H2O$ $O_{remaining} = 1.804 \cdot 10^{4} \cdot \frac{mole}{hr}$

$O_{2_remaining} := \frac{O_{remaining}}{2}$ $O_{2_remaining} = 9.022 \cdot 10^{3} \cdot \frac{mole}{hr}$

$N_{remaining} := N_{actual} - NO2$ $N_{remaining} = 3.134 \cdot 10^{5} \cdot \frac{mole}{hr}$

$N_{2_remaining} := \frac{N_{remaining}}{2}$ $N_{2_remaining} = 1.567 \cdot 10^{5} \cdot \frac{mole}{hr}$

Verification that remaining carbon is essentially "zero".

$C_{remaining} := 16 \cdot Fuel - CO - CO2 - CH4$ $C_{remaining} = 3.781 \cdot 10^{-4} \cdot \frac{mole}{hr}$

Recalling that Mole % = Volume % (for gasses only) one can easily calculate the volume % of the constituents in the exiting gas stream.

$Moles_{total} := O_{2_remaining} + N_{2_remaining} + CO + CO2 + SO2 + NO2 + CH4 + H2O$

$Moles_{total} = 2.076 \cdot 10^{5} \cdot \frac{mole}{hr}$

Gas calculations are to be done on a dry basis; therefore, need to subtract out the water contribution.

$Moles_{total_dry} := Moles_{total} - H2O$ $\qquad Moles_{total_dry} = 1.899 \cdot 10^{5} \cdot \frac{mole}{hr}$

$O2\% := \frac{(O_{2_remaining} \cdot 100)}{Moles_{total_dry}}$ $\qquad O2\% = 4.751$

$N2\% := \frac{(N_{2_remaining} \cdot 100)}{Moles_{total_dry}}$ $\qquad N2\% = 82.513$

$CH4\% := \frac{CH4 \cdot 100}{Moles_{total_dry}}$ $\qquad CH4\% = 0.019$

$SO2\% := \frac{SO2 \cdot 100}{Moles_{total_dry}}$ $\qquad SO2\% = 0.026$

$NO2\% := \frac{NO2 \cdot 100}{Moles_{total_dry}}$ $\qquad NO2\% = 0.232$

$CO\% := \frac{CO \cdot 100}{Moles_{total_dry}}$ $\qquad CO\% = 0.095$

$CO2\% := \frac{CO2 \cdot 100}{Moles_{total_dry}}$ $\qquad CO2\% = 12.364$

Check to see if sum equals 100%

$SUM_{dry} := O2\% + N2\% + CH4\% + SO2\% + NO2\% + CO\% + CO2\%$ $\qquad SUM_{dry} = 100$

$ppm := \frac{1}{1000000}$ $\qquad SO2_{7\%O2} := SO2\% \cdot \left(\frac{14}{21 - O2\%}\right)$ $\qquad SO2_{7\%O2} = 0.023$

Since SO2 concentration is already in % divide by 100 to express in ppm

$SO2_{7\%O2} := \frac{SO2_{7\%O2}}{100}$ $\qquad SO2_{7\%O2} = 226.694 \cdot ppm$

3.1.2 MODEL 2 Nitrogen Oxides Emission Calculations

MODEL 2B (Engine W) Description: Compliance with 75.5 lbs/hr NO_x (Engine E) or 42 lbs/hr NO_x

$$ER = F * AP_{42} * CF$$

where: ER = Emission rate for NO_x in lbs/hr

F = Diesel burn rate (gal/hr)

AP_{42} = AP-42 factor (3.1 lbs/mmBTU)

CF = 0.139 mmBTU/gal

Assumptions: heat of combustion for diesel #2 oil = 140,000 BTU/gal
F = 104.7 gal/hr (Engine E, 2200 hp), manufacturer's specification
F = 90.8 gal/hr (Engine W, 1850 hp), manufacturer's specification
ER (Engine E) = 45.1 lbs/hr
ER (Engine W) = 39.1 lbs/hr

Fuel used divided by hours logged will demonstrate the average fuel consumption rate is below manufacturer's specification

Engine E will be in continuous compliance with the NO_x emission limit of 75.5 lbs/hr

Engine W will be in continuous compliance with the NO_x emission limit of 42 lbs/hr

3.1.3 MODEL 4 Volatile Organic Compounds Emission Calculations

MODEL 4A Description: Compliance with 50 ppm and 500 ppm VOC

Assumptions: A Total Organic Carbon Analyzer or similar instrument will be used to determine VOC concentrations in the stack effluent using EPA method 25A or an approved alternative. The VOC concentration will be determined in accordance with the frequency identified in the tables.

MODEL 4B Description: Compliance with 0.8 lbs VOC emitted in any hour

VOC emission rate in lbs/hr $=10 \times [\sum_{i=1 \text{ to } 3} (U_i * RF_i)]$

Where i=1 for organic gases
i=2 for volatile organic vapors/liquids
i=3 for organic liquids

U_i = Maximum Annual Average Hourly Usage Rate (lb/hr) = (Maximum annual usage, lbs/yr)/(8760 hrs/yr)

RFi = Release fractions
$RF_1 = 1$ for organic gases
$RF_2 = 0.1$ for volatile organic vapors/liquids
$RF_3 = 10^{-3}$ for organic liquids

Assumptions:
Maximum emission rate in any hour is 10 times the maximum annual average hourly emissions, as stated in NOC approval condition 2.
If usage is not available, U may be estimated by assuming the inventory is used in a year.

3.1.4 MODEL 5 Ammonia Emission Calculations

Description: Compliance with 0.05 lbs/hr NH_3

ER = C * Sf * CF

where: ER = Emission rate for NH_3 in lbs/hr

C = Concentration of NH_3 in ppm

S_f = Stack flow (Vent & Balance measurements) in cfm

CF = 2.20 E-6 * 1.70 * 0.71 = 2.66 E-6 lb / (ppm*cfm*hr)

It appears in the above equation line the scientific notation is used for the molecular weight in the on of the numbers presented and then it is not used in the next. Makes it unclear if in deed it is the molecular weight. Please make sure the equation is correct and on method of presentation is used in the equation.

conversion from mg to lbs, m^3/hr to cfm, ppm NH_3 to mg/m^3

Assumptions:

(1) Stack exhausts at ambient temperature
(2) Vent & Balance measurements for average stack flow
(3) Draeger tube measurement for NH_3 (minimum of one per year) during operations will demonstrate NH_3 levels are below the threshold which would be equal to 0.05 lbs/hr
(4) If measurements during peak activities are below threshold, continuous compliance is assumed. For example, at 800 cfm, the concentration of NH_3 must be below 23.5 ppm.

3.1.5 MODEL 6 Emissions from 331C Gas Cylinder Management Process (GCMP)

GCMP emissions will be determined by recording the daily volume and concentration emitted for each cylinder. The volumes and concentrations will be based on the known and recorded pressures and concentrations in the cylinders, or upper-bounding estimates if unknown.

3.1.6 MODEL 7A – Emissions from Use of Chemical Inventory

Emissions:

Emissions from the use of the chemical inventory in the building will be determined as follows:

Use rate x release fraction x (1-control efficiency).

In addition to chemical use rate, chemical inventory data may be used to estimate emissions. If the inventory information is used, the annual ASILs will be determined assuming the entire inventory is released in a year, and the 24-hour ASILs will be determined assuming the entire inventory is released during 20 days. The above methods and assumptions may be modified with Ecology's concurrence.

3.1.7 MODEL 7B – Air Concentrations for Comparison to ASILs

Total Building Emissions:

Calculate a building's total emissions by summing those due to the use of chemical inventory from Model A and those from additional processes in the building whose emissions are not included in Model A.

Total Building Ambient Air Concentrations

Calculate the air concentrations at the nearest points of unrestricted or uncontrolled public access to the building using the EPA T-Screen or ISCST3 dispersion models and compare them to the ASILs.

3.1.8 MODEL 7C – Emission Calculations for LERF/ETF

Air Emission Concentrations for Comparison to ASILs and SQER

1. Emission concentrations (to compare to ASIL):

$$AC_i = TR_i * FC_i$$

AC_i : air concentration of species i, ug/m^3
TR_i : transfer rate of species i, unitless
FC_i : feed concentration of species i, ug/m^3

Transfer rates vary depending on the species. For acids, bases, and salts, a TR of 1E-12 is given in DOE/RL-92-69. For other species it can be calculated using a variation of Raoult's Law:

$$TR_I = \left[\frac{1/MW_I}{DENSITY_I / MW_I} \right] * \left(\frac{VP_I}{760} \right) * \left[\frac{273/(T + 273)}{22.4} \right] * MW_I$$

TR_i : transfer rate of species i, unitless
MW_i : molecular weight of species i, kg/kgmol
$DENSITY_i$: density of pure liquid species, kg/m^3
VP_i : vapor pressure of pure liquid species i at temperature T, mmHg
T : temperature, ^oC
Other values are conversion factors

Typical transfer rates: acetone = 1E-03
carbon tetrachloride = 1E-03
butanol = 1E-04
TBP = 1E-05

2. Hourly emission rate (to compare to SQER):

$$ERH_i = AC_i * FLOW * 0.02832 * 2.205 * 60 / 1{,}000{,}000$$

ERH_i : hourly emission rate of species i, lb/hr
AC_i : air concentration of species i, ug/m^3
FLOW : ETF vessel off-gas flowrate = 27,250 ft^3/min
Other values are conversion factors

3. Annual emission rate (to compare to SQER):

$$ERY_i = ERH_i * 24 * 365$$

ERY_i = annual emission rate of species i, lb/yr

Other values are conversion factors.

3.1.9 MODEL 10C Description: VOC Emissions on a Daily Average

Compliance with NSR VOC emission limit on a daily average:

[2 ton (2000 lb/ton)]/365 = 24[(VOC mg/m^3) x (339.8 m^3/hr) x (lb / 453,593 mg) = VOC (lb/day)

Where:

2 tons/year = WAC 174-400-110 NSR threshold for VOCs
1 year = 365 days
1 day = 24 hours
339.8 m^3/hr = volumetric flow rate
1 lb = 453,593 mg
VOC mg/m^3 = vapor space sampling data from the TWINs database

APPENDIX A

Excerpts from DOE/RL-95-07 Initial AOP Application (as supplemented) Insignificant Emission Units Summary Discussion

Insignificant Emission Unit (IEU) General Requirements

The following limits or standards apply to insignificant emission units and activities on the Hanford Site. Compliance with the standards is required; however, no monitoring is required for IEUs. The applicable requirements are:

IEU Requirement	Standard	Limit	Monitoring/Compliance Method
WAC 173-400-040(1)	Opacity	20 %	None
WAC 173-400-040(2)	Fallout	[a]	None
WAC 173-400-040(3)	Fugitive Emissions	[a]	None
WAC 173-400-040(4)	Odor	[a]	None
WAC 173-400-040(5)	Emissions Detrimental to Persons or Property	[a]	None
WAC 173-400-040(6)	SO_2	1000[b]	None
WAC 173-400-040(7)	Concealment and Masking	[a]	None
WAC 173-400-040(8)	Fugitive Dust	[a]	None

[a] reasonable precautions and/or best management practices, as specified in the Hanford Site AOP

[b] for applicable sources; units in parts per million on a dry basis, corrected to seven percent oxygen

Facility-wide IEU Processes

There are numerous activities on the Hanford Site that may generate fugitive air emissions. These activities are often associated with construction or facility routine maintenance activities. Specific locations for sources in this category are not listed since these activities involve all areas and a majority of the facilities on the Hanford Site. The activities listed below may require operation of one or more point sources of regulated criteria/hazardous air pollutants in conjunction with the categories listed below. Projects utilizing the functions or categories listed below will be evaluated on a case-by-case basis to determine applicable general requirements, new source review, and the definition of a new source.

Functions or categories associated with fugitive emissions may include but are not limited to the following:

Site Preparation

- Vegetation clearing
- Land leveling, including preparing areas for foundations
- Excavation (e.g., power line trenching and plumbing trench activities)
- Dredging
- Water-truck dust suppression activities

Roofing

- Carpentry
- Concreting
- Coating
- Demolition and/or replacement
- Equipment and area cleaning
- Miscellaneous repair and/or activities

Concreting and Paving

- Construction of foundations, walls, floors, pads, and other structural elements
- Construction of parking areas, roads, and other vehicular areas

Structural Construction

- Building framing -- metal and/or wood
- Welding and cutting torch activities
- Interior construction and installations (e.g., walls, floors, ceilings, counters, and cabinets)
- Installation or removal of floor coverings

Electrical Work

- Interior lighting and power
- Exterior lighting and power, including excavation for wire trench
- Installation of temporary interior and exterior lighting
- Miscellaneous lighting and power activities

Plumbing

- Pipe threading
- Welding, brazing, soldering, or cutting torch activities supporting maintenance
- Acid etching
- Application of protective coatings
- Equipment and area cleaning

Metal Working Activities

- Cutting, grinding, finishing, welding, drilling, machining, and other maintenance activities
- Sheet metal application and/or repair

Heavy Equipment Usage

- Scrapers, bulldozers, snow plows, dump trucks, front end loaders, track hoes, backhoes, graders, cranes, pavers, water trucks, sweepers, rollers, water wagons, rock hauling and processing equipment, cement trucks, and support equipment

Agricultural and Landscaping Activities

- Site preparation
- Revegetation activities
- Application of agricultural and landscaping chemicals
- Application of surface coatings (e.g., rock, gravel, plastics, bark)

Miscellaneous Construction Activities

- Installation of miscellaneous systems or equipment
- Installation and use of portable sanitation facilities
- Equipment and area cleaning
- Fuel trucks and fuel filling operations

Abatement Activities

- Lead abatement positioning/repositioning
- PCB equipment management, abatement, and relocation
- Radiological contamination abatement
- Chemical contamination abatement
- Asbestos abatement methods
- Herbicide/pesticide abatement application

Demolition Activities

- Standard demolition practices and/or equipment

The activities listed above may be conducted in radiological and/or chemically contaminated areas and may be conducted in exhausted greenhouses. Activities conducted in contaminated areas are assessed to determine regulatory agency approvals that may be required prior to commencement or construction of activities. Certain activities conducted in exhausted greenhouses may also be permitted under notice of construction approvals with the State of Washington, Department of Health (WDOH).

The activities or equipment listed above may include the use of fuels for propelling or powering equipment or the use of gasses (e.g., acetylene and oxygen for welding or cutting activities).

Diffuse and Fugitive Radioactive Emission Sources

In accordance with the National Emission Standards for Hazardous Air Pollutants (NESHAP), regulated under 40 Code of Federal Regulations (CFR) 61, Subparts A and H, and WAC 246-247, diffuse and fugitive radioactive emission sources were provided to WDOH in support of the FF-01 license for radioactive air emissions. Diffuse and fugitive sources include radioactive emission sources that are not actively ventilated or are not routinely sampled (e.g., passively ventilated tank vents, vented containers, outdoor surface contamination areas, cracks between cover blocks, etc.). Passively ventilated emissions are considered diffuse in nature because they lack a measurable flow. Diffuse and fugitive emission sources are monitored by the Hanford Site Surface Environmental Surveillance Program and the Near-Facility Monitoring Program, as described in Section 4 of the annual Radionuclide Air Emissions Report. Numerous types of sources of diffuse and fugitive emissions are in and around Hanford Site facilities.

Included in the diffuse and fugitive supplement to the AOP renewal was a list of buildings and structures without filtered ventilation systems and registered stacks and from which radioactive material might enter the ambient air by way of resuspension. The list also includes outdoor sites with dispersible radioactive material. The diffuse and fugitive package was recommended for WDOH inclusion in the AOP renewal statement of basis, consistent with the IEUs provided herein.

Other potential sources of fugitive emissions not specifically identified in the list provided to WDOH are operations and maintenance activities performed at waste tanks in the 200 East and 200 West areas. The WDOH agreed to represent large complexes with multiple diffuse and fugitive sources contained within a fenced boundary as a single consolidated source. The Tank Farms facilities operating on the Hanford Site utilized this agreement and categorized the tank farms as single diffuse and fugitive source.

APPENDIX B

Size/Production Rate/Miscellaneous IEUs

APPENDIX B1

Facility/Facilities: Hanford Site Major Stationary Source

Insignificant Emission Units Based on Size or Production Rate. WAC 173-401-533(2)			
Regulatory Citation WAC 173-401-533	**Description**	**IEU Present?**	
		Yes	**No**
(2)(a)	Operation, loading and unloading of storage tanks and storage vessels, with lids or other appropriate closure and less than two hundred sixty gallon capacity (35 cft), heated only to the minimum extent to avoid solidification if necessary.	x	
(2)(b)	Operation, loading and unloading of storage tanks, not greater than one thousand one hundred gallon capacity, with lids or other appropriate closure, not for use with hazardous air pollutants (HAPs), maximum (max.) vp 550mm Hg.	x	
(2)(c)	Operation, loading and unloading of VOC storage tanks (including gasoline storage tanks), ten thousand gallons capacity or less, with lids or other appropriate closure, vp not greater than 80mm Hg at 21°C.	x	
(2)(d)	Operation, loading and unloading storage of butane, propane, or liquefied petroleum gas (LPG), storage tanks, vessel capacity under forty thousand gallons.	x	
(2)(e)	Combustion source less than five million Btu/hr. (~1965 Hp) exclusively using natural gas, butane, propane, and/or LPG.	x	
(2)(f)	Combustion source, less than five hundred thousand Btu/hr. (~196 Hp), using any commercial fuel containing less than 0.4% by weight sulfur for coal or less than 1% by weight sulfur for other fuels.	x	
(2)(g)	Combustion source, of less than one million Btu/hr. (~393 Hp) if using kerosene, No. 1 or No. 2 fuel oil.	x	
(2)(h)	Combustion source, not greater than five hundred thousand Btu/hr. (~196 Hp) if burning used oil and not greater than four hundred thousand Btu/hr. (~157 Hp) if burning waste wood or waste paper.		x
(2)(i)	Welding using not more than one ton per day of welding rod.	x	
(2)(j)	Foundry sand molds, unheated and using binders with less than 0.25% free phenol by sand weight.		x
(2)(k)	"Parylene" coaters using less than five hundred gallons of coating per year.		x

Insignificant Emission Units Based on Size or Production Rate. WAC 173-401-533(2) -- Continued (page 2 of 3)			
(2)(l)	Printing and silk-screening, using less than two gallons/day of any combination of the following: inks, coatings, adhesives, fountain solutions, thinners, retarders, or non-aqueous cleaning solutions.	x	
(2)(m)	Water cooling towers and ponds, not using chromium-based corrosion inhibitors, not used with barometric jets or condensers, not greater than ten thousand gpm, not in direct contact w/ gaseous or liquid process streams containing regulated air pollutants.	x	
(2)(n)	Combustion turbines, of less than 500 HP.	x	
(2)(o)	Batch solvent distillation, not greater than fifty-five gallons batch capacity.		x
(2)(p)	Municipal and industrial water chlorination facilities of not greater than twenty million gallons per day capacity. The exemption does not apply to waste water treatment.	x	
(2)(q)	Surface coating, using less than two gallons per day.	x	
(2)(r)	Space heaters and hot water heaters using natural gas, propane or kerosene and generating less than five million Btu/hr.	x	
(2)(s)(i)	Tanks, vessels, and pumping equipment, with lids or other appropriate closure for storage or dispensing of aqueous solutions of inorganic salts, bases and acids excluding 99% or greater H2SO4 or H3PO4.	x	
(2)(s)(ii)	Tanks, vessels, and pumping equipment, with lids or other appropriate closure for storage or dispensing of aqueous solutions of inorganic salts, bases and acids excluding 70% or greater HNO3.	x	
(2)(s)(iii)	Tanks, vessels, and pumping equipment, with lids or other appropriate closure for storage or dispensing of aqueous solutions of inorganic salts, bases and acids excluding 30% or greater HCl.	x	
(2)(s)(iv)	Tanks, vessels, and pumping equipment, with lids or other appropriate closure for storage or dispensing of aqueous solutions of inorganic salts, bases and acids excluding more than one liquid phase where the top phase is more than one percent VOCs.	x	
(2)(t)	Equipment used exclusively to pump, load, unload or store high boiling organic material, material with initial boiling point (IBP) not less than 150°C or vapor pressure (vp) not more than 5mm Hg at 21°C with lids or other appropriate closure.		x
(2)(u)	Smokehouses under twenty square feet.		x
(2)(v)	Milling and grinding activities, using paste-form compounds with less than one percent VOCs.	x	

Insignificant Emission Units Based on Size or Production Rate. WAC 173-401-533(2) -- Continued (page 3 of 3)			
(2)(w)	Rolling, forging, drawing, stamping, shearing, or spinning hot or cold metals.	x	
(2)(x)	Dip coating operations, using materials with less than one percent VOCs.		x
(2)(y)	Surface coating, aqueous solution or suspension containing less than one percent VOCs.	x	
(2)(z)	Cleaning and stripping activities and equipment, using solutions having less than one percent VOCs by weight. On metallic substrates, acid solutions are not considered for listing as insignificant.	x	
(2)(aa)	Storage and handling of water based lubricants for metal working where the organic content of the lubricant is less than ten percent.	x	
(2)(bb)	Municipal and industrial waste water chlorination facilities of not greater than one million gallons per day capacity.		x

Appendix B2 -- Item # 5 List

Miscellaneous Emission Units and Activities Listing (Process Item # 5)
• Chemical or physical analytical laboratory operations or equipment including fume hoods and vacuum pumps regulated as insignificant per WAC 173-401-533(3)(c) (e.g., 338 Building Prototype Engineering Laboratory). • Insecticide, pesticide, or fertilizer spray or broadcast equipment. • Internal combustion engines less than the affected source size threshold (i.e., <= 500 brake horsepower) for the United States Environmental Protection Agency (EPA) National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 40 CFR Part 63 Subpart ZZZZ. This includes attached fuel tanks. • Laboratory testing and quality assurance/control testing equipment used exclusively for chemical or physical analysis, teaching, or experimentation, including non-production bench scale research equipment. • Storage tanks: (A) that do not store substances capable of emitting air contaminants; or (B) with a rated capacity of 1,000 gallons (3,780 liters) or less used for storage of gasoline or diesel fuel; or (C) with a rated capacity of less than 10,000 gallons (38,000 liters) used for storage of volatile organic compounds; or (D) with a rated capacity of less than 40,000 gallons (150,000 liters) used for storage of volatile organic compounds with a true vapor pressure less than 0.01 kPa (0.002 psia). • Storage tanks not regulated under 40 CFR Part 60 Subpart K, Ka, or Kb. • Wipe solvent cleaning. • Equipment maintenance and repair, including off-road equipment. • Instrument functional checks/calibration, maintenance, and repair; including the use of alcohol, gases, or other solvents and fluids. • Groundwater remediation operations. • Solvent cleaning of non-motor vehicle parts • Small industrial vacuum systems that vent outside. • Miscellaneous abrasive blast units not requiring an Order of Approval. • Liquid storage and transfer operations not requiring an NOC. • Firearm training, maintenance, and cleaning. • Hazardous waste worker training and training equipment. • Any source emitting minimal amounts of criteria/hazardous air pollutants, but determined through evaluation not to trigger new source review applicability or portable/temporary notification pursuant to WAC 173-400-110, WAC 173-460-030, or WAC 173-400-035, respectively.

APPENDIX C

Below IEU Threshold -Emission Unit Types

Process Item # 4 Pursuant to WAC 173-401-530(4) and WAC 173-401-53**1**

Structure Identification	Title	Emission Unit Type
350 Building	350 Plant Operations and Maintenance Facility	R&D facilities maintenance and fabrication shop
350-D Building	350-D Oil Storage Facility	Oil storage and waste minimization

Contents

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1.0 EMISSION STANDARDS

Radioactive air emission standards for the State of Washington are contained in WAC 173-480-040, 173-480-050, 173-480-060 and in 40 CFR Part 61, Subparts H. In accordance with WAC 173-480-050 Health shall enforce the most stringent standard in effect.

Under WAC 246-247-040(5), the department may set limits on emission rates for specific radionuclides for specific emission units and/or set requirements and limitations on the operation of emission unit(s) as specified in this license. Health establishes emission limits in Notice of Construction (NOC) approvals and the FF-01 License.

All new construction and significant modifications of emission units from August 10, 1988 until the termination of this license, shall utilize BARCT per WAC 246-247-040(3).

All existing emission units and insignificant modifications shall utilize ALARACT. [WAC 246-247-040(4)]

2.0 MONITORING, TESTING, QUALITY ASSURANCE, REPORTING AND RECORD KEEPING

Emission units with a potential-to-emit less than 0.1 mrem/yr TEDE to the MEI may, use periodic confirmatory monitoring methods approved by the department under WAC 246-247-075(3).

WAC 246-247-075(11) requires the licensee to address accidental releases when planning for any new construction or significant modification of the emission unit if the probability of occurrence during the expected life of the emission unit is greater than one percent.

2.1 REQUIREMENTS FOR DIFFUSE OR FUGITIVE SOURCES IN TABLE 2.1

Section 5 of Attachment 2 describes the requirements for monitoring and reporting of diffuse or fugitive source emissions. The ambient air monitoring conducted at the Hanford Site has been accepted by the department as the method for demonstrating compliance to emissions limits for diffuse and fugitive sources. Those sources with Emission Unit specific conditions and limitations within the FF-01 License must be monitored and meet the applicable quality assurance and analysis requirements. All required ambient air monitors shall be identified along with their data measurements in the annual Radionuclide Air Emissions Report.

Quality Assurance and Analysis

All required ambient air samples collected and analyzed must be compatible with the quality assurance requirements of national standards such as NQA-1, EPA QA/R-5, and Method 114 as applicable. Near-facility ambient air samples from individual stations must be composited at a frequency no greater than 6 months.

Modifications to the Diffuse and Fugitive Environmental Monitoring

Prior to making modifications (i.e., moving, or removing air sample locations, or changing the sampling period) to the accepted periodic confirmatory measurement (for minor diffuse and fugitive sources) and continuous measurement (for major diffuse and fugitive sources) the Department of Health, Air Emissions and Defense Waste Section shall approve a written request for the modifications. The request for modification may take the form of an email or formal letter. Analysis of other media samples will be conducted at labs with the appropriate quality assurance programs in-place.

2.2 COMPLIANCE ASSURANCE MONITORING FOR SOURCES DISCOVERED ON SITE

In the course of Hanford's 50-year history radioactive waste products may have been disposed of by means not allowed by today's standards. These disposal areas represent potential diffuse or passively ventilated point sources of radioactive airborne emissions. The license describes actions that must be taken upon the licensee discovering any category of diffuse or passively ventilated point sources. These actions include a means to establish methods for determining compliance assurance.

Categories of emission units or other specific emission units not identified in existing Tables, will meet the requirements for periodic confirmatory monitoring, recordkeeping, and reporting found in Attachment 2. The annual Radionuclide Air Emissions Report for the Hanford Site satisfies the reporting requirements.

3.0 EMISSION UNIT IDENTIFICATION DESCRIPTIONS USED IN ATTACHMENT 2

The principle identifier used in Attachment 2 of the Air Operation Permit is the Emission Unit ID number. This number is assigned to an emission unit when registered with the department. In addition to the Emission Unit ID number the Air Emissions Inventory (AEI) number is also used as an identifier. This unique identifier was established for use in the Hanford Air Operating Permit. It is based upon an alphanumeric code description indicating key information concerning the operational area code, a category code, a building identifier, and type of emission point identifier code.

Secondary emission unit identifications were used in the permit for familiarity with the identification such as the commonly used regulatory identification.

For facility operator's ease of use, a plant name or tank farm was listed with the emission unit identifiers.

In Attachment 2, Health used a three digit Emission Unit ID in small font under the heading text. This number is created from the database Health uses to track and generate the emission unit requirements for each emission unit.

An example of the heading used in Attachment 2 would be as follows:

Emission Unit ID: 393……..*Health's database tracking number*
200W P-291Z001 …….. .....*The AEI number*
291-Z-1 …….. .....*The regulatory ID*
PLUTONIUM FINISHING PLANT (Z PLANT)... *The associated building or tank farm*

AEI number representation:

200W Operational area code

P Process emission point

291Z Building number

001 Emission Unit ID number

4.0 ALARACT AGREEMENTS

The following ALARACT Agreements describe the approved methods for compliance to ALARACT set forth in Attachment 2 for the following approved routine activities.

ALARACT Number	ALARACT Agreement Title
1	TANK FARM ALARACT DEMONSTRATION FOR RISER PREPARATION/OPENING
2	TANK FARM ALARACT DEMONSTRATION FOR INSTALLATION/OPERATION/REMOVAL OF PUSH MODE CORE SAMPLING EQUIPMENT
3	TANK FARM ALARACT DEMONSTRATION FOR INSTALLATION/OPERATION/REMOVAL OF AUGER SAMPLING EQUIPMENT
4	TANK FARM ALARACT DEMONSTRATION FOR PACKAGING AND TRANSPORTATION OF WASTE
5	TANK FARM ALARACT DEMONSTRATION SOIL EXCAVATION (using hand tools)
6	TANK FARM ALARACT DEMONSTRATION FOR PIT ACCESS
7	TANK FARM ALARACT DEMONSTRATION FOR TANK WASTE GRAB SAMPLING
8	TANK FARM ALARACT DEMONSTRATION FOR VAPOR SAMPLING
10	TANK FARM ALARACT DEMONSTRATION FOR WATER LANCING
11	TANK FARM ALARACT DEMONSTRATION FOR WASTE TRANSFERS
12	TANK FARM ALARACT DEMONSTRATION FOR PACKAGING AND TRANSPORTATION OF EQUIPMENT & VEHICLES
13	TANK FARM ALARACT DEMONSTRATION FOR INSTALLATION, OPERATION, AND REMOVAL OF TANK EQUIPMENT

ALARACT Number	ALARACT Agreement Title
14	TANK FARM ALARACT DEMONSTRATION FOR PIT WORK. This ALARACT demonstration applies to all pits except 241-ER-152, 241-S-151, 241-UX-154, 241-TX-154, 244-CR Vault DCRT, 244-A Lift Station DCRT, and 244-TX DCRT.
15	TANK FARM ALARACT DEMONSTRATION FOR SIZE REDUCTION OF WASTE EQUIPMENT FOR DISPOSAL
16	TANK FARM ALARACT DEMONSTRATION FOR WORK ON POTENTIALLY CONTAMINATED VENTILATION SYSTEM COMPONENTS
18	ALARACT DEMONSTRATION FOR WELL DRILLING
26	DISPOSAL BY BURNING OF POTENTIALLY CONTAMINATED TUMBLEWEEDS
28	SHUTDOWN OF STACK SYSTEM(s) (Maintenance and incidental)
29	242-A EVAPORATOR MAINTENANCE FACILITY SHUTDOWNS
30	TANK FARM ALARACT DEMONSTRATION FOR STACK EXTENSION AND PASSIVE EMISSION POINT VENTURI

5.0 OBSOLETE EMISSION UNITS

EU ID	Emission Unit Name	Date Obsolete
60	296-T-12	2/2/2006
61	296-T-11	2/2/2006
95	296-P-41	10/25/2002
144	296-P-33	5/23/2006
167	Cross-site transfer line	2/14/2003
171	P-241ER151-001	5/01/2006
184	RCF-2-EX	5/25/2006
185	ER311	2/14/2003
195	309-PRTR-001	4/18/2002
197	305 B Building	5/25/2006
211	296-A-13	10/25/2002
221	296-A-17	10/25/2002
222	296-A-25	8/6/2004
253	296-P-34	5/23/2006
307	EP-3020-01-S	6/4/2002
319	P-241AR151-001	5/01/2006
329	296-U-11	10/25/2002
330	P-241AX155-001	5/01/2006
336	296-S-2	3/3/2006
342	EP-331G-01-S	3/21/2003
343	EP-331G-02-S	3/21/2003
344	241-UX-154 Diversion Box	8/10/2004
348	306 W-03-V	12/20/2004
356	EP-320-03-S	7/21/2004
392	296-Z-10	3/3/2006
419	EP-3720-01-S	7/20/2004
456	Tank Farm Restoration and Safe Storage	12/31/2002
479	Portable Exhauster	6/4/2002
480	Soil Characterization Using Cone Penetrometer	10/19/2002
481	ETF Load-In Station Filter Skid	1/15/2004
482	Hexone Tanks	5/24/2002
483	By-Pass of 244-U DCRT	11/19/2002
484	Borehole 41-09-39	2/14/2003
487	Vadose Zone Characterization	5/01/2001
488	Isolation of Valve Box#11 Outside 324 Facility	2/14/2003
490	Portable Exhauster on Pit 244-TX DCRT	8/10/2004
492	241-TX-154 Diversion Box	8/10/2004
493	Tank Farm 241-S-151 Diversion Box	8/10/2004
494	Portex 030	3/03/2006
497	244-CR-VAULT activities	8/6/2004
560	Decontamination Trailer	8/6/2004

6.0 OBSOLETE APPROVALS

EU ID	NOC ID	Project Title	Date Obsolete	Permit Number
50				
	327	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping	9/22/2005	AIR 02-1020
	380	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping, addition of tanks 241-A-101, 241-U-102, Rev. 4	10/25/2002	NOC Revision
	455	Interim stabilization activities associated with removal of remaining pumpable liquids present in the 244-AR facility	8/6/2004	AIR 02-1108
56				
	62	241-SY-101Tank Mixer Pump Replacement	11/19/2002	AIR 95-203
	358	241-SY-101 Crust Growth Near Term Mitigation	11/19/2002	Shortform
57				
	327	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping	9/22/2005	AIR 02-1020
	380	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping, addition of tanks 241-A-101, 241-U-102, Rev. 4	10/25/2002	NOC Revision
58				
	327	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping	9/22/2005	AIR 02-1020
	380	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping, addition of tanks 241-A-101, 241-U-102, Rev. 4	10/25/2002	NOC Revision
	455	Interim stabilization activities associated with removal of remaining pumpable liquids present in the 244-AR facility	8/6/2004	AIR 02-1108
64				
	242	Rotary Mode Core Sampling (RMCS) Systems at 241-SX	9/22/2005	AIR 02-1237
	263	241-SX-104 Saltwell Pumping, Phase I	11/19/2002	Shortform
	283	Saltwell Pumping of tank 241-SX-106	12/31/2002	RTAM
	423	Saltwell Pumping Tanks 241-SX-101, 241-SX-102, 241-SX-103, and 241-SX-105	6/14/2006	AIR 02-1248
89				
	393	Isolation of Exhauster 296-P-17 from Tank 105-A in the 241-A Tank Farm	11/19/2002	NOC Revision
93				
	286	241-AY and 241-AZ Ventilation Upgrades	12/31/2002	AIR 98-708
	296	Installation and Operation of Waste Retrieval Systems in Tanks 241-AZ-101 and 241-AZ-102	7/26/2005	AIR 02-503
	333	241-AY and 241-AZ Ventilation Upgrades	12/31/2002	NOC Revision
144				
	261	Rotary Mode Core Sampling (RMCS) Systems 3 & 4, Rev. 1	8/23/2004	AIR 98-301
	327	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping	9/22/2005	AIR 02-1020
	607	Operation of Rotary Mode Core Sampling Systems Three and Four.	9/22/2005	AIR 04-904

EU ID	NOC ID	Project Title	Date Obsolete	Permit Number
145				
	343	Use of a portable exhauster at 244-AR Vault	12/20/2002	Revision Form
146				
	211	200 Area Effluent Treatment Facility (ETF) and Load-In Station, and Liquid Effluent Retention Facility (LERF) (Emission Point: 296-E-1)	12/31/2002	Revision Form
147				
	211	200 Area Effluent Treatment Facility (ETF) and Load-In Station, and Liquid Effluent Retention Facility (LERF) (Emission Point: 296-E-1)	12/31/2002	Revision Form
148				
	211	200 Area Effluent Treatment Facility (ETF) and Load-In Station, and Liquid Effluent Retention Facility (LERF) (Emission Point: 296-E-1)	12/31/2002	Revision Form
165				
	120	S-Farm removal of duct work and associated exhausters	10/15/2002	AIR 95-1004
	339	Stack Monitoring System Upgrades (Project W-420)	9/22/2005	AIR 02-1235
	365	Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)	12/31/2002	RTAM
166				
	339	Stack Monitoring System Upgrades (Project W-420)	9/22/2005	AIR 02-1235
	365	Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)	12/31/2002	RTAM
175				
	131	Removal of HEPA Filtration in the 318 Building	7/24/2001	RTAM
	251	Building 318 Modification and stack relocation	12/23/2002	Shortform
185				
	412	Installation and use of a new emissions unit for the 241-ER-311 Catch Tank.	11/19/2002	Shortform
190				
	547	K-East Basin Sludge and Water System	10/10/2003	CERCLA
	24	105-KE Basin Fuel Removal	2/18/2004	AIR 04-105
195				
	291	Decontamination and Stabilization Activities For 309 Plutonium Recycle Test Reactor	3/27/2002	NOC Revision
197				
	319	Operation of the Dangerous and Radioactive Mixed Waste Storage Facility (305-B)	5/25/2006	AIR 02-1202
208				
	339	Stack Monitoring System Upgrades (Project W-420)	9/22/2005	AIR 02-1235
	365	Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)	12/31/2002	RTAM
213				
	45	244-CR Vault Double-Contained Receiver Tank	12/31/2002	AIR 94-913
	339	Stack Monitoring System Upgrades (Project W-420)	9/22/2005	AIR 02-1235

EU ID	NOC ID	Project Title	Date Obsolete	Permit Number
	365	Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)	12/31/2002	RTAM
217				
	484	241-AY-101 Annulus Primary Tank Wall Cleaning Activities	11/19/2002	AIR 01-1108
224				
	329	Basin Drain System Mitigation Activities at the 105 K East and 105 K West Basins	1/28/2002	AIR 98-1006
227				
	38	Installation of a small mixer pump to support routine pH adjustment in Tank 107-AN.	11/19/2002	RTAM
234				
	339	Stack Monitoring System Upgrades (Project W-420)	9/22/2005	AIR 02-1235
	365	Stack Monitoring System Upgrades Resume Work Strategy (Project W-420)	12/31/2002	RTAM
236				
	310	241-C-106 Tank Sluicing, Phase II	11/25/2002	AIR 98-1002
253				
	261	Rotary Mode Core Sampling (RMCS) Systems 3 & 4, Rev. 1	8/23/2004	AIR 98-301
	327	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping	9/22/2005	AIR 02-1020
	607	Operation of Rotary Mode Core Sampling Systems Three and Four.	9/22/2005	AIR 04-904
284				
	429	Use of an ultra high pressure water lance to install saltwell pumping equipment in Tank 241-BY-105	11/19/2002	AIR 00-207
301				
	211	200 Area Effluent Treatment Facility (ETF) and Load-In Station, and Liquid Effluent Retention Facility (LERF) (Emission Point: 296-E-1)	12/31/2002	Revision Form
307				
	248	Environmental Molecular Sciences Laboratory (EMSL) Uranyl nitrate hexahydrate project	12/5/2001	Shortform
314				
	445	Storage in T Plant Complex of Sludge from K Basins	5/16/2005	AIR 03-1208
	499	T Plant Complex Fuel Removal Project	5/16/2005	AIR 01-1010
	500	Entering and Characterizing of the 224-T Facility Process Cells	5/16/2005	AIR 02-704
332				
	413	REDOX Plutonium Loadout Hood Stabilization	8/27/2002	NOC Revision
336				
	413	REDOX Plutonium Loadout Hood Stabilization	8/27/2002	NOC Revision
340				
	249	Waste Encapsulation and Storage Facility (WESF) K-3 Duct Characterization	6/11/2002	NOC Revision
342				
	252	Registration of Existing Stacks at the 331-G Building	3/10/2003	AIR 02-1217

EU ID	NOC ID	Project Title	Date Obsolete	Permit Number
343				
	252	Registration of Existing Stacks at the 331-G Building	3/10/2003	AIR 02-1217
344				
	401	Tank Farm 241-UX-154 Diversion Box	8/10/2004	AIR 02-1242
348				
	233	X-Ray and Low Level Waste Repackaging in the 306W Building	12/28/2004	AIR 02-1216
360				
	113	Cleanout of B-Cell in the 324 Building	2/25/2002	AIR 95-903
	469	Deactivation Activities at the 324 Building	2/25/2002	AIR 01-608
361				
	491	Medical Isotope Research Using Th-232 in the Radiochemical Processing Laboratory (325 Building)	12/10/2002	AIR 02-206
	302	325 Building Hazardous Waste Treatment Unit (HWTU)	12/10/2002	AIR 02-809
	430	Tritium Target Qualification Program Radiochemical Processing laboratory 325 Building, 300 Area	12/10/2002	AIR 02-808
	447	I-131 Medical Isotope Research in the Radiochemical Processing Laboratory (325 Building)	12/10/2002	AIR 02-102
	127	Removal of 3rd Stage HEPA Filter, 325 Building	7/24/2001	RTAM
	253	Transfer Strontium-90 from the 324 Building to the 325 Building	12/10/2002	Shortform
	294	Modification to the annual possession quantity of the 325 Building Special Nuclear Materials Disposition and Low-Level Waste Vitrification Research Programs (Pu-238)	12/10/2002	AIR 98-807
366				
	64	329 Building, Chemical Sciences Laboratory	8/29/2001	AIR 95-205
	494	Research at the 329 Facility	7/20/2004	AIR 01-1006
386				
	563	Decontamination for Transition of the 241-Z Liquid Waste Treatment Facility to Demolition	4/3/2006	AIR 03-1109
387				
	11	Plutonium Finishing Plant Low-Level Waste Treatment Facility	12/30/2004	AIR 02-1212
389				
	450	Plutonium Finishing Plant Stabilization and Packaging Equipment	12/30/2004	AIR 04-202
390				
	450	Plutonium Finishing Plant Stabilization and Packaging Equipment	12/30/2004	AIR 04-202
391				
	553	Transition of the 232-Z Contaminated Waste Recovery Process Facility at the Plutonium Finishing Plant	8/17/2004	AIR 03-902
393				
	374	Construction, Installation, Operation, and Removal of a Vertical Calciner to Stabilize Plutonium at PFP.	12/30/2004	AIR 01-710

EU ID	NOC ID	Project Title	Date Obsolete	Permit Number
	432	Plutonium Finishing Plant (PFP) Cementation process (ALARACT)	12/2/2002	AIR 00-302
	443	Magnesium Hydroxide Precipitation Process at the Plutonium Finishing Plant	12/30/2004	AIR 03-1207
	124	Ductwork and Process Piping Remediation in Buildings 234-5Z & 291-Z (PFP)	12/30/2004	AIR 02-1213
	170	Plutonium Finishing Plant Duct Work and Process Piping Remediation	9/6/2002	RTAM
	209	Disposition of Select Plutonium-Bearing Alloys at the Plutonium Finishing Plant (PFP)	12/30/2004	AIR 03-104
395				
	246	FFTF Ion Exchange Resin Columns Changeout	11/29/2002	AIR 97-1203
412				
	143	HEPA Filter Bank Removal in the331 Building	7/24/2001	RTAM
	158	Approval to relocate Portable Radon Research Facility to any location on site	12/30/2002	AIR 96-506
	254	Life Sciences Laboratory-1 (331 Building)	11/23/2004	AIR 02-207
423				
	228	340-A Building Tank Sludge Cleanout	2/14/2005	AIR 03-1203
438				
	8	219-S to 204-AR Truck Transfers	8/6/2004	AIR 03-1202
	332	219-S to 204-AR Truck Transfers	8/6/2004	NOC Revision
443				
	437	Removal of a Section of Concrete from the 384 Powerhouse Bunker Tanks	10/31/2003	AIR 02-515
	469	Deactivation Activities at the 324 Building	2/25/2002	AIR 01-608
	485	Demolition of 303-K Storage Facility	8/15/2002	AIR 01-1014
447				
	435	Tank Farm Restoration and Safe Storage	12/31/2002	AIR 02-901
	455	Interim stabilization activities associated with removal of remaining pumpable liquids present in the 244-AR facility	8/6/2004	AIR 02-1108
	500	Entering and Characterizing of the 224-T Facility Process Cells	5/16/2005	AIR 02-704
461				
	292	Modular Containment (PermaCon) for Sampling Activities at the Central Waste Complex	7/29/2002	RTAM
476				
	492	Retrieving Buried Containers of Transuranic (TRU) and Suspect-TRU Waste From the Low-Level Burial Grounds (LLBG)	12/12/2003	AIR 02-103
	296	Installation and Operation of Waste Retrieval Systems in Tanks 241-AZ-101 and 241-AZ-102	7/26/2005	AIR 02-503
	435	Tank Farm Restoration and Safe Storage	12/31/2002	AIR 02-901
	455	Interim stabilization activities associated with removal of remaining pumpable liquids present in the 244-AR facility	8/6/2004	AIR 02-1108
479				
	336	219-S Waste Handling Facility Secondary Containment Upgrade (Project W-178)	8/21/2002	NOC revision
480				
	324	Soil Characterization Using the Cone Penetrometer	11/19/2002	AIR 98-1009

EU ID	NOC ID	Project Title	Date Obsolete	Permit Number
481				
	350	Addition of 200 Area Effluent Treatment Facility (ETF) Load-In Station Filter Skid	1/15/2004	AIR 02-208
482				
	441	Stabilizing the Hexone Tanks 276-S-141 and 276-S-142	5/24/2002	AIR 02-101
483				
	360	By-Passing the 244-U Double Contained Receiver Tank (DCRT) During Saltwell Pumping	11/19/2002	Shortform
486				
	539	Installation of Breather Filter on Tank 241-C-106	06/14/2006	AIR 03-203
	598	Construction and Operation of a Fuel Storage Facility at the Plutonium Finishing Plant Complex	12/30/2004	AIR 04-605
	585	Plutonium Finishing Plant Decontamination Trailer	12/30/2004	AIR 04-309
	605	Indoor Releases Performed With Uranium Hexafluoride in the UO-3 Plant Complex 200W Area.	12/28/2004	AIR 04-815
	563	Decontamination for Transition of the 241-Z Liquid Waste Treatment Facility to Demolition	4/3/2006	AIR 03-1109
	492	Retrieving Buried Containers of Transuranic (TRU) and Suspect-TRU Waste From the Low-Level Burial Grounds (LLBG)	12/12/2003	AIR 02-103
	500	Entering and Characterizing of the 224-T Facility Process Cells	5/16/2005	AIR 02-704
	504	Exhaust Fan Replacement at the 291-T-1 Stack	9/29/2005	AIR 02-509
	438	Operation of a Conex Box Adapted to Allow Ambient Air Drying of Radionuclide Contaminated Green Vegetation	10/31/2003	AIR 02-516
	455	Interim stabilization activities associated with removal of remaining pumpable liquids present in the 244-AR facility	8/6/2004	AIR 02-1108
	470	Radioactive Asbestos Removal From the Exterior of Hanford Facilities Located in the 200 Areas	8/10/2004	AIR 01-609
	327	Portable Exhauster Use On Single Shell (SST) Tanks During Saltwell Pumping	9/22/2005	AIR 02-1020
	553	Transition of the 232-Z Contaminated Waste Recovery Process Facility at the Plutonium Finishing Plant	8/17/2004	AIR 03-902
	435	Tank Farm Restoration and Safe Storage	12/31/2002	AIR 02-901
	517	Waste Treatment Plant Phase I	8/6/2004	AIR 03-310
	518	Stabilization, Deactivation, and Demolition of the Plutonium Finishing Plant (PFP) Ancillary Buildings and Structures	12/30/2004	AIR 02-807
	296	Installation and Operation of Waste Retrieval Systems in Tanks 241-AZ-101 and 241-AZ-102	7/26/2005	AIR 02-503
	487	Waste transfer from the Vit Plant to LERF and TEDF under project W-519.	6/26/2001	AIR 00-706
487				
	379	Tank Waste Remediation System Vadose Zone Characterization	5/14/2001	AIR 00-515
	387	Vadose Zone Characterization NOC revision	6/21/2001	NOC Revision
	409	Vadose Zone Characterization NOC Revision 2	6/21/2001	NOC Revision
	454	Vadose Zone Characterization	6/21/2001	AIR 00-1104

EU ID	NOC ID	Project Title	Date Obsolete	Permit Number
	490	Tank Waste Remediation System Vadose Zone Characterization, revision 1	6/21/2001	AIR 00-515
489				
	356	Operation of the 4843 Building Waste Inspection Facility	10/25/2002	Shortform
490				
	403	Tank Farm Waste Transfer Pit 244-TX Double Contained Receiver Tank (DCRT)	8/10/2004	AIR 02-1243
492				
	408	Tank Farm 241-TX-154 Diversion Box	8/10/2004	AIR 02-1245
493				
	407	Tank Farm 241-S-151 Diversion Box	8/10/2004	AIR 02-1244
497				
	424	244-CR Vault work activities	8/6/2004	AIR 00-206
499				
	120	S-Farm removal of duct work and associated exhausters	10/15/2002	AIR 95-1004
501				
	446	300 Area Process Sewer Cleanout	12/31/2002	AIR 00-708
503				
	450	Plutonium Finishing Plant Stabilization and Packaging Equipment	12/30/2004	AIR 04-202
560				
	506	Operation of a Mobile Decontamination Trailer	8/6/2004	AIR 02-410
689				
	526	Stabilization of Two Concrete Boxes Containing Ion Exchange Columns in 183-KW Vault	3/15/2006	AIR 02-810
712				
	539	Installation of Breather Filter on Tank 241-C-106	6/14/2006	AIR 03-203
716				
	539	Installation of Breather Filter on Tank 241-C-106	6/14/2006	AIR 03-203
717				
	539	Installation of Breather Filter on Tank 241-C-106	6/14/2006	AIR 03-203
747				
	563	Decontamination for Transition of the 241-Z Liquid Waste Treatment Facility to Demolition	4/3/2006	AIR 03-1109
874				
	598	Construction and Operation of a Fuel Storage Facility at the Plutonium Finishing Plant Complex	12/30/2004	AIR 04-605

7.0 CERCLA APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

CERCLA Substantive Requirements -- Applicable or Relevant and Appropriate Regulations
[WAC 246-247-040]

Regulations promulgated under statutory authority other than the FCAA (e.g., RCRA and CERCLA) are not Title V applicable requirements and are not included in the license. In addition, actions taken pursuant to CERCLA are exempt from permitting. However, the actions taken must meet the substantive requirements of applicable or relevant and appropriate regulations (ARARs) (e.g., WAC 246-247-040, ALARACT). Characterization and cleanup activities are being conducted at Hanford pursuant to CERCLA. The characterization and cleanup activities are applying best available radionuclide control technology to control emissions, and emissions are being monitored to ensure that the offsite dose to the maximally exposed individual is below the applicable standards. The CERCLA decision documents, such as an Action Memo, identify ARARs.

Attachment 2

Number: 00-05-006 (Hanford AOP 2006 Draft Renewal)

State of Washington Department of Health (Health)
Radiation Protection
Richland, Washington 99352

For
Public comment from 7/10-8/11/2006

The Department of Energy
Hanford Site Radioactive Air Emissions License
#FF-01

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[Rules and Regulations]
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From the Federal Register Online via GPO Access [wais.access.gpo.gov]
[DOCID:fr05jn06-8]

ENVIRONMENTAL PROTECTION AGENCY
40 CFR Part 61
[EPA-R10-OAR-2006-0001; FRL-8177-2]

Partial Approval of the Clean Air Act, Section 112(l), Delegation of Authority to the Washington State Department of Health

AGENCY: Environmental Protection Agency (EPA).
ACTION: Final rule.

SUMMARY: EPA is granting partial approval to Washington State Department of Health's (WDOH) request for delegation of authority to implement and enforce the National Emission Standards for Hazardous Air Pollutants (NESHAP) for radionuclide air emission. This action is being taken under the Clean Air Act (CAA or the Act).

DATES: Effective Date: This final rule is effective on July 5, 2006.

ADDRESSES: EPA has established a docket for this action under Docket ID No. EPA-R10-OAR-2006-0001. All documents in the electronic docket are listed in the http://www.regulations.gov EXIT Disclaimer index. Although listed in the index, some information is not publicly available, i.e., Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material is not placed on the Internet and will be publicly available only in hard copy form. Publicly available docket materials are available either electronically in http://www.regulations.gov EXIT Disclaimer or in hard copy during normal business hours at the Office of Air, Waste and Toxics, U.S. Environmental Protection Agency, Region 10, 1200 Sixth Avenue, Seattle, Washington 98101. EPA requests that if at all possible, you contact the individual listed in the FOR FURTHER INFORMATION CONTACT section to view the hard copy of the docket.

FOR FURTHER INFORMATION CONTACT: Davis Zhen, (206) 553-7660, or by e-

mail at zhen.davis@epa.gov.

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I. Background

On June 6, 2005, WDOH submitted a request for delegation of authority to implement and enforce 40 CFR part 61, subparts A, B, H, I, K, Q, R, T, and W (Radionuclide NESHAPs). WDOH's request showed that it had adopted without change or modification all of the provisions of the Radionuclide NESHAPs, as in effect on July 1, 2004. On February 22, 2006, EPA proposed a partial approval of WDOH's delegation request. The reason for EPA's decision to grant partial rather than full approval was that WDOH does not currently have express authority to recover criminal fines for knowingly making a false material statement, representation, or certificate in any form, notice or report, or knowingly rendering inadequate any required monitoring device or method, as required by 40 CFR 70.11(a)(3)(iii) and 40 CFR 63.91(d)(3)(i). Please refer to 71 FR 9059 (February 22, 2006) for a detailed description of our proposed partial approval and delegation.

II. Response to Comments

EPA provided a 30-day period for public comment on our February 22, 2006 proposal, which ended on March 24, 2006. No comments were received

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during the public comment period. EPA did receive a comment letter, however, on March 27, 2006, after the close of the public comment period. Although EPA is not legally obligated to respond, a summary of the commenter's concerns and EPA's response to the comments follows. A copy of the comment letter is in the docket.

The commenter states that WDOH's radionuclide regulations are not consistent with and are more stringent than the Radionuclide NESHAPs. The commenter cites a 1983 EPA guidance document regarding delegation of NSPS and NESHAP standards which states that ``state regulations dealing with NSPS and NESHAPS must be consistent with the Federal regulations as outlined in 40 CFR Part 60 and 61.'' Good Practices Manual for Delegation of NSPS and NESHAPs, February 1983. The commenter

continues that, although a state regulation is allowed to be more stringent than the corresponding federal regulation, the state regulation should be consistent.

The commenter notes several ways in which it believes WDOH's radionuclide regulations are not consistent with the Radionuclide NESHAPs. First, the commenter states that the WDOH regulations have no de minimis exemption from the requirement to obtain a construction permit and that there is no scientific basis for permitting sources below EPA's standard of 0.1 mrem per year. EPA assumes this is a reference to the exemption in 40 CFR 61.96(b) for new construction and modifications with emissions less than 1% of the standard in 40 CFR 61.92 (referred to here as the ``de minimis exemption'' or ``de minimis level''). The commenter is also concerned that WDOH has allegedly stated that it does not review or assess the economic impact of regulating sources below this de minimis level. Second, the commenter states that some of WDOH's exemptions are narrower than those provided in the Radionuclide NESHAPs. As an example, the commenter states that WDOH's exemption to the definition of ``modification'' for routine maintenance, repair and replacement applies only to abatement technology, whereas EPA's definition of modification has no such limitation. Third, the commenter states that WDOH requires notice of construction applications for accidental releases, whereas the Radionuclide NESHAPs do not. Fourth, the commenter states that WDOH has expressed concern, and even reluctance, to permit some individual sources, even though their effective doses were below the de minimis level individually and actual facility-wide emissions are approximately 0.3% of the Radionuclide NESHAPs facility-wide standard of 10 mrem per year because the unabated (uncontrolled) emissions of the Department of Energy's Hanford facility (DOE Hanford) are approaching the facility-wide standard of 10 mrem per year. The commenter concludes that EPA should not delegate the Radionuclide NESHAPs to WDOH unless WDOH promulgates regulations consistent with the regulations and the intent of the Radionuclide NESHAPs or documents substantial evidence other than that compiled by the EPA to reinforce their regulations.

As the commenter notes and as discussed in the proposal, WDOH has, in addition, adopted other provisions as a matter of state law that regulated radionuclide emissions and that apply to sources subject to the Radionuclide NESHAPs. These requirements are additional to and more stringent than the Radionuclide NESHAPs, by, for example, eliminating exemptions that may be available under the Radionuclide NESHAPs. Section 116 of the CAA makes clear, however, that with some exceptions not relevant here, nothing in title I of the CAA precludes or denies the right of any State to adopt or enforce any standard or limitation respecting emissions of air pollutants or any requirement respecting control or abatement of air pollutant so long as it is not less stringent than a standard or limitation in effect under an applicable implementation plan or under section 111 or 112 of the CAA. EPA made clear in proposing to approve WDOH's delegation request that EPA's partial approval and delegation of the Radionuclide NESHAPs to WDOH does not extend to any additional state standards regulating radionuclide emissions. See 71 FR 9062 and 9063. These additional State standards are enforceable as a matter of State law, but are not enforceable under the CAA or in any way part of this delegation.

III. Final Action

EPA is granting partial approval to WDOH's request for partial approval and delegation of authority to implement and enforce the Radionuclide NESHAPs. Pursuant to the authority of section 112(l) of the CAA, this partial approval is based on EPA's finding that State

law, regulations and agency resources meet the requirements for partial program approval and delegation of authority specified in 40 CFR 63.91 and applicable EPA guidance. Except as provided in Section III.B., EPA is delegating to WDOH authority to implement and enforce 40 CFR part 61, subparts A, B, H, I, K, Q, R, T, and W, as in effect on July 1, 2004. NESHAPs that are promulgated or revised substantively after July 1, 2004 are not delegated to WDOH. These remain the responsibility of EPA. Included as part of the delegation is the authority to approve:

1. ``Minor changes to monitoring,'' including the use of the specified monitoring requirements and procedures with minor changes in methodology as described in 40 CFR 61.14(g)(1)(i);
2. ``Intermediate changes to monitoring;''
3. ``Minor changes to recordkeeping/reporting;'';
4. ``Minor changes in test methods,'' including the use of a reference method with minor changes in methodology as described in 40 CFR 61.13(h)(1)(i);
5. Waiver of the requirement for emission testing because the owner or operator of a source has demonstrated by other means to WDOH's satisfaction that the source is in compliance with the standard as described in 40 CFR 61.13(h)(1)(iii).

For purposes of this paragraph, the terms in quotations have the meaning assigned to them in 40 CFR 63.90.

EPA is also updating the table published at 40 CFR 61.04(c)(10) showing the most recent delegation status of specific part 61 subparts that have been delegated to State and local air pollution control authorities in Region 10.

A. What Authorities Are Excluded From This Partial Approval and Delegation?

EPA is not delegating authorities under 40 CFR part 61 that specifically indicate they can not be delegated, that require rulemaking to implement, that affect the stringency of the standard, or where national oversight is the only way to ensure national consistency. Table 1 below identifies the specific authorities within 40 CFR part 61, subparts A, B, H, I, K, Q, R, T, and W that EPA is specifically excluding from this delegation.

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Table 1.--Part 61 Authorities Excluded From Partial Approval and Delegation

Section	Authorities
61.04(b)	Waiver of recordkeeping.
61.12(d)(1)	Approval of alternative means of emission limitation.
61.13(h)(1)(ii)	Approval of alternatives to test methods (except as provided in 40 CFR 61.13(h)(1)(i)).
61.14(g)(1)(ii)	Approval of alternatives to monitoring that do not qualify as ``Minor changes to monitoring,'' ``Intermediate changes to monitoring,'' or ``Minor changes to recordkeeping/reporting'' For purposes of the previous sentence, the terms in quotes are defined in 40 CFR 63.90.
61.16	Availability of information.

61.23(b).....	Subpart B--Radon Emissions from Underground Uranium Mines Alternative compliance demonstration to COMPLY-R (requires EPA Headquarters approval).
61.93(b)(2)(iii), (c)(2)(iii).....	Subpart H--Emissions of Radionuclides Other than Radon from DOE Facilities (alternatives to test methods).
61.107(b)(2)(iii), (d)(2)(iii)....	Subpart I--Radionuclide Emissions from Federal Facilities Other than NRC licensees and Not Covered in Subpart H (alternatives to test methods).
61.125(a).....	Subpart K--Radionuclide Emissions from elemental Phosphorus Plants (alternatives to test methods).
61.206(c), (d), and (e).....	Subpart R--Emission from Phosphogypsum Stacks (requires Approval from Assistant Administrator of EPA Office of Air and Radiation).

In addition, because WDOH does not currently have express authority to recover criminal fines for knowingly making a false material statement, representation, or certificate in any form, notice or report or knowingly rendering inadequate any required monitoring device or method, as required by 40 CFR 70.11(a)(3)(iii) and 40 CFR 63.91(d)(3)(i), EPA will continue to retain primary authority to implement and enforce these authorities. This is the basis for partial rather than full approval.

B. How Will This Partial Approval and Delegation Affect Regulated Community?

Generally speaking, the transfer of authority from EPA to WDOH in this delegation changes EPA's role from primary implementer and enforcer to overseer. As a result, sources in Washington subject to the delegated Radionuclide NESHAPs should direct questions and compliance issues to WDOH. For authorities that are NOT delegated (those noted in Section III.A. above), affected sources should continue to work with EPA as their primary contact and submit materials directly to EPA. In such cases, affected sources should copy WDOH on all submittals, questions, and requests. EPA will continue to have primary responsibility to implement and enforce Federal regulations that do not have current state or local agency delegations.

C. Where Will the Regulated Community Send Notifications and Reports?

Sources subject to the delegated NESHAPs will be required to send required notifications, reports and requests to WDOH for WDOH's action and to provide copies to EPA. For authorities that are excluded from this delegation, sources should continue to send required notifications, reports, and requests to EPA and to provide copies to WDOH.

D. What Are WDOH's Reporting Obligations?

WDOH must maintain a record of all approved alternatives to all monitoring, testing, recordkeeping, and reporting requirements and

provide this list of alternatives to EPA at least semi-annually, or at a more frequent basis if requested by EPA. EPA may audit the WDOH-approved alternatives and disapprove any that it determines are inappropriate, after discussion with WDOH. If changes are disapproved, WDOH must notify the source that it must revert to the original applicable monitoring, testing, recordkeeping, and/or reporting requirements (either those requirements of the original section 112 requirements, the alternative requirements approved under 40 CFR part 63, subpart A, or the previously approved site-specific alternative requirements). Also, in cases where the source does not maintain the conditions which prompted the approval of the alternatives to the monitoring testing, recordkeeping, and/or reporting requirements, WDOH must require the source to revert to the original monitoring, testing, recordkeeping, and reporting requirements, or more stringent requirements, if justified.

E. What Is the Effect of Other State Laws Regulating Radionuclide Air Emissions?

This partial approval and delegation delegates to WDOH authority to implement and enforce 40 CFR part 61, subparts A, B, H, I, K, Q, R, T, and W, as in effect on July 1, 2004. The partial approval and delegation does not extend to any additional state standards, including other state standards regulating radionuclide air emissions. However, if both a State or local regulation and a Federal regulation apply to the same source, both must be complied with, regardless of whether the one is more stringent than the other, pursuant to the requirements of section 116 of the Clean Air Act.

F. Delegation of Newly Promulgated and Revised Radionuclide NESHAPs

WDOH may receive partial approval and delegation of newly promulgated or revised Radionuclide NEHAPS by the following streamlined process: (1) WDOH will send a letter to EPA requesting delegation for such new or revised NESHAPs which WDOH has adopted by reference into Washington regulations; (2) EPA will send a letter of response back to WDOH granting partial approval of the delegation request (or explaining why EPA cannot grant the request), and publish only EPA's approval in the Federal Register; (3) WDOH does not need to send a response back to EPA.

G. How Will WDOH Receive Partial Approval and Delegation of Newly Promulgated and Revised Radionuclide NESHAPs?

WDOH is not obligated to request or receive future delegations. However, EPA encourages WDOH, on an annual basis, to revise its rules to incorporate by reference newly promulgated or revised Radionuclide NESHAPs and request updated delegation. Preferably, WDOH should adopt Federal regulations effective July 1, of each year; this corresponds with the publication date of the Code of Federal Regulations (CFR).

H. How Will This Partial Approval and Delegation Affect Indian Country?

This partial approval and delegation to WDOH to implement and enforce the

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Radionuclide NESHAPs does not extend to sources or activities located in Indian country, as defined in 18 U.S.C. 1151. ``Indian country'' is defined under 18 U.S.C. 1151 as: (1) All land within the limits of any

Indian reservation under the jurisdiction of the United States Government, notwithstanding the issuance of any patent, and including rights-of-way running through the reservation; (2) all dependent Indian communities within the borders of the United States, whether within the original or subsequently acquired territory thereof, and whether within or without the limits of a State; and (3) all Indian allotments, the Indian titles to which have not been extinguished, including rights-of-way running through the same. Under this definition, EPA treats as reservations trust lands validly set aside for the use of a Tribe, even if the trust lands have not been formally designated as a reservation. Consistent with previous Federal program approvals or delegations, EPA will continue to implement the NESHAPs in Indian country, because WDOH has not adequately demonstrated its authority over sources and activities located within the exterior boundaries of Indian reservations and other areas in Indian country.

IV. Statutory and Executive Order Reviews

Under Executive Order 12866 (58 FR 51735, October 4, 1993), this action is not a ``significant regulatory action'' and therefore is not subject to review by the Office of Management and Budget. For this reason, this action is also not subject to Executive Order 13211, ``Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use'' (66 FR 28355, May 22, 2001). This action merely approves State law as meeting Federal requirements and imposes no additional requirements beyond those imposed by State law. Accordingly, the Administrator certifies that this rule will not have a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 et seq.). Because this rule approves pre-existing requirements under State law and does not impose any additional enforceable duty beyond that required by State law, it does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Pub. L. 104-4).

The rule also does not have Tribal implications because it will not have a substantial direct effect on one or more Indian Tribes, on the relationship between the Federal Government and Indian Tribes, or on the distribution of power and responsibilities between the Federal Government and Indian Tribes, as specified by Executive Order 13175 (59 FR 22951, November 9, 2000). Consistent with EPA policy, however, EPA nonetheless initiated consultation with representatives of tribal governments in the process of developing this proposal to permit them to have meaningful and timely input into its development.

This action also does not have Federalism implications because it does not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government, as specified in Executive Order 13132 (64 FR 43255, August 10, 1999). This action merely approves a State request to receive delegation of certain Federal standards, and does not alter the relationship or the distribution of power and responsibilities established in the Clean Air Act. This rule also is not subject to Executive Order 13045 ``Protection of Children from Environmental Health Risks and Safety Risks'' (62 FR 19885, April 23, 1997), because it is not economically significant.

In reviewing program approval and delegation submissions, EPA's role is to approve submissions provided that they meet the criteria of the Clean Air Act. In this context, in the absence of a prior existing requirement for the State to use voluntary consensus standards (VCS), EPA has no authority to disapprove a delegation submission for failure

to use VCS. It would thus be inconsistent with applicable law for EPA to use VCS in place of a delegation submission that otherwise satisfies the provisions of the Clean Air Act. Thus the requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) do not apply. This rule does not impose an information collection burden under the provisions of Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.).

The Congressional Review Act, 5 U.S.C. 801 et seq., as added by the Small Business Regulatory Enforcement Fairness Act of 1996, generally provides that before a rule may take effect, the agency promulgating the rule must submit a rule report, which includes a copy of the rule, to each House of the Congress and to the Comptroller General of the United States. EPA will submit a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the United States prior to publication of the rule in the Federal Register. A major rule cannot take effect until 60 days after it is published in the Federal Register. This action is not a ``major rule'' as defined by 5 U.S.C. 804(2).

Under section 307(b)(1) of the Clean Air Act, petitions for judicial review of this action must be filed in the United States Court of Appeals for the appropriate circuit by August 4, 2006. Filing a petition for reconsideration by the Administrator of this final rule does not affect the finality of this rule for the purposes of judicial review nor does it extend the time within which a petition for judicial review may be filed, and shall not postpone the effectiveness of such rule or action. This action may not be challenged later in proceedings to enforce its requirements (See section 307(b)(2)).

List of Subjects in 40 CFR Part 61

Environmental protection, Air pollution control, Radionuclides, Reporting, and recordkeeping requirements.

Dated: May 19, 2006.
L. Michael Bogert,
Regional Administrator, Region 10.

• 40 CFR part 61 is amended to read as follows:

PART 61--[AMENDED]

• 1. The authority citation for part 61 continues to read as follows:

Authority: 42 U.S.C. 7401, 7412, 7413, 7414, 7416, 7601 and 7602.

Subpart A--General Provisions

• 2. Section 61.04 is amended by revising the table in paragraph (c)(10) to read as follows:

Sec. 61.04 Address.

* * * * *
(c) * * *
(10) * * *

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Delegation Status for Part 61

Delegation Status for Part 61 Standards--Region 10 \1\

	AK	ID	OR						WA				
Subparts \2\	ADEC \3\	IDEQ \4\	ODEQ \5\	LRAPA \6\	Ecology \7\	BCAA \8\	NWCAA \9\	ORCAA \10\	PSCAA \11\	SWCAA \12\	SCAPCA \13\	YRCAA \14\	WDOH \15\
A General Provisions \16\	X \16\	X \16\	X \16\	X \16\	X \16\	X \16\	X \16\	X \16\	X \16\	X \16\	X \16\	X \16\	X \17\
B Radon from Underground Uranium Mines	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X
C Beryllium	.....	X	X	X	X	X	X	X	X	X	X	X	.....
D Beryllium Rocket Motor Firing	.....	X	X	X	X	X	X	X	X	X	X	X	.....
E Mercury	X	X	X	X	X	X	X	X	X	X	X	X	.....
F Vinyl Chloride	.....	X	X	X	X	X	X	X	X	X	X	X	.....
H Radionuclide other than Radon from Dept. of Energy Facilities	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X
I Radionuclide from Federal Facilities other than Nuclear Regulatory Commission Licensees and not covered by Subpart H	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X
J Equipment Leaks of Benzene	X	X	X	X	X	X	X	X	X	X	X	X	.....
K Radionuclide from Elemental Phosphorus Plants	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X
L Benzene from Coke By-Product Recovery Plants	.....	X	X	X	X	X	X	X	X	X	X	X	.....
M Asbestos	X	.....	.....	.....	X	X	X	X	X	X	X	X	.....
N Inorganic Arsenic from Glass Manufacturing Plants	.....	X	X	.....	X	X	X	X	X	X	X	X	.....
O Inorganic Arsenic from Primary Copper Smelters	.....	X	X	.....	X	X	X	X	X	X	X	X	.....
P Inorganic Arsenic emissions from Arsenic Trioxide and Metallic Arsenic Production Facilities	.....	X	X	.....	X	X	X	X	X	X	X	X	.....
Q Radon from Dept. of Energy Facilities	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X
R Radon from Phosphogypsum Stacks	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X
T Radon from Disposal Uranium Mill Tailings	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X
V Equipment Leaks (Fugitive Sources)	X	X	X	.....	X	X	X	X	X	X	X	X	.....
W Radon from Operating Mill Tailings	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	X
Y Benzene from Benzene Storage Vessels	X	X	X	.....	X	X	X	X	X	X	X	X	.....
BB Benzene from Benzene Transfer Operations	.....	X	X	.....	X	X	X	X	X	X	X	X	.....
FF Benzene Waste Operations	X	X	X	.....	X	X	X	X	X	X	X	X	.....

1. Table last updated on July 5, 2006.
2. Any authority within any subpart of this part (i.e. under ``Delegation of Authority'') that is identified as not delegable, is not delegated.
3. Alaska Department of Environmental Conservation (01/18/1997). Note: Alaska received delegation for Sec. 61.145 and Sec. 61.154 of subpart M (Asbestos), along with other sections and appendices which are referenced in Sec. 61.145, as Sec. 61.145 applies to sources required to obtain an operating permit under Alaska's regulations. Alaska has not received delegation for subpart M for sources not required to obtain an operating permit under Alaska's regulations.
4. Idaho Department of Environmental Quality (07/01/2003). Note: Delegation of these part 61 subparts applies only to those sources in Idaho required to obtain an operating permit under title V of the Clean Air Act.
5. Oregon Department of Environmental Quality (07/01/2004).
6. Lane Regional Air Pollution Authority (07/01/2001).
7. Washington Department of Ecology (02/20/2001). Note: Delegation of part 61, subpart M, applies only to sources required to obtain an operating permit under title V of the Clean Air Act, including Hanford. (Pursuant to RCW 70.105.240, only Ecology can enforce non-radionuclide regulations at Hanford).

8. Benton Clean Air Authority (02/20/2001). Note: Delegation of part 61, subpart M, excludes Hanford, see note #7.
9. Northwest Clean Air Agency (07/01/2003).
10. Olympic Regional Clean Air Agency (07/01/2000). Note: Delegation of part 61, subpart M applies only to sources required to obtain an operating permit under title V of the Clean Air Act.

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11. Puget Sound Clean Air Agency (07/01/2005).
12. Southwest Clean Air Agency (08/01/1998).
13. Spokane County Air Pollution Control Authority (02/20/2001).
14. Yakima Regional Clean Air Authority (07/01/2000).
15. Washington State Department of Health (07/01/2004). Note: WDOH is only delegated the Radionuclide NESHAPs. Other NESHAPs will be enforced by Washington State Department of Ecology and local air agencies, as applicable.
16. General Provisions Authorities which are not delegated include: Sec. Sec. 61.04(b); 61.12(d)(1); 61.13(h)(1)(ii) for approval of major alternatives to test methods; Sec. 61.14(g)(1)(ii) for approval of major alternatives to monitoring; Sec. 61.16; Sec. 61.53(c)(4); and any sections in the subparts pertaining to approval of alternative standards (i.e., alternative means of emission limitations), or approval of major alternatives to test methods or monitoring. For definitions of minor, intermediate, and major alternatives or changes to test methods and monitoring, see 40 CFR 63.90.
17. General Provisions Authorities which are not delegated include: waiver of recordkeeping, approval of alternative means of emission limitation, approval of alternatives to test methods, except as provided in 40 CFR 61.13(h)(1)(i), approval of alternative to monitoring that do not qualify as ``Minor changes to monitoring,'' ``Intermediate changes to monitoring,'' or ``Minor changes to recordkeeping/reporting'' as defined in 40 CFR 63.90, and availability of information.

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Memorandum of Understanding between the Department of Ecology and the Department of Health

MEMORANDUM OF UNDERSTANDING

Between the

Washington State Department of Ecology

and the

Washington State Department of Health

Related to the

RESPECTIVE ROLES AND RESPONSIBILITIES

OF THE TWO AGENCIES IN COORDINATING ACTIVITIES

CONCERNING HANFORD SITE RADIOACTIVE AIR EMISSIONS

DOH Contract #N1256

PURPOSE

This Memorandum of Understanding (MOU) is between the Washington State Department of Health (Health) and the Washington State Department of Ecology (Ecology) under authorities granted within Chapters 43.70, 43.21A, 70.94, and 70.98 of the Revised Code of Washington (RCW). The purpose of this MOU is to clarify the respective roles of Health and Ecology in the issuance and administration of air operating permits and the performance of new source reviews at Hanford. It recognizes Health as the state agency responsible for public health protection and the primary agency responsible for regulation of Hanford facility radioactive air emissions (except as provided in Clause 5 of Ecology's Roles and Responsibilities). It recognizes Ecology as the agency responsible for environmental protection as described in this MOU, including both nonradioactive air and radioactive air issues with specific responsibilities for radionuclides outlined below.

BACKGROUND

Health and Ecology share responsibility for the control of radioactive air emissions pursuant to state and federal statues. Both agencies have authority to set standards for and to regulate radioactive air emissions per RCW 70.94 and RCW 70.98.

This MOU is designed to aid coordination between the agencies, and to avoid conflicting regulatory requirements for radioactive air emissions at the Hanford facility. This MOU defines the respective roles of Health and Ecology in the regulation of Hanford Site radioactive air emissions, including the determination of compliance, radioactive air emissions control technology standards and the performance of new source review.

NOTE: This document does not affect the delegation from the U.S. Environmental Protection Agency (EPA) of the National Emission Standards for Hazardous Air Pollutants Program.

RECITALS

Chapter 70.94 RCW and Chapter 173-401 Washington Administrative Code (WAC), administered by Ecology, establish a comprehensive air operating permit program in Washington State consistent with the requirements of Title V of the federal Clean Air Act (42 U.S.C. 7401, et seq.). All sources subject to these laws and regulations must have a permit to operate that assures compliance by the source with all applicable requirements.

Chapter 70.98 RCW and chapter 246-247 WAC, administered by Health, establish radioactive air emission requirements. These requirements are "applicable requirements" under Ecology's WAC 173-401-200.

Air emissions, including radioactive air emissions, at the Hanford Site must be covered under an air operating permit. The U. S. Department of Energy (USDOE) is required to submit two copies of its air operating permit application, one to Health for the licensing of radionuclides, and one to Ecology for the permitting of nonradioactive air emissions. Health will issue a radionuclide air emission license (hereinafter "radioactive air emissions license" or "license") for USDOE, which will be incorporated into the air operating permit issued by Ecology as an applicable requirement in accordance with the interagency procedures outlined below. A permit will be issued by Ecology with Health as a signatory reviewer and issuer of the radioactive air emissions license portion of the permit.

Health and Ecology will work with USDOE to establish a schedule of application submittals. All air operating permits for the Hanford facility will be issued by Ecology and reviewed by Health. All future re-openings, revisions and renewals of permits will follow the same process as outlined in this MOU.

NOTE: Wherever practicable, the provisions of this MOU shall apply to new source review, as well as to air operating permits.

DEFINITIONS

The definitions of terms contained in Chapters 173-400 and 173-401 WAC are incorporated by reference, unless otherwise defined here. Unless a different meaning is clearly required by context, the following words and phrases, as used in this MOU, shall have the following meanings:

> "Compliance determination" refers to the process whereby Health verifies how and whether a specific source meets standards set by Ecology in Chapter 173-480 WAC.
>
> "License" or "radioactive air emissions license" refers to the document issued by Health in accordance with Chapter 246-247 WAC that prescribes the relevant control requirements for radionuclide air emissions.

"Permit" or "operating permit" refers to the document issued by Ecology to USDOE in accordance with Chapter 173-401 WAC, chapter 70.94 RCW, and Title V of the federal Clean Air Act (42 U.S.C. 7401, et seq.). The operating permit gathers in one document all air emission limitations and requirements that apply to a given source.

"Primary or Primarily" - While both Ecology and Health have authority to regulate radionuclide air emissions under Chapters 70.94 RCW and 70.98 RCW, respectively, "primary" exercise of that authority means that, unless extenuating circumstances exist (for example, see Clauses 5 and 6 in the Joint Rules and Activities section), Health will be responsible for the particular activity.

"Standard," without further description, refers to any requirement established by Ecology through revision of Chapter 173-480 WAC that limits the quantity, rate or concentration of emissions of air pollution on a continuous basis including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under Chapter 173-480 WAC.

RESPECTIVE ROLES AND ACTIVITIES OF ECOLOGY AND HEALTH

The parties to this MOU describe their responsibilities as follows:

Ecology

1. Ecology issues the air operating permit.

2. Ecology is the state agency responsible for federal and state regulation of nonradioactive hazardous air pollutants at Hanford.

3. Ecology is the point of contact for issues and questions involving nonradioactive air emissions.

4. Ecology is the state agency responsible for determining requirements related to control technologies for nonradioactive air emissions.

5. Ecology sets air quality and emission standards for radioactive air emissions in Chapter 173-480 WAC.[1]

[1]Addition of this clause clarifies that the vehicle anticipated to be the primary way for Ecology to regulate is through the establishment of standards by the rule revision process and does not eliminate any powers that Ecology may have to regulate if Health fails to perform. The Joint Responsibilities section refers to scenarios in which Ecology may exercise its authority in other ways.

Health

1. Health is the state agency primarily responsible for regulation of Hanford Site radionuclide air emissions (except as provided in Clause 5 of Ecology's Roles and Responsibilities). This responsibility does not alter, in any way, existing statutory authorities of Health or Ecology.

2. Health is the state agency primarily responsible for evaluating airborne radionuclide emissions, including during new source reviews, and the agency responsible for the issuance of a radionuclide license that will be incorporated into the Hanford Air Operating Permit consistent with such evaluations.

3. Health is the point of contact for issues and questions pertaining to the regulation of Hanford Site radioactive air emissions.

4. Health is the state agency primarily responsible for evaluating airborne radioactive emissions in order to verify that offsite doses comply with applicable human health standards, and that site worker exposures from radionuclide air emissions are as low as reasonably achievable.

5. Health is the state agency primarily responsible for the implementation of state and federal requirements for radioactive air emission control technology, using EPA guidance for "top down" Best Available Control Technology (BACT). In Health's regulations the BACT process has been adapted to radionuclides and called BARCT in accordance with Chapter 173-480 WAC.

6. Health establishes control requirements for radionuclides for Hanford in a license, issued under Chapter 246-247 WAC, that is incorporated into the air operating permit for Hanford.

JOINT ROLES AND ACTIVITIES
OF THE DEPARTMENTS OF ECOLOGY AND HEALTH

The parties to this MOU recognize and agree to the following:

1. A staff point of contact for each agency will be identified for each Hanford Site new source or source modification to ensure that both agencies' interests are maintained, and to ensure that requirements placed on Hanford facilities are compatible.

2. If it can be demonstrated by Ecology that there will be risk to the public or to the environment without the use of technology different than that proposed by Health, Ecology may request that Health implement the different technology. Health will consider Ecology's request and justify its conclusion on whether to implement the requested technology. If the two parties cannot agree, the issue shall be referred to the General Dispute Resolution Process outlined in this MOU.

3. Both Ecology and Health are committed to cooperation and the sharing of pertinent information in order to aid compliance with applicable regulations, and to ensure protection of both human health and the environment.

4. In accordance with RCW 70.94.162(1) and §502(b)(3) of the federal Clean Air Act Amendments of 1990, air operating permit fees will cover all costs involved in administering the Operating Permit Program with respect to sources of air emissions. Health will bill Energy and collect fees separately, in accordance with Chapter 246-254 WAC, for all costs incurred by Health in regulating the radionuclides portions of the air operating permit. Ecology's permit program costs will include permit administration costs and development and oversight costs associated with Health's regulatory activities. Ecology will also bill USDOE and collect fees separately for all costs incurred by Ecology in the setting of standards and regulation of radionuclide air emissions, as well as for all costs incurred by Ecology in regulating nonradioactive air emissions. Health and Ecology will avoid billing USDOE for overlapping costs regarding the Hanford facility. There will be separate costs for separate duties under separate authorities.

5. Both Ecology and Health have identical enforcement authority under Chapter 70.94 RCW, and access to all applicable areas of the Hanford facility for inspections by both or either of the agencies will be a condition of the permit. Health will assume primary responsibility for inspection and enforcement actions that involve only radionuclides at Hanford, including the issuance of notices of violations and any administrative or judicial proceedings that stem from such actions. Ecology will have responsibility for inspection and enforcement actions that involve only nonradionuclides at Hanford, including the issuance of notices of violations and any administrative or judicial proceedings that stem from such actions. Wherever inspections or enforcement actions involve both radionuclide and nonradionuclide air emissions at Hanford, both agencies will share responsibility, including responsibility for issuance of notices of violations and any administrative or judicial proceedings that stem from such actions. However, in all instances of suspected violation, the agencies will confer before a notice of violation is issued (unless an imminent and substantial threat to the environment or human health exists - see below). The EPA will have enforcement authority over all federally enforceable portions of the permit.

   If in Ecology's judgment it can be demonstrated that there is risk to the public or to the environment from radioactive air emissions, Ecology will consult with Health. If Health fails to adequately address Ecology's concerns, the Dispute Resolution process outlined in this document will be followed, beginning at the section manager level. If a dispute arises as to which agency is responsible for enforcement, the dispute resolution procedures outlined in this MOU shall be followed, except as provided in Clause 6 of the Joint Roles and Activities Section. No enforcement action on the issue under consideration may be taken by either party until the full dispute resolution procedures have been followed, except as provided in Clause 6 of the Joint Roles and Activities Section.

6. If either agency recognizes an imminent and substantial threat to human health or the environment, that agency may take steps to mitigate the problem, then consult the other agency, and if warranted, follow the dispute resolution process.

7. Under the timeline requirements for operating permit issuance, Health will handle all radioactive air emissions license procedures, and Ecology will handle all air operating permit issuance procedures and requirements as per this MOU. Ecology will submit notices of permit issuance, modifications, and renewals to the Permit Register as required under WAC 173-401-805. The two agencies will hold joint hearings and will jointly assure proper notice of hearings. The two agencies will jointly prepare responses to public comments. Ecology will submit notices, comments, and the proposed permit to EPA.

8. Under the timeline requirements for operating permit issuance, permitting authorities have 180 days between the time a completeness determination is made and the time when the Draft Permit or Renewal is due. Under this MOU, each agency (Ecology and Health) shall submit to the other a Draft of its license or portion of a Hanford Operating Permit within 90 days after the date that a completeness determination is due or made. Each will then have 30 days to send comments to the other agency. Each agency will then have 30 days to respond to the comments and revise the license or the original Draft Permit. Each agency will have discretion to consider comments received after the 30-day comment period has expired. If a disagreement exists or one agency believes the other agency's response to the comments is insufficient, the issue shall follow the dispute resolution process outlined in this MOU, but in no event shall the deadlines for permit submittals to the EPA be missed.

GENERAL RESOLUTION OF DISPUTES

Both agencies recognize the time constraints that are involved with meeting the operating permit deadlines under the federal Clean Air Act and commit to resolving disputes as expeditiously as possible. Disputes arising from the implementation of this MOU will be resolved at the lowest level possible utilizing standard agency chains of command. Elevation to Ecology's Deputy Director and Health's Assistant Secretary for Environmental Health shall occur only after all reasonable efforts at the Program and Division level have failed or after two weeks after a comment period deadline has passed, whichever comes first. If the dispute still cannot be resolved at the Assistant Director and Assistant Secretary levels, the dispute shall be referred to the Director of Ecology and the Secretary of Health. If the dispute cannot be resolved at the highest agency levels within one week, the dispute shall be referred to the Governor's Office in accordance with RCW 43.17.330. Both agencies shall refrain from issuing a final determination until all disputes are resolved, but in no event shall the deadlines for permit submittals to the EPA be missed.

EFFECTIVE DATE, MODIFICATION, AND TERMINATION

This Memorandum of Understanding shall be effective upon signature by the parties, may be amended in writing by mutual consent, and may be terminated by either party after giving 30 days notice to the other party.

Signatures:

Janice Adair, Assistant Secretary
Environmental Health
Washington State Department of Health

Date 18 Aug 05

Ann Thompson, Contracts Manager
Washington State Department of Health

Date 8/19/05

Approved as to Form

Lilia Lopez, Assistant Attorney General
Washington State Department of Health

Date 8/18/05

Polly Zehm, Deputy Director
Washington State Department of Ecology

Date 9/14/05

7 #N14256

Interpretation of the Regulations and Definitions

Use the following guidance when interpreting the combination of 40 CFR 61 Subparts A and H with WAC 173-480 and 246-247. The following definitions apply:

- Federal Clean Air Act and 40 CFR 61 Subparts A and H
    - Apply only those definitions given for these laws or regulations.
- Washington State Clean Air Act, WAC 173-480 and 246-247
    - Apply only those definitions given for these laws and regulations
- When a conflict of definition may arise, the more stringent definition as determined by the administrator applies.

Clarification of these general conditions will occur during the WAC 246-247 regulation rewrite. When determining applicable of a regulation the facility should contact the department for guidance prior to use. The department reserves the right to make final determination on applicability of regulations.

The emission unit specific information

The emission unit specific information (i.e., stack height and diameter, average temperature and velocity) are parameters used by the department to identify significant changes in operation of an emission unit. The emission unit specific information contained in this license is to assure consistent emission unit operation, the actual emission unit parameters must be maintained by the emission unit owner/operator and reported as required by both WAC 246-247 and 40CFR61 Subpart H.

Referenced documents in the emission unit specific conditions and limitations

If the document cited in the emission unit specific conditions and limitations reflects:

- Data that justifies the project or a specific requirement (i.e., design data, calculation data, etc.) it will stand as the referenced document.
- Description (i.e., monitoring process etc.), but does not change a requirement (i.e., frequency of monitoring etc) the latest approved revision of that document will stand as the referenced document.

When determining applicable referenced document the facility should contact the department for guidance prior to use. The department reserves the right to make final determination on which document will stand as the referenced document.

Definitions Used in This License.

40 CFR 61 Subpart A Definitions (61.02)

The terms used in this part are defined in the Act or in this section as follows:

Act means the Clean Air Act (42 U.S.C. 7401 *et seq.*).

Administrator means the Administrator of the Environmental Protection Agency or his authorized representative.

Alternative method means any method of sampling and analyzing for an air pollutant which is not a reference method but which has been demonstrated to the Administrator's satisfaction to produce results adequate for the Administrator's determination of compliance.

Approved permit program means a State permit program approved by the Administrator as meeting the requirements of part 70 of this chapter (40 CFR) or a Federal permit program established in this chapter pursuant to title V of the Act (42 U.S.C. 7661).

Capital expenditure means an expenditure for a physical or operational change to a stationary source which exceeds the product of the applicable “annual asset guideline repair allowance percentage” specified in the latest edition of Internal Revenue Service (IRS) Publication 534 and the stationary source's basis, as defined by section 1012 of the Internal Revenue Code. However, the total expenditure for a physical or operational change to a stationary source must not be reduced by any “excluded additions” as defined for stationary sources constructed after December 31, 1981, in IRS Publication 534, as would be done for tax purposes. In addition, “annual asset guideline repair allowance” may be used even though it is excluded for tax purposes in IRS Publication 534.

Commenced means, with respect to the definition of “new source” in section 111(a)(2) of the Act, that an owner or operator has undertaken a continuous program of construction or modification or that an owner or operator has entered into a contractual obligation to undertake and complete, within a reasonable time, a continuous program of construction or modification.

Compliance schedule means the date or dates by which a source or category of sources is required to comply with the standards of this part and with any steps toward such compliance which are set forth in a waiver of compliance under §61.11.

Construction means fabrication, erection, or installation of an affected facility.

Effective date is the date of promulgation in the Federal Register of an applicable standard or other regulation under this part.

Existing source means any stationary source which is not a new source.

Issuance of a part 70 permit will occur, if the State is the permitting authority, in accordance with the requirements of part 70 of this chapter (40 CFR) and the applicable, approved State permit program. When the EPA is the permitting authority, issuance of a title V permit occurs immediately after the EPA takes final action on the final permit.

Monitoring system means any system, required under the monitoring sections in applicable subparts, used to sample and condition (if applicable), to analyze, and to provide a record of emissions or process parameters.

New source means any stationary source, the construction or modification of which is commenced after the publication in the Federal Register of proposed national emission standards for hazardous air pollutants which will be applicable to such source.

Owner or operator means any person who owns, leases, operates, controls, or supervises a stationary source.

Part 70 permit means any permit issued, renewed, or revised pursuant to part 70 of this chapter (40 CFR).

Permit program means a comprehensive State operating permit system established pursuant to title V of the Act (42 U.S.C. 7661) and regulations codified in part 70 of this chapter (40 CFR) and applicable State regulations, or a comprehensive Federal operating permit system established pursuant to title V of the Act and regulations codified in this chapter.

Permitting authority means:

(1) The State air pollution control agency, local agency, other State agency, or other agency authorized by the Administrator to carry out a permit program under part 70 of this chapter (40 CFR); or

(2) The Administrator, in the case of EPA-implemented permit programs under title V of the Act (42 U.S.C. 7661).

Reference method means any method of sampling and analyzing for an air pollutant, as described in appendix B, 40 CFR 61.

Run means the net period of time during which an emission sample is collected. Unless otherwise specified, a run may be either intermittent or continuous within the limits of good engineering practice.

Standard means a national emission standard including a design, equipment, work practice or operational standard for a hazardous air pollutant proposed or promulgated under this part.

Startup means the setting in operation of a stationary source for any purpose.

State means all non-Federal authorities, including local agencies, interstate associations, and State-wide programs, that have delegated authority to implement:

(1) The provisions of this part; and/or

(2) The permit program established under part 70 of this chapter (40 CFR). The term State shall have its conventional meaning where clear from the context.

Stationary source means any building, structure, facility, or installation which emits or may emit any air pollutant (radionuclides in this case) which has been designated as hazardous by the Administrator.

Title V permit means any permit issued, renewed, or revised pursuant to Federal or State regulations established to implement title V of the Act (42 U.S.C. 7661). A title V permit issued by a State permitting authority is called a part 70 permit in this part.

40 CFR 61 Subpart H Definitions *(61.91)*

As used in this subpart, all terms not defined here have the meaning given them in the Clean Air Act or 40 CFR part 61, subpart A. The following terms shall have the following specific meanings:

(a) *Effective dose equivalent* means the sum of the products of absorbed dose and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its distribution in the body of reference man. The unit of the effective dose equivalent is the rem. For purposes of this subpart, doses caused by radon-222 and its respective decay products formed after the radon is released from the facility are not included. The method for calculating effective dose equivalent and the definition of reference man are outlined in the International Commission on Radiological Protection's Publication No. 26.

(b) *Facility* means all buildings, structures and operations on one contiguous site.

(c) *Radionuclide* means a type of atom which spontaneously undergoes radioactive decay.

(d) *Residence* means any home, house, apartment building, or other place of dwelling which is occupied during any portion of the relevant year.

WAC 246-247 Definitions *(WAC 246-247-030 June 26, 2005)*

Terms used in this chapter have the definitions set forth below with reference to radioactive air emissions.

(1) "Abatement technology" means any mechanism, process or method that has the potential to reduce public exposure to radioactive air emissions. Abatement control features include automatic mechanisms and administrative controls used in the operation and control of abatement technology from entry of radionuclides into the ventilated vapor space to release to the environment.

(2) "Administrative control" means any policy or procedure that limits the emission of radionuclides.

(3) "ALARA" means as low as reasonably achievable making every reasonable effort to maintain exposures to radiation as far below the dose standards in this chapter as is practical, consistent with the purpose for which the licensed activity is undertaken, taking into account the state of technology, the economics of improvements in relation to the state of technology, the economics of improvements in relation to benefits to the public health and safety, and other socioeconomic considerations, and in relation to the utilization of nuclear energy, ionizing radiation, and radioactive materials in the public interest. See WAC 246-220-007.

(4) "As low as reasonably achievable control technology" (ALARACT) means the use of radionuclide emission control technology that achieves emission levels that are consistent with the philosophy of ALARA. ALARACT compliance is demonstrated by evaluating the existing control system and proposed nonsignificant modifications in relation to applicable technology standards and other control technologies operated successfully in similar applications. In no event shall application of ALARACT result in emissions of radionuclides that could cause exceedance of the applicable standards of WAC 246-247-040. See the definition of ALARA in this section. Note that ALARACT is equivalent to, but replaces, RACT in the May 7, 1986, version of chapter 173-480 WAC.

(5) "Annual possession quantity" means the sum of the quantity of a radionuclide on hand at the beginning of the calendar year and the quantity of that radionuclide received or produced during the calendar year.

(6) "Best available radionuclide control technology" (BARCT) means technology that will result in a radionuclide emission limitation based on the maximum degree of reduction for radionuclides from any proposed newly constructed or significantly modified emission units that the licensing authority determines is achievable on a case-by-case basis. A BARCT compliance demonstration must consider energy, environmental, and economic impacts, and other costs through examination of production processes, and available methods, systems, and techniques for the control of radionuclide

emissions. A BARCT compliance demonstration is the conclusion of an evaluative process that results in the selection of the most effective control technology from all known feasible alternatives. In no event shall application of BARCT result in emissions of radionuclides that could exceed the applicable standards of WAC 246-247-040. Control technology that meets BARCT requirements also meets ALARACT requirements. See WAC 173-480-030 and 246-247-120.

(7) "Committed effective dose equivalent" (CEDE) means the sum of the products of absorbed dose from internally deposited radionuclides and appropriate factors to account for differences in biological effectiveness due to the quality of radiation and its distribution in the body of reference man over a fifty-year period.

(8) "Construction" means fabrication, erection, or installation of a new building, structure, plant, process, or operation within a facility tat has the potential to emit airborne radionuclides. Construction includes activities of a permanent nature aimed at completion of the emission unit, such as pouring concrete, putting in a foundation, or installing utilities directly related to the emission unit. It does not include preliminary activities such as tests to determine site suitability, equipment procurement and storage, site clearing and grading, and the construction of ancillary buildings.

(9) "Decommissioning" means actions taken to reduce or eliminate the potential public health and safety impacts of a building, structure, or plant that has permanently ceased operations, including, but not limited to, actions such as decontamination, demolition, and disposition.

(10) "Emission unit" means any single location that emits or has the potential to emit airborne radioactive material. This may be a point source, nonpoint source, or source of fugitive emissions.

(11) "Facility" means all buildings, structures, plants, processes, and operations on one contiguous site under control of the same owner or operator.

(12) "Fugitive emissions" are radioactive air emissions which do not and could not reasonably pass through a stack, vent, or other functionally equivalent structure, and which are not feasible to directly measure and quantify.

(13) "Indication device" means any method or apparatus used to monitor, or to enable monitoring, the operation of abatement controls or the potential or actual radioactive air emissions.

(14) "License" means a radioactive air emissions license, either issued by the department or incorporated by the department as an applicable portion of an air operating permit issued by the department of ecology or a local air pollution control authority, with requirements and limitations listed therein to which the licensed or permitted party must comply. Compliance with the license requirements shall be determined and enforced by the department.

(15) "Maximally exposed individual" (MEI) means any member of the public (real or hypothetical) who abides or resides in an unrestricted area, and may receive the highest TEDE from the emission unit(s) under consideration, taking into account all exposure pathways affected by the radioactive air emissions

(16) "Modification" means any physical change in, or change in the method of operation of, an emission unit that could increase the amount of radioactive materials emitted or may result in the emission of any radionuclide not previously emitted. This definition includes the cleanup of land contaminated with radioactive material, the decommissioning of buildings, structures, or plants where radioactive contamination exists, and changes that will cause an increase in the emission unit's operating design capacity. This definition excludes routine maintenance, routine repair, replacement-in-kind, any increases in the production rate or hours of operation, provided the emission unit does not exceed the release quantities specified in the license application or the operating design capacity approved by the department, addition of abatement technology as long as it is not less environmentally beneficial than existing, approved controls, and changes that result in an increase in the quantity of emissions of an existing radionuclide that will be offset by an equal or greater decrease in the quantity of emissions of another radionuclide that is deemed at least as hazardous with regard to its TEDE to the MEI.

(17) "Monitoring" means the measurement of radioactive material released to the ambient air by means of an in-line radiation detector, and/or by the withdrawal of representative samples from the effluent stream. Ambient air measurements may be acceptable for nonpoint sources and fugitive emissions.

(18) "Nonpoint source" is a location at which radioactive air emissions originate from an area, such as contaminated ground above a near-surface waste disposal unit, whose extent may or may not be well-defined.

(19) "Notice of construction" (NOC) is an application submitted to the department by an applicant that contains information required by WAC 246-247-060 for proposed construction or modification of a registered emission unit(s), or for modification of an existing, unregistered emission unit(s).

(20) "Point source" is a discrete, well-defined location from which radioactive air emissions originate, such as a stack, vent, or other functionally equivalent structure.

(21) "Potential-to-emit" means the rate of release of radionuclides from an emission unit based on the actual or potential discharge of the effluent stream that would result if all abatement control equipment did not exist, but operations are otherwise normal. Determine the potential-to-emit by one of the following methods:

(a) Multiply the annual possession quantity of each radionuclide by the release fraction for that radionuclide, depending on its physical state. Use the following release fractions:

(i) 1 for gases;

(ii) 10-3 for liquids or particulate solids; and

(iii) 10-6 for solids.

Determine the physical state for each radionuclide by considering its chemical form and the highest temperature to which it is subjected. Use a release fraction of one if the radionuclide is subjected to temperatures at or above its boiling point; use a release fraction of 10-3 if the radionuclide is subjected to temperatures at or above its melting point, but below its boiling point. If the chemical form is not known, use a release fraction of one for any radionuclide that is heated to a temperature of one hundred degrees Celsius or more, boils at a temperature of one hundred degrees Celsius or less, or is intentionally dispersed into the environment. Other release fractions may be used only with the department's approval; or

(b) Perform a back-calculation using measured emission rates and in situ measurements of the control equipment efficiencies, as approved by the department; or

(c) Measure the quantities of radionuclides captured in each control device, coupled with in situ measurements of the control equipment efficiencies, as approved by the department; or

(d) Sample the effluent upstream from all control devices, as approved by the department; or

(e) Use an alternative method approved by the department.

(22) "Replacement-in-kind" means the substitution of existing systems, equipment, components, or devices of an emission unit's control technology with systems, equipment, components, or devices with equivalent, or better, performance specifications that will perform the same function(s).

(23) "Routine" means:

(a) Maintenance, repair, or replacement-in-kind performed on systems, equipment, components, or devices of an emission unit's abatement technology as a planned part of an established inspection, maintenance, or quality assurance program that does not increase the emission unit's operating design capacity; or

(b) Normal, day-to-day operations of a facility.

(24) "Sealed source" means radioactive material that is permanently bonded or fixed in a capsule or matrix, or radioactive material in airtight containers, designed to prevent release and dispersal of the radioactive material under the most severe conditions encountered in normal use and handling.

(25) "Significant" means the potential-to-emit airborne radioactivity at a rate that could increase the TEDE to the MEI by at least 1.0 mrem/yr as a result of a proposed modification.

(26) "Total effective dose equivalent" (TEDE) means the sum of the dose equivalent due to external exposures and the CEDE due to internal exposures.

(27) "Uranium fuel cycle" means the operations of milling uranium ore, chemical conversion of uranium, isotopic enrichment of uranium, fabrication of uranium fuel, generation of electricity in a nuclear power plant that uses uranium fuel, and reprocessing of spent uranium fuel, to the extent that these operations solely support the production of electrical power for public use.
Excluded are mining operations, waste disposal sites, transportation of any radioactive material, and the reuse of recovered nonuranium special nuclear and by-product materials from the cycle.

Hanford Site License General Conditions and Limitations Applicable to Sources of Radioactive Air Emissions

DOE Federal Facilities 40CFR61 Subparts A, H, and WAC 246-247 General Conditions and Limitations

State and Federally Enforceable

1.0 40CFR61 Subpart A

1.1 List of pollutants and applicability of part 61

The following list presents the substances that, pursuant to section 112 of the Act, have been designated as hazardous air pollutants. The Federal Register citations and dates refer to the publication in which the listing decision was originally published.

Radionuclides (44 FR 76738; Dec. 27, 1979) **(61.01(a))**

This part applies to the owner or operator of any stationary source for which a standard is prescribed under this part. **(61.01(c))**

In addition to complying with the provisions of this part, the owner or operator of a stationary source subject to a standard in this part may be required to obtain an operating permit issued to stationary sources by an authorized State air pollution control agency or by the Administrator of the U.S. Environmental Protection Agency (EPA) pursuant to title V of the Clean Air Act (Act) as amended November 15, 1990 (42 U.S.C. 7661). For more information about obtaining an operating permit see part 70 of this chapter. **(61.01(d))**

1.2 Address

Section 112(d) of the Act directs the Administrator to delegate to each State, when appropriate, the authority to implement and enforce national emission standards for hazardous air pollutants for stationary sources located in such State. If the authority to implement and enforce a standard under this part has been delegated to a State, all information required to be submitted to EPA under paragraph (a) of this section shall also be submitted to the appropriate State agency (provided, that each specific delegation may exempt sources from a certain Federal or State reporting requirement). The Administrator may permit all or some of the information to be submitted to the appropriate State agency only, instead of to EPA and the State agency. If acceptable to both the Administrator and the owner or operator of a source, notifications and reports may be submitted on electronic media. **(61.04(b))**

1.3 Prohibitive activities.

After the effective date of any standard, no owner or operator shall construct or modify any stationary source subject to that standard without first obtaining written approval from the Administrator in accordance with this subpart, except under an exemption granted by the President under section 112(c)(2) of the Act. Sources, the construction or

modification of which commenced after the publication date of the standards proposed to be applicable to the sources, are subject to this prohibition. **(61.05(a))**

After the effective date of any standard, no owner or operator shall operate a new stationary source subject to that standard in violation of the standard, except under an exemption granted by the President under section 112(c)(2) of the Act. **(61.05(b))**

Ninety days after the effective date of any standard, no owner or operator shall operate any existing source subject to that standard in violation of the standard, except under a waiver granted by the Administrator under this part or under an exemption granted by the President under section 112(c)(2) of the Act. **(61.05(c))**

No owner or operator subject to the provisions of this part shall fail to report, revise reports, or report source test results as required under this part. **(61.05(d))**

1.4 Determination of construction or modification.

An owner or operator may submit to the Administrator a written application for a determination of whether actions intended to be taken by the owner or operator constitute construction or modification, or commencement thereof, of a source subject to a standard. The Administrator will notify the owner or operator of his determination within 30 days after receiving sufficient information to evaluate the application. **(61.06)**

1.5 Application for approval of construction or modification.

The owner or operator shall submit to the Administrator an application for approval of the construction of any new source or modification of any existing source **(of radionuclides to the ambient air).** The application shall be submitted before the construction or modification is planned to commence, or within 30 days after the effective date if the construction or modification had commenced before the effective date and initial startup has not occurred. A separate application shall be submitted for each stationary source. **(61.07(a))**

Each application for approval of construction shall include—

(1) The name and address of the applicant;

(2) The location or proposed location of the source; and

(3) Technical information describing the proposed nature, size, design, operating design capacity, and method of operation of the source, including a description of any equipment to be used for control of emissions. Such technical information shall include calculations of emission estimates in sufficient detail to permit assessment of the validity of the calculations. **(61.07(b)**

Each application for approval of modification shall include, in addition to the information required in paragraph (b) of this section—

(1) The precise nature of the proposed changes;

(2) The productive capacity of the source before and after the changes are completed; and

(3) Calculations of estimates of **(radionuclide)** emissions before and after the changes are completed, in sufficient detail to permit assessment of the validity of the calculations. **(61.07(c))**

1.6 Approval of construction or modification

The Administrator will notify the owner or operator of approval or intention to deny approval of construction or modification within 60 days after receipt of sufficient information to evaluate an application under §61.07. **(61.08(a))**

If the Administrator determines that a stationary source for which an application under §61.07 was submitted will not cause emissions in violation of a standard if properly operated, the Administrator will approve the construction or modification. **(61.08(b))**

Before denying any application for approval of construction or modification, the Administrator will notify the applicant of the Administrator's intention to issue the denial together with—

(1) Notice of the information and findings on which the intended denial is based; and

(2) Notice of opportunity for the applicant to present, within such time limit as the Administrator shall specify, additional information or arguments to the Administrator before final action on the application. **(61.08(c))**

A final determination to deny any application for approval will be in writing and will specify the grounds on which the denial is based. The final determination will be made within 60 days of presentation of additional information or arguments, or 60 days after the final date specified for presentation if no presentation is made. **(61.08(d))**

Neither the submission of an application for approval nor the Administrator's approval of construction or modification shall—

(1) Relieve an owner or operator of legal responsibility for compliance with any applicable provisions of this part or of any other applicable Federal, State, or local requirement; or

(2) Prevent the Administrator from implementing or enforcing this part or taking any other action under the Act. **(61.08(e))**

1.7 Notification of startup.

The owner or operator of each stationary source which has an initial startup after the effective date of a standard shall furnish the Administrator with written notification as follows:

(1) A notification of the anticipated date of initial startup of the source not more than 60 days nor less than 30 days before that date.

(2) A notification of the actual date of initial startup of the source within 15 days after that date. **(61.09(a))**

If any State or local agency requires a notice which contains all the information required in the notification in paragraph (a) of this section, sending the Administrator a copy of that notification will satisfy paragraph (a) of this section. **(61.09(b))**

1.8 Wavier of compliance.

Based on the information provided in any request under §61.10, or other information, the Administrator may grant a waiver of compliance with a standard for a period not exceeding 2 years after the effective date of the standard. **(61.11(a))**

The waiver will be in writing and will—

(1) Identify the stationary source covered;

(2) Specify the termination date of the waiver;

(3) Specify dates by which steps toward compliance are to be taken; and

(4) Specify any additional conditions which the Administrator determines necessary to assure installation of the necessary controls within the waiver period and to assure protection of the health of persons during the waiver period. **(61.11(b))**

The Administrator may terminate the waiver at an earlier date than specified if any specification under paragraphs (b)(3) and (b)(4) of this section are not met. **(61.11(c))**

Before denying any request for a waiver, the Administrator will notify the owner or operator making the request of the Administrator's intention to issue the denial, together with—

(1) Notice of the information and findings on which the intended denial is based; and

(2) Notice of opportunity for the owner or operator to present, within the time limit the Administrator specifies, additional information or arguments to the Administrator before final action on the request. **(61.11(d))**

A final determination to deny any request for a waiver will be in writing and will set forth the specific grounds on which the denial is based. The final determination will be made within 60 days after presentation of additional information or argument; or within 60 days after the final date specified for the presentation if no presentation is made. **(61.11(e))**

The granting of a waiver under this section shall not abrogate the Administrator's authority under section 114 of the Act. **(61.11(f))**

1.9 Compliance with standards and maintenance requirements.

Compliance with numerical emission limits shall be determined in accordance with emission tests established in §61.13 or as otherwise specified in an individual subpart. **(61.12(a))**

Compliance with design, equipment, work practice or operational standards shall be determined as specified in an individual subpart **(Subpart H). (61.12(b))**

The owner or operator of each stationary source shall maintain and operate the source, including associated equipment for air pollution control, in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Administrator which may include, but is not limited to, monitoring results, review of operating and maintenance procedures, and inspection of the source. **(61.12(c))**

For the purpose of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this part, nothing in this part shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed. **(61.12(e))**

1.10 Emission tests and waiver of emission tests.

40CFR61.13 Does not apply

1.11 Monitoring requirements.

Unless otherwise specified, this section applies to each monitoring system required under each subpart **(Subpart H)** which requires monitoring. **(61.14(a))**

Each owner or operator shall maintain and operate each monitoring system as specified in the applicable subpart **(Subpart H)** and in a manner consistent with good air pollution control practice for minimizing emissions. Any unavoidable breakdown or malfunction

of the monitoring system should be repaired or adjusted as soon as practicable after its occurrence. The Administrator's determination of whether acceptable operating and maintenance procedures are being used will be based on information which may include, but not be limited to, review of operating and maintenance procedures, manufacturer recommendations and specifications, and inspection of the monitoring system. **(61.14(b))**

When required by the applicable subpart **(Subpart H)**, and at any other time the Administrator may require, the owner or operator of a source being monitored shall conduct a performance evaluation of the monitoring system and furnish the Administrator with a copy of a written report of the results within 60 days of the evaluation. Such a performance evaluation shall be conducted according to the applicable specifications and procedures described in the applicable subpart. The owner or operator of the source shall furnish the Administrator with written notification of the date of the performance evaluation at least 30 days before the evaluation is to begin. **(61.14(c))**

When the effluents from a single source, or from two or more sources subject to the same emission standards, are combined before being released to the atmosphere, the owner or operator shall install a monitoring system on each effluent or on the combined effluent. If two or more sources are not subject to the same emission standards, the owner or operator shall install a separate monitoring system on each effluent, unless otherwise specified. If the applicable standard is a mass emission standard and the effluent from one source is released to the atmosphere through more than one point, the owner or operator shall install a monitoring system at each emission point unless the installation of fewer systems is approved by the Administrator. **(61.14(d))**

The owner or operator of each monitoring system shall reduce the monitoring data as specified in each applicable subpart **(Subpart H)**. Monitoring data recorded during periods of unavoidable monitoring system breakdowns, repairs, calibration checks, and zero and span adjustments shall not be included in any data average. **(61.14(e))**

The owner or operator shall maintain records of monitoring data, monitoring system calibration checks, and the occurrence and duration of any period during which the monitoring system is malfunctioning or inoperative. These records shall be maintained at the source for a minimum of 2 years and made available, upon request, for inspection by the Administrator. **(61.14(f))**

(1) Monitoring shall be conducted as set forth in this section and the applicable subpart (Subpart H) unless the Administrator—

(i) Specifies or approves the use of the specified monitoring requirements and procedures with minor changes in methodology; or

(ii) Approves the use of alternatives to any monitoring requirements or procedures.

(2) If the Administrator finds reasonable grounds to dispute the results obtained by an alternative monitoring method, the Administrator may require the monitoring requirements and procedures specified in this part. **(61.14(g))**

1.12 Modification.

Except as provided under paragraph (d) of this section, any physical or operational change to a stationary source which results in an increase in the rate of emission to the atmosphere of a hazardous pollutant **(radionuclides)** to which a standard applies shall be considered a modification. **(61.15(a))**

Upon modification, an existing source shall become a new source for each hazardous pollutant **(radionuclides in this case)** for which the rate of emission to the atmosphere increases and to which a standard applies. **(61.15(b))**

The following shall not, by themselves, be considered modifications under this part:

(1) Maintenance, repair, and replacement which the Administrator determines to be routine for a source category.

(2) An increase in production rate of a stationary source, if that increase can be accomplished without a capital expenditure on the stationary source.

(3) An increase in the hours of operation.

(5) The relocation or change in ownership of a stationary source. However, such activities must be reported in accordance with §61.10(c). **(61.15(d))**

1.13 Circumvention

No owner or operator shall build, erect, install, or use any article machine, equipment, process, or method, the use of which conceals an emission which would otherwise constitute a violation of an applicable standard. Such concealment includes, but is not limited to, the use of gaseous dilutants to achieve compliance with a visible emissions standard, and the piecemeal carrying out of an operation to avoid coverage by a standard that applies only to operations larger than a specified size. **(61.19)**

2.0 40CFR61 Subpart H

2.1 Designation of facilities

The provisions of this subpart apply to operations at any facility owned or operated by the Department of Energy that emits any radionuclide other than radon-222 and radon-220 into the air, except that this subpart does not apply to disposal at facilities subject to 40 CFR part 191, subpart B or 40 CFR part 192. **(61.90)**

2.2 Standard

Emissions of radionuclides to the ambient air from Department of Energy facilities shall not exceed those amounts that would cause any member of the public to receive in any year an effective dose equivalent of 10 mrem/yr. **(61.92)**

2.3 Determining compliance

To determine compliance with the standard, radionuclide emissions shall be determined and effective dose equivalent values to members of the public calculated using EPA approved sampling procedures, computer models CAP–88 or AIRDOS-PC, or other procedures for which EPA has granted prior approval. DOE facilities for which the maximally exposed individual lives within 3 kilometers of all sources of emissions in the facility, may use EPA's COMPLY model and associated procedures for determining dose for purposes of compliance. **(61.93(a))**

2.4 Emissions monitoring and test procedures.

Radionuclides emission rates from existing point sources (stacks or vents) shall be measured in accordance with the following requirements or with the requirements of paragraph (c) of this section, or other procedures for which EPA has granted prior approval:

(1) Effluent flow rate measurements shall be made using the following methods:

(i) Reference Method 2 of appendix A to part 60 of this chapter shall be used to determine velocity and volumetric flow rates for stacks and large vents.

(ii) Reference Method 2A of appendix A to part 60 of this chapter shall be used to measure flow rates through pipes and small vents.

(iii) The frequency of the flow rate measurements shall depend upon the variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary.

(2) Radionuclides shall be directly monitored or extracted, collected and measured using the following methods:

(i) Reference Method 1 of appendix A to part 60 of this chapter shall be used to select monitoring or sampling sites.

(ii) The effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSIN13.1–1969 "Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities" (including the guidance presented in appendix A of ANSIN13.1) (incorporated by reference—see §61.18). The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions.

(iii) Radionuclides shall be collected and measured using procedures based on the principles of measurement described in appendix B, Method 114. Use of methods based on principles of measurement different from those described in appendix B, Method 114 must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures.

(iv) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114.

(3) When it is impractical to measure the effluent flow rate at an existing source in accordance with the requirements of paragraph (b)(1) of this section or to monitor or sample an effluent stream at an existing source in accordance with the site selection and sample extraction requirements of paragraph (b)(2) of this section, the facility owner or operator may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that:

(i) It can be shown that the requirements of paragraph (b) (1) or (2) of this section are impractical for the effluent stream.

(ii) The alternative procedure will not significantly underestimate the emissions.

(iii) The alternative procedure is fully documented.

(iv) The owner or operator has received prior approval from EPA.

(4)(i) Radionuclide emission measurements in conformance with the requirements of paragraph (b) of this section shall be made at all release points which have a potential to discharge radionuclides into the air in quantities which could cause an effective dose

equivalent in excess of 1% of the standard. All radionuclides which could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release points which have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions.

(ii) To determine whether a release point is subject to the emission measurement requirements of paragraph (b) of this section, it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal.

(5) Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the owner or operator meets the following criteria:

(i) The air at the point of measurement shall be continuously sampled for collection of radionuclides.

(ii) Those radionuclides released from the facility, which are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program.

(iii) Radionuclide concentrations which would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background.

(iv) Net measured radionuclide concentrations shall be compared to the concentration levels in Table 2 of appendix E to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2, and the sum of the fractions that result when each measured concentration value is divided by the value in Table 2 for each radionuclide is less than 1.

(v) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114.

(vi) Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met. **(61.93(b))**

Radionuclide emission rates from new point sources (stacks or vents) as defined in subpart A shall be measured in accordance with the following requirements, or other procedures for which EPA has granted prior approval:

(1) Effluent flow rate measurements shall be made using the following methods:

(i) ANSI/HPS N13.1–1999 “Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities' (incorporated by reference—see §61.18) shall be used to determine velocity and volumetric flow rates for stacks and large vents.

(ii) ANSI/HPS N13.1–1999 shall be used to measure flow rates through pipes and small vents.

(iii) The frequency of the flow rate measurements shall depend upon variability of the effluent flow rate. For variable flow rates, continuous or frequent flow rate measurements shall be made. For relatively constant flow rates only periodic measurements are necessary.

(2) Radionuclide shall be directly monitored or extracted, collected and measured using the following methods:

(i) ANSI/HPS N13.1–1999 shall be used to select monitoring or sampling sites.

(ii) The effluent stream shall be directly monitored continuously with an in-line detector or representative samples of the effluent stream shall be withdrawn continuously from the sampling site following the guidance presented in ANSI/HPS N13.1–1999. The requirements for continuous sampling are applicable to batch processes when the unit is in operation. Periodic sampling (grab samples) may be used only with EPA's prior approval. Such approval may be granted in cases where continuous sampling is not practical and radionuclide emission rates are relatively constant. In such cases, grab samples shall be collected with sufficient frequency so as to provide a representative sample of the emissions.

(iii) Radionuclides shall be collected and measured using procedures based on the principles of measurement described in appendix B, Method 114 of this part. Use of methods based on principles of measurement different from those described in appendix B, Method 114 of this part must have prior approval from the Administrator. EPA reserves the right to approve measurement procedures.

(iv) A quality assurance program shall be conducted that meets the performance requirements described in ANSI/HPS N13.1–1999. **(61.93(c))**

When it is impractical to measure the effluent flow rate at a source in accordance with the requirements of paragraph (b)(1) or (c) of this section or to monitor or sample an effluent stream at a source in accordance with the site selection and sample extraction

requirements of paragraph (b)(2) or (c) of this section, the facility owner or operator may use alternative effluent flow rate measurement procedures or site selection and sample extraction procedures provided that:

(1) It can be shown that the requirements of paragraph (b)(1) or (2) or (c) of this section are impractical for the effluent stream.

(2) The alternative procedure will not significantly underestimate the emissions.

(3) The alternative procedure is fully documented.

(4) The owner or operator has received prior approval from EPA. (61.93(d))

Radionuclide emission measurements in conformance with the requirements of paragraph (b) or (c) of this section shall be made at all release points that have a potential to discharge radionuclides into the air in quantities that could cause an effective dose equivalent in excess of 1% of the standard. All radionuclides that could contribute greater than 10% of the potential effective dose equivalent for a release point shall be measured. With prior EPA approval, DOE may determine these emissions through alternative procedures. For other release points that have a potential to release radionuclides into the air, periodic confirmatory measurements shall be made to verify the low emissions. **(61.93(e))**

To determine whether a release point is subject to the emission measurement requirements of paragraph (b) or (c) of this section, it is necessary to evaluate the potential for radionuclide emissions for that release point. In evaluating the potential of a release point to discharge radionuclides into the air for the purposes of this section, the estimated radionuclide release rates shall be based on the discharge of the effluent stream that would result if all pollution control equipment did not exist, but the facilities operations were otherwise normal. **(61.93(f))**

Environmental measurements of radionuclide air concentrations at critical receptor locations may be used as an alternative to air dispersion calculations in demonstrating compliance with the standard if the owner or operator meets the following criteria:

(1) The air at the point of measurement shall be continuously sampled for collection of radionuclides.

(2) Those radionuclides released from the facility that are the major contributors to the effective dose equivalent must be collected and measured as part of the environmental measurement program.

(3) Radionuclide concentrations that would cause an effective dose equivalent of 10% of the standard shall be readily detectable and distinguishable from background.

(4) Net measured radionuclide concentrations shall be compared to the concentration levels in Table 2 appendix E of this part to determine compliance with the standard. In the case of multiple radionuclides being released from a facility, compliance shall be demonstrated if the value for all radionuclides is less than the concentration level in Table 2 of appendix E of this part, and the sum of the fractions that result when each measured concentration value is divided by the value in Table 2 of appendix E of this part for each radionuclide is less than 1.

(5) A quality assurance program shall be conducted that meets the performance requirements described in appendix B, Method 114 of this part.

(6) Use of environmental measurements to demonstrate compliance with the standard is subject to prior approval of EPA. Applications for approval shall include a detailed description of the sampling and analytical methodology and show how the above criteria will be met. **(61.93(g))**

2.5 Compliance and reporting

Compliance with this standard shall be determined by calculating the highest effective dose equivalent to any member of the public at any offsite point where there is a residence, school, business or office. The owners or operators of each facility shall submit an annual report to both EPA headquarters and the appropriate regional office by June 30 which includes the results of the monitoring as recorded in DOE's Effluent Information System and the dose calculations required by §61.93(a) for the previous calendar year.

In addition to the requirements of paragraph (a) of this section, an annual report shall include the following information:

(1) The name and location of the facility.

(2) A list of the radioactive materials used at the facility.

(3) A description of the handling and processing that the radioactive materials undergo at the facility.

(4) A list of the stacks or vents or other points where radioactive materials are released to the atmosphere.

(5) A description of the effluent controls that are used on each stack, vent, or other release point and an estimate of the efficiency of each control device.

(6) Distances from the points of release to the nearest residence, school, business or office and the nearest farms producing vegetables, milk, and meat.

(7) The values used for all other user-supplied input parameters for the computer models (e.g., meteorological data) and the source of these data.

(8) A brief description of all construction and modifications which were completed in the calendar year for which the report is prepared, but for which the requirement to apply for approval to construct or modify was waived under §61.96 and associated documentation developed by DOE to support the waiver. EPA reserves the right to require that DOE send to EPA all the information that normally would be required in an application to construct or modify, following receipt of the description and supporting documentation.

(9) Each report shall be signed and dated by a corporate officer or public official in charge of the facility and contain the following declaration immediately above the signature line: "I certify under penalty of law that I have personally examined and am familiar with the information submitted herein and based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment. See, 18 U.S.C. 1001." **(61.94(b))**

If the facility is not in compliance with the emission limits of §61.92 in the calendar year covered by the report, then the facility must commence reporting to the Administrator on a monthly basis the information listed in paragraph (b) of this section, for the preceding month. These reports will start the month immediately following the submittal of the annual report for the year in noncompliance and will be due 30 days following the end of each month. This increased level of reporting will continue until the Administrator has determined that the monthly reports are no longer necessary. In addition to all the information required in paragraph (b) of this section, monthly reports shall also include the following information:

(1) All controls or other changes in operation of the facility that will be or are being installed to bring the facility into compliance.

(2) If the facility is under a judicial or administrative enforcement decree, the report will describe the facilities performance under the terms of the decree. **(61.94(c))**

In those instances where the information requested is classified, such information will be made available to EPA separate from the report and will be handled and controlled according to applicable security and classification regulations and requirements. **(61.94(d))**

2.6 Recordkeeping requirements.

All facilities must maintain records documenting the source of input parameters including the results of all measurements upon which they are based, the calculations and/or analytical methods used to derive values for input parameters, and the procedure used to determine effective dose equivalent. This documentation should be sufficient to allow an

independent auditor to verify the accuracy of the determination made concerning the facility's compliance with the standard. These records must be kept at the site of the facility for at least five years and, upon request, be made available for inspection by the Administrator, or his authorized representative. **(61.95)**

2.7 Applications to construct or modify

In addition to any activity that is defined as construction under 40 CFR part 61, subpart A, any fabrication, erection or installation of a new building or structure within a facility that emits radionuclides is also defined as new construction for purposes of 40 CFR part 61, subpart A. **(61.96(a))**

An application for approval under §61.07 or notification of startup under §61.09 does not need to be filed for any new construction of or modification within an existing facility if the effective dose equivalent, caused by all emissions from the new construction or modification, is less than 1% of the standard prescribed in §61.92. For purposes of this paragraph the effective dose equivalent shall be calculated using the source term derived using appendix D as input to the dispersion and other computer models described in §61.93. DOE may, with prior approval from EPA, use another procedure for estimating the source term for use in this paragraph. A facility is eligible for this exemption only if, based on its last annual report, the facility is in compliance with this subpart. **(61.96(b))** **[[*This applies to 40CFR61 subpart H only. State exemption process requires more information for exemption determination.*]]**

Conditions to approvals granted under §61.08 will not contain requirements for post approval reporting on operating conditions beyond those specified in §61.94. **(61.96(c))** **[[*This applies to 40CFR61 subpart H approvals granted under 61.08.*]]**

2.8 Exemption from the reporting and testing requirements of 40CFR61.10

All facilities designated under this subpart are exempt from the reporting requirements of 40 CFR 61.10. **(61.97)**

State Enforceable ONLY

3.0 WAC 246-247 (June 26, 2005)

3.1 Applicability

The standards and requirements of this chapter apply statewide at the following types of facilities that emit radionuclides to the air:

United States Department of Energy (DOE) facilities; **(WAC 246-247-010(1(b)))**

The standards and requirements of this chapter apply to point sources, nonpoint sources, and fugitive emissions. **(WAC 246-247-010(2))**

The standards and requirements of this chapter apply to stationary and mobile emission units, whether temporary or permanent. **(WAC 246-247-010(3))**

The control technology standards and requirements of this chapter apply to the abatement technology and indication devices of facilities and emission units subject to this chapter. Control technology requirements apply from entry of radionuclides into the ventilated vapor space to the point of release to the environment. **(WAC 246-247-010(4))**

In accordance with RCW 70.94.161(10), air operating permits issued under chapter 173-401 WAC shall incorporate all applicable requirements of this chapter. Therefore, all facilities listed in subsection (1) of this section that are also subject to the operating permit regulations in chapter 173-401 WAC shall be considered in compliance with the requirements of this chapter if they comply with all the applicable requirements of the air operating permit issued under chapter 173-401 WAC. These applicable requirements shall be contained in the radioactive air emissions license which shall be incorporated as part of the air operating permit. In accordance with RCW 70.94.422(1), the department shall enforce all the requirements contained in the radioactive air emissions license. **(WAC 246-247-010(5))**

Should any of the federal regulations that have been adopted by reference in this chapter be rescinded, the affected facilities shall nonetheless comply with all other applicable requirements of this chapter. **(WAC 246-247-010(6))**

3.2 Exemptions

The following types of facilities or sources of radiation are exempt from the requirements of this chapter because they release no airborne radioactivity, or they prima facie comply with the standards in WAC 246-247-040, or they are already adequately regulated under other requirements:

(a) Users of only sealed sources;

(b) Sealed sources;

(c) Accelerators less than 200 MeV;

(d) Nuclear-powered vessels underway or moored dockside unless under a maintenance condition with a potential-to-emit;

(e) Uranium mill tailings piles disposed of under 40 CFR Part 192
(WAC 246-247-020(1))

Any exemptions shall be consistent with 40 CFR 61. No exemptions from the standards in WAC 246-247-040 will be granted. **(WAC 246-247-020(2)(a))**

A federal facility may request exemption from some of the requirements of WAC 246-247-060 and 246-247-075 if the potential-to-emit, for the emission unit(s) under consideration, results in a TEDE to the MEI from all pathways less than 0.1 mrem/yr. **(WAC 246-247-020(c))**

The facility shall submit all the data necessary to make the exemption determinations of (b) and (c) of this subsection. The department shall determine if any exemptions apply. **(WAC 246-247-020(2)(d))**

The department may require a facility with exempt emission units to submit a radioactive air emissions report to confirm compliance with applicable standards. The department reserves the right to conduct inspections and audits of the facility to confirm the status of its exempt emission units. **(WAC 246-247-020(3))**

(4) Naturally occurring airborne radionuclides are exempt from the requirements of this chapter unless the concentrations or rates of emissions have been enhanced by industrial processes. **(WAC 246-247-020(4))**

3.3 National standards adopted by reference for sources of radionuclide emissions

The following federal standards, as in effect on July 1, 2004, are adopted by reference except as provided in paragraphs (2) and (3) below.
These standards apply in addition to other requirements of this Chapter.

(a) For federal facilities:

(i) 40 CFR Part 61, Subpart A - General Provisions

(ii) 40 CFR Part 61, Subpart H - National Emission Standards for Emissions of Radionuclides Other Than Radon From Department of Energy Facilities

(WAC 246-247-035(1))

References to "Administrator" or "EPA" in 40 CFR Part 61 include the Department of Health except in any section of 40 CFR Part 61 for which a federal rule or delegation indicates that the authority will not be delegated to the State. **(WAC 246-247-035(2))**

Any change or alternative to standards, emission monitoring and test procedures, compliance and reporting requirements, or recordkeeping requirements must be approved by EPA. [[**See *Federal Register June 5, 2006 (Volume 71, Number 107)* (WAC 246-247-035(3))**

3.4 General standards

Standards for radioactive air emissions in the state of Washington are contained in WAC 173-480-040, 173-480-050, and 173-480-060. Additional standards for emissions of radionuclides other than radon from United States Department of Energy facilities are contained in 40 CFR Part 61, subparts H (as effective on October 9, 2002). **(WAC 246-247-040(1))**

All new construction and significant modifications of emission units commenced after August 10, 1988 (the date this chapter originally became effective) shall utilize BARCT (see Appendix B). **(WAC 246-247-040(3))**

All existing emission units and nonsignificant modifications shall utilize ALARACT (see Appendix C). **(WAC 246-247-040(4))**

In order to implement these standards, the department may set limits on emission rates for specific radionuclides from specific emission units and/or set requirements and limitations on the operation of the emission unit(s) as specified in a license. **(WAC 246-247-040(5))**

All emissions of radionuclides, including those due to emergency conditions resulting from startup, shutdown, maintenance activities, or process upsets are subject to the standards of this section and, therefore, subject to the enforcement actions of WAC 246-247-100. **(WAC 246-247-040(6))**

3.5 Applications, registration and licensing

For those facilities subject to the operating permit regulations in chapter 173-401 WAC, the radioactive air emissions license will be incorporated as an applicable portion of the air operating permit issued by the department of ecology or a local air pollution control authority. The department will be responsible for determining the facility's compliance with and enforcing the requirements of the radioactive air emissions license. **(WAC 2460-247-060)**

Requirements for new construction or modification of emission units.

(a) Early in the design phase, the applicant shall submit a NOC containing the information required in **(WAC 246-247)** Appendix A.

(b) Within thirty days of receipt of the NOC, the department shall inform the applicant if additional information is required. The department may determine, on the basis of the information submitted, that the requirements of BARCT or ALARACT have been met, or may require the applicant to submit a BARCT or ALARACT demonstration compatible with **(WAC 246-247)** Appendix B or C, respectively.

(c) Within sixty days of receipt of all required information, the department shall issue an approval or denial to construct. The department may require changes to the final proposed control technology.

(d) The applicant may request a phased approval process by so stating and submitting a limited application. The department may grant a conditional approval to construct for such activities as would not preclude the construction or installation of any control or monitoring equipment required after review of the completed application.

(e) The department shall issue a license, or amend an existing license, authorizing operation of the emission unit(s) when the proposed new construction or modification is complete. For facilities subject to the air operating permit requirements of chapter 173-401 WAC, the license shall become part of the air operating permit issued by the department of ecology or a local air pollution control authority. For new construction, this action shall constitute registration of the emission unit(s). **(WAC 246-247-060 (1))**

Requirements for modification of unregistered emission units that are not exempt from these regulations.

(a) The applicant shall submit an application containing the information required in WAC 246-247 **(WAC 246-247)** Appendix A.

(b) Within thirty days of receipt of the application, the department shall inform the applicant if additional information is required. The department may determine, on the basis of the information submitted, that the requirements of

BARCT or ALARACT have been met, or may require the applicant to submit a BARCT or ALARACT demonstration compatible with **(WAC 246-247)** Appendix B or C, respectively.

(c) Within sixty days of receipt of all required information, the department shall issue or amend the license. For facilities subject to the air operating permit requirements of chapter 173-401 WAC, the license shall become part of the air operating permit issued by the department of ecology or a local air pollution control authority. This action shall constitute registration of the emission unit(s). A determination of noncompliance may result in the issuance of a notice of violation.

(d) The department reserves the right to require the owner of an existing, unregistered emission unit to make modifications necessary to comply with the applicable standards of WAC 246-247-040. **(WAC 246-247-060(2))**

If an emission unit is in violation of any standards contained in WAC 246-247-040, the facility shall either submit a compliance plan which describes how it intends to achieve compliance with the standards, and/or cease operation of the emission unit(s). The facility shall submit the compliance plan within forty-five days of the notice of violation. The cessation of operation of the emission unit(s) shall not necessarily exempt the facility from the requirements of this chapter if active or passive ventilation and radioactive air emission controls will still be required. The department reserves the right to take further enforcement action, if necessary, in accordance with WAC 246-247-100. **(WAC 246-247-060(3))**

The facility shall notify the department at least seven calendar days prior to any planned preoperational tests of new or modified emission units that involve emissions control, monitoring, or containment systems of the emission unit(s). The department reserves the right to witness or require preoperational tests involving the emissions control, monitoring, or containment systems of the emission unit(s). **(WAC 246-247-060(4))**

The license shall specify the requirements and limitations of operation to assure compliance with this chapter. The facility shall comply with the requirements and limitations of the license. **(WAC 246-247-060(5))**

All radioactive air emissions licenses issued by the department, except those issued to radioactive materials licensees, shall have an expiration date of five years from date of issuance or as specified in the air operating permit. **(WAC 246-247-060(6))**

Each federal facility that comes under the authority of this chapter shall hold one license for each site, base, or installation. When applicable, the license shall be part of the facility's air operating permit. **(WAC-246-247-060(7))**

Facilities may request a single categorical license which identifies limits and conditions of operation for similar multipurpose temporary and/or portable emission units. When

applicable, the license shall be part of the facility's air operating permit. **(WAC 246-247-060(8))**

All facilities with licensed emission units, except for radioactive materials licensees, shall submit a request to the department for renewal of their radioactive air emissions license at least sixty days prior to expiration of the license or as required by the air operating permit. All renewal requests shall include a summary of the operational status of all emission units, the status of facility compliance with the standards of WAC 246-247-040, and the status of any corrective actions necessary to achieve compliance with the requirements of this chapter. Facilities with licensed emission units that also hold a radioactive materials license issued by the department shall submit this information along with their radioactive material license renewal submittal. If the department is unable to renew a radioactive air emissions license before its expiration date, the existing license, with all of its requirements and limitations, remains in force until the department either renews or revokes the license. **(WAC 246-247-060(9))**

3.6 Fees

All facilities under the authority of this chapter shall submit fees in accordance with WAC 246-254-160. **(WAC 246-247-065(1))**

Those facilities required by WAC 246-254-160(2) to submit an application fee, shall submit the fee with the application. **(WAC 246-247-065(2))**

3.7 Monitoring, testing and quality assurance

All radioactive air emissions monitoring, testing, and quality assurance requirements of 40 CFR 61, subpart H (as effective on October 9, 2002), are adopted by reference, as applicable as specified by the referenced subparts. **(WAC 246-247-075 (1))**

Equipment and procedures used for the continuous monitoring of radioactive air emissions shall conform, ***as applicable***, to the guidance contained in ANSI N13.1, ANSI N42.18, ANSI N323, ANSI N317, reference methods 1, 1A, 2, 2A, 2C, 2D, 4, 5, and 17 of 40 CFR Part 60, Appendix A, 40 CFR Part 52, Appendix E, and any other methods approved by the department. **(WAC 246-247-075(2))**

The operator of an emission unit with a potential-to-emit of less than 0.1 mrem/yr TEDE to the MEI may estimate those radionuclide emissions, in lieu of monitoring, in accordance with 40 CFR 61 Appendix D, or other procedure approved by the department. The department may require periodic confirmatory measurements (e.g., grab samples) during routine operations to verify the low emissions. Methods to implement periodic confirmatory monitoring shall be approved by the department. **(WAC 246-247-075(3))**

The department may allow a facility to use alternative monitoring procedures or methods if continuous monitoring is not a feasible or reasonable requirement. **(WAC 246-247-075(4))**

Licensed facilities shall conduct and document a quality assurance program. Except for those types of facilities specified in subsection (5) of this section, the quality assurance program shall be compatible with applicable national standards such as ANSI/ASME NQA-1-1988, ANSI/ASME NQA-2-1986, QA/R-2, and QA/R-5. **(WAC 246-247-075(6))**

Facilities shall monitor nonpoint and fugitive emissions of radioactive material. **(WAC 246-247-075(8))**

The department may conduct an environmental surveillance program to ensure that radiation doses to the public from emission units are in compliance with applicable standards. The department may require the operator of any emission unit to conduct stack sampling, ambient air monitoring, or other testing as necessary to demonstrate compliance with the standards in WAC 246-247-040. **(WAC 246-247-075(9))**

The department may require the owner or operator of an emission unit to make provision, at existing emission unit sampling stations, for the department to take split or collocated samples of the emissions. **(WAC 246-247-075(10))**

The planning for any proposed new construction or significant modification of the emission unit must address accidental releases with a probability of occurrence during the expected life of the emission unit of greater than one percent. **(WAC 246-247-075(11))**

All facilities must be able to demonstrate that appropriate supervisors and workers are adequately trained in the use and maintenance of emission control and monitoring systems, and in the performance of associated test and emergency response procedures. **(WAC 246-247-075(12))**

All facilities must be able to demonstrate the reliability and accuracy of the radioactive air emissions monitoring data. **(WAC 246-247-075(13))**

3.8 Inspections, reporting, and recordkeeping

The department reserves the right to inspect and audit all construction activities, equipment, operations, documents, data, and other records related to compliance with the requirements of this chapter. The department may require a demonstration of ALARACT at any time. **(WAC 246-247-080(1))**

All reporting and recordkeeping requirements of 40 CFR 61, subparts H (as effective on October 9, 2002), are adopted by reference, as applicable as specified by the referenced subparts. **(WAC 246-247-080(2))**

The facility shall annually submit to the department the information requirements adopted in subsection (2) of this section, as applicable, along with the following additional information, as applicable:

(a) The results of emission measurements for those emission units subject only to periodic confirmatory measurements;

(b) Wind rose or joint frequency table;

(c) Annual average ambient temperature;

(d) Annual average emission unit gas temperature, if available;

(e) Annual total rainfall;

(f) Annual average emission unit flow rate and total volume of air released during the calendar year.

If this additional information is available in another annual report, the facility may instead provide a copy of that report along with the information requirements in this subsection. Annual reports are due by June 30 for the previous calendar year's operations. **(WAC 246-247-080(3))**

Any report or application that contains proprietary or procurement-sensitive information shall be submitted to the department with those portions so designated. The department shall hold this information confidential, unless required to release the information pursuant to laws, regulations, or court order. **(WAC 246-247-080(4))**

The facility shall notify the department within twenty-four hours of any shutdown, or of any transient abnormal condition lasting more than four hours or other change in facility operations which, if allowed to persist, would result in emissions of radioactive material in excess of applicable standards or license requirements. If requested by the department, the facility shall submit a written report within ten days including known causes, corrective actions taken, and any preventive measures taken or planned to minimize or eliminate the chance of recurrence. **(WAC 246-247-080(5))**

The facility shall file a report of closure with the department whenever operations producing emissions of radioactive material are permanently ceased at any emission unit (except temporary emission units) regulated under this chapter. The closure report shall indicate whether, despite cessation of operations, there is still a potential for radioactive air emissions and a need for an active or passive ventilation system with emission control and/or monitoring devices. If decommissioning is planned and will constitute a modification, a NOC is required, as applicable, in accordance with WAC 246-247-060. **(WAC 246-247-080(6))**

The facility shall maintain a log for each emission unit that has received categorical approval under WAC 246-247-060(8). The log shall contain records of important operations parameters including the date, location, and duration of the release, measured or calculated radionuclide concentrations, the type of emissions (liquid, gaseous, solid), and the type of emission control and monitoring equipment. **(WAC 246-247-080(7))**

The facility shall maintain readily retrievable storage areas for all records and documents related to, and which may help establish compliance with, the requirements of this chapter. The facility shall keep these records available for department inspection for at least five years. **(WAC 246-247-080(8))**

The facility shall ensure all emission units are fully accessible to department inspectors. In the event the hazards associated with accessibility to a unit require training and/or restrictions or requirements for entry, the facility owner or operator shall inform the department, prior to arrival, of those restrictions or requirements. The owner or operator shall be responsible for providing the necessary training, escorts, and support services to allow the department to inspect the facility. **(WAC 246-247-080(9))**

The facility shall make available, in a timely manner, all documents requested by the department for review. The facility shall allow the department to review documents in advance of an inspection. The facility shall allow access to classified documents by representatives of the department with the appropriate security clearance and a demonstrable need-to-know. **(WAC 246-247-080(10))**

The facility shall respond in writing in a timely manner, or within a time limit set by the department, to inspection results which require the facility to implement corrective actions or any other actions so directed by the department. **(WAC 246-247-080(11))**

3.9 Compliance determination for existing emission units and facilities

All procedures for determining compliance with the dose equivalent standards of 40 CFR 61, subparts H (as effective on October 9, 2002), are adopted by reference, as applicable as specified by the referenced subparts. **(WAC 246-247-085(1))**

Facilities subject to 40 CFR 61 shall use computer codes or procedures approved by the EPA to determine the TEDE to the MEI; all other facilities shall use computer codes or procedures approved by the department. **(WAC 246-247-085(2))**

The determination of compliance with the dose equivalent standard of WAC 246-247-040 shall include all radioactive air emissions resulting from routine and nonroutine operations for the past calendar year. **(WAC 246-247-085(3))**

3.10 Enforcement actions

In accordance with RCW 70.94.422, the department may take any of the following actions to enforce compliance with the provisions of this chapter:

(a) Notice of violation and compliance order (RCW 70.94.332).

(b) Restraining order or temporary or permanent injunction (RCW 70.94.425; also RCW 70.98.140).

(c) Penalty: Fine and/or imprisonment (RCW 70.94.430).

(d) Civil penalty: Up to ten thousand dollars for each day of continued noncompliance (RCW 70.94.431 (1) through (7)).

(e) Assurance of discontinuance (RCW 70.94.435).
(WAC 246-247-100(1))

The department, in accordance with RCW 70.98.050 (4)(l), may issue subpoenas in order to compel attendance of witnesses and/or production of records or documents in connection with any adjudicative or other administrative proceeding. **(WAC 246-247-100(2))**

The department, in accordance with RCW 70.98.160, may impound sources of ionizing radiation. **(WAC 246-247-100(3))**

The secretary of the department, in accordance with RCW 43.70.190, is authorized to bring an action to prohibit a violation or a threatened violation of any department rules or regulation, or to bring any legal proceeding authorized by law to a county superior court. **(WAC 246-247-100(4))**

Any party, against which an enforcement action is brought by the department, has the right to submit an application for the adjudicative process in accordance with chapter 246-10 WAC and chapter 34.05 RCW. **(WAC 246-247-100(5))**

3.11 Appendix A -- Application information requirements.

(1) Name and address of the facility, and location (latitude and longitude) of the emission unit(s).

(2) Name, title, address, and phone number of the responsible manager.

(3) Identify the type of proposed action for which this application is submitted:

(a) Construction of new emission unit(s);

(b) Modification of existing emission unit(s); identify whether this is a significant modification;

(c) Modification of existing unit(s), unregistered.

(4) If this project is subject to the requirements of the State Environmental Policy Act (SEPA) contained in chapter 197-11 WAC, provide the name of the lead agency, lead agency contact person, and their phone number.

(5) Describe the chemical and physical processes upstream of the emission unit(s).

(6) Describe the existing and proposed (as applicable) abatement technology. Describe the basis for the use of the proposed system. Include expected efficiency of each control device, and the annual average volumetric flow rate(s) in meters3/sec for the emission unit(s).

(7) Provide conceptual drawings showing all applicable control technology components from the point of entry of radionuclides into the vapor space to release to the environment.

(8) Identify each radionuclide that could contribute greater than ten percent of the potential-to-emit TEDE to the MEI, or greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI.

(9) Describe the effluent monitoring system for the proposed control system. Describe each piece of monitoring equipment and its monitoring capability, including detection limits, for each radionuclide that could contribute greater than ten percent of the potential-to-emit TEDE to the MEI, or greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, or greater than twenty-five percent of the TEDE to the MEI, after controls. Describe the method for monitoring or calculating those radionuclide emissions. Describe the method with detail sufficient to demonstrate compliance with the applicable requirements.

(10) Indicate the annual possession quantity for each radionuclide.

(11) Indicate the physical form of each radionuclide in inventory: Solid, particulate solids, liquid, or gas.

(12) Indicate the release form of each radionuclide in inventory:
Particulate solids, vapor, or gas. Give the chemical form and ICRP 30 solubility class, if known.

(13) Release rates.

(a) New emission unit(s): Give predicted release rates without any emissions control equipment (the potential-to-emit) and with the proposed control equipment using the efficiencies described in subsection (6) of this section.

(b) Modified emission unit(s): Give predicted release rates without any emissions control equipment (the potential-to-emit) and with the existing and proposed control equipment using the efficiencies described in subsection (6) of this section. Provide the latest year's emissions data or emissions estimates.

In all cases, indicate whether the emission unit is operating in a batch or continuous mode.

(14) Identify the MEI by distance and direction from the emission unit(s). The MEI is determined by considering distance, windrose data, presence of vegetable gardens, and meat or milk producing animals at unrestricted areas surrounding the emission unit.

(15) Calculate the TEDE to the MEI using an approved procedure (see WAC 246-247-085). For each radionuclide identified in subsection (8) of this section, determine the TEDE to the MEI for existing and proposed emission controls, and without any emission controls (the potential-to-emit) using the release rates from subsection (13) of this section. Provide all input data used in the calculations.

(16) Provide cost factors for construction, operation, and maintenance of the proposed control technology components and system, if a BARCT or ALARACT demonstration is not submitted with the NOC.

(17) Provide an estimate of the lifetime for the facility process with the emission rates provided in this application.

(18) Indicate which of the following control technology standards have been considered and will be complied with in the design and operation of new or modified emission unit(s) described in this application:

ASME/ANSI AG-1, Code on Nuclear Air and Gas Treatment (where there are conflicts in standards with the other listed references, this standard shall take precedence)

ASME/ANSI N509, Nuclear Power Plant Air-Cleaning Units and Components

ASME/ANSI N510, Testing of Nuclear Air Treatment Systems

ANSI/ASME NQA-1, Quality Assurance Program Requirements for Nuclear Facilities

40 CFR 60, Appendix A, Methods 1, 1A, 2, 2A, 2C, 2D, 4, 5, and 17

ANSI/HPS N13.1.1999, Sampling and Monitoring Releases of Airborne Radioactive Substances from the Stacks and Ducts of Nuclear Facilities if the unit's potential-to-emit exceeds 0.1 mrem/yr TEDE to the MEI and the unit is required to meet ANSI/HPS N13.1.1999 under federal regulations.

ANSI N13.1.1969, Guide to Sampling Airborne Radioactive Materials in Nuclear Facilities if the unit's potential-to-emit exceeds 0.1 mrem/yr TEDE to the MEI and the unit is not required to meet ANSI/HPS N13.1.1999 under federal regulations.

For each standard not so indicated, give reason(s) to support adequacy of the design and operation of the emission unit(s) as proposed. **(WAC 246-247-110)**

4.0 Quality Assurance Requirements for PCM Using Stack Sampling (AIR 05-303 dated March 18, 2005) State Only Requirement.

The following is being provided as clarification to those licenses issued for all minor/point source emission units that use sample extraction as the approved form of periodic confirmatory measurement. This clarification deals with the "State Only" requirement concerning 40 CFR 61, Appendix B, Method 114 for minor/point sources.

When the quality assurance method referenced in Attachment 2 of the Hanford Site Air Operating Permit, 00-05-006, states either Method 114 or Method 114(3) the following will be the meaning:

Actions to assure quality of periodic confirmatory measurement shall be as follows:
(1) Implementation of quality checks supporting the periodic confirmatory measurements. These checks shall assure that the emissions measurements are sufficient to verify low emissions;
(2) Stack flow measurements will be conducted annually;
(3) An annual calibration will be performed on the existing sample flow meter or an annual function check will be performed if the flow meter is replaced by either a rotameter or a magnahelic gauge;
(4) The effluent samples will be collected on standard (very high efficiency particulate air) sample filters;
(5) The laboratory sample analysis will meet the requirements of Appendix B, Method 114(3); and
(6) The following items shall be documented in a NESHAP Quality Assurance Project Plan or other documents:
(i) The sample collection and analysis procedures used;
(ii) The quality control program for evaluating and tracking the quality of the periodic confirmatory measurement data against preset criteria. The quality

control program should include, where applicable, a system of replicates, spiked samples, split samples, blanks and control charts. The number and frequency of such quality control checks shall be identified; and
(iii) The sample tracking system to provide positive identification of samples and data through all phases of the sample collection, analysis, and reporting system. Sample handling and preservation procedures to maintain the integrity of the samples during collection, storage, and analysis.

5.0 Method for Monitoring and Reporting of Diffuse and Fugitive Sources and Emissions.

5.1 Diffuse and Fugitive Sources at Hanford

The ambient air monitoring conducted at the Hanford Site has been accepted by the department as the method for demonstrating compliance to emissions limits for diffuse and fugitive sources. Those sources with Emission Unit specific conditions and limitations within the FF-01 License must be monitored; meet the applicable quality assurance and analysis requirements. All required ambient air monitors shall be identified along with their data measurements in the annual Radionuclide Air Emissions Report.

5.1.1 Monitoring

Monitoring of diffuse and fugitive emissions must be conducted to estimate public dose. This is accomplished by conducting monitoring or other testing as required by the department (WAC 246-247-075(8) and (9). Environmental air pathways are monitored near facilities emitting radionuclides from either point sources or diffuse and fugitive sources. The environmental air pathways for air emissions from the Hanford Site must be monitored using a network of ambient air samplers.

5.1.2 Near-Facility Monitoring

Near-facility environmental monitoring is defined as the Department of Energy's monitoring on the Hanford Site near facilities with radioactive materials that are

potentially dispersible. Monitoring locations are associated mostly with major nuclear facilities and waste storage or disposal facilities such as container storage, burial grounds, underground tanks (i.e., Tank Farms in the 200 Areas), ponds, cribs, trenches, and ditches.

In accordance with the definition of "Monitoring" provided in WAC 246-247-030(17), required monitoring activities include the measurement of radionuclides in ambient air. Samples are collected from known or expected transport pathways, which are generally downwind of potential or actual airborne release points and down-gradient of liquid discharges. The accepted primary method of monitoring diffuse and fugitive emissions is ambient air sampling, with other media samples (e.g., surface soil, vegetation for deposition, radiological surveys and thermoluminescent dosimeters) used as qualitative indicators.

5.1.3 Site-Wide Monitoring

In addition, the Department of Energy conducts air monitoring at site-wide locations away from the facilities, offsite around the perimeter of the Hanford Site, and in nearby and distant communities. Because a person could live as close to the Hanford Site as some of the perimeter stations, their data represent maximum exposures for a member of the public. Therefore, ambient air sampling data from the perimeter locations most closely reflect the actual impacts of radionuclide air emissions from point sources and diffuse and fugitive sources at the Hanford Site.

5.1.4 Quality Assurance and Analysis

All required ambient air samples collected and analyzed must be compatible with the quality assurance requirements of national standards such as NQA-1, EPA QA/R-5, and Method 114 as applicable. Near-facility ambient air samples from individual stations must be composited at a frequency no greater than 6 months. Analysis of other media samples will be conducted at labs with the appropriate quality assurance programs in-place.

5.1.5 Reporting

The average results from the analysis of composite ambient air samples must be reported on an annual basis as required by WAC 246-247-080.

5.1.5.1 Near Facility Monitoring and Reporting

Comparison against 10% of the values listed in Table 2 of 40 CFR 61 Appendix E must be performed. Any analytical result that exceeds these values will be reported to the department. Notification may take the form of an email. These comparisons shall be used to demonstrate that activities being conducted under various approvals are being maintained as ALARACT or BARCT.

5.1.5.2 Hanford Facility Off-site Diffuse and Fugitive Ambient Air Concentration Procedure for Annual Reporting of Emissions

For purposes of annual reporting of emissions, any emissions from diffuse and fugitive sources are estimated from ambient air monitoring data collected at the Hanford Site perimeter. Radionuclide air concentrations resulting from monitored stack emissions at Hanford facilities and other nearby non-DOE sources are calculated for each of the perimeter sample locations using the CAP88-PC atmospheric dispersion modeling code. The combined contributions to airborne radionuclide concentrations attributable to the stack emissions from these sources will be subtracted from the ambient air sampling results. Averaged regional background concentrations for each radionuclide will be calculated from the air sample results obtained at distant community sampling stations located outside the 80-km (50-mile) radius from Hanford sources. The average background concentration at these stations will also be subtracted from the ambient monitoring results at Hanford perimeter stations. The air concentrations at the site perimeter, corrected as described for monitored emissions sources and background concentrations, are assumed to be attributable to emissions from diffuse sources.

Annual emissions from diffuse and fugitive sources will be estimated using the corrected perimeter air concentrations attributable to fugitive emissions, and by performing a back-calculation using CAP88-PC. For purposes of conservatism in estimating emissions, the 200 West Area near the center of the Hanford Site is assumed to be the source of all diffuse and fugitive emissions. The average aggregate emissions from diffuse sources will then be used to estimate the dose at the Hanford Site perimeter with the CAP88-PC code. The annual Hanford Site Radionuclide Air Emissions Report will contain results for the perimeter location having the highest dose and separately the dose at the location of the maximally exposed member of the public from monitored stack sources. The maximum combined dose to a member of the public from monitored stack emissions and potential diffuse source emissions will be reported to demonstrate compliance with the 10 mrem/year standard in 40 CFR Part 61, Subpart H, as adopted by WAC 246-247.

5.1.6 Additional Monitoring Requirements for Specific Activities with Diffuse/Fugitive Emissions

Additional monitoring or testing requirements (issued as Notice of Construction Approval Conditions and Limitations) may be placed on emissions units for a specific activity as authorized in WAC 246-247-075(9).

5.1.7 Changes to the Diffuse and Fugitive Environmental Monitoring

Prior to making a change (i.e., moving, or removing air sample locations, or changing the sampling period) to the accepted periodic confirmatory measurement (for minor diffuse and fugitive sources) or continuous measurement (for major diffuse and fugitive sources), the Department of Energy shall provide a written request describing the change to the Department of Health, Air Emissions and Defense Waste Section for approval. The request for approval may take the form of an email or formal letter.

Attachment 1 Emission Unit Specific License

Emission Unit ID: 1

200E P-241C111-001

241-C-111

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 50

200 W-296P045-001

296-P-45

This is a MAJOR, ACTIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 21.00 ft. 6.40 m. Stack Diameter 0.50 ft. 0.15 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 38.22 ft/second. 11.65 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	
	Heater	1	
	HEPA	2	2 HEPAs in series
	Fan	1	
	Demister	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a skid/mobile type portable exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities. The emission unit is a portable exhauster that operates intermittently or continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Categorical Tank Farm Facility Waste Retrieval and Closure: Phase II Waste Retrieval Operations	AIR 06-660	7/5/2006	703

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.31E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.61E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

   The operation of the waste retrieval system(s) for the removal of radioactive wastes from all 149 Single Shell Tanks (SST) at the Hanford Site.

   SALTCAKE DISSOLUTION WASTE RETRIEVAL SYSTEM

The saltcake dissolution waste retrieval system may be used to retrieve soluble saltcake waste. This method retrieves the soluble portion of the waste only, resulting in very few of the solids being pumped from the tank. The saltcake dissolution waste retrieval system deployed in the SSTs is for water, chemical agent, or catalyst liquid to be added to the tank using a variety of spray nozzles or "sprinklers". The approach is to sprinkle the waste surface with water, chemical agent, or catalyst liquid. The added water, chemical agent, or catalyst liquid must stay in contact with the saltcake for a long enough period of time for the brine to become saturated. Once the brine is saturated, it is pumped from the SST to a receiver tank, staging tank, storage DST or other staging/storage vessel associated with the supplemental treatment, packaging or disposal. Salt solution will be removed using the existing saltwell pump or other pump placed into the tank.

A tank not equipped with a saltwell pump, a transfer pump (progressive cavity, vertical turbine) can be installed and operated.

Remotely directable water distribution devices will be located in risers spaced as far apart as practical. A combination of spraying waster, chemical agent, or catalyst liquid to dissolve the saltcake can be used in conjunction with directing a flow of water or recirculating water at the waste to move it to the pump suction to allow the pumping of waste from the tank. Recirculated waste from the pump may be sent back to the tank as an alternative to using water to direct dissolution waste to the pump suction.

MODIFIED SLUCING WASTE RETRIEVAL SYSTEM

Modified sluicing can be used for some SST waste retrieval. Modified sluicing is the introduction of liquid at low to moderate pressures, not to exceed 1200 psi, and volumes into the waste. The liquid dissolves and breaks apart solid materials and suspends them in the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a receiver tank.

Modified sluicing introduces sluice liquid in a controlled fashion using multiple sluicing nozzles at varying pressures and flows, then pumps out the resultant waste slurry. This maintains minimal liquid inventories within the tank at all times. The liquids that could be used in modified sluicing include water, recirculated supernatant/water from the receiving Double Shell Tank, recirculated supernatant/water, chemical agent or catalyst liquid.

VACUUM WASTE RETRIEVAL SYSTEM

A vacuum waste retrieval system can be used for waste retrieval activities in the (SSTs). The vacuum waste retrieval system is introduced into the SSTs by means of an articulating mast system (AMS). The AMS has a horizontal reach and rotational capabilities of 360 degrees. The AMS has a retracted position and can be extended vertically. Air is mixed at the suction end of the AMS enabling the required vertical lift for the waste to a topside receiver tank, batch vessel or a staging SST, storage DST, or other staging/storage vessels associated with supplemental treatment, packaging or disposal.

The AMS will be deployed through and attached to standard riser flanges that are available on the SSTs. Cameras can also be installed in other risers for in-tank viewing and control of the AMS.

For the 200-series tanks in the 241-C, 241-U, 241-B and 241-T Tank Farms a vacuum retrieval process tank, staging tank, staging SST, storage DST or other staging/storage vessel will be deployed. The receiver tank will receive waste in batches from whichever tank is connected into the vacuum retrieval system. The vacuum pressure used to draw up the waste from the tank to the receiver tank is relieved back into the SST being retrieved.

MOBILE RETRIEVAL SYSTEM

A Mobile Retrieval System (MRS) can be used to retrieve waste from some SSTs. The MRS consists of two in-tank systems. The first is a robotic crawler inserted through one riser the second is an AMS inserted through a second riser. The AMS retrieves the sludge from the tank using a vacuum with assisting pneumatic conveyance. The AMS vacuum tube has a horizontal reach and can be extended to the bottom of the tank. The

arm rotates 360 degrees. The vacuum will be directed through the AMS in the tank to the end effector, which is in contact with the waste. The pneumatic conveyance-assisted vacuum retrieval system will draw the waste up through the vacuum to the waste vessel in the vessel skid in batches. The AMS is then valved out while the waste vessel is emptied and pumped out through the over ground transfer lines to a DST, a staging SST or other treatment/disposal options. When the waste vessel is nearly empty, the transfer line will be valved out and the AMS will be valved back in and another batch of waste will be removed from the tank. This process will be repeated until waste near the center of the tank is removed. The robotic crawler will be remotely controlled to move and/or wash waste toward the center of the tank.

The robotic crawler is equipped with a plow blade at the front for pushing/pulling wastes, a screw pump to jet wastes through a small nozzle towards the center of the tank, the ability to direct hot or cold water through the same nozzle to wash wastes off of in-tank equipment, dissolve waste agglomerations in the tank, and wash waste toward the center of the tank for removal.

Any new retrieval methods or changes to processes will need to be provided to WDOH in a revised NOC prior to implementation.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.99E+00	Am - 241	8.68E+03	Am - 243	3.39E-01
Ba - 137 m	4.26E+07	C - 14	6.25E+02	Cd - 113 m	4.95E+03
Cm - 242	1.97E+01	Cm - 243	1.80E+00	Cm - 244	1.90E+01
Co - 60	2.52E+03	Cs - 134	3.44E+04	Cs - 137	4.89E+07
Eu - 152	8.49E+02	Eu - 154	1.45E+04	Eu - 155	9.54E+03
H - 3	5.95E+03	I - 129	2.95E+01	Nb - 93 m	1.01E+03
Ni - 59	1.05E+02	Ni - 63	9.30E+03	Np - 237	9.50E+01
Pa - 231	1.25E+01	Pu - 238	1.65E+02	Pu - 239	3.17E+03
Pu - 240	5.36E+02	Pu - 241	4.80E+03	Pu - 242	3.34E-02
Ra - 226	1.27E-02	Ra - 228	1.15E+01	Ru - 106	1.22E-02
Sb - 125	1.73E+04	Se - 79	6.36E+01	Sm - 151	8.93E+05
Sn - 126	2.59E+02	Sr - 90	2.91E+06	Tc - 99	2.24E+04
Th - 229	4.20E-01	Th - 232	1.26E+00	U - 232	3.66E+00
U - 233	3.02E+01	U - 234	1.07E+01	U - 235	4.44E-01
U - 236	2.73E-01	U - 238	9.86E+00	Y - 90	2.91E+06
Zr - 93	1.25E+03				

4) A pre-operational NDA of the exhauster(s) HEPA filters and a post-operational NDA will be performed the first time each of the four waste retrieval methods (mobile retrieval system, vacuum retrieval, supernatant sluicing, and saltcake dissolution with supernatant) when placed into service. The post-operational NDA should occur after one cycle or phase of waste retrieval operation is completed, a method replaces another method during a cycle/phase or six months from the in-service date, whichever occurs first. The facility may opt to replace the exhauster's HEPA filters prior to placing a new waste retrieval method in service and eliminate the pre-operational NDA.
5) All ductwork connections shall have a radiological survey performed monthly to ensure ductwork connections are not degrading.
6) All ductwork shall be pressure tested in accordance with the requirements of ASME AG-1 Section SA.
7) All receiver tanks (including waste retrieval process tanks for tank TRU retrieval (stagging) SSTs, storage DSTs, or other staging/storage vessels, but not including batch vessel supporting vacuum retrieval) shall have active ventilation during waste receipt, unless alternative controls are documented and approved by WDOH.
8) All ventilation ductwork from the exit of the tank to the inlet of the exhauster filter housing shall be insulated.
9) During waste retrieval operations liquid shall be introduced through sluicing and saltcake dissolution nozzles at a pressure not to exceed 1200 psig, and the nozzle shall be at least five inches from the waste surface.
10) Each HEPA filter shall be in-place tested annually in accordance with the requirements of ASME AG-1 Section

TA. HEPA filters shall have a minimum efficiency of 99.95%.

11) General WAC 246-247 technology standard exemptions justified and documented in RPP-19233, WAC 246-247 technology standard exemption justification for waste tank ventilation systems, may be applied to Phase II NOC retrieval exhauster operations.

12) Relative humidity shall be monitored, at least once a month, downstream of the heater and prior to the HEPA filters to ensure the air stream does not exceed 70% relative humidity.

13) The annual possession quantity shall be tracked on a WDOH approved log.

14) The differential pressure readings for the pre-filters and both stages of HEPA filters shall be monitored, recorded and trended daily. Action levels shall be developed and provided to WDOH for when actions will be taken to assure the pre-filters and HEPA filters will be operated within their design parameters.

15) The emission unit stack monitoring system shall meet the requirements of ANSI/HPS N13.1-1999 including the stack monitoring system inspection requirements. The technical justification document required by ANSI/HPS N13.1-1999 shall be provided to WDOH for review and approval.

Emission Unit ID: 53

200W P-296P022-001

296-P-22

This is a MINOR, ACTIVELY ventilated emission unit.

241-SY TANK FARM

Emission Unit Information

Stack Height: 13.17 ft. 4.01 m. Stack Diameter 0.69 ft. 0.21 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 33.04 ft/second. 10.07 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	2 in series
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a DST annulus exhauster used to support tank farm operations and ventilates the annuli of DSTs 241-SY Tank Farm. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The annulus is the space between the inner wall and outer wall of the tank, and is used for leak detection. The emission unit operates continuously.

Emission Unit ID: 54

200W P-296P028-001

296-P-28

This is a MINOR, ACTIVELY ventilated emission unit.

241-SY TANK FARM

Emission Unit Information

Stack Height: 11.00 ft. 3.35 m. Stack Diameter 0.67 ft. 0.20 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 32.60 ft/second. 9.94 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	Non-Operational	This emission unit is inactive and will require an NOC to resume operation or a report of closure to de-register.
	Heater	Non-Operational	This emission unit is inactive and will require an NOC to resume operation or a report of closure to de-register.
	Prefilter	Non-Operational	This emission unit is inactive and will require an NOC to resume operation or a report of closure to de-register.
	HEPA	Non-Operational	This emission unit is inactive and will require an NOC to resume operation or a report of closure to de-register.
	Fan	Non-Operational	This emission unit is inactive and will require an NOC to resume operation or a report of closure to de-register.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is an exhauster used to support tank farm operations and ventilates DSTs 241-SY Tank Farm. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The emission unit is inactive, removed from service, and will not be utilized for future tank farm operations. If the emission unit is required for tank farm operations, the proper regulatory requirements and permits will be obtained prior to returning the emission unit to service.

Emission Unit ID: 56

200W P-296SY-001

296-P-23

This is a MINOR, ACTIVELY ventilated emission unit.

241-SY TANK FARM

Emission Unit Information

Stack Height: 17.30 ft. 5.27 m. Stack Diameter 0.51 ft. 0.16 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 83.07 ft/second. 25.32 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	
	Heater	Non-Operational	
	Prefilter	1	
	HEPA	2	In series
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241-SY Tank Farm during storage, maintenance, and normal operation. This emission unit operates with the "B" train (Western most unit) while the "A" train (Eastern most unit) operates in conjunction with the emission unit (296-S-25). This emission unit is operated in alternation with the "A" train when "B" train is not operational. The emission unit operates intermittently.

Emission Unit ID: 57

200 W-296P043-001

296-P-43

This is a MAJOR, ACTIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 21.00 ft. 6.40 m. Stack Diameter 0.50 ft. 0.15 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 38.22 ft/second. 11.65 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	
	Heater	1	
	HEPA	2	2 HEPAs in series
	Fan	1	
	Demister	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a skid/mobile type portable exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities. The emission unit is a portable exhauster that operates intermittently or continuously.

This Emission Unit has 3 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Installation and Operation of Waste Retrieval Systems in Single-Shell Tank (SST) 241-S-112	AIR 06-645	7/5/2006	686

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.90E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.51E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The Salt Cake Dissolution Retrieval Demonstration Project in SST 241-S-112 uses water that is introduced in a controlled fashion to dissolve and mobilize solids in the tank. The resulting solution is then pumped and transferred to the Double-Shell Tank (DST) system. A portable exhauster will provide active ventilation for some dissolution activities and all waste transfer activities until structural safety considerations force shutdown, at which time passive ventilation shall be used.

The following activities will be performed :

Pit

a. Opening the 241-S-112 Condenser Pit to remove the old cover plate and install a new cover plate to allow for the connection of a HEPA filter to the exhauster trunk for a portable exhauster.
b. Enter 241-S-C Valve Pit to disconnect the existing 241-S-112 HIHTL.
c. Enter the 241-S-109 Valve Pit to remove the existing HIHTL that is no longer needed.
d. Accessing the 241-S-112A Central Pump Pit to:
   - Install an instrument manifold,
   - Install a transfer pump, and
   - Replacement of the existing HIHTL that is not needed for this project with a new HIHTL.
e. Enter the 241-S-A Valve Pit to:
   - Connect the hose-in-hose transfer line (HIHTL) from the 241-S-112 Tank to the DST receiver tank, and
   - Install the leak detection hardware.

Pit work shall be performed in accordance with ALARACT 6 "TWRS ALARACT Demonstration for Pit Access" and ALARACT 14 "TWRS ALARACT Demonstration for Pit Work".

Soil Excavation

a. Excavation of soil inside the tank farm for the installation of an electrical and instrumentation conduit to monitor transfer progress.
b. Excavation of soil outside the tank farm for conduit and transformer installation.
c. Excavation of soil inside the tank farm for installation of a new raw water header installed between the 241-SY Tank Farm and the 241-S Tank Farm to the 241-S-112 Tank.
d. Installation of a HIHTL to convey waste from Tank 241-S-112 to the DST transfer system.

Soil excavation shall be performed in accordance with ALARACT 5 "TWRS ALARACT Demonstration for Soil Excavation (using hand tools)".

In-Tank Equipment

a: Installation of various motor controlled spray devices into (3) risers near the outside perimeter of the tank and an automatic indexing spray device will be installed on a centrally located riser.
b. Remove Liquid Observation Well (LOW).
c. Installation of Stilwell (Level Monitoring Device protection).

Work shall be performed in accordance with ALARACT 1 "TWRS ALARACT Demonstration for Riser Preparation/Opening" and ALARACT 13 "TWRS ALARACT Demonstration for Installation, Operation and Removal of Tank Equipment".

Water Addition/ Dilution

- Installation of a new heat traced and insulated raw water line installed between the 241-S Tank Farm and the 241-SY Tank Farm to the water distribution skid on top of Tank 241-S-112.

Water addition and dilution for salt-cake dissolution shall use portable exhausters for active ventilation when water addition flow rate is above 80 gallons per minute, at less than 80 gallons per minute salt cake dissolution shall use either a breather HEPA filter for passive ventilation, or active ventilation.

Waste Transfer

- Installation of a progressive cavity pump and supporting equipment to recover and transport waste from Tank 241-S-112 to the DST System.

Waste transfer activities shall use portable exhausters for active ventilation until structural safety considerations force shutdown, at which time passive ventilation shall be used.
The major components of the exhauster are; stack, glycol heaters, 1 pre-filter, 2 HEPA filters, 1 exhaust fan, sampling system and a demister which is determined to be optional.

Other

- Removal of the Standard Hydrogen Monitoring Probe.

The completion of tank retrieval may also be aided by a Remote Water Lance (RWL) that is a high pressure water device, or hydrolaser. The system will consist of both ex-tank and in-tank components. The ex-tank components will be comprised of; high pressure water skid, operating controls, cables and hoses. The in-tank components will be comprised of; umbilical, in-tank vehicle, high pressure nozzle(s).

The high pressure water skid will provide the water at the desired pressure, not to exceed 37,000 psig. A conditioning system will be used to filter the raw water entering the skid to ensure that no abrasive materials are entrained in the water. The water volumetric flow rate will be on the order of 6 to 15 gpm. The operating controls will be located in a control trailer outside of the farm fence. The cables and hoses will connect the hydraulically powered in-tank vehicle with the ex-tank controls and water skid via the umbilical. The in-tank vehicle will house one to four high pressure water nozzles. The RWL will be operated with the nozzle end submerged to avoid aerosols in the tank. A rupture disc will be used to prevent reaching pressures above 37,000 psig.

The in-tank vehicle, with umbilical, will be deployed through a 12 inch riser in tank 241-S-112 and will weigh on the order of 1,000 pounds plus the weight of the umbilical. A crane will be used to lower the vehicle and the full length of umbilical down into the tank. After the in-tank vehicle and umbilical are in the tank, a cover, with gasket, will be bolted to the riser flange to seal the riser opening. The equipment will be operated outside the tank farm fence.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	6.12E-03	Am - 241	7.24E+01	Am - 243	7.60E+01
Ba - 137 m	2.14E+05	C - 14	3.59E+01	Cd - 109	2.26E+02
Cm - 242	1.14E-02	Cm - 243	5.63E-01	Cm - 244	1.35E+01
Co - 60	6.47E+01	Cs - 134	5.68E-01	Cs - 137	2.26E+05
Eu - 152	1.02E+01	Eu - 154	2.05E+02	Eu - 155	1.96E+02
H - 3	3.08E+02	I - 129	8.43E-01	Nb - 93 m	5.09E+01
Ni - 59	1.08E+01	Ni - 63	9.97E+02	Np - 237	1.56E+00
Pa - 231	1.59E-02	Pu - 238	8.10E+00	Pu - 239	6.08E+01
Pu - 240	9.36E+00	Pu - 241	5.78E+01	Pu - 242	4.16E-04
Ra - 226	5.98E-04	Ra - 228	8.46E-02	Ru - 106	1.84E-04
Sb - 125	1.01E+02	Se - 79	1.73E+00	Sm - 151	4.27E+04
Sn - 126	7.73E+00	Sr - 90	1.07E+05	Tc - 99	2.47E+02
Th - 229	4.50E-03	Th - 232	1.35E-03	U - 232	2.78E-01
U - 233	7.11E+00	U - 234	4.65E+00	U - 235	2.01E-02
U - 236	2.51E-02	U - 238	4.52E-01	Y - 90	1.07E+05
Zr - 93	6.26E+01				

4) Equipment removal and monitoring (pre and post-job surveys) shall be performed in accordance with ALARACT 13; equipment disposition shall be performed in accordance with ALARACT 4 and 15.
5) Radiological monitoring shall be performed in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual.
6) The Annual Possession Quantity and potential-to-emit to the MEI shall be tracked on a WDOH approved log.
7) The differential pressure across the demister, prefilter, primary HEPA filter, and secondary HEPA filter shall be monitored, recorded and tracked twice a shift during operation of the hydrolaser.
8) The dose rate on the prefilter, primary HEPA filter, and secondary HEPA filter shall be monitored, recorded, and tracked twice a shift during operation of the hydrolaser.
9) Each HEPA filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.
10) The operation of the hydrolaser may occur with the nozzle assemblies above or below the waste surface.
11) Monitor and record the digital readout on the CAM unit one per shift during hydrolaser operation.
12) After two weeks of operation of the hydrolaser, provide DOH with:
    a. The differential pressure readings across the demister, prefilter, primary HEPA filter, and secondary HEPA filter.
    b. Dose rate readings on the prefilter, primary HEPA filter, and secondary HEPA filter.
    c. Digital readout from the CAM.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.80E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 8.40E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The salt cake dissolution activity associated with 241-S-102 shall include the following: pit work, soil excavation, in-tank equipment installation/removal, water dilution, and waste transfers.

Pit Work (Diffuse and Fugitive):

- Open the 241-S-102B Distributor pit and cut flange in riser with hold saw or plasma cutter, to install instrumentation manifold and new progressive cavity transfer pump (ALARACT 1, 6, 12, 13, 14);
- Open the two 241-S-102 Condenser pits to replace two existing cover plates with new cover plates. Connect the passive breather filter assembly and connect the trunk of the portable exhauster (ALARACT 4, 6, 14);
- Open the 241-S-A Valve pit, and connect the HIHTL from the 241-S-102 tank to the DST system (ALARACT 6, 14).

Soil Excavation (Diffuse and Fugitive):

- Excavate trenches for tie-in of instrumentation and power systems (ALARACT 5);
- Excavate for HIHTL placement from 241-S-102 to 241-S-A Valve pit (ALARACT 5).

Other Equipment Installation/Removal (Diffuse and Fugitive):

- Install motor controlled spray devices in three risers near the outside perimeter of tank 241-S-102 (ALARACT 1, 13);
- Install automatic spray indexing device in a central riser (ALARACT 1, 13);
- Remove motor controlled and automatic spray indexing devices if necessary (ALARACT 1, 13);
- Place water distribution skid and connect to the raw water header between 241-SY and 241-S tank farms. Connect water distribution skid to spray devices.
- Remove standard hydrogen monitoring system vapor probe (ALARACT 4, 15, 13);
- Place and hook up exhauster and exhauster system;
- Remove unused flammable gas cabinet (per Tank Farm Radcon Control Manual, HNF 5183);
- Place Field Instrument Electrical Skid and connect associated cabling;
- Install stilling well for Enraf Liquid Indicating Transmitter (ALARACT 1, 13);
- Install camera monitoring system (ALARACT 1,13);
- Remove Liquid Observation Well if necessary (ALARACT 1, 13).

Water Dilution and Waste Transfer:

- Water shall be sprayed onto the surface of the in-tank salt cake to dissolve the cake;
- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11);
- Operation and maintenance of the portable exhauster(s).

Waste Transfer (S102):

- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11).

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.34E-03	Am - 241	1.23E+02	Am - 243	4.20E-03
Ba - 137 m	2.41E+05	C - 14	4.78E+01	Cd - 113 m	6.95E+01
Cm - 242	3.02E-01	Cm - 243	2.41E-02	Cm - 244	2.17E-01
Co - 60	1.76E+01	Cs - 134	3.54E-01	Cs - 137	2.55E+05
Eu - 152	3.50E+00	Eu - 154	2.46E+02	Eu - 155	2.70E+02
H - 3	2.09E+02	I - 129	6.81E-01	Nb - 93 m	1.39E+01
Ni - 59	3.00E+00	Ni - 63	2.75E+02	Np - 237	1.30E+00
Pa - 231	4.82E-03	Pu - 238	2.96E+00	Pu - 239	1.15E+02
Pu - 240	1.90E+01	Pu - 241	1.49E+02	Pu - 242	1.14E-03
Ra - 226	2.47E-04	Ra - 228	8.89E-02	Ru - 106	5.74E-05
Sb - 125	3.18E+01	Se - 79	3.88E-01	Sm - 151	1.30E+04
Sn - 126	2.35E+00	Sr - 90	9.29E+04	Tc - 99	2.17E+02
Th - 229	2.20E-03	Th - 232	9.50E-03	U - 232	1.42E+00
U - 233	5.83E+00	U - 234	1.81E+00	U - 235	7.35E-02
U - 236	5.63E-02	U - 238	1.65E+00	Y - 90	9.29E+04
Zr - 93	1.90E+01				

4) Monthly checks shall be performed on the exhaust duct to ensure there is no degradation of the ductwork or leakage at the connection points [WAC 246-247-040(5)].

5) The Annual Possession Quantity and Potential-to-Emit to the MEI shall be logged and retained [WAC 246-247-040(5)].

6) The portable exhauster shall operate continuously when water is being added to the tank via the spray devices. If structural safety considerations force shutdown of the active ventilation system, WDOH shall be notified prior to shutdown of active ventilation. Passive breather filter ventilation may be used when there is no dilution water delivery via the spray devices [WAC 246-247-040(5)].

7) The heater shall have an automatic trip set point below 200 degrees F. HEPAs shall be individually aerosol tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95% [WAC 246-247-040(5)].

8) By October 25, 2003, and thereafter as individually noted below, the emission unit monitoring system shall have the following activities performed:

a. Inspect pitot tube systems for leaks, at least annually.
b. Inspect nozzles for alignment, presence of deposits, damage to sharp-edged nozzles, or other potentially degrading factors (corrosion, physical damage, etc) at least annually.
c. Check transport lines and if visible deposits are present perform cleaning, at least annually.
d. Checks to ensure the tightness of all fittings and connections as well as a leak test of the sample system, at least annually.
e. Check the response of stack flow rate monitoring and control system at least quarterly.
f. A functional/calibration check of monitoring system instrumentation shall be performed at least annually.[WAC 246-247-040(5)]

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.31E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.61E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The operation of the waste retrieval system(s) for the removal of radioactive wastes from all 149 Single Shell Tanks (SST) at the Hanford Site.

SALTCAKE DISSOLUTION WASTE RETRIEVAL SYSTEM

The saltcake dissolution waste retrieval system may be used to retrieve soluble saltcake waste. This method retrieves the soluble portion of the waste only, resulting in very few of the solids being pumped from the tank. The saltcake dissolution waste retrieval system deployed in the SSTs is for water, chemical agent, or catalyst liquid to be added to the tank using a variety of spray nozzles or "sprinklers". The approach is to sprinkle the waste surface with water, chemical agent, or catalyst liquid. The added water, chemical agent, or catalyst liquid must stay in contact with the saltcake for a long enough period of time for the brine to become saturated. Once the brine is saturated, it is pumped from the SST to a receiver tank, staging tank, storage DST or other staging/storage vessel associated with the supplemental treatment, packaging or disposal. Salt solution will be removed using the existing saltwell pump or other pump placed into the tank.

A tank not equipped with a saltwell pump, a transfer pump (progressive cavity, vertical turbine) can be installed and operated.

Remotely directable water distribution devices will be located in risers spaced as far apart as practical. A combination of spraying waster, chemical agent, or catalyst liquid to dissolve the saltcake can be used in conjunction with directing a flow of water or recirculating water at the waste to move it to the pump suction to allow the pumping of waste from the tank. Recirculated waste from the pump may be sent back to the tank as an alternative to using water to direct dissolution waste to the pump suction.

MODIFIED SLUCING WASTE RETRIEVAL SYSTEM

Modified sluicing can be used for some SST waste retrieval. Modified sluicing is the introduction of liquid at low to moderate pressures, not to exceed 1200 psi, and volumes into the waste. The liquid dissolves and breaks apart solid materials and suspends them in the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a receiver tank.

Modified sluicing introduces sluice liquid in a controlled fashion using multiple sluicing nozzles at varying pressures and flows, then pumps out the resultant waste slurry. This maintains minimal liquid inventories within the tank at all times. The liquids that could be used in modified sluicing include water, recirculated supernatant/water from the receiving Double Shell Tank, recirculated supernatant/water, chemical agent or catalyst liquid.

VACUUM WASTE RETRIEVAL SYSTEM

A vacuum waste retrieval system can be used for waste retrieval activities in the (SSTs). The vacuum waste retrieval system is introduced into the SSTs by means of an articulating mast system (AMS). The AMS has a horizontal reach and rotational capabilities of 360 degrees. The AMS has a retracted position and can be extended vertically. Air is mixed at the suction end of the AMS enabling the required vertical lift for the waste

to a topside receiver tank, batch vessel or a staging SST, storage DST, or other staging/storage vessels associated with supplemental treatment, packaging or disposal.

The AMS will be deployed through and attached to standard riser flanges that are available on the SSTs. Cameras can also be installed in other risers for in-tank viewing and control of the AMS.

For the 200-series tanks in the 241-C, 241-U, 241-B and 241-T Tank Farms a vacuum retrieval process tank, staging tank, staging SST, storage DST or other staging/storage vessel will be deployed. The receiver tank will receive waste in batches from whichever tank is connected into the vacuum retrieval system. The vacuum pressure used to draw up the waste from the tank to the receiver tank is relieved back into the SST being retrieved.

MOBILE RETRIEVAL SYSTEM

A Mobile Retrieval System (MRS) can be used to retrieve waste from some SSTs. The MRS consists of two in-tank systems. The first is a robotic crawler inserted through one riser the second is an AMS inserted through a second riser. The AMS retrieves the sludge from the tank using a vacuum with assisting pneumatic conveyance. The AMS vacuum tube has a horizontal reach and can be extended to the bottom of the tank. The arm rotates 360 degrees. The vacuum will be directed through the AMS in the tank to the end effector, which is in contact with the waste. The pneumatic conveyance-assisted vacuum retrieval system will draw the waste up through the vacuum to the waste vessel in the vessel skid in batches. The AMS is then valved out while the waste vessel is emptied and pumped out through the over ground transfer lines to a DST, a staging SST or other treatment/disposal options. When the waste vessel is nearly empty, the transfer line will be valved out and the AMS will be valved back in and another batch of waste will be removed from the tank. This process will be repeated until waste near the center of the tank is removed. The robotic crawler will be remotely controlled to move and/or wash waste toward the center of the tank.

The robotic crawler is equipped with a plow blade at the front for pushing/pulling wastes, a screw pump to jet wastes through a small nozzle towards the center of the tank, the ability to direct hot or cold water through the same nozzle to wash wastes off of in-tank equipment, dissolve waste agglomerations in the tank, and wash waste toward the center of the tank for removal.

Any new retrieval methods or changes to processes will need to be provided to WDOH in a revised NOC prior to implementation.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.99E+00	Am - 241	8.68E+03	Am - 243	3.39E-01
Ba - 137 m	4.26E+07	C - 14	6.25E+02	Cd - 113 m	4.95E+03
Cm - 242	1.97E+01	Cm - 243	1.80E+00	Cm - 244	1.90E+01
Co - 60	2.52E+03	Cs - 134	3.44E+04	Cs - 137	4.89E+07
Eu - 152	8.49E+02	Eu - 154	1.45E+04	Eu - 155	9.54E+03
H - 3	5.95E+03	I - 129	2.95E+01	Nb - 93 m	1.01E+03
Ni - 59	1.05E+02	Ni - 63	9.30E+03	Np - 237	9.50E+01
Pa - 231	1.25E+01	Pu - 238	1.65E+02	Pu - 239	3.17E+03
Pu - 240	5.36E+02	Pu - 241	4.80E+03	Pu - 242	3.34E-02
Ra - 226	1.27E-02	Ra - 228	1.15E+01	Ru - 106	1.22E-02
Sb - 125	1.73E+04	Se - 79	6.36E+01	Sm - 151	8.93E+05
Sn - 126	2.59E+02	Sr - 90	2.91E+06	Tc - 99	2.24E+04
Th - 229	4.20E-01	Th - 232	1.26E+00	U - 232	3.66E+00
U - 233	3.02E+01	U - 234	1.07E+01	U - 235	4.44E-01
U - 236	2.73E-01	U - 238	9.86E+00	Y - 90	2.91E+06
Zr - 93	1.25E+03				

4) A pre-operational NDA of the exhauster(s) HEPA filters and a post-operational NDA will be performed the first time each of the four waste retrieval methods (mobile retrieval system, vacuum retrieval, supernatant sluicing, and saltcake dissolution with supernatant) when placed into service. The post-operational NDA should occur after one cycle or phase of waste retrieval operation is completed, a method replaces another method during a cycle/phase or six months from the inservice date, whichever occurs first. The facility may opt to replace the exhauster's HEPA filters prior to placing a new waste retrieval method in service and eliminate the pre-operational NDA.
5) All ductwork connections shall have a radiological survey performed monthly to ensure ductwork connections are not degrading.
6) All ductwork shall be pressure tested in accordance with the requirements of ASME AG-1 Section SA.
7) All receiver tanks (including waste retrieval process tanks for tank TRU retrieval (stagging) SSTs, storage DSTs, or other staging/storage vessels, but not including batch vessel supporting vacuum retrieval) shall have active ventilation during waste receipt, unless alternative controls are documented and approved by WDOH.
8) All ventilation ductwork from the exit of the tank to the inlet of the exhauster filter housing shall be insulated.
9) During waste retrieval operations liquid shall be introduced through sluicing and saltcake dissolution nozzles at a pressure not to exceed 1200 psig, and the nozzle shall be at least five inches from the waste surface.
10) Each HEPA filter shall be in-place tested annually in accordance with the requirements of ASME AG-1 Section TA. HEPA filters shall have a minimum efficiency of 99.95%.
11) General WAC 246-247 technology standard exemptions justified and documented in RPP-19233, WAC 246-247 technology standard exemption justification for waste tank ventilation systems, may be applied to Phase II NOC retrieval exhauster operations.
12) Relative humidity shall be monitored, at least once a month, downstream of the heater and prior to the HEPA filters to ensure the air stream does not exceed 70% relative humidity.
13) The annual possession quantity shall be tracked on a WDOH approved log.
14) The differential pressure readings for the pre-filters and both stages of HEPA filters shall be monitored, recorded and trended daily. Action levels shall be developed and provided to WDOH for when actions will be taken to assure the pre-filters and HEPA filters will be operated within their design parameters.
15) The emission unit stack monitoring system shall meet the requirements of ANSI/HPS N13.1-1999 including the stack monitoring system inspection requirements. The technical justification document required by ANSI/HPS N13.1-1999 shall be provided to WDOH for review and approval.

Emission Unit ID: 58

200 W-296P044-001

296-P-44

This is a MAJOR, ACTIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 21.00 ft. 6.40 m. Stack Diameter 0.50 ft. 0.15 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 38.22 ft/second. 11.65 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	
	Heater	1	
	HEPA	2	2 HEPAs in series
	Fan	1	
	Demister	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a skid/mobile type portable exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities. The emission unit is a portable exhauster that operates intermittently or continuously.

This Emission Unit has 2 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
241-S-102 Installation and Operation of Waste Retrieval Systems	AIR 06-652	7/5/2006	694

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.80E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 8.40E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The salt cake dissolution activity associated with 241-S-102 shall include the following: pit work, soil excavation, in-tank equipment installation/removal, water dilution, and waste transfers.

   Pit Work (Diffuse and Fugitive):

- Open the 241-S-102B Distributor pit and cut flange in riser with hold saw or plasma cutter, to install instrumentation manifold and new progressive cavity transfer pump (ALARACT 1, 6, 12, 13, 14);
- Open the two 241-S-102 Condenser pits to replace two existing cover plates with new cover plates. Connect the passive breather filter assembly and connect the trunk of the portable exhauster (ALARACT 4, 6, 14);
- Open the 241-S-A Valve pit, and connect the HIHTL from the 241-S-102 tank to the DST system (ALARACT 6, 14).

Soil Excavation (Diffuse and Fugitive):

- Excavate trenches for tie-in of instrumentation and power systems (ALARACT 5);
- Excavate for HIHTL placement from 241-S-102 to 241-S-A Valve pit (ALARACT 5).

Other Equipment Installation/Removal (Diffuse and Fugitive):

- Install motor controlled spray devices in three risers near the outside perimeter of tank 241-S-102 (ALARACT 1, 13);
- Install automatic spray indexing device in a central riser (ALARACT 1, 13);
- Remove motor controlled and automatic spray indexing devices if necessary (ALARACT 1, 13);
- Place water distribution skid and connect to the raw water header between 241-SY and 241-S tank farms. Connect water distribution skid to spray devices.
- Remove standard hydrogen monitoring system vapor probe (ALARACT 4, 15, 13);
- Place and hook up exhauster and exhauster system;
- Remove unused flammable gas cabinet (per Tank Farm Radcon Control Manual, HNF 5183);
- Place Field Instrument Electrical Skid and connect associated cabling;
- Install stilling well for Enraf Liquid Indicating Transmitter (ALARACT 1, 13);
- Install camera monitoring system (ALARACT 1,13);
- Remove Liquid Observation Well if necessary (ALARACT 1, 13).

Water Dilution and Waste Transfer:

- Water shall be sprayed onto the surface of the in-tank salt cake to dissolve the cake;
- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11);
- Operation and maintenance of the portable exhauster(s).

Waste Transfer (S102):

- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11).

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.34E-03	Am - 241	1.23E+02	Am - 243	4.20E-03
Ba - 137 m	2.41E+05	C - 14	4.78E+01	Cd - 113 m	6.95E+01
Cm - 242	3.02E-01	Cm - 243	2.41E-02	Cm - 244	2.17E-01
Co - 60	1.76E+01	Cs - 134	3.54E-01	Cs - 137	2.55E+05
Eu - 152	3.50E+00	Eu - 154	2.46E+02	Eu - 155	2.70E+02
H - 3	2.09E+02	I - 129	6.81E-01	Nb - 93 m	1.39E+01
Ni - 59	3.00E+00	Ni - 63	2.75E+02	Np - 237	1.30E+00
Pa - 231	4.82E-03	Pu - 238	2.96E+00	Pu - 239	1.15E+02
Pu - 240	1.90E+01	Pu - 241	1.49E+02	Pu - 242	1.14E-03

Ra - 226	2.47E-04	Ra - 228	8.89E-02	Ru - 106	5.74E-05
Sb - 125	3.18E+01	Se - 79	3.88E-01	Sm - 151	1.30E+04
Sn - 126	2.35E+00	Sr - 90	9.29E+04	Tc - 99	2.17E+02
Th - 229	2.20E-03	Th - 232	9.50E-03	U - 232	1.42E+00
U - 233	5.83E+00	U - 234	1.81E+00	U - 235	7.35E-02
U - 236	5.63E-02	U - 238	1.65E+00	Y - 90	9.29E+04
Zr - 93	1.90E+01				

4) Monthly checks shall be performed on the exhaust duct to ensure there is no degradation of the ductwork or leakage at the connection points [WAC 246-247-040(5)].

5) Once the portable exhauster system is connected to tank 241-S-102, an operability/acceptance test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH [WAC 246-247-040(5)].

6) The Annual Possession Quantity and Potential-to-Emit to the MEI shall be logged and retained [WAC 246-247-040(5)].

7) The portable exhauster shall operate continuously when water is being added to the tank via the spray devices. If structural safety considerations force shutdown of the active ventilation system, WDOH shall be notified prior to shutdown of active ventilation. Passive breather filter ventilation may be used when there is no dilution water delivery via the spray devices [WAC 246-247-040(5)].

8) The heater shall have an automatic trip set point below 200 degrees F. HEPAs shall be individually aerosol tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95% [WAC 246-247-040(5)].

9) By October 25, 2003, and thereafter as individually noted below, the emission unit monitoring system shall have the following activities performed:

a. Inspect pitot tube systems for leaks, at least annually.
b. Inspect nozzles for alignment, presence of deposits, damage to sharp-edged nozzles, or other potentially degrading factors (corrosion, physical damage, etc) at least annually.
c. Check transport lines and if visible deposits are present perform cleaning, at least annually.
d. Checks to ensure the tightness of all fittings and connections as well as a leak test of the sample system, at least annually.
e. Check the response of stack flow rate monitoring and control system at least quarterly.
g. A functional/calibration check of monitoring system instrumentation shall be performed at least annually.[WAC 246-247-040(5)]

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.31E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.61E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The operation of the waste retrieval system(s) for the removal of radioactive wastes from all 149 Single Shell Tanks (SST) at the Hanford Site.

SALTCAKE DISSOLUTION WASTE RETRIEVAL SYSTEM

The saltcake dissolution waste retrieval system may be used to retrieve soluble saltcake waste. This method retrieves the soluble portion of the waste only, resulting in very few of the solids being pumped from the tank. The saltcake dissolution waste retrieval system deployed in the SSTs is for water, chemical agent, or catalyst liquid to be added to the tank using a variety of spray nozzles or "sprinklers". The approach is to sprinkle the waste surface with water, chemical agent, or catalyst liquid. The added water, chemical agent, or catalyst liquid must stay in contact with the saltcake for a long enough period of time for the brine to become saturated. Once the brine is saturated, it is pumped from the SST to a receiver tank, staging tank, storage DST or other staging/storage vessel associated with the supplemental treatment, packaging or disposal. Salt solution will be removed using the existing saltwell pump or other pump placed into the tank.

A tank not equipped with a saltwell pump, a transfer pump (progressive cavity, vertical turbine) can be installed and operated.

Remotely directable water distribution devices will be located in risers spaced as far apart as practical. A combination of spraying waster, chemical agent, or catalyst liquid to dissolve the saltcake can be used in conjunction with directing a flow of water or recirculating water at the waste to move it to the pump suction to allow the pumping of waste from the tank. Recirculated waste from the pump may be sent back to the tank as an alternative to using water to direct dissolution waste to the pump suction.

MODIFIED SLUCING WASTE RETRIEVAL SYSTEM

Modified sluicing can be used for some SST waste retrieval. Modified sluicing is the introduction of liquid at low to moderate pressures, not to exceed 1200 psi, and volumes into the waste. The liquid dissolves and breaks apart solid materials and suspends them in the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a receiver tank.

Modified sluicing introduces sluice liquid in a controlled fashion using multiple sluicing nozzles at varying pressures and flows, then pumps out the resultant waste slurry. This maintains minimal liquid inventories within the tank at all times. The liquids that could be used in modified sluicing include water, recirculated supernatant/water from the receiving Double Shell Tank, recirculated supernatant/water, chemical agent or catalyst liquid.

VACUUM WASTE RETRIEVAL SYSTEM

A vacuum waste retrieval system can be used for waste retrieval activities in the (SSTs). The vacuum waste retrieval system is introduced into the SSTs by means of an articulating mast system (AMS). The AMS has a horizontal reach and rotational capabilities of 360 degrees. The AMS has a retracted position and can be extended vertically. Air is mixed at the suction end of the AMS enabling the required vertical lift for the waste

to a topside receiver tank, batch vessel or a staging SST, storage DST, or other staging/storage vessels associated with supplemental treatment, packaging or disposal.

The AMS will be deployed through and attached to standard riser flanges that are available on the SSTs. Cameras can also be installed in other risers for in-tank viewing and control of the AMS.

For the 200-series tanks in the 241-C, 241-U, 241-B and 241-T Tank Farms a vacuum retrieval process tank, staging tank, staging SST, storage DST or other staging/storage vessel will be deployed. The receiver tank will receive waste in batches from whichever tank is connected into the vacuum retrieval system. The vacuum pressure used to draw up the waste from the tank to the receiver tank is relieved back into the SST being retrieved.

MOBILE RETRIEVAL SYSTEM

A Mobile Retrieval System (MRS) can be used to retrieve waste from some SSTs. The MRS consists of two in-tank systems. The first is a robotic crawler inserted through one riser the second is an AMS inserted through a second riser. The AMS retrieves the sludge from the tank using a vacuum with assisting pneumatic conveyance. The AMS vacuum tube has a horizontal reach and can be extended to the bottom of the tank. The arm rotates 360 degrees. The vacuum will be directed through the AMS in the tank to the end effector, which is in contact with the waste. The pneumatic conveyance-assisted vacuum retrieval system will draw the waste up through the vacuum to the waste vessel in the vessel skid in batches. The AMS is then valved out while the waste vessel is emptied and pumped out through the over ground transfer lines to a DST, a staging SST or other treatment/disposal options. When the waste vessel is nearly empty, the transfer line will be valved out and the AMS will be valved back in and another batch of waste will be removed from the tank. This process will be repeated until waste near the center of the tank is removed. The robotic crawler will be remotely controlled to move and/or wash waste toward the center of the tank.

The robotic crawler is equipped with a plow blade at the front for pushing/pulling wastes, a screw pump to jet wastes through a small nozzle towards the center of the tank, the ability to direct hot or cold water through the same nozzle to wash wastes off of in-tank equipment, dissolve waste agglomerations in the tank, and wash waste toward the center of the tank for removal.

Any new retrieval methods or changes to processes will need to be provided to WDOH in a revised NOC prior to implementation.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.99E+00	Am - 241	8.68E+03	Am - 243	3.39E-01
Ba - 137 m	4.26E+07	C - 14	6.25E+02	Cd - 113 m	4.95E+03
Cm - 242	1.97E+01	Cm - 243	1.80E+00	Cm - 244	1.90E+01
Co - 60	2.52E+03	Cs - 134	3.44E+04	Cs - 137	4.89E+07
Eu - 152	8.49E+02	Eu - 154	1.45E+04	Eu - 155	9.54E+03
H - 3	5.95E+03	I - 129	2.95E+01	Nb - 93 m	1.01E+03
Ni - 59	1.05E+02	Ni - 63	9.30E+03	Np - 237	9.50E+01
Pa - 231	1.25E+01	Pu - 238	1.65E+02	Pu - 239	3.17E+03
Pu - 240	5.36E+02	Pu - 241	4.80E+03	Pu - 242	3.34E-02
Ra - 226	1.27E-02	Ra - 228	1.15E+01	Ru - 106	1.22E-02
Sb - 125	1.73E+04	Se - 79	6.36E+01	Sm - 151	8.93E+05
Sn - 126	2.59E+02	Sr - 90	2.91E+06	Tc - 99	2.24E+04
Th - 229	4.20E-01	Th - 232	1.26E+00	U - 232	3.66E+00
U - 233	3.02E+01	U - 234	1.07E+01	U - 235	4.44E-01
U - 236	2.73E-01	U - 238	9.86E+00	Y - 90	2.91E+06
Zr - 93	1.25E+03				

4) A pre-operational NDA of the exhauster(s) HEPA filters and a post-operational NDA will be performed the first time each of the four waste retrieval methods (mobile retrieval system, vacuum retrieval, supernatant sluicing, and saltcake dissolution with supernatant) when placed into service. The post-operational NDA should occur after one cycle or phase of waste retrieval operation is completed, a method replaces another method during a cycle/phase or six months from the inservice date, whichever occurs first. The facility may opt to replace the exhauster's HEPA filters prior to placing a new waste retrieval method in service and eliminate the pre-operational NDA.
5) All ductwork connections shall have a radiological survey performed monthly to ensure ductwork connections are not degrading.
6) All ductwork shall be pressure tested in accordance with the requirements of ASME AG-1 Section SA.
7) All receiver tanks (including waste retrieval process tanks for tank TRU retrieval (stagging) SSTs, storage DSTs, or other staging/storage vessels, but not including batch vessel supporting vacuum retrieval) shall have active ventilation during waste receipt, unless alternative controls are documented and approved by WDOH.
8) All ventilation ductwork from the exit of the tank to the inlet of the exhauster filter housing shall be insulated.
9) During waste retrieval operations liquid shall be introduced through sluicing and saltcake dissolution nozzles at a pressure not to exceed 1200 psig, and the nozzle shall be at least five inches from the waste surface.
10) Each HEPA filter shall be in-place tested annually in accordance with the requirements of ASME AG-1 Section TA. HEPA filters shall have a minimum efficiency of 99.95%.
11) General WAC 246-247 technology standard exemptions justified and documented in RPP-19233, WAC 246-247 technology standard exemption justification for waste tank ventilation systems, may be applied to Phase II NOC retrieval exhauster operations.
12) Relative humidity shall be monitored, at least once a month, downstream of the heater and prior to the HEPA filters to ensure the air stream does not exceed 70% relative humidity.
13) The annual possession quantity shall be tracked on a WDOH approved log.
14) The differential pressure readings for the pre-filters and both stages of HEPA filters shall be monitored, recorded and trended daily. Action levels shall be developed and provided to WDOH for when actions will be taken to assure the pre-filters and HEPA filters will be operated within their design parameters.
15) The emission unit stack monitoring system shall meet the requirements of ANSI/HPS N13.1-1999 including the stack monitoring system inspection requirements. The technical justification document required by ANSI/HPS N13.1-1999 shall be provided to WDOH for review and approval.

Emission Unit ID: 59

200W S-296S025-001

296-S-25

This is a MINOR, ACTIVELY ventilated emission unit.

241-SY TANK FARM

Emission Unit Information

Stack Height: 19.08 ft. 5.82 m. Stack Diameter 0.67 ft. 0.20 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 47.27 ft/second. 14.41 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	
	Heater	1	Heater runs intermittently due to temperature Regulation
	Prefilter	1	
	HEPA	2	In series
	Fan	1	Emission unit operates intermittently

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241-SY Tank Farm during storage, maintenance, and normal operations. This emission unit operates with the "A" train (Eastern most unit) while the "B" train (Western most unit) operates in conjunction with the emission unit (296-P-23). This emission unit is operated in alternation with the "B" train when "A" train is not operational. The emission unit operates intermittently.

Emission Unit ID: 62

600 S-6266-001

696-W-1

This is a MINOR, ACTIVELY ventilated emission unit.

Waste Sampling and Characterization Facility WSCF

Emission Unit Information

Stack Height: 25.00 ft. 7.62 m. Stack Diameter 4.50 ft. 1.37 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 51.90 ft/second. 15.82 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	2	In parallel
	HEPA	2	In parallel
	Fan	2	In parallel

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/quarter

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the Waste Sampling and Characterization Facility (WSCF) support operations at the Hanford Site. This 25 foot tall stack exhausts filtered air from the analytical laboratory, on the main floor of the 6266 Building. Particulate emissions are sampled. WSCF provides low level radiological and chemical analyses on various types of samples and sample media. The majority of the analyzed samples are used to determine compliance with the requirements of environmental regulations and DOE Orders.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Use of Portable Tanks and Revised Source Term Description at Waste Sampling and Characterization Facility (WSCF)	AIR 06-633	7/5/2006	669

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

* Analytical Laboratory Building (696-W-1) - Solid, liquid, and vapor samples contaminated with low levels of radioactive material are processed, on a bench-scale basis, in fume hoods or other controlled air spaces in the building. Evaporation and wet chemistry also are used to prepare samples for analysis. Low-level waste drums are filled inside the laboratory building and transferred either to the Solid Waste Storage Building (described as follows) or other approved facilities on the Hanford Site, or the low-level waste drums are moved to various locations with WSCF.

* Radiochemistry Laboratory (696-W-2) - This is a below grade counting room in the Analytical Laboratory Building with a separately controlled airspace within the building.

* Environmental Data/Computer Center (6270) - This is a non-radiological building and will not be addressed further.

* Environmental Sample Archive Building (6267) - This building provides for controlled storage, indexing, categorizing and retrieval of low-level contaminated samples. Storage is provided for up to 2,500 samples requiring refrigerated storage and up to 11,500 samples requiring ambient storage. This building also provides for temporary storage of unvented drums or other low-level waste, packaged in accordance with applicable laboratory procedures. Less than 100 low-level waste packages are stored at any one time.

* Mobile Laboratory Storage Facility (6269) - This structure houses up to five mobile laboratories and provides protection from adverse weather conditions for the instrumentation and computers inside the mobile laboratories. This area contains calibration laboratory instrumentation used in the mobile laboratories, and a sample preparation area for adding chemical buffers and preservatives to sample containers. This building provides temporary storage of drums, or other waste packages contained with low-levels of radioactive material. Less than 100 low-level waste packages are stored at any one time.

* Solid Waste Storage Building (6265A) - This open-sided building shall provide for temporary storage of drums or other low-level waste packages. Less than 100 low-level waste packages are stored at any one time and will not be addressed further in this license, as these are unvented drums.

* Contaminated Liquid Waste Retention Vault (6266A) - Consists of two 3,785 liter polyethylene tanks contained in a common concrete vault. The tanks are designed to receive low-level inorganic and radiologically contaminated liquid waste or sample excess from the analytical laboratory. The liquid routinely is transferred to an approved disposal facility on the Hanford Site using the portable tanker described as follows. This building also provides temporary storage of drums, or other waste packages contaminated with low-levels of radioactive material. Less than 100 low-level waste packages are stored at any one time.

* Sample Equipment Cleaning Facility - This is a non-radiological building and will not be addressed further.

* Portable Tanker(s) used for Wastewater Transport - Wastewater drums containing liquid waste contaminated with low-levels of radioactive material are stored temporarily at various locations within WSCF. In some cases, the contents of these drums are pumped into a portable tanker at the various locations for transport to other facilities. To accomplish the pumping, a small pump has its drop leg inserted into each drum through the bunghole or other opening, and flexible hose transfers the liquid to the tanker.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.40E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	3.30E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

License PTE limit bounds 3.3E-04 Ci/yr 239Pu and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during operation of the WSCF. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 239Pu and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

B/G - 0	6.80E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

License PTE limit bounds 6.8E-03 Ci/yr 90Sr and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during operation of the WSCF. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 239Pu and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The potential release rates of plutonium and strontium are considered conservative and noted that these radionuclides representative types of alpha and beta radiation that WSCF expects to handle. The WSCF needs to verify annually that plutonium and strontium are the most conservative radionuclides WSCF handles.

Emission Unit ID: 63

600 S-6266-002

696-W-2

This is a MINOR, ACTIVELY ventilated emission unit.

Waste Sampling and Characterization Facility WSCF

Emission Unit Information

Stack Height: 32.00 ft. 9.75 m. Stack Diameter 3.00 ft. 0.91 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 6.60 ft/second. 2.01 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	2	In parallel
	HEPA	2	In parallel
	Fan	1	An additional standby fan recirculates the air flow back to Building (Bldg. 6266) or can vent it to the atmosphere.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/quarter

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the WSCF support operations at the Hanford Site. This 32 foot tall stack exhausts filtered air from the Nuclear Spectroscopy Laboratory in the 6266 Building. Particulate emissions are sampled. WSCF provides low level radiological and chemical analyses on various types of samples and sample media. The majority of the analyzed samples are used to determine compliance with the requirements of environmental regulations and DOE Orders.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Use of Portable Tanks and Revised Source Term Description at Waste Sampling and Characterization Facility (WSCF)	AIR 06-633	7/5/2006	669

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

* Analytical Laboratory Building (696-W-1) - Solid, liquid, and vapor samples contaminated with low levels of radioactive material are processed, on a bench-scale basis, in fume hoods or other controlled air spaces in the building. Evaporation and wet chemistry also are used to prepare samples for analysis. Low-level waste drums are filled inside the laboratory building and transferred either to the Solid Waste Storage Building (described as follows) or other approved facilities on the Hanford Site, or the low-level waste drums are moved to various locations with WSCF.

* Radiochemistry Laboratory (696-W-2) - This is a below grade counting room in the Analytical Laboratory Building with a separately controlled airspace within the building.

* Environmental Data/Computer Center (6270) - This is a non-radiological building and will not be addressed further.

* Environmental Sample Archive Building (6267) - This building provides for controlled storage, indexing, categorizing and retrieval of low-level contaminated samples. Storage is provided for up to 2,500 samples requiring refrigerated storage and up to 11,500 samples requiring ambient storage. This building also provides for temporary storage of unvented drums or other low-level waste, packaged in accordance with applicable laboratory procedures. Less than 100 low-level waste packages are stored at any one time.

* Mobile Laboratory Storage Facility (6269) - This structure houses up to five mobile laboratories and provides protection from adverse weather conditions for the instrumentation and computers inside the mobile laboratories. This area contains calibration laboratory instrumentation used in the mobile laboratories, and a sample preparation area for adding chemical buffers and preservatives to sample containers. This building provides temporary storage of drums, or other waste packages contained with low-levels of radioactive material. Less than 100 low-level waste packages are stored at any one time.

* Solid Waste Storage Building (6265A) - This open-sided building shall provide for temporary storage of drums or other low-level waste packages. Less than 100 low-level waste packages are stored at any one time and will not be addressed further in this license, as these are unvented drums.

* Contaminated Liquid Waste Retention Vault (6266A) - Consists of two 3,785 liter polyethylene tanks contained in a common concrete vault. The tanks are designed to receive low-level inorganic and radiologically contaminated liquid waste or sample excess from the analytical laboratory. The liquid routinely is transferred to an approved disposal facility on the Hanford Site using the portable tanker described as follows. This building also provides temporary storage of drums, or other waste packages contaminated with low-levels of radioactive material. Less than 100 low-level waste packages are stored at any one time.

* Sample Equipment Cleaning Facility - This is a non-radiological building and will not be addressed further.

* Portable Tanker(s) used for Wastewater Transport - Wastewater drums containing liquid waste contaminated with low-levels of radioactive material are stored temporarily at various locations within WSCF. In some cases, the contents of these drums are pumped into a portable tanker at the various locations for transport to other facilities. To accomplish the pumping, a small pump has its drop leg inserted into each drum through the bunghole or other opening, and flexible hose transfers the liquid to the tanker.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.40E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	3.30E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

License PTE limit bounds 3.3E-04 Ci/yr 239Pu and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during operation of the WSCF. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 239Pu and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

B/G - 0	6.80E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

License PTE limit bounds 6.8E-03 Ci/yr 90Sr and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during operation of the WSCF. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 239Pu and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The potential release rates of plutonium and strontium are considered conservative and noted that these radionuclides representative types of alpha and beta radiation that WSCF expects to handle. The WSCF needs to verify annually that plutonium and strontium are the most conservative radionuclides WSCF handles.

Emission Unit ID: 64

200W P-296SX-001

296-S-15

This is a MINOR, ACTIVELY ventilated emission unit.

241-SX TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 3.50 ft. 1.07 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 7.60 ft/second. 2.32 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	1 flow path
	HEPA	2	1 flow path
	Fan	1	1 flow path

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a SSTexhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities for 241-SX Tank Farm. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The tanks are scheduled for waste retrieval, decommissioning, and eventual closure under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is an exhauster ventilation system that operates intermittently.

Emission Unit ID: 65

200W P-241T105-001

241-T-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 66

200W P-241T106-001

241-T-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 67

200W P-241T109-001

241-T-109

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 68

200W P-241T102-001

241-T-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 69

200W P-241T107-001

241-T-107

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 70

200W P-241T111-001

241-T-111

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 71

200W P-241T104-001

241-T-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 72

200W P-241T112-001

241-T-112

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 73

200W P-241T108-001

241-T-108

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 74

200W P-241T203-001

241-T-203

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 75

200W P-241T204-001

241-T-204

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 76

200W P-241T110-001

241-T-110

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 77

200W P-241T202-001

241-T-202

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 78

200W P-241T103-001

241-T-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 79

200W P-241T101-001

241-T-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 80

200W P-241T201-001

241-T-201

This is a MINOR, PASSIVELY ventilated emission unit.

241-T TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 81

200W P-241TY106-001

241-TY-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-TY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 82

200W P-241TY102-001

241-TY-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-TY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 83

200W P-241TY105-001

241-TY-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-TY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 84

200W P-241TY104-001

241-TY-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-TY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 85

200W P-241TY103-001

241-TY-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-TY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 86

200W P-241TY101-001

241-TY-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-TY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 87

200E P-241A103-001

241-A-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-A TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 88

200E P-241A104-001

241-A-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-A TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 90

200E P-241A102-001

241-A-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-A TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 91

200E P-241A105-001

241-A-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-A TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 92

200E P-241A101-001

241-A-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-A TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 93

200E P-296A042-001

296-A-42

This is a MAJOR, ACTIVELY ventilated emission unit.

241-AY/AZ TANK FARM

Emission Unit Information

Stack Height: 55.00 ft. 16.76 m. Stack Diameter 0.83 ft. 0.25 m.

Average Stack Effluent Temperature: 75 degrees Fahrenheit. 24 degrees Celsius.

Average Stack ExhaustVelocity: 30.56 ft/second. 9.31 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Condenser	1	Downtime to be negotiated with the department.
	Water Chiller	1	Downtime to be negotiated with the department.
	HEME	1	Downtime to be negotiated with the department.
	Pump	1	Downtime to be negotiated with the department.
	Heater	1	2 parallel flow paths with 1 operational. Downtime to be negotiated with the department.
	HEPA	2	Before and after the HEGA (gas absorber) 2 parallel flow paths. Downtime to be negotiated with the department.
	HEGA	1	2 parallel flow paths. Downtime to be negotiated with the department.
	Pump	1	Downtime to be negotiated with the department.
	Moisture Separator	1	Downtime to be negotiated with the department.
	Fan	1	2 parallel flow paths. Downtime to be negotiated with the department.
	Evaporative Tower	1	Downtime to be negotiated with the department.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241 AY/AZ Tank Farm during storage, maintenance, and normal operations. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a primary exhauster ventilation system that operates continuously.

This Emission Unit has 2 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
241-AY and 241-AZ Ventilation Upgrades	AIR 06-621	7/5/2006	653

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.20E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The ventilation of the 241-AY and 241-AZ Tank Farms which each contain two double-shell tanks (DSTs). A DST consists of a concrete shell and dome, insulating concrete base, and two steel liners. The primary (inner) steel liner and outer steel liner are separated by a 0.76 meter annulus. Both liners are contained inside the shell. The tanks have a flat bottom with a useable depth of 9.28 meters, allowing a tank to contain 3,800,000 liters of waste.

The 241-AY and 241-AZ tanks contain mixed waste in the form of liquids or contained solids (suspended or settled). As part of the treatment and storage process, the contents in each of the four tanks could be mixed periodically to control gas entrapment in the settled solids, to control temperature, for chemical treatment, or for waste retrieval. Contained solids are mobilized, as required, as part of this process by hydraulic action of the mixer pumps or by use of air lift circulators in each of the tanks. Mobilization of contained solids normally occurs in a single tank in each farm at a time. During such activities, as well as during storage, the ventilation system shall maintain the vapor space in each tank below atmospheric pressure.

Air flow is from the tank to a glycol cooled recirculation system and to a common header. The common header is the point in the overall ventilation system at which ventilation flow is provided to the emissions control system. Also, a portion of each tank's exhaust can be recirculated to assist in maintaining temperature.

The recirculation system takes vapor from the tank, cools and condenses it to remove vapor and some entrained particulate, further removes moisture via a separator, and returns a portion of the cooled vapor to the tank. This provides cooling for the tank while reducing air emissions. Nominal flow rates in the recirculation system vary from zero cubic meter per second (bypassed) to 0.25 cubic meter per second per tank, at standard temperature and pressure conditions. At the higher flow rate, approximately 0.05 cubic meter per second is provided to the emissions control system before the remaining 0.2 cubic meter per second is recirculated to the tank. Similar air flow from the other three tanks is combined in the common ventilation header connecting the discharges of the other recirculation coolant systems. The combined flow is discharged to the emissions control system. The recirculation system is considered part of the process because the collected material is returned to the tank. The common header is considered the emission source.

When mixer pumps are operating in a tank the 0.25 cubic meter per second drawn from the tank may not be recirculated but may be combined with the flow from the other tanks for a total discharge to the emissions control system of 0.4 to 0.5 cubic meter per second. Numerous other combinations of discharge flow rates are possible but the combined annual average discharge flow rate to the emissions control system shall not be greater than 0.5 cubic meter per second. During system upset conditions, such as an automatic shutdown of one exhaust train and start of the opposite train, discharge flow rates could reach 0.6 cubic meter per second for several seconds.

The portion of the stream discharged to atmosphere shall flow through a condenser, high-efficiency mist

eliminator, heater, two HEPA filters in series with a gas adsorption unit between the HEPAs. For the purpose of calculating abated emissions, only the HEPA filter control efficiencies are used. The annual average discharge flow rate is considered to be 0.5 cubic meter per second. Discharge flow rates can vary from 0.2 cubic meter per second to 0.5 cubic meter per second.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.65E-02	Am - 241	7.34E+04	Ba - 137 m	1.14E+07
C - 14	5.92E+01	Cd - 113 m	4.00E+03	Cm - 242	4.34E+01
Cm - 243	1.00E+01	Cm - 244	2.44E+02	Co - 60	9.55E+03
Cs - 134	8.50E+04	Cs - 137	1.22E+07	Eu - 152	5.15E+02
Eu - 154	9.15E+04	Eu - 155	1.44E+05	H - 3	1.53E+04
I - 129	9.61E+00	Nb - 93 m	2.46E+02	Ni - 59	8.57E+01
Ni - 63	9.00E+03	Np - 237	3.29E+01	Pa - 231	2.66E-02
Pu - 238	5.58E+02	Pu - 239	2.21E+03	Pu - 240	6.44E+02
Pu - 241	4.19E+04	Pu - 242	2.10E-01	Ra - 226	3.27E-03
Ra - 228	1.46E-01	Ru - 106	1.82E+05	Sb - 125	2.24E+05
Se - 79	9.76E+01	Sm - 151	3.37E+05	Sn - 126	1.55E+02
Sr - 90	1.79E+07	Tc - 99	2.11E+03	Th - 229	3.49E-03
Th - 232	1.45E-02	U - 232	6.15E-01	U - 233	2.36E+00
U - 234	4.61E+00	U - 235	1.79E-01	U - 236	3.29E-01
U - 238	3.54E+00	Y - 90	1.79E+07	Zr - 93	4.65E+02

4) Any problems, which could affect the monitoring, ventilation or controls to this facility must be reported to the department.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.10E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.57E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The 241-AZ-101, 241-AZ-102, 241-AY-101, and 241-AY-102 and associated equipment shall be modified to allow for installation of waste retrieval systems and equipment, including the following major components.

New In Tank Equipment

• Two mixer pumps each in tanks 241-AZ-102, 241-AY-101, and 241-AY-102 for mobilizing the settled solids. Two mixer pumps were installed in tank 241-AZ-101 and permitted previously by WDOH through issuance of AIR-98-708. All of the pumps will be capable of pumping waste through each of two, horizontally opposed, discharge nozzles.

• A riser extension/spray wash system on top of each of the riser used for mixer pumps. The spray wash system will be used for future decontamination of the mixer pumps if they are removed from the tank.

• One transfer pump in each tank for the transfer of waste.

• New temperature probes for each tank.

• New decant pumps in the AY tanks, and associated transfer piping; to include a one time use hose-in-hose transfer line approximately 40 feet in length.

New Ancillary Equipment and Buildings

• Electrical power and instrument cables and other utility tie ins and/or upgrades (e.g., sanitary and raw water, and telecommunications).

• Tie-in to the existing dilution and caustic supply system, to bring waste properties into compliance with the feed specifications and to flush and preheat transfer lines. The dilution system will be capable of providing approximately 140 gallons per minute of pH adjusted water.

• New pit coverblocks.

• New water/diluent piping to and from the process pits.

• New process jumpers.

• Miscellaneous concrete pads for electrical and mechanical equipment.

• Chain link fencing and gates.

Removal, Repair, Decontamination and Demolition of Existing Equipment

• Removal/repair of transfer and/or mixer pumps, as necessary during the life of the facility.

• Removal and disposal of several thermocouple probes/instrument trees.

• Removal and disposal of several existing pumps and other miscellaneous equipment (e.g. slurry distributers and process jumpers).

If needed or chosen for use during these activities, the Regulated Guzzler, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of the NOC.

Soil Excavation

Soil will be excavated inside and outside the 241-AZ and 241-AY Tank Farms for the dilution piping that will tie-in to the existing AN Tank Farm caustic supply system and to remove soil in preparation for mixer pump foundations and miscellaneous equipment support structures, to remove soil around pits in preparation of core drilling, and for placement of control building foundations (as required). A total of approximately 6,000 cubic yards, per farm, could be excavated. Backfill will be made with the original removed soil or non-contaminated controlled density fill (sand, water and a small amount of cement).

Soil excavation activities inside the tank farm fence will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools). If contamination is discovered outside the tank farm fence, ALARACT 5 will be followed. Clean soil piles could be moved from one place to another within the tank farm with heavy equipment (backhoe, front-end loader, etc.). Soil excavation outside the tank farm fence in non-contaminated soil also could be performed with heavy equipment. The regulated guzzler also could be used as described in the NOC for use in the 241-A Tank Farm Complex.

Pipe Cutting and Welding

Any required cuts of contaminated piping will be made inside a glove bag using appropriate equipment such as a sawzall or tri tool. To perform a cut without a glove bag, the piping will be surveyed/smeared to verify removable contamination levels are equal to or less than 10,000 disintegrations per minute (dpm) per 100 square centimeters (cm2) beta gamma and 200 dpm/100cm2 alpha.

Welding might be necessary to join various pieces of equipment. If welding is necessary, welding will commence once removable contamination levels in the weld area are reduced to ALARA. The goal will be to achieve 1,000 dpm/100 cm2 beta gamma and 20 dpm/100 cm2 alpha or less.

If needed or chosen for use during these activities, a portable/temporary radioactive air emission unit and a HEPA filtered vacuum radioactive air emission unit could be used in accordance with the latest revisions of the NOCs.

Pit Work

Work to be performed in pits may include replacing existing sets of cover blocks with newly designed cover blocks, core drilling (equivalent of 100, 14-inch diameter holes for AZ Farm and 10, 14-inch diameter, holes for AY Farm), installing new nozzles and removing existing jumpers.

Pit access and work will be performed in accordance with ALARACT Demonstrations 6 and 14, TWRS ALARACT Demonstration for Pit Access, and TWRS ALARACT Demonstration for Pit Work. Activities not covered in these ALARACTs are described in the following.

If needed or chosen for use during these activities, a portable/temporary radioactive air emission unit and HEPA filtered vacuum radioactive air emission unit could be used in accordance with the latest revisions of their NOCs.

At the start of the pit work, the cover blocks will be lifted off and radiologically surveyed to determine an appropriate disposal method. New cover blocks will be installed when all work in the pits has been completed.

Core drilling could be performed and will occur below grade level, on the outside of the pit. The hole will be drilled from the outside to the inside, with the temporary pit cover in place. Nozzle installation generally will proceed immediately after the hole is completed. If immediate nozzle installation is not possible, the hole will be temporarily sealed with a plug, tape, or equivalent device, until the nozzle can be installed.

Installation of new nozzles in existing pits will take place in an open pit. All parts of the nozzle will be assembled ahead of time and will be lowered into position as a single unit. The piping in the back of the nozzle will be threaded through the hole (from the inside of the pit to the outside) and pulled tight into place from the outside of the pit. Grout will be used to secure and seal the nozzle into place. The front opening of the nozzle, inside the pit, will be fitted with a temporary cap/seal until a jumper is connected to the nozzle. Once the nozzle(s) is/are installed, the temporary pit cover will be replaced until other work inside the pit requires pit cover removal.

Removal of In Tank Equipment

Various in-tank equipment will be removed from the tanks to make room for the waste retrieval equipment, or to be replaced with equivalent equipment built to withstand the mixer pump jet forces. Removed long-length equipment will either be packaged in long-length contaminated equipment disposal containers or size reduced for disposal in accordance with ALARACT Demonstration 15, Tank Farm ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal. Equipment removal will be performed in accordance with ALARACT Demonstration 13, TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment. Activities not covered in this ALARACT are described in the following.

If needed or chosen for use during these activities, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs.

Decontamination of removed equipment is not anticipated. The fewer decontamination activities undertaken, the less exposure possibilities there are to the worker and the environment. Contingency decontamination plans, however, are in place if needed. The most likely equipment to be decontaminated would be sections of the flexible receiver. Equipment removal will be performed in accordance with TWRS ALARACT Demonstration 13, Installation, Operation, and Removal of Tank Equipment.

In Tank Equipment Installation

Equipment installation will be performed in accordance with TWRS ALARACT Demonstration 13, Installation, Operation, and Removal of Tank Equipment.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	3.14E-03	Am - 241	1.82E+04	Am - 243	1.45E+01
Ba - 137 m	7.56E+04	C - 14	1.97E+00	Cd - 113 m	2.18E+01
Cm - 242	2.05E+02	Cm - 243	1.93E+00	Cm - 244	4.21E+02
Co - 60	5.33E+02	Cs - 134	9.31E+00	Cs - 137	3.76E+05
Eu - 152	4.26E+02	Eu - 154	1.03E+04	Eu - 155	4.88E+03
H - 3	1.87E+01	I - 129	1.92E-01	Nb - 93 m	1.14E+02
Ni - 59	5.51E+01	Ni - 63	5.08E+03	Np - 237	7.40E+00
Pa - 231	2.24E-02	Pu - 238	1.23E+02	Pu - 239	2.33E+03
Pu - 240	5.91E+02	Pu - 241	5.65E+03	Pu - 242	5.59E-02
Ra - 226	1.42E+00	Ra - 228	9.73E-02	Ru - 106	3.03E-02
Sb - 125	2.55E+02	Se - 79	4.08E-01	Sm - 151	3.28E+05
Sn - 126	3.28E+01	Sr - 90	7.76E+06	Tc - 99	6.89E+01
Th - 229	1.28E-04				

		Th - 232	5.88E-02	U - 232	3.89E-03
U - 233	1.22E-01	U - 234	7.79E-01	U - 235	3.29E-02
U - 236	8.45E-03	U - 238	1.87E-01	Y - 90	7.76E+06
Zr - 93	2.10E+02				

4) The individual HEPA filters shall be annually tested in place (per ASME N510), with a minimum efficiency of 99.95 percent.

Emission Unit ID: 94

200E P-241A106-001

241-A-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-A TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously

Emission Unit ID: 96

200E P-204AR-001

296-A-26

This is a MINOR, ACTIVELY ventilated emission unit.

204 AR Building

Emission Unit Information

Stack Height: 27.00 ft. 8.23 m. Stack Diameter 1.17 ft. 0.36 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 25.50 ft/second. 7.77 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	1 filter is located on the line directly to the catch tank. 2nd filter is on the shared/main line for the facility and catch tank
	Fan	1	
	Deentrainer	2	1 located just upstream of each HEPA filter
	Heater	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a building/facility exhauster that is use to ventilate building and facility operations such as but not limited to process vessels, contaminated rooms, catch tank, abandoned facilities awaiting decommissioning, and vaults that support tank farm operations, maintenance, and surveillance activities for tank farms. The exhauster can be used to support current surveillance, maintenance activities, operations or decommissioning, decontamination, and cleanup activities within the building/facility. Many of the activities other than normal surveillance, maintenance, and operation support will be or are regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a building/facility exhauster ventilation system that operates intermittently.

Emission Unit ID: 97

200W P-241U103-001

241-U-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements See additional requirements below.

Additional Requirements

Contamination surveys of breather filters with stack extensions will be performed on the downstream side of the filter or on the outside of the screen covering the outlet fo the vent (if one exists) or by removing the test port cap downstream of the HEPA filter, surveying the cap and inserting smear media (e.g. swab, masslin) in the opening and smearing the interior ducting surface on the opposite side of the test port cap opening.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 98

200W P-241U108-001

241-U-108

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements See additional requirements below.

Additional Requirements

Contamination surveys of breather filters with stack extensions will be performed on the downstream side of the filter or on the outside of the screen covering the outlet fo the vent (if one exists) or by removing the test port cap downstream of the HEPA filter, surveying the cap and inserting smear media (e.g. swab, masslin) in the opening and smearing the interior ducting surface on the opposite side of the test port cap opening.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 99

200W P-241U107-001

241-U-107

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 100

200W P-241U203-001

241-U-203

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 101

200W P-241U102-001

241-U-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements See additional requirements below.

Additional Requirements

Contamination surveys of breather filters with stack extensions will be performed on the downstream side of the filter or on the outside of the screen covering the outlet fo the vent (if one exists) or by removing the test port cap downstream of the HEPA filter, surveying the cap and inserting smear media (e.g. swab, masslin) in the opening and smearing the interior ducting surface on the opposite side of the test port cap opening.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 102

200W P-241U201-001

241-U-201

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 103

200W P-241U101-001

241-U-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 104

200W P-241U204-001

241-U-204

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 105

200W P-241U109-001

241-U-109

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 106

200W P-241U202-001

241-U-202

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 107

200W P-241U111-001

241-U-111

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 108

200W P-241U112-001

241-U-112

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements See additional requirements below.

Additional Requirements

Contamination surveys of breather filters with stack extensions will be performed on the downstream side of the filter or on the outside of the screen covering the outlet fo the vent (if one exists) or by removing the test port cap downstream of the HEPA filter, surveying the cap and inserting smear media (e.g. swab, masslin) in the opening and smearing the interior ducting surface on the opposite side of the test port cap opening.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 109

200W P-241U104-001

241-U-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 110

200W P-241U110-001

241-U-110

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 111

200W P-241U106-001

241-U-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements See additional requirements below.

Additional Requirements

Contamination surveys of breather filters with stack extensions will be performed on the downstream side of the filter or on the outside of the screen covering the outlet fo the vent (if one exists) or by removing the test port cap downstream of the HEPA filter, surveying the cap and inserting smear media (e.g. swab, masslin) in the opening and smearing the interior ducting surface on the opposite side of the test port cap opening.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 112

200W P-241U105-001

241-U-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements See additional requirements below.

Additional Requirements

Contamination surveys of breather filters with stack extensions will be performed on the downstream side of the filter or on the outside of the screen covering the outlet fo the vent (if one exists) or by removing the test port cap downstream of the HEPA filter, surveying the cap and inserting smear media (e.g. swab, masslin) in the opening and smearing the interior ducting surface on the opposite side of the test port cap opening.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 113

200W P-241TX117-001

241-TX-117

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 114

200W P-241TX107-001

241-TX-107

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 115

200W P-241TX112-001

241-TX-112

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 116

200W P-241TX105-001

241-TX-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 117

200W P-241TX113-001

241-TX-113

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 118

200W P-241TX104-001

241-TX-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 119

200W P-241TX114-001

241-TX-114

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 120

200W P-241TX103-001

241-TX-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously

Emission Unit ID: 121

200W P-241TX110-001

241-TX-110

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 122

200W P-241TX116-001

241-TX-116

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 123

200W P-241TX108-001

241-TX-108

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 124

200W P-241TX102-001

241-TX-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 125

200W P-241TX115-001

241-TX-115

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 126

200W P-241TX106-001

241-TX-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 127

200W P-241TX101-001

241-TX-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 128

200W P-241TX109-001

241-TX-109

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 129

200W P-241TX118-001

241-TX-118

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 130

200W P-241TX111-001

241-TX-111

This is a MINOR, PASSIVELY ventilated emission unit.

241-TX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 131

200W P-241S104-001

241-S-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 132

200W P-241S101-001

241-S-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 133

200W P-241S103-001

241-S-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 134

200W P-241S102-001

241-S-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114	Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows the SST to vent to the atmosphere under tank farm storage, maintenance, and operations. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The tanks are scheduled for waste retrieval, decommissioning, and eventual closure under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
241-S-102 Installation and Operation of Waste Retrieval Systems	AIR 06-652	7/5/2006	694

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.80E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 8.40E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The salt cake dissolution activity associated with 241-S-102 shall include the following: pit work, soil excavation, in-tank equipment installation/removal, water dilution, and waste transfers.

Pit Work (Diffuse and Fugitive):

- Open the 241-S-102B Distributor pit and cut flange in riser with hold saw or plasma cutter,

to install instrumentation manifold and new progressive cavity transfer pump (ALARACT 1, 6, 12, 13, 14);
- Open the two 241-S-102 Condenser pits to replace two existing cover plates with new cover plates. Connect the passive breather filter assembly and connect the trunk of the portable exhauster (ALARACT 4, 6, 14);
- Open the 241-S-A Valve pit, and connect the HIHTL from the 241-S-102 tank to the DST system (ALARACT 6, 14).

Soil Excavation (Diffuse and Fugitive):

- Excavate trenches for tie-in of instrumentation and power systems (ALARACT 5);
- Excavate for HIHTL placement from 241-S-102 to 241-S-A Valve pit (ALARACT 5).

Other Equipment Installation/Removal (Diffuse and Fugitive):

- Install motor controlled spray devices in three risers near the outside perimeter of tank 241-S-102 (ALARACT 1, 13);
- Install automatic spray indexing device in a central riser (ALARACT 1, 13);
- Remove motor controlled and automatic spray indexing devices if necessary (ALARACT 1, 13);
- Place water distribution skid and connect to the raw water header between 241-SY and 241-S tank farms. Connect water distribution skid to spray devices.
- Remove standard hydrogen monitoring system vapor probe (ALARACT 4, 15, 13);
- Place and hook up exhauster and exhauster system;
- Remove unused flammable gas cabinet (per Tank Farm Radcon Control Manual, HNF 5183);
- Place Field Instrument Electrical Skid and connect associated cabling;
- Install stilling well for Enraf Liquid Indicating Transmitter (ALARACT 1, 13);
- Install camera monitoring system (ALARACT 1,13);
- Remove Liquid Observation Well if necessary (ALARACT 1, 13).

Water Dilution and Waste Transfer:

- Water shall be sprayed onto the surface of the in-tank salt cake to dissolve the cake;
- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11);
- Operation and maintenance of the portable exhauster(s).

Waste Transfer (S102):

- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11).

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	1.79E-03	Cs - 137	1.49E-05	Sr - 90	1.96E-03

4) The total abated emission limit for S102 (passive ventilation mode) under this Notice of Construction is limited to 3.0 E-04 to the Maximally Exposed Individual. The total unabated emission limit on the Potential-to-Emit for S102 (passive ventilation mode) under this Notice of Construction is limited to 3.0 E-02 mrem/year to the Maximally Exposed Individual [WAC 246-247-040(5)].

5) Radiological monitoring shall be performed in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual.

6) The tank shall be ventilated through the passive breather filter (consisting of a single HEPA filter) only when no water is being added to the tank via the spray devices. If structural safety considerations force shutdown of the active ventilation system, WDOH shall be notified prior to resumption of spray water addition. Each HEPA filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of

99.95% [WAC 246-247-040(5)].

Emission Unit ID: 135

200W P-241S108-001

241-S-108

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 136

200W P-241S109-001

241-S-109

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 137

200W P-241S105-001

241-S-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 138

200W P-241S110-001

241-S-110

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 139

200W P-241S106-001

241-S-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 140

200W P-241S107-001

241-S-107

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 141

200E P-242A-001

296-A-21

This is a MINOR, ACTIVELY ventilated emission unit.

242-A Evaporator

Emission Unit Information

Stack Height: 22.00 ft. 6.71 m. Stack Diameter 3.50 ft. 1.07 m.

Average Stack Effluent Temperature: 117 degrees Fahrenheit. 47 degrees Celsius.

Average Stack ExhaustVelocity: 33.43 ft/second. 10.19 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	2 parallel flow paths with 1 bank per flow path
	HEPA	2	2 parallel flow paths with 2 banks per flow path
	Fan	1	2 parallel flow paths (Minimum 1 parallel path in operation)

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a building/facility exhauster that is use to ventilate building and facility operations such as but not limited to process vessels, contaminated rooms, cells, glove boxes, hoods, abandoned facilities awaiting decommissioning, and vaults that support tank farm operations, maintenance, and surveillance activities for tank farms. The exhauster can be used to support current surveillance, maintenance activities, operations or decommissioning, decontamination, and cleanup activities within the building/facility. Many of the activities other than normal surveillance, maintenance, and operation support will be or are regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a building/facility exhauster ventilation system that operates intermittently.

Emission Unit ID: 142

200E P-242A-002

296-A-22

This is a MINOR, ACTIVELY ventilated emission unit.

242-A Evaporator

Emission Unit Information

Stack Height: 63.58 ft. 19.38 m. Stack Diameter 0.67 ft. 0.20 m.

Average Stack Effluent Temperature: 120 degrees Fahrenheit. 49 degrees Celsius.

Average Stack ExhaustVelocity: 37.82 ft/second. 11.53 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Heater	1	
	HEPA	2	In series
	Fan	1	Fan operates during 242-A processing.
	Prefilter	1	
	Deentrainer	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	During campaigns: Method 2 appendix A Method appendix B 61.93(b)(2)(ii) ANSI N13.1: During non-campaigns Appendix B, Method 114(3)	Campaign: TOTAL ALPHA, TOTAL BETA, 137Cs, 90Sr, 239Pu, 238Pu, 241Am, I-129 and each radionclude that could contribute greater than 10% of the potential TEDE. Non-Campaign: Total Alpha, Total Beta, and Cs-137.	One week sample per quarter, and continuous sampling during campaign.

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a Vessel Vent exhauster that is used to ventilate the process equipment including the evaporator vessel, C-100 tank and associated piping. The emission unit is a building/facility exhauster ventilation system that operates intermittently.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of the 242-A Evaporator emission unit 296-A-22	AIR 06-619	7/5/2006	651

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.00E-09 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.20E-06 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The 242-A Evaporator facility is used to reduce the volume of waste solutions that do not self-boil, and thus

reduce the number of underground double-shell tanks required for waste storage. The 242-A Evaporator employs a conventional forced-circulation, vacuum evaporation system to concentrate radioactive waste solutions. Principal process components of the evaporator system are located in the 242-A Building. They include the reboiler, vapor-liquid separator, recirculation pump and pipe loop, slurry product pump, condensers, and vessel ventilation system.

The evaporator system receives a mixed blend feed from the feed tank. The feed consists of unprocessed and processed waste and recycled liquid that are removed from storage tanks after solids have settled. The feed is pumped into the recirculation line and blended with the main product slurry stream, which flows to the reboiler via the recirculation pump. The mixture is heated in the reboiler. The vapor liquid separator is maintained at a reduced pressure. Under this reduced pressure, a fraction of the water in the heated slurry flashes to steam and is drawn through two wire mesh deentrainer pads into a vapor line that leads to the primary condenser. As evaporation takes place in the separator vessel, the slurry becomes concentrated. When the process solution has been concentrated to the parameters specified by the campaigns process memo, a fraction is withdrawn from the upper recirculation line, upstream of the feed addition point, and is either gravity drained or pumped by the slurry pump to underground storage tanks.

Vapors removed from the vapor-liquid separator via the vapor line are condensed and routed to the condensate collection tank. The process condensate is discharged to the Liquid Effluent Retention Facility (LERF). Steam condensate is continuously monitored for excessive radiation, pH, and conductivity, and then discharged from the building to the 200 Area Treated Effluent Disposal Facility (TEDF). Upon detection of radioactive contamination, the radiation monitor will automatically divert the steam condensate stream to the feed tank. Cooling water from the condensers, which is also continuously monitored for excessive radiation, pH, and conductivity, is also discharged to the 200 Area TEDF. This used cooling water stream cannot be diverted, thus, if contamination is detected, an evaporator shutdown is required. Non-condensable vapors from the evaporator are filtered and discharged to the atmosphere via the vessel vent system. This system consists of a deentrainment pad, prefilter, heater, high-efficiency filter assembly, and vessel vent exhauster.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	3.50E+04	C - 14	1.80E+05	Cm - 244	4.50E+02
Co - 60	4.20E+04	Cs - 134	5.20E+05	Cs - 137	5.20E+07
Eu - 154	1.70E+05	Eu - 155	2.40E+05	I - 129	9.10E+01
Nb - 94	3.40E+03	Pu - 238	4.50E+01	Pu - 239/240	5.60E+03
Pu - 241	5.20E+05	Ra - 226	1.10E+03	Ru - 106	1.80E+06
Se - 79	2.70E+03	Sr - 90	7.70E+06	Tc - 99	7.00E+04

Emission Unit ID: 145

200 P-296P032-001

296-P-32

This is a MAJOR, ACTIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Heater	Non-Operational	
	Prefilter	Non-Operational	
	HEPA	Non-Operational	
	Fan	Non-Operational	1 flow path with 2 HEPA's

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a skid/mobile type portable exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities. The emission unit is inactive, removed from service, and will not be utilized for any future tank farm operations. If the emission unit is required for tank farm operations the proper regulatory requirements and permits will be obtained prior to returning the emission unit to service. Closure is pending submittal of closure form and final inspection and approval by WDOH.

Emission Unit ID: 146

200E P-242AL44-001

LERF Basin #44

This is a MINOR, PASSIVELY ventilated emission unit.

Liquid Effluent Retention Facility (LERF)

Emission Unit Information

Stack Height: 5.00 ft. 1.52 m. Stack Diameter 0.25 ft. 0.08 m.

Average Stack Effluent Temperature: 77 degrees Fahrenheit. 25 degrees Celsius.

Average Stack ExhaustVelocity: 32.50 ft/second. 9.91 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Charcoal filter	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	Air - every 2 weeks continuous/deposition - annually

Sampling Requirements Near Field Environment Sampling

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status LERF Basin #44 is one of 3 active retention basins. Incoming wastewater is added directly to the 200 Area Effluent Treatment Facility (ETF) process or received at the LERF or the load in station. The LERF receives wastewaters via underground pipelines from generator facilities, via pipeline from the load in station, or directly through a series of access ports located at each basin. The load in station accommodates wastewater receipt via containers (e.g., drums, carboys, tankers, etc.).

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of the Liquid Effluent Retention Facility and the 200 Area Effluent Treatment Facility	AIR 06-649	7/5/2006	690

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility (LERF/ETF), which includes the load-in station and load-in station filter skid.

Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification

tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.48E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
Am - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
B/G - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate is assumed to be Sr-90/Cs-137. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
C - 14	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ce - 144	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cm - 244	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Co - 60	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 134	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 154	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 155	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
H - 3	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 129	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
K - 40	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 54	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Na - 22	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Nb - 94	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Np - 237	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 226	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ru - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sb - 125	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Se - 79	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Tc - 99	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 235	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 236	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	C - 14	Ce - 144	Cm - 244	Co - 60
Cs - 134	Cs - 137	Eu - 154	Eu - 155	H - 3
I - 129	K - 40	Mn - 54	Na - 22	Nb - 94
Np - 237	Pu - 238	Pu - 239/240	Pu - 241	Ra - 226
Ru - 106	Sb - 125	Se - 79	Sr - 90	Tc - 99
U - 233	U - 234	U - 235	U - 236	U - 238
Zn - 65	Zr - 95			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The emissions for this activity from the all LERF basins and diffuse/fugitive emissions are limited to 4.59E-02 mrem/year unabated and abated.

5) The LERF is approved to provide temporary storage, as well as flow and pH equalization, for wastewaters prior to treatment at ETF. The LERF shall consist of three high-density polyethylene double-lined basins, each with an operating capacity of 29.5 million liters. Each basin has a leachate collection system located between the primary and secondary composite liner systems and is also equipped with a floating low-density polyethylene cover firmly attached to the sidewalls to prevent unwanted material from entering the basins and to avoid evaporation of wastewater. To prevent the buildup of gas, each basin is passively vented through vent pipes. Gases exiting through a vent pipe shall be channeled through a carbon adsorption filter.

Emission Unit ID: 147

200E P-242AL43-001

LERF Basin #43

This is a MINOR, PASSIVELY ventilated emission unit.

Liquid Effluent Retention Facility (LERF)

Emission Unit Information

Stack Height: 5.00 ft. 1.52 m. Stack Diameter 0.25 ft. 0.08 m.

Average Stack Effluent Temperature: 77 degrees Fahrenheit. 25 degrees Celsius.

Average Stack ExhaustVelocity: 32.50 ft/second. 9.91 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Charcoal filter	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	Air - every 2 weeks continuous/deposition - annually

Sampling Requirements Near Field Environment Sampling

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status LERF Basin #43 is one of 3 active retention basins. Incoming wastewater is added directly to the ETF process or received at the LERF or the load in station. The LERF receives wastewaters via underground pipelines from generator facilities, via pipeline from the load in station, or directly through a series of access ports located at each basin. The load in station accommodates wastewater receipt via containers (e.g., drums, carboys, tankers, etc.).

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of the Liquid Effluent Retention Facility and the 200 Area Effluent Treatment Facility	AIR 06-649	7/5/2006	690

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility (LERF/ETF), which includes the load-in station and load-in station filter skid.

Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification

tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.48E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
Am - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
B/G - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate is assumed to be Sr-90/Cs-137. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
C - 14	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ce - 144	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cm - 244	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Co - 60	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 134	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 154	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 155	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
H - 3	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 129	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
K - 40	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 54	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Na - 22	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Nb - 94	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Np - 237	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pu - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pu - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ra - 226	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 125	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Se - 79	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tc - 99	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 235	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 236	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	C - 14	Ce - 144	Cm - 244	Co - 60
Cs - 134	Cs - 137	Eu - 154	Eu - 155	H - 3
I - 129	K - 40	Mn - 54	Na - 22	Nb - 94
Np - 237	Pu - 238	Pu - 239/240	Pu - 241	Ra - 226
Ru - 106	Sb - 125	Se - 79	Sr - 90	Tc - 99
U - 233	U - 234	U - 235	U - 236	U - 238
Zn - 65	Zr - 95			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The emissions for this activity from the all LERF basins and diffuse/fugitive emissions are limited to 4.59E-02 mrem/year unabated and abated.

5) The LERF is approved to provide temporary storage, as well as flow and pH equalization, for wastewaters prior to treatment at ETF. The LERF shall consist of three high-density polyethylene double-lined basins, each with an operating capacity of 29.5 million liters. Each basin has a leachate collection system located between the primary and secondary composite liner systems and is also equipped with a floating low-density polyethylene cover firmly attached to the sidewalls to prevent unwanted material from entering the basins and to avoid evaporation of wastewater. To prevent the buildup of gas, each basin is passively vented through vent pipes. Gases exiting through a vent pipe shall be channeled through a carbon adsorption filter.

Emission Unit ID: 148

200E P-242AL42-001

LERF Basin #42

This is a MINOR, PASSIVELY ventilated emission unit.

Liquid Effluent Retention Facility (LERF)

Emission Unit Information

Stack Height: 5.00 ft. 1.52 m. Stack Diameter 0.25 ft. 0.08 m.

Average Stack Effluent Temperature: 77 degrees Fahrenheit. 25 degrees Celsius.

Average Stack ExhaustVelocity: 32.50 ft/second. 9.91 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Charcoal filter	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	Air - every 2 weeks continuous/deposition - annually

Sampling Requirements Near FieldEnvironment Sampling

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status LERF Basin #42 is one of 3 active retention basins. Incoming wastewater is added directly to the ETF process or received at the LERF or the load in station. The LERF receives wastewaters via underground pipelines from generator facilities, via pipeline from the load in station, or directly through a series of access ports located at each basin. The load in station accommodates wastewater receipt via containers (e.g., drums, carboys, tankers, etc.).

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of the Liquid Effluent Retention Facility and the 200 Area Effluent Treatment Facility	AIR 06-649	7/5/2006	690

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility (LERF/ETF), which includes the load-in station and load-in station filter skid.

Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification

tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.48E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
Am - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
B/G - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate is assumed to be Sr-90/Cs-137. The release rate assumes two full basins and the addition of waste water equivalent to ETF's annual operating capacity. In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
C - 14	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ce - 144	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cm - 244	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Co - 60	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 134	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 154	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 155	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
H - 3	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 129	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
K - 40	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 54	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Na - 22	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Nb - 94	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Np - 237	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 226	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ru - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sb - 125	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Se - 79	Liquid/Particulate Solid	

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Tc - 99	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 235	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 236	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	C - 14	Ce - 144	Cm - 244	Co - 60
Cs - 134	Cs - 137	Eu - 154	Eu - 155	H - 3
I - 129	K - 40	Mn - 54	Na - 22	Nb - 94
Np - 237	Pu - 238	Pu - 239/240	Pu - 241	Ra - 226
Ru - 106	Sb - 125	Se - 79	Sr - 90	Tc - 99
U - 233	U - 234	U - 235	U - 236	U - 238
Zn - 65	Zr - 95			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The emissions for this activity from the all LERF basins and diffuse/fugitive emissions are limited to 4.59E-02 mrem/year unabated and abated.

5) The LERF is approved to provide temporary storage, as well as flow and pH equalization, for wastewaters prior to treatment at ETF. The LERF shall consist of three high-density polyethylene double-lined basins, each with an operating capacity of 29.5 million liters. Each basin has a leachate collection system located between the primary and secondary composite liner systems and is also equipped with a floating low-density polyethylene cover firmly attached to the sidewalls to prevent unwanted material from entering the basins and to avoid evaporation of wastewater. To prevent the buildup of gas, each basin is passively vented through vent pipes. Gases exiting through a vent pipe shall be channeled through a carbon adsorption filter.

Emission Unit ID: 150

200E P-296AW-001

296-A-27

This is a MINOR, ACTIVELY ventilated emission unit.

241-AW TANK FARM

Emission Unit Information

Stack Height: 16.27 ft. 4.96 m. Stack Diameter 0.83 ft. 0.25 m.

Average Stack Effluent Temperature: 110 degrees Fahrenheit. 43 degrees Celsius.

Average Stack ExhaustVelocity: 30.56 ft/second. 9.31 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	2 parallel flow paths
	Heater	1	2 parallel flow paths
	Fan	2	2 parallel flow paths, 1 in operation at a time.
	HEPA	2	2 parallel flow paths with 2 HEPAs in series
	Prefilter	1	2 parallel flow paths

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241-AW Tank Farm during storage, maintenance, and normal operations. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a primary exhauster ventilation system that operates continuously.

Emission Unit ID: 156

200E P-296A028-001

296-A-28

This is a MINOR, ACTIVELY ventilated emission unit.

241-AW TANK FARM

Emission Unit Information

Stack Height: 23.50 ft. 7.16 m. Stack Diameter 2.00 ft. 0.61 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 31.83 ft/second. 9.70 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	2 filter in series for each train, trains may be operated independently or together
	Fan	1	1 for each train, trains may be operated independently or together
	Deentrainer	1	1 for each train
	Heater	1	1 for each train

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a DST annulus exhauster used to support tank farm operations and ventilates the annuli of DSTs 241-AW Tank Farm. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The annulus is the space between the inner wall and outer wall of the tank, and is used for leak detection. The emission unit operates continuously.

Emission Unit ID: 162

200W P-242T-001

296-T-17

This is a MINOR, ACTIVELY ventilated emission unit.

242-T Evaporator

Emission Unit Information

Stack Height: 32.00 ft. 9.75 m. Stack Diameter 1.17 ft. 0.36 m.

Average Stack Effluent Temperature: 71 degrees Fahrenheit. 22 degrees Celsius.

Average Stack ExhaustVelocity: 17.80 ft/second. 5.43 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	4	2 trains with 2 parallel flow paths with 2 HEPAs in series (1 bank of filters no longer meets efficiency standards, only one train is available for operations)
	Fan	1	2 in parallel

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a building/facility exhauster that is use to ventilate building and facility operations such as but not limited to process vessels, contaminated rooms, cells, glove boxes, hoods, abandoned facilities awaiting decommissioning, and vaults that support tank farm operations, maintenance, and surveillance activities for tank farms. The exhauster can be used to support current surveillance, maintenance activities, operations or decommissioning, decontamination, and cleanup activities within the building/facility. Many of the activities other than normal surveillance, maintenance, and operation support will be or are regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a building/facility exhauster ventilation system that operates intermittently.

Emission Unit ID: 163

200W P-242S-001

296-S-18

This is a MINOR, ACTIVELY ventilated emission unit.

242-S Evaporator

Emission Unit Information

Stack Height: 22.00 ft. 6.71 m. Stack Diameter 3.50 ft. 1.07 m.

Average Stack Effluent Temperature: 117 degrees Fahrenheit. 47 degrees Celsius.

Average Stack ExhaustVelocity: 5.80 ft/second. 1.77 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	2 in parallel with 2 in series (1 fan abandoned in place, only one flow path is available for operations)
	Fan	1	2 parallel flow paths (1 fan abandoned in place, only one flow path is available for operations)

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a building/facility exhauster that is use to ventilate building and facility operations such as but not limited to process vessels, contaminated rooms, cells, glove boxes, hoods, abandoned facilities awaiting decommissioning, and vaults that support tank farm operations, maintenance, and surveillance activities for tank farms. The exhauster can be used to support current surveillance, maintenance activities, operations or decommissioning, decontamination, and cleanup activities within the building/facility. Many of the activities other than normal surveillance, maintenance, and operation support will be or are regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a building/facility exhauster ventilation system that operates intermittently.

Emission Unit ID: 165

200W P-244S-001

296-S-22

This is a MAJOR, ACTIVELY ventilated emission unit.

244 S-DCRT

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Heater	1	Non-Operational
	Prefilter	1	2 parallel flow paths
	HEPA	2	2 parallel flow paths
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double container receiver tank (DCRT) exhauster used to support tank farm operations, such as but not limited to waste retrieval and operation support activities. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a DCRT exhauster ventilation system that operates intermittently. Isolation, deactivation, and decommissioning activities are permitted, and closure is pending submittal of closure form and final inspection and approval by WDOH. The emission unit will not operate pending submittal of closure form and final inspection and approval by WDOH.

Emission Unit ID: 166

200W P-244TX-001

296-T-18

This is a MAJOR, ACTIVELY ventilated emission unit.

244-TX DCRT

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Heater	1	Annulus exhaust is not heated
	Prefilter	1	3 parallel flow paths
	HEPA	2	3 parallel flow paths with 2 HEPAs in series
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double container receiver tank (DCRT) exhauster used to support tank farm operations, such as but not limited to waste retrieval and operation support activities. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a DCRT exhauster ventilation system that operates intermittently. Isolation, deactivation, and decommissioning activities are permitted, and closure is pending submittal of closure form and final inspection and approval by WDOH. The emission unit will not operate pending submittal of closure form and final inspection and approval by WDOH.

Emission Unit ID: 168

100K R-1706KE-001

1706KE

This is a MINOR, ACTIVELY ventilated emission unit.

1706-KE Lab

Emission Unit Information

Stack Height: 25.00 ft. 7.62 m. Stack Diameter 1.50 ft. 0.46 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 113.00 ft/second. 34.44 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	
	Fan	1	Intermittent operation

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 1706 KE Laboratory support decontamination and decommissioning operations include CERCLA cleanup at the Hanford Site. This stack exhausts filtered air from the 1706 KE Laboratory. Particulate emissions are sampled. The 1706 KE Counting Laboratory supports cleanup activities at the 105 KE and KW Basins.

Emission Unit ID: 174

200E P-296A020-001

296-A-20

This is a MINOR, ACTIVELY ventilated emission unit.

241-AZ TANK FARM

Emission Unit Information

Stack Height: 15.70 ft. 4.79 m. Stack Diameter 2.00 ft. 0.61 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 10.61 ft/second. 3.23 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	4	2 HEPA's in series for each train, 2 trains
	Fan	1	
	Radial Damper	1	Set to allow only 2,000 CFM (1,000 CFM per annulus)
	Heater	2	1 per train, 2 trains

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075[3]	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a DST annulus exhauster used to support tank farm operations by ventilating the annuli of DSTs 241-AZ-101 and 241-AZ-102. Each train of this emission unit supports an individual tank (Train A for 241-AZ-101 and Train B for 241-AZ-102). Tank Farm during storage, maintenance, and normal operations. The annulus is the space between the inner wall and outer wall of the tank, and is used for leak detection. The emission unit operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
241-AZ Tank Farm Annulus Exhauster Operation	AIR 06-635	7/5/2006	671

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.56E-09 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.12E-06 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Exhausting the annulus of the 241-AZ-101 and 241-AZ-102 double-shell tanks (DSTs). The inner shell is constructed from heat-treated, stress-relieved steel. The outer shell is constructed of non-stress-relieved steel. The two shells are separated by a 2.5 foot annulus and are contained inside a concrete shell. The tanks have a usable waste volume of approximately 1,000,000 gallons each. The 296-A-20 stack exhauster ventilates the annular space of both 241-AZ-101and 241-AZ-102. The 241-AZ annulus exhaust fan draws outside air into a

common inlet filter assembly. The inlet filter assembly shall consists of two filter stages, a pre-filter bank, and an inlet filter. The air will pass through a distribution manifold and flow control valves into the annular space of both the 241-AZ-101 and 241-AZ-102 tanks, via underground ductwork. The flow control butterfly dampers can be adjusted to distribute air between the sides of the annuli and the air slots below the primary tanks. Exhaust air shall be drawn out of each annulus through underground ducting to individual aboveground exhaust HEPA filter banks (one for each tank), associated heaters, and isolation dampers. To allow for balancing flow between annuli or to allow isolation of an individual exhaust HEPA filter bank, dampers shall be installed upstream of each exhaust HEPA filter bank.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	7.00E-05	Beta - 0	2.99E-02

4) Flow rate through the HEPA filters shall not exceed the manufactures rating of those HEPA filters.

Emission Unit ID: 175

300 EP-318-01-S

EP-318-01-S

This is a MINOR, ACTIVELY ventilated emission unit.

318 Building

Emission Unit Information

Stack Height: 29.00 ft. 8.84 m. Stack Diameter 0.82 ft. 0.25 m.

Average Stack Effluent Temperature: 79 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 18.91 ft/second. 5.76 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
Exhaust Duct	HEPA	1	12" x 24" x 24" HEPA filter installed in the exhaust duct from the fume hood in Room 126.
Exhaust Duct	Exhaust Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	Total Alpha and Total Beta	2 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 318 Building support operations. This 29 foot tall stack exhausts emissions from a single fume hood. Particulate emissions are sampled. The building contains areas for calibrating radiation survey instruments and processing personnel dosimeters.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Installation of Single Stage HEPA Filter for the Calibration and Development Activities in the Radiological Calibrations Laboratory (318 Building)	AIR 06-641	7/5/2006	681

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.72E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   To install a single stage HEPA filter into the exhaust flow duct from the fume hood in Room 126. This modification is in support of the calibration and repair of contaminated equipment that will take place in the fume hood once the HEPA filter is installed. These activities currently are performed in the glove box in Room 131.

   The 318 Building provides technical services such as internal dosimetry, external dosimetry, instrument calibration, repair, and testing in support of the Hanford and DOE missions. Research capabilities are also provided to support the development of radiation detection and measuring instruments.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.72E-05 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.70E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on Am-241/Pu-239.			
B/G - 0	4.50E-07	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/gamma release rate based on Cs-137/Sr-90.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Ba - 133	Co - 57	Co - 60	Cs - 137
Eu - 154	Eu - 155	H - 3	Hg - 203	Kr - 85
Mn - 54	Na - 22	Pu - 239	Ra - 226	Rn - 220
Rn - 222	Sb - 125	Sr - 90	Th - 228	U(Nat) - 0
Y - 88				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) HEPA filters shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.

5) The radionuclides with potential to emit are limited to the following physical forms:

Gas: H-3, Kr-85, Rn-220, Rn-222
Solid: Am-241, Ba-133, Co-57, Co-60, Cs-137, Eu-154, Eu-155, Hg-203, Mn-54, Na-22, Pu-239, Sb-125, Sr-90, U(Nat), Y-88,
Particulates: Ra-226,Th-228

Emission Unit ID: 193

200W P-296W004 001

296-W-4

This is a MAJOR, ACTIVELY ventilated emission unit.

Waste Receiving and Processing Facility (WRAP)

Emission Unit Information

Stack Height: 47.00 ft. 14.33 m. Stack Diameter 12.63 ft. 3.85 m.

Average Stack Effluent Temperature: 70 degrees Fahrenheit. 21 degrees Celsius.

Average Stack ExhaustVelocity: 2.00 ft/second. 0.61 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	Redundant systems in parallel consisting of two banks each
	HEPA	2	Redundant systems in parallel consisting of two banks each
	Prefilter	1	Prefilter for each HEPA housing
	Fan	4	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous, Collect samples biweekly at a minimum

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the WRAP Facility involve operations supporting the Hanford TRU program mission. These operations include examining, assaying, characterizing, treating, verifying, and repackaging solid radioactive material and mixed waste to enable treatment, storage, or disposal of low level waste (LLW), TRU waste, TRU mixed waste, and low level mixed waste (LLMW) in contact handled (CH) containers where the external surface dose rate does not exceed 200 millirems per hour.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Construction and operation of the Waste Receiving and Processing (WRAP) Facility	AIR 06-610	7/5/2006	638

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.63E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

At the WRAP FACILITY--
Examining, assaying, characterizing, treating, verifying, and repackaging solid radioactive material and mixed waste to enable treatment, storage, or disposal of low-level waste (LLW), transuranic (TRU) waste, TRU mixed waste, and low-level mixed waste (LLMW) in contact handled (CH) containers where the external surface dose

rate does not exceed 200 millirem per hour.

At SHIPPING AND RECEIVING (200 Area Diffuse/Fugitive Emissions)--
Containers delivered to and transferred/shipped from the shipping and receiving shall be unloaded, visually inspected, bar code labeled, and radiologically surveyed with information pertaining to each container entered into the data management system.

Following visual inspection, transfer incoming drums to the NDE/NDA area for further characterization using the process described for the NDE/NDA below.

Once characterized, verified, and/or certified, the certified TRU waste must be loaded into a transuranic package transporter (TRUPACT-2) shipping cask for shipment to the Waste Isolation Pilot Plant (WIPP) in New Mexico. Verified LLW shall be transferred for disposal onsite. Mixed waste must be moved to an offsite treatment or permitted storage facility, or to an onsite treatment, disposal, and/or storage unit. Radioactive material that fails verification shall be returned to the generator, processed to correct the problem, or sent to another facility for further reprocessing.

During NONDESTRUCTIVE EXAMINATION/NONDESTRUCTIVE ASSAY SYSTEMS
(200 Area Diffuse/Fugitive Emissions)--
The NDE/NDA shall used to examine and to certify LLW, LLMW, TRU, and TRU mixed waste container contents without opening the containers.

In the PROCESS AREA (296-W-4 Emission Unit)--
The process area consists of four glovebox lines: a TRU waste process glovebox, a TRU waste restricted waste management (RWM) glovebox, a LLW process glovebox (with supercompaction capability that also can be used for TRU waste processing), and a LLW RWM glovebox. The following is allowed in the process gloveboxes: drums opened, contents sorted and sampled, if necessary, noncompliant items removed and transferred to the RWM gloveboxes, and remaining compliant waste repackaged into new drums.

Incoming drums generally shall be opened in gloveboxes. However, loosening of a lid or replace a damaged lid outside of a glovebox is allowed.

In the TRANSURANIC WASTE PROCESS LINE--
The TRU waste process glovebox line consists of stainless steel modular gloveboxes bolted together in a linear configuration. Windows shall be gasketed and bolted to the glovebox wall, and gloveports shall be fitted to the glovebox wall and windows to accept push-through type gloves. Glovebox ventilation shall be the once-through type. Air shall be drawn from the process room, through a nontestable high-efficiency process filter, and into the glovebox. The air shall be exhausted from the glovebox through another nontestable high-efficiency process filter to the combined glovebox exhaust system.

Process operations shall be performed inside of the gloveboxes by using the gloves and/or remote controlled manipulators. Drums shall be loaded into the glovebox through airlock and sealed-type entry systems.

In the TRANSURANIC WASTE RESTRICTED WASTE MANAGEMENT LINE--
The TRU waste RWM glovebox line consists of stainless steel. Window, gloveport, ventilation, and manipulator features shall comply to those described for the TRU waste process line glovebox. Glovebox ventilation shall be the once-through type. Air shall be drawn from the process room, through a nontestable high-efficiency process filter, and into the glovebox. The air shall be exhausted from the glovebox through another nontestable high-efficiency process filter to the combined glovebox exhaust system.

The treatment and repackaging operations that occur in the TRU waste RWM glovebox is limited to the following.

Aerosol cans are depressurized and drained. The drained liquids are treated within the gloveboxes or retained in containers, which are sent to storage outside of the WRAP Facility. Vapors from the aerosol cans shall pass through a series of demisters for removal of entrained liquids, and shall be vented to the glovebox exhaust.

Miscellaneous inorganic liquids shall be sampled for characterization, neutralized if required, and solidified using stabilizing additives.

Miscellaneous organic liquids shall be sampled for characterization, treated within the gloveboxes or repackaged for transfer to storage facilities pending future treatment.

Corrosive materials shall be neutralized. After neutralization, the materials shall be solidified or loaded out for storage or treatment outside the WRAP Facility.

Other treatment such as mercury amalgamation, stabilization of heavy metals, and macroencapsulation are allowed to be performed.

Radioactive material shall be repackaged to meet acceptance criteria of the receiving facility.

Radioactive material is sampled.

The empty aerosol cans and other treated LLW packages will be loaded into new drums and routed to the LLW process glovebox for compaction or loaded out of the RWM glovebox for storage, disposal, or additional treatment.

In the LOW-LEVEL WASTE PROCESS LINE--
The LLW process glovebox line consists of stainless steel modular gloveboxes bolted together in a linear configuration. Glovebox ventilation shall be of the once-through type. Air shall be drawn from the process room, through a nontestable high-efficiency process filter, and into the glovebox. The air shall be exhausted from the glovebox through another nontestable high-efficiency process filter to the combined glovebox exhaust system.

Drums shall enter the glovebox through an airlock entry system. Noncompliant items shall be bar code labeled and transferred to the LLW RWM glovebox using a reusable transfer system. Compliant waste shall be compacted and repackaged into new drums.

The LLW process glovebox will be modified to support CH-TRU processing, and include the capability for supercompaction. A one-trip drum exit port will be installed on the LLW glovebox. An improved drum tipper will be used to enable sorting capability, and a commercial non-destructive assay system for glovebox material balance control will be installed.

In the LOW-LEVEL WASTE RESTRUCTED WASTE MANAGEMENT PROCESS LINE--
The operations in the LLW RWM process line is limited those as described for the operations in the TRU waste RWM line.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.13E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.00E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

License PTE limit bounds 1.00E+01 Ci/yr 241Am and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during WRAP Process Area activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

B/G - 0	1.50E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

License PTE limit bounds 1.50E+02 Ci/yr 90Sr and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during the WRAP Process Area activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

Emission Unit ID: 200

200W P-241SX115-001

241-SX-115

This is a MINOR, PASSIVELY ventilated emission unit.

241-SX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 201

200W P-241SX113-001

241-SX-113

This is a MINOR, PASSIVELY ventilated emission unit.

241-SX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 202

200W P-241S111-001

241-S-111

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 203

200W P-241S-001

241-S-112

This is a MINOR, PASSIVELY ventilated emission unit.

241-S TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows the SST to vent to the atmosphere under tank farm storage, maintenance, and operations. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The tanks are scheduled for waste retrieval, decommissioning, and eventual closure under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Installation and Operation of Waste Retrieval Systems in Single-Shell Tank (SST) 241-S-112	AIR 06-645	7/5/2006	686

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.90E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.51E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The Salt Cake Dissolution Retrieval Demonstration Project in SST 241-S-112 uses water that is introduced in a controlled fashion to dissolve and mobilize solids in the tank. The resulting solution is then pumped and transferred to the Double-Shell Tank (DST) system. A portable exhauster will provide active ventilation for some dissolution activities and all waste transfer activities until structural safety considerations force shutdown, at which time passive ventilation shall be used.

The following activities will be performed :

Pit

a. Opening the 241-S-112 Condenser Pit to remove the old cover plate and install a new cover plate to allow for the connection of a HEPA filter to the exhauster trunk for a portable exhauster.
b. Enter 241-S-C Valve Pit to disconnect the existing 241-S-112 HIHTL.
c. Enter the 241-S-109 Valve Pit to remove the existing HIHTL that is no longer needed.
d. Accessing the 241-S-112A Central Pump Pit to:
   - Install an instrument manifold,
   - Install a transfer pump, and
   - Replacement of the existing HIHTL that is not needed for this project with a new HIHTL.
e. Enter the 241-S-A Valve Pit to:
   - Connect the hose-in-hose transfer line (HIHTL) from the 241-S-112 Tank to the DST receiver tank, and
   - Install the leak detection hardware.

Pit work shall be performed in accordance with ALARACT 6 "TWRS ALARACT Demonstration for Pit Access" and ALARACT 14 "TWRS ALARACT Demonstration for Pit Work".

Soil Excavation

a. Excavation of soil inside the tank farm for the installation of an electrical and instrumentation conduit to monitor transfer progress.
b. Excavation of soil outside the tank farm for conduit and transformer installation.
c. Excavation of soil inside the tank farm for installation of a new raw water header installed between the 241-SY Tank Farm and the 241-S Tank Farm to the 241-S-112 Tank.
d. Installation of a HIHTL to convey waste from Tank 241-S-112 to the DST transfer system.

Soil excavation shall be performed in accordance with ALARACT 5 "TWRS ALARACT Demonstration for Soil Excavation (using hand tools)".

In-Tank Equipment

a: Installation of various motor controlled spray devices into (3) risers near the outside perimeter of the tank and an automatic indexing spray device will be installed on a centrally located riser.
b. Remove Liquid Observation Well (LOW).
c. Installation of Stilwell (Level Monitoring Device protection).

Work shall be performed in accordance with ALARACT 1 "TWRS ALARACT Demonstration for Riser Preparation/Opening" and ALARACT 13 "TWRS ALARACT Demonstration for Installation, Operation and Removal of Tank Equipment".

Water Addition/ Dilution

- Installation of a new heat traced and insulated raw water line installed between the 241-S Tank Farm and the 241-SY Tank Farm to the water distribution skid on top of Tank 241-S-112.

Water addition and dilution for salt-cake dissolution shall use portable exhausters for active ventilation when water addition flow rate is above 80 gallons per minute, at less than 80 gallons per minute salt cake dissolution shall use either a breather HEPA filter for passive ventilation, or active ventilation.

Waste Transfer

- Installation of a progressive cavity pump and supporting equipment to recover and transport waste from Tank 241-S-112 to the DST System.

Waste transfer activities shall use portable exhausters for active ventilation until structural safety considerations force shutdown, at which time passive ventilation shall be used.
The major components of the exhauster are; stack, glycol heaters, 1 pre-filter, 2 HEPA filters, 1 exhaust fan, sampling system and a demister which is determined to be optional.

Other

- Removal of the Standard Hydrogen Monitoring Probe.

The completion of tank retrieval may also be aided by a Remote Water Lance (RWL) that is a high pressure water device, or hydrolaser. The system will consist of both ex-tank and in-tank components. The ex-tank components will be comprised of; high pressure water skid, operating controls, cables and hoses. The in-tank components will be comprised of; umbilical, in-tank vehicle, high pressure nozzle(s).

The high pressure water skid will provide the water at the desired pressure, not to exceed 37,000 psig. A conditioning system will be used to filter the raw water entering the skid to ensure that no abrasive materials are entrained in the water. The water volumetric flow rate will be on the order of 6 to 15 gpm. The operating controls will be located in a control trailer outside of the farm fence. The cables and hoses will connect the hydraulically powered in-tank vehicle with the ex-tank controls and water skid via the umbilical. The in-tank vehicle will house one to four high pressure water nozzles. The RWL will be operated with the nozzle end submerged to avoid aerosols in the tank. A rupture disc will be used to prevent reaching pressures above 37,000 psig.

The in-tank vehicle, with umbilical, will be deployed through a 12 inch riser in tank 241-S-112 and will weigh on the order of 1,000 pounds plus the weight of the umbilical. A crane will be used to lower the vehicle and the full length of umbilical down into the tank. After the in-tank vehicle and umbilical are in the tank, a cover, with gasket, will be bolted to the riser flange to seal the riser opening. The equipment will be operated outside the tank farm fence.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	6.12E-03	Am - 241	7.24E+01	Am - 243	7.60E+01
Ba - 137 m	2.14E+05	C - 14	3.59E+01	Cd - 113 m	2.26E+02
Cm - 242	1.14E-02	Cm - 243	5.63E-01	Cm - 244	1.35E+01
Co - 60	6.47E+01	Cs - 134	5.68E-01	Cs - 137	2.26E+05
Eu - 152	1.02E+01	Eu - 154	2.05E+02	Eu - 155	1.96E+02
H - 3	3.08E+02	I - 129	8.43E-01	Nb - 93 m	5.09E+01
Ni - 59	1.08E+01	Ni - 63	9.97E+02	Np - 237	1.56E+00
Pa - 231	1.59E-02	Pu - 238	8.10E+00	Pu - 239	6.08E+01
Pu - 240	9.36E+00	Pu - 241	5.78E+01	Pu - 242	4.16E-04
Ra - 226	5.98E-04	Ra - 228	8.46E-02	Ru - 106	1.84E-04
Sb - 125	1.01E+02	Se - 79	1.73E+00	Sm - 151	4.27E+04
Sn - 126	7.73E+00	Sr - 90	1.07E+05	Tc - 99	2.47E+02
Th - 229	4.50E-03	Th - 232	1.35E-03	U - 232	2.78E-01
U - 233	7.11E+00	U - 234	4.65E+00	U - 235	2.01E-02
U - 236	2.51E-02	U - 238	4.52E-01	Y - 90	1.07E+05
Zr - 93	6.26E+01				

4) Pre and post-job surveys shall be made in accordance with ALARACT(s) 5, 6 and 13 during pit work activities, soil excavation activities, and for equipment removal and/or installation.
5) Radiological monitoring shall be performed in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual.
6) The Annual Possession Quantity and potential-to-emit to the MEI shall be tracked on a WDOH approved log.
7) The radionuclides listed in the Annual Possession Quantity are limited to the physical forms of liquid or particulate solid.
8) When the portable exhauster is not in use the tank shall be ventilated through the passive breather filter consisting of a single HEPA filter. Each HEPA filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.

Emission Unit ID: 204

200E P-296AP-001

296-A-40

This is a MINOR, ACTIVELY ventilated emission unit.

241-AP TANK FARM

Emission Unit Information

Stack Height: 20.58 ft. 6.27 m. Stack Diameter 0.50 ft. 0.15 m.

Average Stack Effluent Temperature: 110 degrees Fahrenheit. 43 degrees Celsius.

Average Stack ExhaustVelocity: 84.88 ft/second. 25.87 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	2 parallel flow paths
	Heater	1	2 parallel flow paths
	Prefilter	1	2 parallel flow paths
	HEPA	2	2 parallel flow paths with 2 HEPAs in series
	Fan	1	2 parallel flow paths, 1 in operation at a time

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/quarter

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241 AP Tank Farm during storage, maintenance, and normal operations. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a primary exhauster ventilation system that operates continuously

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Installation and operation of Waste Retrieval System in Tanks 241-AP-102 and 241-AP-104	AIR 06-630	7/5/2006	666

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.17E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 4.50E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Install and operate a waste retrieval system (one mixer pump and other required equipment) in the 241-AP-102 and the 241-AP-104 tanks. The pumps will operate in a batch mode as needed. The waste capacity of the tanks will not be altered, nor will the ventilation system.

The 241-AP-102 and 241-AP-104 tanks are 75-foot diameter double-shell tanks (DST) constructed from the latest generation of tank designs, with a reinforced concrete shell and dome, and an insulating concrete base. A heat-treated, stress relieved, primary steel liner and a non-stress-relieved, outer steel liner are separated by a 2.5 foot annulus and contained inside the concrete shell. The tanks have a flat bottom with a usable waste depth of approximately 35 feet (1,160,000 gallons).

Current design calls for modifications to the AP-102 and AP-105 tanks and associated equipment to allow installation and removal of waste retrieval system equipment, and shall be limited to the following major components.

New In-Tank Equipment:

Installation of one mixer pump in each tank for mobilizing the settled solids. The pumps will be equipped with an approximate 300-horse power motor with a variable speed drive to allow operation from approximately 60 percent speed to 100 percent speed. The pump will be capable of pumping waste at a flow rate of approximately 5,200 gallons per minute through each of two, horizontally opposed, discharge nozzles, located approximately 18 inches above the bottom of the tank.

Installation of a high-pressure spray wash system on top of each of the 42-inch risers used for the mixer pumps. The spray wash system will be used for future decontamination of the mixer pumps as they are removed from the tank.

Installation of one transfer pump in each tank for the transfer of waste. The pumps will be capable of maintaining a variable waste transfer at a top rate of up to 140 gallons per minute.

Installation of one closed circuit television for each tank.

New Ancillary Equipment and Buildings:

Construction of an annex to the existing 241-AP-271 Instrument Building to house retrieval instrumentation/electrical equipment and operator stations.

Installation of electrical power and instrument cables and other utility tie-ins and/or upgrades (e.g., sanitary and raw water, and telecommunications).

Upgrade of Existing Pits

Installation of new, double-contained waste transfer piping, water and diluent piping to and from the process pits, and 8-inch diameter annulus ventilation piping. A total of approximately 1,400 linear feet of piping will be installed approximately 5 feet underground.

Installation of jumpers inside existing AP02A, AP02D, and AP04A AP Farm pits.

Installation of three new sets of pit cover blocks for the AP02A, AP02D, AP04A pits.

Removal, Decontamination and Demolition of Existing Equipment:

Removal of one mixer pump from AP-102.

Removal of one transfer pump from AP-102 and one transfer pump from AP-104.

Removal of a slurry distributor from AP-104.

Removal of a drop-leg jumper from AP-102.

Relocation of a dip tube assembly to a different riser (AP-104).

Removal of jumpers form each of the three pits, central pump pit cover blocks, and pump pit cover blocks.

Removal of an existing 2-inch waste line, approximately 15 linear feet.

Use of equipment and containers for removal, cleaning, decontamination, transport, storage, and burial of in-tank components and soil.

Removal of existing 8-inch-diameter annulus ventilation piping, approximately 32 feet.

Construction Activities with the Potential to Emit are:

Construction activities with the potential to emit include soil excavation, work in pump pits, pipe cutting, removal of, and installation of in-tank equipment. Some of these activities are described in, and will be done in accordance with, an applicable Tank Farm ALARACT demonstration, HNF-4327 latest revision, Control of Airborne Radioactive Emissions for Frequently Performed TWRS Work Activities. The specific activities and corresponding ALARACT demonstration are called out as they apply in the following text.

If needed or chosen for use during these activities, the Regulated Guzzler, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs (98-EAP-037, DOE/RL-96-75, and DOE/RL-97-50 respectively).

The AP Tank Farm is posted and maintained as a radiological buffer area, free of surface contamination (entrance is made in street clothes). There are no recorded spills or leaks. Therefore, encountering contamination is not expected during soil excavation activities. Because of the possibility of encountering previously undetected subsurface contamination, all work is performed in accordance with the Hanford Site Radiological Control Manual and the RPP As Low As Reasonably Achievable (ALARA) Program requirements. These requirements are carried out through the activity work packages and associated radiological work permit (RWP).

Soil Excavation:

Soil will be excavated inside and outside the AP Tank Farm to install new piping and construct a new pump pit. A total of approximately 1,000 cubic yards shall be excavated, which includes approximately 600 cubic yards inside the tank farm. Backfill shall be made with the original removed soil or controlled density fill (sand, water and a small amount of cement).

Soil excavation activities inside the tank farm fence will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools). Clean soil piles may be moved from one place to another within the tank farm with heavy equipment (backhoe, front-end loader, etc.). Soil excavation outside the tank farm fence also may be performed with heavy equipment. The Regulated Guzzler may also be used as described in its NOC for use in the A Tank Farm Complex (98-EAP-037).

Pipe Cutting:

One existing 2-inch diameter waste transfer line will be cut and replaced with a new 3-inch diameter waste transfer line. The cuts will be made, inside a glove bag, using appropriate equipment such as a sawzall or tri-tool. The tie-ins will be made at the new pit nozzles. If any welding is required, the glove bag will be removed and the weld made.

One 12-inch diameter tank riser will be cut to fit into the new pit being constructed. The riser will be opened and an expandable plug will be installed in the riser to maintain containment of the vapor space and prevent material from falling into the tank while the work takes place. In order to perform the cut without a glove bag, the riser will be surveyed/smeared to verify removable contamination levels are equal to or less than 10,000 dpm/100 cm2 beta gamma and 200 dpm/100 cm2 alpha. The cut will be made above the plug with equipment

such as a tri-tool or sawzall. If a glove bag is used, it will be removed. The plug will be removed and a flange welded in place. Then the top of the riser flange will be sealed with a temporary shield plug.

Approximately thirty-two feet of 8-inch diameter annulus ventilation pipe will be cut and rerouted. The cuts will be made, inside a glove bag, using appropriate equipment such as a sawzall or tri-tool. The glove bag will be removed and the tie-ins will be made by welding.

If needed or chosen for use during these activities, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs (DOE/RL-96-75, and DOE/RL-97-50 respectively).

Pit Work:

Work to be performed in pump pits includes replacing three existing sets of cover blocks with newly designed cover blocks, core drilling (core drills will be performed as necessary), installing new nozzles, removing existing jumpers, and installing riser extensions (total of two, 42-inch diameter).

Pit access and work will be performed in accordance with ALARACT Demonstrations 6 and 14, TWRS ALARACT Demonstration for Pit Access, and TWRS ALARACT Demonstration for Pit Work. Activities not covered in these ALARACTs are described below.

If needed or chosen for use during these activities, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs (DOE/RL-96-75, and DOE/RL-97-50 respectively).

At the start of the pit work, the cover blocks will be lifted off and radiologically surveyed to determine appropriate disposal protocol and packaged for disposal. A new cover block will be installed when all work in the pit has been completed.

Core drilling will be performed below grade level, on the outside of the pit. The hole will be drilled from the outside to the inside, with the temporary pit cover in place. The drilling bit will be water-cooled. Nozzle installation will generally proceed immediately after the hole is completed. If immediate nozzle installation is not possible, the hole will be temporarily sealed with a plug, tape, or equivalent device, until the nozzle can be installed.

Installation of new nozzles in existing pits will take place in an open pit. All parts of the nozzle will be assembled ahead of time, and will be lowered into position as a single unit. The piping in the back of the nozzle will be threaded through the hole (from the inside of the pit to the outside) and pulled tight into place from the outside of the pit. Grout shall be used to secure and seal the nozzle into place. The front opening of the nozzle, inside the pit, will be fitted with a temporary cap/seal until a jumper is connected to it. Once the nozzle(s) is installed, the temporary pit cover will be replaced until other work inside the pit requires its removal.

Installation of the 42-inch diameter riser extensions will take place in an open pit. Only the risers that will house a mixer pump will have an extension installed. The depth-verification shield plug left in/on the riser from the previously removed mixer pump shall be removed and replaced with the riser extension that has a temporary shield plug inserted at the bottom end. The riser will be open during this step which takes approximately thirty minutes. The extension will be sealed to the cover block with metal bellows. The extensions shall be equipped with spray was rings that will provide a means of decontamination for future mixer pump removals. They will also provide confinement between the pump and the inside of the pit during future pump removals, which will be possible without removing the pit cover blocks.

Removal of In-Tank Equipment

Various in-tank equipment will be removed from both tanks to make room for the water retrieval equipment, or to be replaced with equivalent equipment built to withstand the mixer pump jet forces. The existing flexible receiver equipment will be used to remove and decontaminate, to acceptable levels, a mixer pump (from a 42-

inch riser) and two transfer pumps (from 12-inch risers). The remaining equipment will be removed from 4-inch, 12-inch, and 42-inch risers using the general bag out process (sleeving equipment with plastic or piping as it is removed.

Equipment removal will be performed in accordance with ALARACT Demonstration 13, TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment. Activities not covered in this ALARACT are described below.

If needed or chosen for use during these activities, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs (DOE/RL-96-75, and DOE/RL-97-50 respectively).

Decontamination of removed equipment is not anticipated, the fewer decontamination activities undertaken the less exposure possibilities there are to the worker and the environment. Contingency decontamination plans, however, are in place if needed. The most likely equipment to be decontaminated would be sections of the flexible receiver. If contingency decontamination is required a two-roomed decontamination tent will be set up within the tank farm fence. Decontamination work will take place in one room and the other will be maintained "clean".

Flexible Receiver Bagging Process

Use of the flexible receiver involves connecting to and disconnecting from a tank riser or pit; lifting/removing the equipment; washing down/decontaminating the equipment; and bagging the equipment. The flexible receiver can be used in a manual or a completely automated mode. Various flexible receiver equipment includes a washer assembly, a radiation monitoring and camera assembly, a bag cinch and cut assembly, a secondary bag seal assembly, and an appropriately sized receiving bag.

The connection process to risers in a concrete pit is different than that to risers outside at, or below, grade level. For risers in pits, the cover block is removed and replaced with the flex receiver platform. The gap between the pit and the platform is sealed with plastic and tape. There is one opening in the platform that is directly above the equipment/riser. The equipment is lifted off the riser, to slightly above the platform, long enough to position the split plates that will support the equipment when it is lowered back down the platform. Generally this step takes less than fifteen minutes and during this time the riser is open around the equipment as it is raised. The equipment is lowered to rest/seal on the split plates. In some instances a gasket may be used between the split plates an the equipment to enhance the seal. At this point confinement is considered restored and work can take place on the upper portion of the piece of equipment, if needed, to prepare it for removal. Once the preparatory work is complete, the equipment is raised slightly to remove the split plates and then lowered back down to rest/seal on the riser. An adapter spool piece assembly (includes the spool piece, the spray wash unit, and alignment bellows) is placed over and around the riser, and the equipment setting on top of the riser. The adapter spool piece is equipped with a rubber seal on the bottom, which provides a seal against the floor of the pit, and the alignment bellows are bolted to the platform providing a seal against the platform. An impact limiter is installed on top of the platform, around the opening, as a precaution if the equipment free falls during the remote bagging process. The piece of equipment is again raised to rest/seal on the impact limiter. Subsequent confinement is provided by the gaskets between equipment/assembly pieces and the rubber seal on the bottom of the adapter spool piece. The remainder of the flex receiver equipment is bolted into place above the impact liner.

For risers that cannot accommodate an adapter spool piece (outside risers), a split spool piece is used to bolt the flex receiver equipment to the riser flange. In this instance, a seal against a floor cannot be made, so a glove bag is used to confine contamination. A glove bag, with the spool piece in it, is sealed around the riser, the riser is opened, the equipment is raised slightly to allow installation of the split spool piece onto the riser flange. Generally this step takes less than fifteen minutes and during this time the riser is open (within the glove bag) around the equipment as it's raised. The equipment is lowered back down to rest/seal on the split spool piece and the spray wash unit is bolted to the split spool piece. The remainder of the flex receiver equipment, in its entirety, is swung into position, the bottom component is slipped into the glove bag and then bolted to the spray wash unit within the glove bag.

After the riser connection process has been completed, the equipment is slowly lifted through the riser (approximately 1 foot per minute). The washing process takes place concurrently with lifting and uses preheated water pressurized up to 3,000 pounds per square inch. Washing takes place outside of the vapor space and the run-off is returned to the tank through the riser.

After a section of the equipment has been washed it is pulled through the radiation monitoring assembly. Here, spectrum analysis is performed on the equipment and it is viewed via the camera to determine if the washing process needs to be repeated. This process will be repeated until the equipment shows no visual signs of waste residue.

Once washed and dripped dry, the equipment is pulled into the flex receiver bag (herculite-type), which expands as the equipment is hoisted up into it. Once the equipment is completely in the bag, an absorbent mat is attached inside the bag. The mat can absorb up to 8 gallons of liquid, if needed. Next, a mechanical sealing device cinches the bag closed with wire rope and crimps the bottom of the bag in two places, one below the other. The bag is then cut between the two crimps, leaving a sealed top section containing the equipment, and a sealed bottom section sealing the riser opening. The bag is then hoisted into position for secondary bagging of the first seal. Secondary bagging involves lowering the bagged equipment, sealed end first, into another bag that fits around the bottom of the first bag. The secondary bag is also cinched closed with wire rope. The portion of the first bag that was cinched at the riser is then removed and disposed of and the riser is closed. From here the equipment is ready for waste packaging for storage and/or burial.

LLCE Waste Packaging Process

The waste packaging process takes place immediately after the equipment bagging process. It is called the Long Length Contaminated Equipment (LLCE) Disposal System and was designed specifically for application at Hanford Tank Farms. It packages non-contact, remote handled, radioactive waste, for storage or burial. In general, the process involves pushing the LLCE into a storage/burial container (polyethylene piping, various diameters and lengths) and filling the container with lightweight grout (perlite concrete) to attain a greater than or equal to 90 percent filled container. Cold testing has shown that it takes approximately two hours to fill the largest container and dissection of the container has demonstrated that the voids around the bagged LLCE are filled 100 percent.

The previously bagged equipment is placed into the skid assembly of the tilt trailer (vertical position). The skid assembly is lowered to the horizontal position and the equipment is slowly pushed into the container already in place on the transport trailer. The endcap is welded closed, using electrical current to fuse the polyethylene together, and leak tested in place. A vent penetration is installed at the top of the end cap for venting displaced air while filling. Another penetration is also put into the endcap for installation of the "trimmie tube" (distributes grout evenly into the container). The vent penetration is fitted with, or piped to, a high-efficiency particulate air (HEPA) filter to satisfy ALARA requirements. At the storage/burial area, the container is removed from the transport trailer and placed for storage or burial.

In-Tank Equipment Installation

Equipment installation will be performed in accordance with TWRS ALARACT Demonstration 13, Installation, Operation, and Removal of Tank Equipment.

Waste Staging and Retrieval Process Overview

The retrieval process at the AP-102 and AP-104 tanks will provide feed stock to a waste treatment facility. The low activity waste received from the source tanks may be conditioned and/or diluted to deliver compliant waste. Mixing and dilution may also take place at the source tanks to meet the waste specifications of AP-102 and -104, i.e., solids content must be within a predetermined amount. In-coming waste will be staged in the tank(s) until enough has been accumulated to send, and the treatment facility is ready to receive, a batch. The mixer pump will then be operated to maintain waste uniformity during staging and to mix the waste for a short period of time before transferring it. The mixer pump will be operated at full speed until waste samples verify that

adequate mixing has been achieved. Waste samples will be collected in accordance with TWRS ALARACT Demonstration 7, Tank Waste Grab Sampling. If dilution/conditioning is needed, the pH and temperature of the diluent will be adjusted. Once the waste is verified acceptable, the transfer lines will be preheated/flushed with diluent, and a transfer to the treatment facility will follow. After the transfer, the lines will be flushed again with diluent.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.65E-03	Am - 241	2.48E+04	Am - 243	3.11E-02
Ba - 137 m	2.20E+06	C - 14	2.04E+02	Cd - 113 m	5.65E+02
Cm - 242	9.87E-01	Cm - 243	4.85E+00	Cm - 244	1.54E+01
Co - 60	7.59E+02	Cs - 134	2.65E+02	Cs - 137	2.32E+06
Eu - 152	4.07E+01	Eu - 154	3.73E+03	Eu - 155	4.73E+03
H - 3	1.41E+03	I - 129	1.10E+01	Nb - 93 m	7.76E+01
Ni - 59	1.30E+01	Ni - 63	1.28E+03	Np - 237	3.10E+01
Pa - 231	2.50E-02	Pu - 238	3.48E+02	Pu - 239	8.17E+02
Pu - 240	2.25E+02	Pu - 241	8.33E+03	Pu - 242	3.19E-02
Ra - 226	4.81E+00	Ra - 228	2.05E+00	Ru - 106	1.39E+01
Sb - 125	1.33E+03	Se - 79	2.19E+01	Sm - 151	7.72E+04
Sn - 126	3.32E+01	Sr - 90	5.54E+05	Tc - 99	1.46E+04
Th - 229	4.74E-02	Th - 232	2.32E-01	U - 232	6.32E+00
U - 233	2.42E+01	U - 234	1.01E+01	U - 235	3.90E-01
U - 236	7.00E-01	U - 238	8.79E+00	Y - 90	5.54E+05
Zr - 93	1.06E+02				

4) All HEPAs must be individually tested annually (per ASME 510) to a minimum efficiency of 99.95% for the removal of particulates using a DOP aerosol as defined in ASME N510 or approved equivalent.

5) All pit work must be performed in accordance with TWRS ALARACT Demonstrations 6 and 14 for Pit Access and, ALARACT Demonstrations for Pit Work.

6) If the wind speeds exceed 30 miles per hour the work in the glove bags will stop. If sustained wind speed exceeds 25 miles per hour pit work must stop. Records of wind speeds reading must be kept and made available to DOH, if requested.

7) Pipe cuts will be made using a sawzall or tri-tool. If removable contamination on only cutting surface is greater than or equal to 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha it must be cut and prepared in a glove bag for welding. If contamination levels are below these levels cutting maybe done outside of a glove bag. Expandable foam and fixatives are approved to fix smearable contamination.

8) Prior to cutting an expandable plug must be in place when a riser is opened in order to maintain constant vapor space and prevent material from falling into the tank during cutting.

9) Sample collection flow rate shall be approximately 120 +/- 12 cubic feet per hour.

10) The use of the regulated Guzzler, Portable/Temporary Radioactive Air Emission Unit and HEPA filtered vacuum radioactive emission units may be used as needed as prescribed by DOH in their latest approved revision.

Emission Unit ID: 205

200E P-296A041-001

296-A-41

This is a MINOR, ACTIVELY ventilated emission unit.

241-AP TANK FARM

Emission Unit Information

Stack Height: 30.88 ft. 9.41 m. Stack Diameter 2.33 ft. 0.71 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 35.05 ft/second. 10.68 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Heater	1	2 parallel flow paths with 1 heater
	HEPA	2	2 parallel flow paths with 2 HEPAs in series
	Fan	1	2 parallel flow paths, minimum of 1 in operation at a time; annulus exhauster

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a DST annulus exhauster used to support tank farm operations and ventilates the annuli of DSTs 241-AP Tank Farm. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The annulus is the space between the inner wall and outer wall of the tank, and is used for leak detection. The emission unit operates continuously.

Emission Unit ID: 208

200E P-244BX-001

296-B-28

This is a MAJOR, ACTIVELY ventilated emission unit.

244-BX-DCRT

Emission Unit Information

Stack Height: 11.00 ft. 3.35 m. Stack Diameter 0.50 ft. 0.15 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 15.40 ft/second. 4.69 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Heater	1	Annulus exhaust is not heated
	Prefilter	1	3 parallel flow paths
	HEPA	2	3 parallel flow paths
	Fan	1	
			* Technology Specific Requirements

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double container receiver tank (DCRT) exhauster used to support tank farm operations, such as but not limited to waste retrieval and operation support activities. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a DCRT exhauster ventilation system that operates intermittently. Isolation, deactivation, and decommissioning activities are permitted, and closure is pending submittal of closure form and final inspection and approval by WDOH. The emission unit will not operate pending submital of closure form and final inspection and approval by WDOH.

Emission Unit ID: 210

200E P-296P031-001

296-P-31

This is a MAJOR, ACTIVELY ventilated emission unit.

209 E CRITICALITY LAB

Emission Unit Information

Stack Height: 32.00 ft. 9.75 m. Stack Diameter ft. m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	4	1 bank
	HEPA	8	2 banks of 4 HEPAs each
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114.	All radionuclides which could contribute greater than 0.1 mrem/yr to the MEI, or represents greater than 10% of the unabated PTE or represents greater than 25% of the abated dose.	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This stack exhausted filtered building ventilation air from the 209 E Facility. Particulate emissions are sampled. This shut down facility originally was used for testing critical mass configurations. Activities at the 209 E support surveillance and maintenance operations at the Hanford Site.

Emission Unit ID: 213

200E P-244CR-001

296-C-5

This is a MAJOR, ACTIVELY ventilated emission unit.

244-CR VAULT

Emission Unit Information

Stack Height: 50.00 ft. 15.24 m. Stack Diameter 1.50 ft. 0.46 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 22.34 ft/second. 6.81 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	Non-Operational	One bank of 4 prefilters (2X2)
	HEPA	Non-Operational	2 banks of 4 filters(2X2) (1 bank of filters no longer meets efficiency standards)
	Fan	Non-Operational	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a building/facility exhauster that is use to ventilate building and facility operations such as but not limited to process vessels, contaminated rooms, cells, glove boxes, hoods, abandoned facilities awaiting decommissioning, and vaults that support tank farm operations, maintenance, and surveillance activities for tank farms. The exhauster can be used to support current surveillance, maintenance activities, operations or decommissioning, decontamination, and cleanup activities within the building/facility. Many of the activities other than normal surveillance, maintenance, and operation support will be or are regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is inactive, removed from service, and will not be utilized for any future tank farm operations. If the emission unit is required for, tank farm operations the proper regulatory requirements and permits will be obtained prior to returning the emission unit to service. Closure is pending submittal of closure form and final inspection and approval by WDOH.

Emission Unit ID: 216

200E P-296A043-001

296-A-43

This is a MINOR, ACTIVELY ventilated emission unit.

241-AY/AZ TANK FARM

Emission Unit Information

Stack Height: 35.50 ft. 10.82 m. Stack Diameter 0.83 ft. 0.25 m.

Average Stack Effluent Temperature: 70 degrees Fahrenheit. 21 degrees Celsius.

Average Stack ExhaustVelocity: 30.56 ft/second. 9.31 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	2 parallel flow paths; only 1 flow path normally operates at a time
	HEPA	1	2 parallel flow paths; only 1 flow path normally operates at a time
	Fan	1	2 parallel flow paths; only 1 flow path normally operates at a time
	Isolation Damper	1	Allows for operation of one flow path at a time

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a building/facility exhauster that is use to ventilate building and facility operations such as but not limited to contaminated rooms, and support equipment for tank farm operations, maintenance, and surveillance activities for tank farms. The exhauster can be used to support current surveillance, maintenance activities, operations or decommissioning, decontamination, and cleanup activities within the building/facility. Many of the activities other than normal surveillance, maintenance, and operation support will be or are regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a building/facility exhauster ventilation system that operates intermittently.

Emission Unit ID: 217

200E P-296A018-001

296-A-18

This is a MINOR, ACTIVELY ventilated emission unit.

241-AY Tank Farm

Emission Unit Information

Stack Height: 12.50 ft. 3.81 m. Stack Diameter 1.33 ft. 0.41 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 47.75 ft/second. 14.55 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	In series
	Fan	1	Annulus exhauster AY-101, intermittent operations.
	Heater	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a DST annulus exhauster used to support tank farm operations and ventilates the annulus of DST 241-AY-101. The tank stores radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The annulus is the space between the inner wall and outer wall of the tank, and is used for leak detection. The emission unit operates continuously.

Emission Unit ID: 218

200E P-296A019-001

296-A-19

This is a MINOR, ACTIVELY ventilated emission unit.

241-AY Tank Farm

Emission Unit Information

Stack Height: 12.90 ft. 3.93 m. Stack Diameter 1.33 ft. 0.41 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 47.75 ft/second. 14.55 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	In series
	Fan	1	Annulus exhauster
	Heater	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a DST annulus exhauster used to support tank farm operations and ventilates the annulus of DST 241-AY-102. The tank stores radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The annulus is the space between the inner wall and outer wall of the tank, and is used for leak detection. The emission unit operates continuously.

Emission Unit ID: 227

200E P-296AN-001

296-A-29

This is a MAJOR, ACTIVELY ventilated emission unit.

241-AN TANK FARM

Emission Unit Information

Stack Height: 16.79 ft. 5.12 m. Stack Diameter 0.83 ft. 0.25 m.

Average Stack Effluent Temperature: 110 degrees Fahrenheit. 43 degrees Celsius.

Average Stack ExhaustVelocity: 30.56 ft/second. 9.31 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	Normally 1 unit is operated for each fan in operation. If both fans are in operation both deentrainers should be in operation. Either unit may support either train. Located upstream of the split in flow path to individual trains
	Heater	1	1/train, 2 trains
	HEPA	2	2 HEPA banks in Series/train, 2 trains
	Fan	1	1/train, 2 trains
	Prefilter	2	1/train, 2 trains

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Appendix B, Method 114 (2), (3) and (4)	Each radionuclide that could contribute greater than 10% of the potential TEDE to the MEI, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, and greater than 25% of the TEDE to the MEI, after controls.	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241 AN Tank Farm during storage, maintenance, and normal operations. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a primary exhauster ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.06E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.60E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Install and operate a waste retrieval system (up to two mixer pumps per tank and other required equipment) in the 241-AN-101, -AN-102, -AN-103, -AN-104, -AN-105, -AN-106 and the -AN-107 tanks. The pumps will operate in a batch mode as needed. The waste capacity of the tanks will not be altered, nor will the ventilation system.

The 241-AN-101, -102, -103, -104, -105, -106 and -107 tanks are 75-foot diameter double-shell tanks (DST) constructed from the latest generation of tank designs, with a reinforced concrete shell and dome, and an insulating concrete base. A heat-treated, stress relieved, primary steel liner and a non-stress-relieved, outer steel liner are separated by a 2.5-foot annulus and contained inside the concrete shell. The tanks have a flat bottom with a usable waste depth of approximately 35 feet (1,160,000 gallons).

Current design calls for modifications to the 241-AN-101, -102, -103, -104, -105, -106 and -107 tanks and associated equipment to allow installation and removal of waste retrieval system equipment, and shall be limited to the following major components.

New In-Tank Equipment:

Installation of up to two mixer pumps in each tank for mobilizing the settled solids. The pump will be capable of pumping waste through each of two, horizontally opposed, discharge nozzles, located approximately 18 inches above the bottom of the tank.

Installation of a high-pressure spray wash system on top of each of the risers used for the mixer pumps. The spray wash system will be used for future decontamination of the mixer pumps as they are removed from the tank.

Installation of one transfer pump in each tank for the transfer of waste.

Installation of one closed circuit television for each tank.

Installation of one thermocouple tree for each tank, as required.

New Ancillary Equipment and Buildings:

Installation of electrical power and instrument cables and other utility tie-ins and/or upgrades (e.g., sanitary and raw water, and telecommunications).

Construction of a dilution system, the Caustic Supply System, to bring waste properties into compliance with the feed specifications, to flush and preheat transfer lines. It will be capable of providing approximately 140 gallons per minute of the pH-adjusted water. It will consist of a package boiler, a chemical injection pump, a diluent/flush pump, a diluent/flush tank (approximately 5,000 gallons), and a spill containment pad for caustic delivery trucks. The system will be located in an area central to and outside of the 241-AN, -AY, and -AZ tank farms.

New pit coverblocks for AN-01A, AN-02A, AN-03A, AN-04A, AN-05A, AN-06A and AN-07A.

Installation of new water and diluent piping to and from the process pits. A total of approximately 2,800 linear feet of piping will be installed at a dept of up to 5 feet underground.

Installation of new process jumpers inside existing central pits (AN01A, AN02A, AN03A, AN04A, AN05A, AN06A and AN07A) and the 241-AN-A/B Valve Pits.

Installation of miscellaneous concrete pads for electrical and mechanical equipment.

Installation of chain-link fencing and gates.

Removal, Decontamination and Demolition of Existing Equipment:

Removal of mixer pumps.

Removal of transfer pumps.

Removal of thermocouple probes.

Removal of camera/multi-port riser from tanks AN-103, AN-104 and AN-105. (Camera will be reused in another riser on the tank).

Removal of a slurry distributors.

Removal of jumpers form each of the central pump pits, and central pump pit cover blocks.

Removal of multi-function instrument trees or multi-purpose probes from Tanks 241-AN-101, -102, -103, -104, -105 and -107.

Use of equipment and containers for removal, cleaning, decontamination, transport, storage, and burial of in-tank components and soil.

Performance of miscellaneous activities in support of construction and operation activities that will not increase emissions above those estimated in this NOC:

Repair of road crossings (asphalt paving).

Construction activities with the potential-to-emit include soil excavation, work in pump pits, pipe cutting, removal of, and installation of in-tank equipment. Some of these activities are described in, and will be done in accordance with, an applicable Tank Farm ALARACT demonstration, HNF-4327 latest revision, Control of Airborne Radioactive Emissions for Frequently Performed TWRS Work Activities. The specific activities and corresponding ALARACT demonstration are called out as they apply in the following text.

If needed or chosen for use during these activities, the Regulated Guzzler, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs (98-EAP-037, DOE/RL-96-75, and DOE/RL-97-50 respectively).

The 241-AN Tank Farm is posted and maintained as a radiological buffer area, free of surface contamination (entrance is made in street clothes). There are no recorded spills or leaks. Therefore, encountering contamination is not expected during soil excavation activities. Because of the possibility of encountering previously undetected subsurface contamination, all work is performed in accordance with the Hanford Site Radiological Control Manual and the RPP As Low As Reasonably Achievable (ALARA) Program requirements. These requirements are carried out through the activity work packages and associated radiological work permit (RWP).

Soil Excavation:

Soil will be excavated inside and outside the 241-AN Tank Farm to install new piping and construct a new pump pit. A total of approximately 6,000 cubic yards will be excavated, which includes approximately 3,600 cubic yards inside the tank farm. Backfill will be made with the original removed soil or controlled density fill (sand, water and a small amount of cement).

Soil excavation activities inside the tank farm fence will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (using hand tools). Clean soil piles may be moved from one place to another within the tank farm with heavy equipment (backhoe, front-end loader, etc.). Soil excavation outside the tank farm fence also may be performed with heavy equipment. The Regulated Guzzler may also be used as described in its NOC for use in the A Tank Farm Complex (98-EAP-037).

Pipe Cutting:

Any required cut of contaminated piping will be made, inside a glove bag, using appropriate equipment such as a sawzall or tri-tool. In order to perform the cut without a glove bag, the riser will be surveyed/smeared to verify removable contamination levels are equal to or less than 10,000 dpm/100cm2 beta gamma and 200 dpm/100cm2 alpha. The tie-ins will be made at the new pit nozzles. If any welding is required, the glove bag will be removed and the weld made.

If needed or chosen for use during these activities, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs (DOE/RL-96-75, and DOE/RL-97-50 respectively).

Pit Work:

Work to be performed in pump pits includes replacing three existing sets of cover blocks with newly designed cover blocks, core drilling (equivalent of one hundred, 14-inch diameter, holes), installing new nozzles, removing existing jumpers, and installing riser extensions (total of two, 42-inch diameter per pit).

Pit access and work will be performed in accordance with ALARACT Demonstrations 6 and 14, TWRS ALARACT Demonstration for Pit Access, and TWRS ALARACT Demonstration for Pit Work. Activities not covered in these ALARACTs are described below.

If needed or chosen for use during these activities, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs (DOE/RL-96-75, and DOE/RL-97-50 respectively).

At the start of the pit work, the cover blocks will be lifted off and radiologically surveyed to determine appropriate disposal protocol and packaged for disposal. A new cover block will be installed when all work in the pit has been completed.

Core drilling will be performed below grade level, on the outside of the pit. The hole will be drilled from the outside to the inside, with the temporary pit cover in place. The drilling bit will be water-cooled. Nozzle installation will generally proceed immediately after the hole is completed. If immediate nozzle installation is not possible, the hole will be temporarily sealed with a plug, tape, or equivalent device, until the nozzle can be installed.

Installation of new nozzles in existing pits will take place in an open pit. All parts of the nozzle will be assembled ahead of time, and will be lowered into position as a single unit. The piping in the back of the nozzle will be threaded through the hole (from the inside of the pit to the outside) and pulled tight into place form the outside of the pit. Grout will be used to secure and seal the nozzle into place. The front opening of the nozzle, inside the pit, will be fitted with a temporary cap/seal until a jumper is connected to it. Once the nozzle(s) is installed, the temporary pit cover will be replaced until other work inside the pit requires its removal.

Installation of the 42-inch diameter riser extensions will take place in an open pit. Only the risers that will house a mixer pump will have an extension installed. The depth-verification shield plug left in/on the riser from the previously removed mixer pump will be removed and replaced with the riser extension that has a temporary shield plug inserted at the bottom end. The riser will be open during this step which takes approximately thirty minutes. The extension will be sealed to the cover block with metal bellows. The extensions will be equipped with spray was rings that will provide a means of decontamination for future mixer pump removals. They will also provide confinement between the pump and the inside of the pit during future pump removals, which will be possible without removing the pit cover blocks.

Removal of In-Tank Equipment:

Various in-tank equipment will be removed from both tanks to make room for the water retrieval equipment, or to be replaced with equivalent equipment built to withstand the mixer pump jet forces. The existing flexible receiver equipment will be used to remove long-length components to acceptable levels risers).

Equipment removal will be performed in accordance with ALARACT Demonstration 13, TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment, and TWRS ALARACT Demonstration 15, Size Reduction of Waste Equipment for Disposal. Activities not covered in this ALARACT are described below.

If needed or chosen for use during these activities, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs (DOE/RL-96-75, and DOE/RL-97-50 respectively).

Decontamination of removed equipment is not anticipated, the fewer decontamination activities undertaken the less exposure possibilities there are to the worker and the environment. Contingency decontamination plans, however, are in place if needed. The most likely equipment to be decontaminated would be sections of the flexible receiver. If contingency decontamination is required a two-roomed decontamination tent will be set up within the tank farm fence. Decontamination work will take place in one room and the other will be maintained clean.

Flexible Receiver Bagging Process:

Use of the flexible receiver involves connecting to and disconnecting from a tank riser or pit; lifting/removing the equipment; washing down/decontaminating the equipment; and bagging the equipment. The flexible receiver can be used in a manual or a completely automated mode. Various flexible receiver equipment includes a washer assembly, a radiation monitoring and camera assembly, a bag cinch and cut assembly, a secondary bag seal assembly, and an appropriately sized receiving bag.

The connection process to risers in a concrete pit is different than that to risers outside at, or below, grade level. For risers in pits, the cover block is removed and replaced with the flex receiver platform. The gap between the pit and the platform is sealed with plastic and tape. There is one opening in the platform that is directly above the equipment/riser. The equipment is lifted off the riser, to slightly above the platform, long enough to position the split plates that will support the equipment when it is lowered back down the platform. Generally this step takes less than fifteen minutes and during this time the riser is open around the equipment as it is raised. The equipment is lowered to rest/seal on the split plates. In some instances a gasket may be used between the split plates an the equipment to enhance the seal. At this point confinement is considered restored and work can take place on the upper portion of the piece of equipment, if needed, to prepare it for removal. Once the preparatory work is complete, the equipment is raised slightly to remove the split plates and then lowered back down to rest/seal on the riser. An adapter spool piece assembly (includes the spool piece, the spray wash unit, and alignment bellows) is placed over and around the riser, and the equipment setting on top of the riser. The adapter spool piece is equipped with a rubber seal on the bottom, which provides a seal against the floor of the pit, and the alignment bellows are bolted to the platform providing a seal against the platform. An impact limiter is installed on top of the platform, around the opening, as a precaution if the equipment free falls during the remote bagging process. The piece of equipment is again raised to rest/seal on the impact limiter. Subsequent confinement is provided by the gaskets between equipment/assembly pieces and the rubber seal on

the bottom of the adapter spool piece. The remainder of the flex receiver equipment is bolted into place above the impact liner.

For risers that cannot accommodate an adapter spool piece (outside risers), a split spool piece is used to bolt the flex receiver equipment to the riser flange. In this instance, a seal against a floor cannot be made, so a glove bag is used to confine contamination. A glove bag, with the spool piece in it, is sealed around the riser, the riser is opened, the equipment is raised slightly to allow installation of the split spool piece onto the riser flange. Generally this step takes less than fifteen minutes and during this time the riser is open (within the glove bag) around the equipment as it's raised. The equipment is lowered back down to rest/seal on the split spool piece and the spray wash unit is bolted to the split spool piece. The remainder of the flex receiver equipment, in its entirety, is swung into position, the bottom component is slipped into the glove bag and then bolted to the spray wash unit within the glove bag.

After the riser connection process has been completed, the equipment is slowly lifted through the riser (approximately one foot per minute). The washing process takes place concurrently with lifting and uses preheated water pressurized up to 3,000 pounds per square inch. Washing takes place outside of the vapor space and the run-off is returned to the tank through the riser.

After a section of the equipment has been washed it is pulled through the radiation monitoring assembly. Here, spectrum analysis is performed on the equipment and it is viewed via the camera to determine if the washing process needs to be repeated.

Once washed and dripped dry, the equipment is pulled into the flex receiver bag. Once the equipment is completely in the bag, an absorbent mat is attached inside the bag. The mat can absorb up to 8 gallons of liquid, if needed. Next, a mechanical sealing device cinches the bag closed with wire rope and crimps the bottom of the bag in two places, one below the other. The bag is then cut between the two crimps, leaving a sealed top section containing the equipment, and a sealed bottom section sealing the riser opening. The bag is then hoisted into position for secondary bagging of the first seal. Secondary bagging involves lowering the bagged equipment, sealed end first, into another bag that fits around the bottom of the first bag. The secondary bag is also cinched closed with wire rope. The portion of the first bag that was cinched at the riser is then removed and disposed of and the riser is closed. From here the equipment is ready for waste packaging for storage and/or burial.

LLCE Waste Packaging Process:

The waste packaging process takes place immediately after the equipment bagging process. It is called the Long Length Contaminated Equipment (LLCE) Disposal System and was designed specifically for application at Hanford Tank Farms. It packages non-contact, remote handled, radioactive waste, for storage or burial. In general, the process involves pushing the LLCE into a storage/burial container and filling the container with lightweight grout to attain a greater than or equal to 90 percent filled container.

The previously bagged equipment is placed into the skid assembly of the tilt trailer (vertical position). The skid assembly is lowered to the horizontal position and the equipment is slowly pushed into the container already in place on the transport trailer. The endcap is welded closed, using electrical current to fuse the polyethylene together, and leak tested in place. A vent penetration is installed at the top of the end cap for venting displaced air while filling. Another penetration is also put into the endcap for installation of the "trimmie tube" (distributes grout evenly into the container). The vent penetration is fitted with, or piped to, a high-efficiency particulate air (HEPA) filter to satisfy ALARA requirements. At the storage/burial area, the container is removed from the transport trailer and placed for storage or burial.

In-Tank Equipment Installation:

Equipment installation will be performed in accordance with TWRS ALARACT Demonstration 13, Installation, Operation, and Removal of Tank Equipment.

Waste Staging and Retrieval Process Overview:

The retrieval process at the 241-AN-101, -102, -103, -104, -105, -106 and -107 tanks will provide feed stock to a waste treatment facility. The low activity waste received from the source tanks may be conditioned and/or diluted to deliver compliant waste. Mixing and dilution may also take place at the source tanks to meet the waste specifications of 241-AN-101, -102, -103, -104, -105, -106 and -107, i.e., solids content must be within a predetermined amount. In-coming waste will be staged in the tank(s) until enough has been accumulated to send, and the treatment facility is ready to receive, a batch. The mixer pump will then be operated to maintain waste uniformity during staging and to mix the waste for a short period of time before transferring it. The mixer pump will be operated at full speed until waste samples verify that adequate mixing has been achieved. Waste samples will be collected in accordance with TWRS ALARACT Demonstration 7, Tank Waste Grab Sampling. If dilution/conditioning is needed, the pH and temperature of the diluent will be adjusted by means of the Caustic Supply System. Once the waste is verified acceptable, the transfer lines will be preheated/flushed with diluent, and a decant waste transfer to the treatment facility will follow. After the transfer, the lines will be flushed again with diluent.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.65E-03	Am - 241	3.65E+03	Am - 243	1.88E-02
C - 14	1.98E+03	Cd - 113 m	5.65E+02	Cm - 242	9.87E-01
Cm - 243	4.85E+00	Cm - 244	1.54E+01	Co - 60	7.59E+02
Cs - 134	2.08E+02	Cs - 137	2.32E+06	Eu - 152	4.07E+01
Eu - 154	3.03E+03	Eu - 155	4.73E+03	H - 3	1.41E+03
I - 129	1.10E+01	Nb - 93 m	7.76E+01	Ni - 59	1.15E+01
Ni - 63	1.14E+03	Np - 237	3.10E+01	Pa - 231	2.49E-02
Pu - 238	1.26E+01	Pu - 239	9.11E+00	Pu - 240	1.85E+00
Pu - 241	1.06E+03	Pu - 242	4.97E-03	Ra - 226	9.14E-04
Ra - 228	2.05E+00	Ru - 106	5.60E-02	Sb - 125	1.33E+03
Se - 79	2.19E+01	Sm - 151	7.72E+04	Sn - 126	3.32E+01
Sr - 90	5.54E+05	Tc - 99	1.17E+03	Th - 229	4.74E-02
Th - 232	2.32E-01	U - 232	6.32E+00	U - 233	2.42E+01
U - 234	5.50E+00	U - 235	2.16E-01	U - 236	2.85E-01
U - 238	6.53E+00	Y - 90	5.54E+05	Zr - 93	1.06E+02

4) When a Portable/Temporary Radioactive Air Emission Unit (DOE/RL-96-75), HEPA Filtered Vacuum (DOE/RL-97-50], or the regulated Guzzler are used all Conditions and Limitations associated with the latest approved revisions of those NOCs must be followed, all required logs must be maintained and emissions reported in the annual air emission report.

5) To ensure the potential-to-emit from these proposed activities remains less than 0.1 mrem/year, a non-destructive analysis (NDA) of the 296-A-29 HEPA filters will be performed annually during waste retrieval system operation. A baseline NDA will be performed prior to operation of the waste retrieval system.

6) Pipe cuts will be made with a sawzall/tri-tool or equivalent tool. If removable contamination levels are greater than 10,000 dpm/100 cm2 beta-gamma and 200 dpm/100 cm2 alpha, the cuts and welding preparation must be performed inside a glovebag.

7) Removal of in-tank equipment will be performed in accordance with ALARACT Demonstration 13, TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment, and ALARACT 12 TWRS ALARACT Demonstration for Packaging and Transportation of Equipment and Vehicles.

8) The HEPA filter on the endcap of the Long Length Contaminated Equipment Disposal System shall be installed and maintained in accordance with manufacturer's recommendations.

9) The TEDE to the MEI from pit work including equipment installation and removal will not exceed the calculated annual dose of 2.85E-02 mrem/year. The pit work will be performed in accordance with TWRS ALARACT Demonstration for Pit Access (6) and TWRS ALARACT Demonstration for Pit Work (14). When contamination levels inside the pit exceed those identified in the ALARACT Demonstrations a notification shall be made to the

WDOH, identifying the additional controls to be added in accordance with the containment matrix guide from HNF-IP-0842. The APQ shall not exceed 5.77E+02 curies. The annual dose to the MEI and the APQ will be tracked on a WDOH approved log.

10) The TEDE to the MEI from soil excavation by hand digging will not exceed the calculated annual dose of 1.61E-02 mrem/year, and will be performed in accordance with ALARACT 5 TWRS ALARACT Demonstration for Soil Excavation (using hand tools). The APQ shall not exceed 2.65E+01 curies. The annual dose to the MEI and the APQ will be tracked on a WDOH approved log.

11) The TEDE to the MEI from soil excavation by the Guzzler will not exceed 6.96E-02 mrem/year, and will be performed in accordance with the regulated Guzzler approval identified in (98-EAP-037). The APQ shall not exceed 1.15E-01 curies. The annual dose to the MEI and the APQ will be tracked on a WDOH approved log. Periodic confirmatory monitoring for soil excavation will consist of soil contamination surveys.

12) The TEDE to the MEI from transfer pipe cuts will not exceed 3.34E-02 mrem/year. The annual possession quantity (APQ) shall not exceed 6.79E+02 curies. The annual dose to the MEI and APQ will be tracked on a WDOH approved log.

13) To confirm low emissions during equipment removal and installation, periodic confirmatory monitoring will be as outlined in ALARACT 13; in addition, periodic confirmatory monitoring for the Flexible Receiver Bagging Process will consist of taking a smear survey of the cut bag. Documentation of the survey will be maintained in a WDOH approved log.

14) Total soil excavated during the project will not exceed 6,000 cubic yards, which includes approximately 3,600 cubic yards inside the tank farm.

15) Work in glovebags will not be performed if sustained wind speeds are greater than 30 miles per hour. This criterion applies to sustained wind speed as determined by the Hanford Meteorological Station.

Emission Unit ID: 228

200E P-296A030-001

296-A-30

This is a MINOR, ACTIVELY ventilated emission unit.

241-AN TANK FARM

Emission Unit Information

Stack Height: 23.40 ft. 7.13 m. Stack Diameter 2.00 ft. 0.61 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 32.49 ft/second. 9.90 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	1 in each train
	Heater	1	1 in each train
	Fan	1	2 parallel flow paths; only 1 flow path normally operates at a time, however both trains may be operated at the same time
	HEPA	2	2 parallel flow paths; only 1 flow path normally operates at a time, however both trains may be operated at the same time

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a DST annulus exhauster used to support tank farm operations and ventilates the annuli of DSTs 241-AN Tank Farm. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The annulus is the space between the inner wall and outer wall of the tank, and is used for leak detection. The emission unit operates continuously.

Emission Unit ID: 230

200E P-241C107-001

241-C-107

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 231

200E P-241C108-001

241-C-108

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 232

200E P-241C112-001

241-C-112

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 233

200E P-241C201-001

241-C-201

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 234

200E P-296P016-001

296-P-16

This is a MAJOR, ACTIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 10.00 ft. 3.05 m. Stack Diameter 1.33 ft. 0.41 m.

Average Stack Effluent Temperature: 110 degrees Fahrenheit. 43 degrees Celsius.

Average Stack ExhaustVelocity: 32.15 ft/second. 9.80 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	
	Heater	1	
	Prefilter	1	
	HEPA	2	In series
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a SST exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities for 241-C Tank Farm. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The tanks are scheduled for waste retrieval, decommissioning, and eventual closure under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is an exhauster ventilation system that operates intermittently. The emission unit is inactive, removed from service, and will not be utilized for any future tank farm operations. If the emission unit is required for, tank farm operations the proper regulatory requirements and permits will be obtained prior to returning the emission unit to service.

Emission Unit ID: 235

200E P-241C204-001

241-C-204

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 236

200E C-106 Sluicing

296-C-6

This is a MAJOR, ACTIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 9.00 ft. 2.74 m. Stack Diameter 0.50 ft. 0.15 m.

Average Stack Effluent Temperature: 69 degrees Fahrenheit. 21 degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	High Efficiency Mist Eliminator	Non-Operational	
	High Efficiency Metal Filter	Non-Operational	
	Heater	Non-Operational	
	HEPA	Non-Operational	In series
	Fan	Non-Operational	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a SST exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities for 241-C Tank Farm. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The tanks are scheduled for waste retrieval, decommissioning, and eventual closure under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is an exhauster ventilation system that operates intermittently. The emission unit is inactive, removed from service, and will not be utilized for any future tank farm operations. If the emission unit is required for, tank farm operations the proper regulatory requirements and permits will be obtained prior to returning the emission unit to service.

Emission Unit ID: 237

200E P-241C102-001

241-C-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 242

200E P-241C203-001

241-C-203

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 244

200E P-241C110-001

241-C-110

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 245

200E P-241C109-001

241-C-109

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 246

200E P-241C202-001

241-C-202

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 247

200E P-241C101-001

241-C-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 254

200W S-296S021-001

296-S-21

This is a MAJOR, ACTIVELY ventilated emission unit.

222-S LABORATORY

Emission Unit Information

Stack Height: 68.00 ft. 20.73 m. Stack Diameter 5.50 ft. 1.68 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 63.16 ft/second. 19.25 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	3	In series for both the primary and backup exhaust systems (222-S Lab Hot Cells)
	HEPA	1	For both primary and backup exhaust systems (222-S Lab Complex)
	Fan	3	Primary exhaust operated in parallel, serves both hot cell addtion & main lab.
	Fan	1	Backup exhaust operates independently or in parallel with primary exhaust

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a laboratory building/facility exhauster that is used to ventilate building and facility operations such as but not limited to contaminated rooms, hot cells, glove boxes, and hoods, that support tank farm waste characterization activities, research and development, environmental sample analysis, and Hanford operations and remediation projects. The exhauster can be used to support current surveillance, maintenance activities, operations, decontamination, and cleanup activities within the building/facility.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
222-S Lab Hot Cell Expansion	AIR 06-609	7/5/2006	637

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 6.60E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 6.00E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The Environmental Hot Cell Expansion to provide a new addition to the 222-S Laboratory. This expansion will provide a seven compartment hot cell to support the increased demand for analytical services.

Emissions from the hot cell will be exhausted through the existing stack at the 222-S Facility (registered stack number 296-S-21). Approximately 1200 cubic feet per minute will be emitted from the hot cell. Prior to being emitted to the atmosphere, the hot cell exhaust shall pass through two sets of existing High-Efficiency Particulate Air (HEPA) Filters (double HEPAs at both the 222-SC and 222-SB Facilities), in addition to one of the three new single-stage HEPA filters adjoining the hot cell. HEPA Filters are tested in place to ensure that they remove at least 99.5 percent of particles ranging in size from 0.1 micron to 3.0 microns, with a mean particle size of 0.5 micron.

The hot cell will examine both solid and liquid samples; approximately 43 samples/month will be solids, and approximately 12 samples/month will be liquid. Each solid sample will weigh up to 625 g, with a maximum specific gravity of 5.0. Each liquid sample will be approximately 125 ml. It was assumed that the specific gravity would be 2.0. Each of the samples (both liquid and solid) will have a maximum radionuclide concentration of 2000 uCi/g Sr-90 and 1000 uCi/g Cs-137. Based on these assumptions, the annual solid inventory for the hot cell is 645 Ci Sr-90 and 322.5 Ci Cs-137, and the annual liquid inventory is 72 Ci Sr-90 and 36 Ci Cs-137.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Cs - 137	3.59E+02	Sr - 90	7.17E+02

Emission Unit ID: 255

200E P-241BX104-001

241-BX-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements See additional requirements below.

Additional Requirements

Contamination surveys of breather filters with stack extensions will be performed on the downstream side of the filter or on the outside of the screen covering the outlet fo the vent (if one exists) or by removing the test port cap downstream of the HEPA filter, surveying the cap and inserting smear media (e.g. swab, masslin) in the opening and smearing the interior ducting surface on the opposite side of the test port cap opening.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 256

200E P-241BX110-001

241-BX-110

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 257

200E P-241BX103-001

241-BX-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 258

200E P-241BX107-001

241-BX-107

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 259

200E P-241BX101-001

241-BX-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 260

200E P-241BX112-001

241-BX-112

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 261

200E P-241BX106-001

241-BX-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 262

200E P-241BX102-001

241-BX-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 263

200E P-241BX109-001

241-BX-109

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 264

200E P-241BX111-001

241-BX-111

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 265

200E P-241BX108-001

241-BX-108

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements See additional requirements below.

Additional Requirements

Contamination surveys of breather filters with stack extensions will be performed on the downstream side of the filter or on the outside of the screen covering the outlet fo the vent (if one exists) or by removing the test port cap downstream of the HEPA filter, surveying the cap and inserting smear media (e.g. swab, masslin) in the opening and smearing the interior ducting surface on the opposite side of the test port cap opening.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 266

200E P-241B105-001

241-B-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 267

200E P-241B201-001

241-B-201

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 268

200E P-241B108-001

241-B-108

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 269

200E P-241B101-001

241-B-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 270

200E P-241B102-001

241-B-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 271

200E P-241B204-001

241-B-204

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 272

200E P-241B104-001

241-B-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 273

200E P-241BX105-001

241-BX-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-BX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 274

200E P-241B112-001

241-B-112

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 275

200E P-241B107-001

241-B-107

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 276

200E P-241B111-001

241-B-111

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 277

200E P-241B109-001

241-B-109

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 278

200E P-241B110-001

241-B-110

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 279

200E P-241B103-001

241-B-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 280

200E P-241B202-001

241-B-202

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 281

200E P-241B106-001

241-B-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 282

200E P-241B203-001

241-B-203

This is a MINOR, PASSIVELY ventilated emission unit.

241-B TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 283

200E P-241BY101-001

241-BY-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 284

200E P-241BY105-001

241-BY-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 285

200E P-241BY106-001

241-BY-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 286

200E P-241BY102-001

241-BY-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 287

200E P-241BY112-001

241-BY-112

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 288

200E P-241BY103-001

241-BY-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 289

200E P-241BY104-001

241-BY-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 290

200E P-241BY109-001

241-BY-109

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 291

200E P-241BY108-001

241-BY-108

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 292

200E P-241BY111-001

241-BY-111

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 293

200E P-241BY110-001

241-BY-110

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA		Passive HEPA Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 294

200E P-241BY107-001

241-BY-107

This is a MINOR, PASSIVELY ventilated emission unit.

241-BY TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 301

200E P-2025E ETF

296-E-1

This is a MINOR, ACTIVELY ventilated emission unit.

Effluent Treatment Facility(ETF)

Emission Unit Information

Stack Height: 51.00 ft. 15.54 m. Stack Diameter 6.00 ft. 1.83 m.

Average Stack Effluent Temperature: 85 degrees Fahrenheit. 29 degrees Celsius.

Average Stack ExhaustVelocity: 33.30 ft/second. 10.15 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
Vessel Off-Gas System	HEPA	3	1 heater and 2 filters in series, with 2 parallel fans (minimum of 1 in operations). VOG discharges into Building Ventilation
Vessel Off-Gas System	Fan	1	
Building Ventilation System	HEPA	2	3 parallel flowpaths each with 1 filter and 1 fan; minimum 2 in operation.
Building Ventilation System	Fan	2	Serves both areas

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Monitoring stations N498, N499, N972, and N999

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 200 Area Effluent Treatment Facility (ETF), treat effluents in support of surveillance and maintenance and decontamination and decommissioning at the Hanford Site. This 51 foot tall stack exhausts filtered air from the 2025 E Building and ETF processing vents. Particulate emissions are sampled. ETF treats mixed aqueous waste streams prior to their disposal at the State Approved Land Disposal Site, also designated as the 616 A Crib.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of the Liquid Effluent Retention Facility and the 200 Area Effluent Treatment Facility	AIR 06-649	7/5/2006	690

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility (LERF/ETF), which includes the load-in station and load-in station filter skid.

Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.48E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. ETF release rates are based on ETF operating capacity + 5 million gallon storage capacity (54.3 million gallons/yr plus 5.0 million gallons = 59.3 million gallons/yr). In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
Am - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
B/G - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/gamma release rate is assumed to be Sr-90/Cs-137. ETF release rates are based on ETF operating capacity + 5 million gallon storage capacity (54.3 million gallons/yr plus 5.0 million gallons = 59.3 million gallons/yr). In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
C - 14	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ce - 144	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cm - 244	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Co - 60	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 134	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 154	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 155	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
H - 3	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 129	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

K - 40	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Mn - 54	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Na - 22	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Nb - 94	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Np - 237	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 226	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ru - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Sb - 125	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Se - 79	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Tc - 99	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 235	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 236	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	C - 14	Ce - 144	Cm - 244	Co - 60
Cs - 134	Cs - 137	Eu - 154	Eu - 155	H - 3
I - 129	K - 40	Mn - 54	Na - 22	Nb - 94

Np - 237	Pu - 238	Pu - 239/240	Pu - 241	Ra - 226
Ru - 106	Sb - 125	Se - 79	Sr - 90	Tc - 99
U - 233	U - 234	U - 235	U - 236	U - 238
Zn - 65	Zr - 95			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The emissions for this activity from the 296-E-1 stack are limited to 3.89E-02 mrem/year unabated and 1.95E-05 mrem/year abated.

5) The following activities are approved for the 296-E-1 Emission Unit Point-Source Emissions:

- ETF operations and maintenance.
- Containerized wastewater additions to the ETF process.
- Leaks into the ETF secondary containment.
- Secondary waste packaging and storage.

Emission Unit ID: 302

200E P-241AX104-001

241-AX-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-AX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 303

200E P-241AX102-001

241-AX-102

This is a MINOR, PASSIVELY ventilated emission unit.

241-AX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 304

200E P-241AX103-001

241-AX-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-AX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 305

200E P-241AX101-001

241-AX-101

This is a MINOR, PASSIVELY ventilated emission unit.

241-AX TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 308

200W P-213W-001

296-W-3

This is a MINOR, ACTIVELY ventilated emission unit.

213-W

Emission Unit Information

Stack Height: 25.00 ft. 7.62 m. Stack Diameter 1.33 ft. 0.41 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 15.50 ft/second. 4.72 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.
	Fan	Non-Operational	This unit is inactive and will require an NOC to resume operation or a report of closure to deregister.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a diffuse source for radiological emissions in the form of dust, or emissions that are generated from point sources or areas/buildings where the emissions are not expected to be emitted through a stack. The emission unit is typically part of the surveillance program however there is a number of units that could be used during waste retrieval, decommissioning, and closure, such as but not limited to pits, pipelines, valves, pumps, and diversion boxes. The emission unit is inactive and was removed from service and will not be utilized for any future tank farm operations. The emission unit does not contain control equipment that is functional or maintained to specifications however, ALARACT methods are used to minimize releases. The area has contamination contained within the soil, a structure without ventilation systems, areas sources with multiple fugitive emission sources, such as but not limited to tanks farms, abandoned buildings/structures, pipelines, valves, pumps, pits, diversion boxes, etc. that may omit fugitive emissions while in operation. If the contamination is buried, or is fixed in such a manner that a release to the air is not expected, then the emission source is not contained within this category of emission units. The emission unit is a continuous source of emissions.

Emission Unit ID: 310

200W P-291U001-001

291-U-1

This is a MINOR, ACTIVELY ventilated emission unit.

U PLANT

Emission Unit Information

Stack Height: 200.00 ft. 60.96 m. Stack Diameter 6.50 ft. 1.98 m.

Average Stack Effluent Temperature: 70 degrees Fahrenheit. 21 degrees Celsius.

Average Stack ExhaustVelocity: 20.10 ft/second. 6.13 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Sandfilter	1	
	Fan	2	In parallel, only 1 operates at a time

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This 200 foot tall stack exhausts filtered air from the 221 U canyon ventilation system. Particulate emissions are sampled. U Plant was constructed as a fuel reprocessing plant but never used for that purpose. Instead, it was used to recover uranium from bismuth phosphate waste and high-level radioactive wastes from Tank Farms. U Plant is now a retired facility, some portions are regulated under CERCLA. Typical activities include routine maintenance of the emissions unit and surveillance and maintenance of the building.

Emission Unit ID: 314

200W P-291T001-001

291-T-1

This is a MAJOR, ACTIVELY ventilated emission unit.

T PLANT COMPLEX

Emission Unit Information

Stack Height: 200.00 ft. 60.96 m. Stack Diameter 6.50 ft. 1.98 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 20.10 ft/second. 6.13 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	
	HEPA	2	In series
	Fan	2	2 in parallel (with one as a backup)

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Appendix B, Method 114 NDA as detailed in conditions below.	All radionuclides that contribute greater than 10 percent of the potential-to-emit TEDE to the MEI, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, and greater than 25 percent of the TEDE to the MEI after controls	Particulates shall be continuously sampled and analyzed every two weeks for gross alpha and gross beta/gamma, composited quarterly, and analyzed isotopically.

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the T Plant Complex involve operations supporting missions described as follows. This 200 foot tall stack exhausts HEPA filtered air from the 221 T canyon, 224 T process cells, and process ventilation system. The 291 T 1 stack became a major emission unit on January 5, 2005, when the first large diameter container of north loadout pit sludge was accepted at 221 T Building. Particulate emissions are sampled. The T Plant Complex consists of two main structures: the 221 T Building and the 2706 T Facility. The 221 T Building is one of the original fuel processing facilities. The last fuel processed there was in 1956. The 221 T Building and the 2706 T Facility are used for the treatment, storage, repackaging, sampling, and verification of waste containers. Liquid waste was treated and stored in tank systems and radioactively contaminated equipment decontaminated in both structures.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Consolidated T Plant Operations	AIR 06-666	7/5/2006	711

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.60E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

This consolidated T-Plant license supersedes all radioactive air licenses for 291-T-1.

a. This approval subsumes those activities approved in three previous license approvals, retains/revises the specific conditions and limitations of those approvals, and replaces them as the radioactive air license for T-Plant:

i. AIR 03-1208 (NOC ID # 445, "Storage in T-Plant Complex of Sludge from K-Basins")
ii. AIR 01-1010 (NOC ID # 499, "T-Plant Complex Fuel Removal Project")
iii. AIR 02-704 (NOC ID # 500, "Entering and Characterizing of the 224-T Facility Process Cells")

b. With additional conditions and limitations provided herein, this approval also extends to new activities discussed in the NOC application "Radioactive Air Emissions Notice of Construction for Consolidated T Plant Operations", DOE/RL-2004-50, Rev. 0, September, 2004, described briefly:

i. Receipt, Storage, Treatment, and Load out of Contact-Handled and Remote-Handled Transuranic (TRU) and Transuranic Mixed Waste (M-91Initiative)
ii. Treatment (in addition to storage) of K-Basin Sludge from the North Load out Pit (NLOP)
iii. Such activities considered routine at T Plant as are described in succeeding conditions.

Activities a)i through a)iii may emit radioactive air through 291-T-1. Additionally, activity a)iii may emit to the 200 Areas Diffuse & Fugitive emission unit and to Portable Temporary Radioactive Air Emission Units.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.20E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241	1.38E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
isotopic distribution based on destrutive analysis of pre-filter four			
Cs - 137	1.46E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239/240	1.38E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sr - 90	1.94E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241 Cs - 137 Pu - 239/240 Sr - 90

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) As described in the NOC, compliance to ASME/ANSI AG-1 is limited to the replacement of HEPA filters in the ventilation systems. Replacement filters must meet the qualifications testing of AG-1 and deviations approved by DOH. (WAC 246-247-040(5))

5) USDOE shall demonstrate that the emission unit monitoring system complies with or is equivalent to the requirements of ANSI Standard N13.1 1999. This demonstration shall be completed by December 31, 2005, and a report of this work shall be submitted by 31 March, 2006 using the ANSI N13.1 1999 Table 6 performance criteria. Calculated transport, transmission, and aspiration values are acceptable in lieu of measurements. A flow

traverse to determine the coefficient of variation (COV) taken in one direction only is acceptable, flow asymmetries in the stack cross section not having been observed in COV determinations performed on stacks of approximately similar configuration. The licensee shall notify WDOH by January 15, 2006, if the flow traverse measurements will not support a compliant COV value; approval for an alternate method shall in that case be obtained by 15 March 2006, or all processing activities governed by this approval shall cease (WAC 246-247-060(5)).

6) A hold point shall be placed on sludge storage activities immediately prior to receipt of sludge in the T-Plant Complex. The USDOE shall notify the WDOH of readiness to receive waste, and the WDOH shall perform an inspection of T-Plant facilities to ensure acceptability of the 291-T-1 stack for operation as a major emission unit (WAC 246-247-060(5)).

7) All activities involving radioactive materials shall be conducted in accordance with radiation control procedures approved per applicable QA program. (WAC 246-247-040(5))

8) Calibrate all differential pressure gauges associated with 291-T-1 HEPA filters annually. (WAC 246-247-040(5))

9) Prior to storing sludge in the T-Plant Complex, USDOE shall perform a complete engineering evaluation of the 291-T-1 stack to ensure its structural integrity. USDOE shall provide to WDOH for review copies of the procedures used to perform this review, together with the results of the review. USDOE shall also provide to WDOH a written plan for remediation of any deficiencies, including a timeline for the remediation. (WAC 246-247-040(5))

10) Receipt and Storage of K-Basins Sludge:

A. Receipt, Treatment, Storage and Load out of north load out pit (NLOP) Sludge:

A1) Sludge treatment consists of mixing the sludge with grout via the following major process steps:
A1a) Transferring sludge from Large Diameter Container into the grout system.
A1b) Sampling to ensure grouted containers meet waste isolation project plant (WIPP) acceptance requirements.
A1c) Transferring aliquots into WIPP certified 55 gallon drums.
A1d) Grouting to meet WIPP waste acceptance criteria.
A2) Prior to treatment, NLOP sludge shall be stored in T-Plant process cells 3L, 10L, 13L, 15L, 8R, 9L, 14R, and/or 16R.
A3) Containerized and grouted sludge shall be stored for not longer than 23 years from the date of issue of this license within the T-Plant complex.
A4) Containerized and grouted sludge shall be stored within the TSD unit boundary, and disposed according to assay of individual containers.
A5) The potential-to-emit of NLOP sludge received at T-Plant shall not exceed 0.9 mrem/year, corresponding to 120 DE Ci.

B. Receipt and Storage of K-Basins Sludge:

B1) Preparation of cells to receive sludge containers, which shall be limited to the following activities:
B1a) Intrusive cell operations to relocate items within cells and to transfer items between cells.
B1b) Removal of cell contents, which shall be limited to the following operations.
B1b1) Remote crane operations using lifting bails and clamshells.
B1b2) Pumping of liquids.
B1b3) Vacuum suction.
B1b4) Storage, repackaging, and treatment of containerized and uncontainerized radioactive waste.
B1b5) Waste characterization, verification, repackaging, size reduction, segregation, immobilization, and consolidation.
B1b6) Preparation of waste shipments in accordance with acceptance criteria for other facilities.
B1b7) Treatment and storage of liquid mixed waste.
B1c) Storage of contaminated process equipment and debris in the 221-T Canyon Building cells and deck shall be limited to:
B1c1) Tanks, pulsers, precipitators, centrifuges, and jumpers/connectors.
B1c2) Decontamination equipment, immersion tanks, sprayers, and blasters.
B1c3) Equipment racks, pumps, mixers, and motors.
B1c4) Original equipment (prior to decontamination mission).
B1c5) Condensers, chillers, filter assemblies, and columns.
B1c6) Open and closed boxes, drums, and containers, filled with debris.

B1c7) Tools, concrete blocks, and loose debris.
B1d) Refurbishing, recycling, and maintenance of contaminated equipment shall be limited to the items of equipment listed above.
B1e) Decontamination of equipment and materials, which shall be limited to the following operations:
B1e1) Hand, spray, and abrasive methods.
B1e2) Steam cleaning.
B1e3) High pressure hot water.
B1e4) High pressure cold water
B1e5) Ice blasting.
B1e6) Abrasive tools.
B2) The chemical and physical processes associated with the sludge storage shall consist of the following:
B2a) After all existing 72 fuel assemblies have been removed and the spent fuel pool water has been removed in accordance with the T-Plant Complex Fuel Removal NOC (DOE/RL-2000-64, Revision 1), the 221-T Canyon spent fuel pool shall be decontaminated by T-Plant operation personnel. Following the activities covered in the fuel removal NOC (DOE/RL-2000-64, Revision 1), disposal of fuel assembly racks, the filtration system, ion exchange system, and any residual contamination on the pools walls and floor shall be accomplished using the following methods:
B2a1) Hand, spray, and abrasive methods.
B2a2) Steam cleaning.
B2a3) High pressure hot water.
B2a4) High pressure cold water.
B2a5) Ice blasting.
B2a6) Abrasive tools.
B2b) Radioactive waste shall be managed in accordance with written facility and Hanford Site waste management procedures and acceptance criteria. Criteria for moving containers from the canyon into the tunnel include the requirements that smearable contamination on the outside of the container must be less than 400 dpm/100 cm2 alpha and less than 20,000 dpm/100 cm2 beta/gamma for low risk evolutions. For medium risk evolutions the criteria for moving containers from the canyon into the tunnel shall include the requirements that smearable contamination on the outside of the container must be less than 2,000 dpm/100 cm2 alpha and less than 100,000 dpm/100 cm2 beta/gamma.
B2c) New liner systems shall be installed in the pool if storage under water is required and in four to twelve of the process cells. Existing water conditioning systems (coolers, filtration system, ion exchange columns, and piping) shall be used, modified, replaced or removed if storage under water is required.
B2d) Spent nuclear fuel (SNF) sludge retrieved from the 105-KE and 105-KW Basins shall be managed as two separate waste streams. Sludge containers configured for dry storage shall be used for less reactive floor and pit sludge components, including windblown sand and rocks, spalled concrete from the basin walls, iron and aluminum corrosion products, ion exchange resin beads, uranium oxides, and uranium fuel particles. More reactive sludge collected in the knockout pots and settler tank during SNF retrieval and processing at K-Basins shall be stored in a container configured for storage under water or for dry storage if allowed by criticality and thermal analyses.
B2e) Physical upgrades to the 221-T Canyon, as determined in final design, shall include installation of new cell containment, liner bracing systems, sump pumps, leak detectors, and instrumentation and controls in the 221-T Canyon.
B2f) Fire protection alarms and automatic sprinkler systems shall be upgraded in 221-T before sludge containers configured for storage of waste from knockout pots and settler tanks is received. Licensee may submit additional information bearing on this condition at any time.
B2g) Canyon radiation detectors, alarms, and cameras will be upgraded to provide surveillance.
B2h) Sludge containers shall be designed to ensure a safe storage configuration, based on final design results determined in criticality and heat rejection requirements analysis. Final design shall analyze maximum sludge loading and container sizing to minimize the number of transfers and number of containers.
B2i) Contents of filled sludge containers shall consist of a layer of sludge below a layer of water and a layer of air to provide a void space in each container. Sludge containers shall be capable of maintaining sludge in a wet state during transport and storage.
B2j) Sludge containers shall be received and placed into interim storage in the 221-T Canyon, configured for dry cell storage or storage under water. All sludge container handling and placement within the 221-T Building shall be performed remotely via crane operations.
B2k) The containers shall be transported from K- Basins to the 221-T Building via tractor and trailer. Each transfer

shall consist of one transport cask which shall be inspected upon receipt according to approved receipt methods.
B2l) Sludge container unloading operations shall be done remotely using the canyon crane system. T-Plant Complex personnel shall vent and purge the transport cask with non-radioactive inert gas within the controlled airspace. The purge/venting system shall include a radiation detection method to verify that the storage container does not leak during transport and shall purge all hydrogen from the transport cask.
B2m) As a sludge container is moved from the tunnel into the canyon, operations personnel shall verify remotely the identification number and record the container number, via existing camera systems. After the container is removed from the cask, an empty container will be placed in the cask and the lid shall be replaced. The transport system shall be surveyed for possible contamination on exiting the Radiological Area and will return to K- Basins.
B2n) After the sludge containers are placed in the 221-T Canyon interim dry storage location, surveillance shall be performed to ensure that safety, regulatory, and safeguards and security requirements are met. Water levels within the dry storage containers shall be monitored (weight differential), and water additions shall be made remotely.
B2o) After sludge containers are placed in the interim underwater pool storage location, surveillance shall be performed to ensure that safety, regulatory, and safeguards and security requirements are met. Pool storage conditions (water quality, water temperature, water level, and ion exchange column status) shall be monitored, and water shall be added as needed to the pool to maintain the necessary water depth.
B2p) After removal of the fuel assemblies and the pool water, a hold point shall be placed on further spent fuel decontamination activities, pending the establishment of acceptable levels for decontamination of the 221-T Canyon spent fuel pool. The USDOE shall propose a set of decontamination levels for review by WDOH, and decontamination work shall not continue until the WDOH has reviewed and accepted these levels. (WAC 246-247-040(5))

11) Receipt, Storage, Treatment, and Load out of Contact-handled and Remote-handled transuranic (TRU) and transuranic mixed (TRUM) (M-91 Initiative):

A. M91 project activities shall be conducted in T-Plant within the head end, the railroad tunnel, and/or the T-Plant Canyon. M-91 waste shall be received at the head end or at the railroad tunnel. M91 waste is remote or contact handled transuranic, transuranic mixed, mixed, or mixed low level waste.

B. M-91 waste containers shall be opened and their contents treated in the head end of T-Plant only under containment, containment being defined here as either vented and HEPA-filtered glove box/bag, sealed glove box/bag, ventilated and HEPA-filtered containment tent or ventilated and HEPA-filtered solid-structure temporary containment, or PTRAEU. Where active ventilation is provided, that ventilation shall discharge into the T-Plant canyon so that radioactive air emissions originating in this process are further controlled by the 291-T-1 ventilation system controls. Procedures (approved in accord with applicable QA program) to ensure the initial integrity of the containment and to ensure the continued integrity of the containment structures shall be followed, shall include periodic radiological surveys, and shall be kept available for WDOH review. The head end will be posted based on radiological conditions in accordance with radiation control procedures approved per applicable QA program.

C. M-91 waste containers shall be opened and their contents treated in the railroad tunnel and/or canyon of T-Plant, in accord with radiological control procedures (approved in accord with applicable QA program).

D. Lower risk M-91 containers may be received at the head end of T-Plant, and higher risk M-91 containers shall be received at the railroad tunnel. Risk criteria, including radiological risk considerations, governing receipt location shall be developed and documented.

E. Surface contamination and dose rate limits on M-91 waste containers received at T-Plant shall be governed by approved solid waste acceptance procedures. Deviations from approved solid waste acceptance procedures are allowed under a controlled waiver process. Stand-alone solid waste acceptance documents specifying surface contamination and dose rate limits shall be developed and approved for any M-91 containers received under the waiver process. These procedures shall be kept readily available for WDOH review. Documentation shall be sufficient to allow ready identification of the criteria under which each waste container is accepted, and shall note definite compliance with the applicable criteria on receipt.

F. Applicable surface contamination/dose rate criteria shall be documented for each container of M-91 waste repackaged at T-Plant for transshipment. Documentation of applicable criteria and compliance thereto shall be maintained for M-91 waste containers shipped from T-Plant.

G. Receipt, Storage, Treatment, and Load out of Contact-Handled and Remote-Handled Transuranic (TRU) and Transuranic Mixed Waste (M-91Initiative) includes the following activities:
G1) Receiving.
G2) Sorting.
G3) Storing.
G4) Size Reduction.
G5) Repackaging.
G6) Containerizing.
G7) Load out.
G8) Treatment. (WAC 246-247-040(5)).

12) Routine T-Plant Activities:

A1) Packaging and Repackaging Waste - Packaging and repackaging activities are performed for waste generated at T-Plant as well as for onsite and offsite generators. Packaging and repackaging activities are:
A1a) Sorting.
A1b) Segregation.
A1c) Removing prohibited items.
A1d) Compositing/aggregating solids or liquids.
A1e) Adding absorbent.
A1f) Size reduction [e.g., cutting (jaws, saws, torches)], bending, folding, crushing (e.g., drum crusher), shredding, compacting, or similar methods that do not have a higher extent of disruption].
A1g) Void filling.
A1h) Pressure relief/release (e.g., aerosol cans, gas cylinders, drums, or other similar containers).
A1i) Aerosol can/drum puncturing.
A2) Verification Activities - Verification support activities are provided for waste and other materials that are generated on or off the Hanford Site. Verification activities are:
A2a) Physical observation.
A2b) Nondestructive examination (NDE).
A2c) Nondestructive assay (NDA).
A2d) Chemical field screening.
A2e) Radiological surveys.
A2f) Radiological samples.
A2g) Headspace gas analysis.
A2h) Chemical sampling.
A3) Sampling Activities - Sampling of waste generated by operations or by other onsite or offsite generators is performed. The purpose of sampling is to confirm process knowledge, characterize waste, support verification, and determine land disposal requirements as applicable. Sampling activities are:
A3a) Field screening [e.g., pH paper, oxidizer, volatile organic analyses (VOAs), polychlorinated biphenyls (PCBs), or similar screening parameters].
A3b) Obtaining a sample for analysis [e.g., grab, composite, composite liquid waste sampler (COLIWASA), or other similar sampling techniques].
A3c) Shipping/transferring the samples to an approved laboratory for analysis.
A3d) Disposition of sample returns (e.g., placement back into the parent container or another approved container/tank).
A3e) Headspace gas analysis [typically in support of the Waste Isolation Pilot Plant (WIPP) Project].
A3f) Tank sampling (liquid, sludge, salt cake, composites).
A4) Decontamination/Refurbishment Activities - Materials, equipment, and waste can be decontaminated (e.g., free release, reduce the radiological levels, or other similar criteria) using a variety of methods. T-Plant also performs decontamination of T- Plant structural components (e.g., 221-T Building walls, cells, or other similar surfaces). Decontamination activities at T-Plant are:
A4a) Water (fog, high or low-pressure spraying).
A4b) Steam.
A4c) Ice blasting.
A4d) Vacuum blasting.
A4e) Brushing.

A4f) Abrasive tools.
A4g) Scraping.
A4h) Washing (e.g., chemicals/detergents).
A4i) Immersion.
A4j) Electro-polishing.
A4k) Cutting (e.g., removal by sawing, torch cutting more highly radioactive components or other similar methods).
A4l) Rust/paint removal.
A5) Maintenance Activities - A variety of preventative and/or repair maintenance activities are performed at T-Plant. Some maintenance activities involve the temporary shut down of the 291-T-1 exhaust stack. Maintenance activities are:
A5a) Painting.
A5b) Crane maintenance.
A5c) Electronic systems functional checks and repairs [CAMs, personnel contamination monitors (PCMs)].
A5d) Calibrations.
And may be performed on:
A5e) Rollup doors.
A5f) Heat pumps.
A5g) Exhaust fans.
A5h) Transformers.
A5i) Scale systems.
A5j) Wire rope.
A5k) Stack systems fan lubes.
A5l) Forklifts.
A6) Waste Treatment Activities - T-Plant is a treatment facility permitted by the Washington State Department of Ecology (Ecology). Treatment activities are:
A6a) Macroencapsulation.
A6b) Absorption.
A6c) Neutralization.
A6d) Immobilization.
A6e) Encapsulation.
A6f) Stabilization (solidification, cementation, grouting).
A6g) Compaction.
A6h) Amalgamation.
A6i) Segregation.
A6j) Shredding.
A6k) Venting.
A6l) Size Reduction.
A7) Recycling Activities - Materials are recycled whenever possible. Recycled materials are collected in accumulation containers in approved locations and transferred to the Recycling Center. Only nonradioactive materials are sent to the Recycling Center. Some radioactive materials (ferrous and nonferrous metals) can be recycled. Recycled materials are: ferrous and non-ferrous metal, light bulbs, aerosol cans, oils, and batteries.
A8) Storage Activities - T-Plant is permitted for waste storage by Ecology. Plant also stores other materials (chemicals, or equipment, or similar materials) to support operations. Radioactive wastes may be stored uncontainerized or in:
A8a) Containers (boxes, drums, tanker trucks/railcars, or large diameter containers).
A8b) Tanks.
A8c) Sumps and pipes.
A9) Equipment, Materials, and Waste Movement Activities - The movement of materials, equipment, waste, chemicals, or similar items involves the receipt and/or transferring/shipping, and movement and/or relocation within the T-Plant TSD unit boundary. Movement activities (using a forklift, crane, truck, dolly, personnel) are:
A9a) Receiving waste (liquid, solid, semi-solid) for storage and/or treatment.
A9b) Movement of waste (liquid, solid, semi-solid) and equipment in or out of process cells, canyon deck craneway, or tunnel in the 221-T Building.
A9c) Movement of liquids, sludges, or other waste from containers and/or tanks via transfer lines.
A9d) Waste container transfers (among outdoor storage pads, within buildings, process cells, canyon deck, or other approved locations).

A9e) Placing and storing chemical products in flammable cabinets or other approved storage locations.
A9f) Transloading from the 221-T tunnel to canyon deck and/or process cells.
A10) Housekeeping Activities - Housekeeping activities involve maintaining T-Plant in a clean and orderly condition. Housekeeping activities are:
A10a) Sweeping (brooms).
A10b) Mopping (squeegees or mops).
A10c) Vacuuming.
A10d) Dusting.
A10e) Wiping (sponges, towels).
A10f) Picking up debris.
A10g) Removal of trash.
A11) Surveillance Activities - Surveillance activities involve walking down and inspecting various areas, systems, and components. Surveillances typically consist of daily, weekly, and monthly inspections of waste containers, tanks, buildings, or similar locations. Surveillances are subject to change (adding, deleting and/or modifying) as operations, maintenance, engineering, and radiological control dictates. Surveillances, inspections, and maintenance activities that do not have the potential to create airborne contamination can occur within the 221-T Building when the 291-T-1 exhaust stack emission system is shutdown. The following surveillances are performed at T-Plant:
A11a) Container storage areas treatment and storage tanks and ancillary equipment.
A11b) General condition of building structures.
A11c) Safety Cold weather surveillances (typically, between October 1 and March 31).
A11d) Inspection of equipment.
A11e) Inspection of HEPA filtered vacuums.
A11f) Radiological surveys.
A12) Contamination Within the Canyon - The operational activities described inherently involve the spread of contamination within the canyon. The canyon is designed to provide containment for these operational activities. Job specific contamination controls are used (spreading paper to facilitate easy decontamination, fogging, fixing contamination, covering, performing operations remotely or other similar methods that cover, seal, or remove smearable contamination). (WAC 246-247-040(5))

13) The abated and unabated emissions for this license have been estimated using particulate 241-Am, 239/240-Pu, 137-Cs, and 90-Sr, based on the isotopic distribution measured in destructive analysis of a T-Plant pre-filter, a Dose Equivalent-Curie limit of 15,000 DE-Ci, and also include a small contribution from gaseous radionuclides that may be encountered. The amounts of radioactive gases included are: (3-H, 25 Ci), (85-Kr, 3000 Ci), (129-I, 0.05 Ci), (219-Rn, 0.2 Ci), (220-Rn, 30 Ci), (222-Rn, 2 Ci). Radionuclides that may be encountered as particulates are: 242-Cm, 243-Am, 244-Cm, 60-Co, 134-Cs, 154-Eu, 40-K, 94-Nb, 237-Np, 238-Pu, 241-Pu, 242-Pu, 244-Pu, 226-Ra, 106-Ru, 125-Sb, 228-Th, 234-Th, 232-U, 233-U, 234-U, 235-U, 236-U, 238-U. Other particulate radionuclides are permitted, the total to remain within the DE-Ci limit of 15,000 DE-Ci and the abated emission limit of the license. Gaseous radionuclides are permitted, the sum of doses from radioactive gases to remain less than 6% of the total abated emission limit for this license.

This condition does not apply to naturally occurring Radon.

14) The adequacy of the sampling system must be maintained by a minimum of annual inspections, calibrations and maintenance activities as scheduled in the T-Plant Facility procedures. The frequency of these activities cannot be diminished from their current approved level without concurrence from WDOH. (WAC 246-247-040(5))

15) The alternative flow measurement method proposed for the 291-T-1 stack by USDOE letter 03-RCA-0210, dated April 9, 2003, is approved for use (WAC 246-247-075(3)).

16) The annual inspection and maintenance of the HEPAs must include visual inspection of the filter housing. Documentation of these activities must be made available to DOH upon request. (WAC 246-247-040(5))

17) The document "291-T-1 Exhaust Stack Inspection Report," HNF-15560, contains conclusions and recommendations for stack improvements, including the fabrication and installation of a new stack weather cap. These recommendations shall be addressed, and documentation of their resolution shall be forwarded to WDOH for approval by June 1, 2005 (WAC 246-247-060(5)).

18) The emission unit monitoring system shall have the following activities performed:
A1) By December 31, 2005 and annually thereafter:
A1a) A visual check of nozzle position and orientation as well as measurements of nozzle openings;
A1b) Checks to ensure the tightness of all fittings and connections as well as a leak test of the entire sampling

system.
A1c) Visual inspections for corrosion, physical damage, or dust loading of the probe, sample lines, and monitoring system equipment.
A2) Annually, from December 31, 2003:
A2a) A functional/calibration check of monitoring system instrumentation shall be performed.
A2b) USDOE shall provide to WDOH for review copies of the procedures used to perform the above activities. (WAC 246-247-060(5)).

19) The PTE at T-Plant shall be tracked in DE curies. A running total of DE curies present at the beginning of the calendar year plus DE curies introduced into T-Plant during that year shall be maintained and kept available for WDOH review. This record shall be made current at no greater than weekly intervals. That the total does not exceed license limits shall be routinely verified, and documentation of that verification shall be maintained. (WAC 246-247-040(5)) (WAC 246-247-060(5))

20) The Quality Assurance Standards for the sampling of emissions and subsequent analysis must remain in compliance with HNF-0528 NESHAPS Quality Assurance Project Plan for Radioactive Airborne (all of sections 2.0, 3.0, 5.0). (WAC 246-247-060(5))

21) The relative humidity must be measured with a calibrated hygrometer or with wet and dry bulb readings as allowed in Method 2.
Methods 4, 5 and 17 are not applicable to radioactive airborne effluent stacks. (WAC 246-247-040(5))

22) The stack must be operated to maintain near isokinetic sampling (WAC 246-247-040(5)).

23) T-Plant Fuel Removal Project:

A. The spent fuel pool filtration system must be reactivated and placed in service before removal of the fuel assemblies to increase water clarity. The pool water chemistry must be maintained and monitored while the PWR-2 fuel is removed.

B. Monitor at least monthly the water quality of the spent fuel pool for Cobalt-60 and Cesium-137. The low radionuclide concentrations are evidence that the integrity of the fuel cladding is intact. Notify DOH immediately if the activity levels of the water increase during fuel removal to a level greater than two times the established levels (0.01 microcuries per milliliter) for the pool; i.e., 0.02 microcuries per milliliter.

C. The radionuclides of concern for this fuel removal project are Iron-55, Cobalt-60, Nickel- 63, Strontium-90, and Plutonium-238 from the crud (external surface contamination on the fuel assemblies) Cobalt-60 and Cesium-137 in the pool water.

D. The scope of the T-Plant Complex Fuel Removal Project is limited to the activities required to prepare for, and perform fuel handling, canister loading, canister drying and creating an inert atmosphere inside the canister, and cask loading within the 221-T Canyon, and subsequent cask transportation to the Canister Storage Building (CSB).

E. The removal activities covered under this NOC are limited to the 72 PWR-2 fuel assemblies currently in the 221-T spent fuel pool.

F. The transport cask must be designed to preclude the potential release of radioactive emissions.

G. Upon completion of the project, the pool water will be pumped out and transferred (e.g. tanker trucks or hard piping) to a permitted liquid waste treatment/disposal facility.

H. Approved activities for the T-Plant Fuel Removal Project are:

H1) Remove all spent nuclear fuel assemblies from the spent fuel pool in the T-Plant Complex 221-T Canyon for interim storage in the Canister Storage Building. The activities required for fuel removal are limited to the following:
H1a) Retrieval of PWR-2 fuel assemblies from their current pool storage racks in the 221-T Building.
H1b) Insertion of PWR-2 fuel assemblies into Shippingport Spent Fuel Containers (SSFCs) and closure with shield plugs.
H1c) Fuel conditioning within the SSFCs. This includes the drying of the fuel, and replacing the air inside the SSFCs with an inert atmosphere.

H1d)Transfer of the SSFCs to the CSB.
H2) The chemical and physical processes associated with the T-Plant Complex Fuel Removal Project are limited to the following:
H2a) The SSFCs (with inserts installed), shield plugs, shield plug seals, and required tools will be staged at the T-Plant Complex. The skid-mounted fuel conditioning system will be placed in the 221-T Tunnel.
H2b) The SSFCs/cask/transporter will be moved into the 221-T Tunnel and the loading guide will be installed into the SSFCs.
H2c) The hoist will be moved to the spent fuel pool using the canyon bridge crane to position. The fuel assembly will be grappled remotely, raised from the pool, and the fuel assembly identification number will be recorded.
H2d) The fuel assembly will be transferred over the cell partition and lowered into the SSFCs. After four fuel assemblies are placed into an SSFCs, the shield plug will be installed and the SSFCs will be sealed mechanically.
H2e) The SSFCs will remain on the transporter trailer during loading and conditioning operations within the fuel transport cask, and will be connected to the fuel conditioning system via the process port on the shield plug. The SSFCs will be conditioned by pulling a vacuum to dry the fuel, backfilling with helium, pulling a vacuum again, and refilling the SSFCs with helium to inert the atmosphere surrounding the fuel. The SSFCs will be leak tested to verify closure and the process port cover plate will be closed.
H2f) The cask lid will be placed on the cask and bolted in place (airtight) and the cask will be transported to the CSB. After off-loading the SSFCs at the CSB, the cask and transporter will be returned to the 221-T Tunnel. It will take 18 trips to transfer the 72 fuel assemblies.
H2g) The transport cask must be designed to preclude the potential release of radioactive emissions.
H2h) The fuel conditioning system skid will be dismantled and removed from the 221-T Canyon.

(WAC 246-247-040(5))

24) T-Plant must continue to demonstrate that the adequacy of their system design and operation is equivalent to the intent of ASME/ANSI N 510. Both stages of HEPA filtration must be individually aerosol tested in place, a minimum of annually (at a minimum control efficiency of 99.95 percent). (WAC 246-247-040(5))

25) Until the requirements below for the emission unit monitoring system are met, non-destructive analysis (NDA) shall be performed annually on the final stage of the HEPA filters for the 291-T-1 stack. The NDA method used for this measurement shall be capable of measuring a minimum detectable activity (MDA) of 1 uCi or less. USDOE shall provide to WDOH for review, copies of written procedures for conducting the NDA measurement and for determining the MDA. The MDA of the NDA measurement method shall be verified at each measurement, and the results of the verification shall be provided to WDOH. (WAC 246-247-040(5))

Emission Unit ID: 315

200W P-296T007-001

296-T-7

This is a MINOR, ACTIVELY ventilated emission unit.

T PLANT COMPLEX

Emission Unit Information

Stack Height: 28.00 ft. 8.53 m. Stack Diameter 2.30 ft. 0.70 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 81.00 ft/second. 24.69 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Demister	1	To operate per Conditions and Limitations of the license.
	Heater	1	To operate per Conditions and Limitations of the license.
	Prefilter	1	
	HEPA	1	
	Fan	1	To operate per Conditions and Limitations of the license.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(c)(4)(e) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	See special conditions.

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the T Plant Complex involve waste management operations in support of decontamination and decommissioning mission at the Hanford Site. This 28 foot tall stack exhausts filtered air from the 2706 T and 2706 TA Buildings when decontamination, treatment, storage, sampling, etc., activities were performed or other activities were underway that had the potential to increase airborne radionuclide contamination; otherwise, the stack does not operate. Particulate emissions are sampled. The T Plant Complex consists of two main structures: the 221 T Building and the 2706 T Facility. The 221 T Building is one of the original fuel processing facilities. The last fuel processed there was in 1956. The 221 T Building and the 2706 T Facility are now used for the treatment, storage, repackaging, sampling, and verification of waste containers. Liquid waste was treated and stored in tank systems and radioactively contaminated equipment decontaminated in both structures.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
T Plant Complex Secondary Containment and Leak Detection Upgrades	AIR 06-612	7/5/2006	640

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 6.01E-08 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16),

may be conducted.

The 2706-T Building is 18-meters wide, 20-meters long, 7.6-meters high, constructed of prefabricated steel. The 2706-T Building shall be used to decontaminate/treat railroad equipment, buses, trucks, automobiles, road building equipment, eprocess equipment, and other types of equipment as requested. The methods used by operations personnel to decontaminate/treat these items are limited to ice blasting, abrasive blasting, steam cleaning, hand wiping and sanding, grinding and cutting. The building contains two pits over which liquid generating activities are performed. Liquid mixed waste generated by this process is collected in the Railroad Pit and currently transferred to the 221-T Tank System before transfer to Double Shelled tanks (DST) System. Sampling, treatment, verification, and repackaging waste containers and boxes also are conducted in the 2706-T Building.

The 2706-TA is a pre-fabricated steel building erected on an existing concrete pad located next to the 2706-T Building. The 2706-TA building is limited to work similar to the existing activities that are being performed within the 2706-T Building.

A new building, 2707-TB will be constructed adjacent to the existing 2706-T/TA buildings for management of radioactive and mixed decon waste. Two new stainless steel storage tanks 15,000 gal and 6,000 gal will be located within the 2706-TB containment building. Both tanks will have concrete secondary containment catch basins, sized to catch 110% of the tank volume. The tanks shall be equipped with leak detection systems, transfer piping, and basin/pit sump liners. The ancillary equipment will also have secondary containment. A waste transfer pipe from the 2706-T/TA decon facility shall be connected to the new tanks. Prior to being transferred from the Railroad Pit to these tanks, the waste shall be routed thought a new filtration and liquid waste load-out system.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	3.36E-06	Co - 57	1.74E-06	Cs - 137	8.00E-06
Pu - 239	1.05E-05	Sr - 90	1.53E-03		

Emission Unit ID: 332

200W P-291S001-001

291-S-1

This is a MINOR, ACTIVELY ventilated emission unit.

S PLANT (REDOX)

Emission Unit Information

Stack Height: 200.00 ft. 60.96 m. Stack Diameter 6.50 ft. 1.98 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 11.30 ft/second. 3.44 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Sandfilter	1	
	Fan	2	In parallel, only 1 operates at a time

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This 200 foot tall stack exhausts filtered air from the reduction and oxidation (REDOX) canyon, vessel ventilation system, and treated dissolver offgas system. Particulate emissions are sampled. REDOX also is known as the 202 S Building and as S Plant. REDOX operated as a fuel reprocessing facility until it was shutdown in 1967. Typical activities include routine maintenance of the emissions unit and surveillance and maintenance of the building.

Emission Unit ID: 337

200W P-296S016-001

296-S-16

This is a MINOR, ACTIVELY ventilated emission unit.

219-S Building

Emission Unit Information

Stack Height: 12.50 ft. 3.81 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 29.41 ft/second. 8.96 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a waste handling building/facility exhauster that is used to ventilate building and facility operations such as but not limited to liquid waste tanks that support tank farm waste characterization activities, research and development, environmental sample analysis, and Hanford operation and remediation projects.

Emission Unit ID: 340

200E P-296B010-001

296-B-10, WESF

This is a MAJOR, ACTIVELY ventilated emission unit.

Waste Encapsulation and Storage Facility (WESF)

Emission Unit Information

Stack Height: 75.00 ft. 22.86 m. Stack Diameter 3.50 ft. 1.07 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 42.20 ft/second. 12.86 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
K-1 Filter Bldg.	Prefilter	2	In series
K-1 Filter Bldg.	HEPA	2	In series
K-1 Filter Bldg.	Fan	1	2 in parallel
K-3 Filter Pit	Demister	1	Not operable
K-3 Filter Pit	Heater	1	Not operable
K-3 Filter Pit	Impingement Vanes	1	
K-3 Filter Pit	HEPA	2	2 parallel flow paths, in-series
K-3 Filter Pit	Fan	1	2 parallel paths (1 in-use, 1 backup)

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 appendix A Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10% of the potential TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the WESF involve operations for safe surveillance and maintenance of radioactive capsules. This 75 foot tall stack exhausts filtered air from the 225 B Building. Particulate emissions are sampled. At WESF, 90Sr and 137Cs from waste separations material were converted to solid strontium fluoride and cesium chloride, respectively. Those cesium and strontium compounds were separately double encapsulated and placed in water-filled storage basins at WESF. The current mission for WESF is to continue storing these radioactive capsules.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Waste Encapsulation and Storage Facility (WESF) Liquid Low Level Radioactive Liquid Removal from Tank 100.	AIR 06-617	7/5/2006	649

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.75E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Modification and continuous operations of the Waste Encapsulation and Storage Facility (WESF) liquid low level radioactive (LLLW) stream piping. The tank TK-100 serves as a catch tank for liquid low level radioactive waste streams originating from WESF, condensate from the K-1 and K-3 filter pits, and the 296-B-10 stack. TK-100 is ventilated through the WESF K-3 ventilation system and out of the 296-B-10 Stack.

The contents of TK-100 are emptied by pumping the LLLW to a tanker truck at the Truck Load-Out Port. In the event that additional storage capacity is needed, a new portable aboveground storage tank (nominal capacity of 4,000 gallons) will be installed at the Truck Load-Out Port and vented to TK-100 during filling operations. After filling the portable aboveground storage tank, the tank will be disconnected from the Truck Load-Out Port, a HEPA or NucFil filter shall be installed, and then the tank will be moved outside for storage until arrangements are made to dispose of the excess LLLW.

During normal operations the LLLW streams to TK-100 are less than 0.001 curie/liter of Sr-90 and Cs-137. In the event that the TK-100 contents are greater than or equal to 0.001 curie/liter of Sr-90 and Cs-137 during routine operations, a WESF Ion Exchange Module will be installed at the Truck Load-Out Port and the contents of TK-100 will be recirculated through the WESF Ion Exchange Module until the concentration is less than 0.001 curie/liter of Sr-90 and Cs-137. The WESF Ion Exchange Module will be vented to TK-100 during recirculation. Storage of the WESF Ion Exchange Module will normally be outdoors and will vent to atmosphere through a HEPA or NucFil filter. Use of the WESF Ion Exchange Module will continue up to a maximum loading of 20,000 curies of Sr-90 or 25,000 curies of Cs-137.

In addition, certain piping modifications will be made to the current WESF LLLW system. They are as follows:

A. TK-50 Vault
- Remove existing Tank 50 Vault Piping.
- Remove remaining equipment (e.g., Tank 50, Heat Exchanger, Pumps) if possible, and all other equipment and debris in the vault.
- Install new pipe.

B. Valve Pit 225B-VP-05
- Remove 3-way valve.
- Blank off line to B-Plant.
- Install new pipe elbow.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 3.51E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Release rates are not listed; emission release rates are controlled by special conditions.

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

Emission Unit ID: 355

300 EP-320-02-S

EP-320-02-S

This is a MINOR, ACTIVELY ventilated emission unit.

320 Building

Emission Unit Information

Stack Height: 32.00 ft. 9.75 m. Stack Diameter 0.83 ft. 0.25 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 14.80 ft/second. 4.51 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	In series
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Operations at the 320 Building support operations. This 32 foot tall stack emissions from a filtered chemistry hood. Particulate emissions are sampled. The building contains environmental radiochemistry laboratories.

Emission Unit ID: 357

300 EP-320-04-S

EP-320-04-S

This is a MINOR, ACTIVELY ventilated emission unit.

320 Building

Emission Unit Information

Stack Height: 26.00 ft. 7.92 m. Stack Diameter 0.59 ft. 0.18 m.

Average Stack Effluent Temperature: 76 degrees Fahrenheit. 24 degrees Celsius.

Average Stack ExhaustVelocity: 28.00 ft/second. 8.53 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Operations at the 320 Building support operations. This 26 foot tall stack emissions from filtered chemistry hoods. Particulate emissions are sampled. The building contains environmental radiochemistry laboratories.

Emission Unit ID: 358

300 EP-320-01-S

EP-320-01-S

This is a MINOR, ACTIVELY ventilated emission unit.

320 Building

Emission Unit Information

Stack Height: 40.00 ft. 12.19 m. Stack Diameter 5.00 ft. 1.52 m.

Average Stack Effluent Temperature: 76 degrees Fahrenheit. 24 degrees Celsius.

Average Stack ExhaustVelocity: 25.20 ft/second. 7.68 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	In series
	Fan	2	1 operational, 1 backup

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 320 Building support operations. This 40 foot tall stack exhausts filtered building ventilation air. Particulate emissions are sampled. The building contains environmental radiochemistry laboratories.

Emission Unit ID: 359

300 EP-323-01-S

EP-323-01-S

This is a MINOR, ACTIVELY ventilated emission unit.

323 MECH PROPERTIES

Emission Unit Information

Stack Height: 16.00 ft. 4.88 m. Stack Diameter 1.67 ft. 0.51 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 15.00 ft/second. 4.57 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Fan	1	Common to both areas
Hot Cell	HEPA	2	In series
Equipment Room	HEPA	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Operations at the 323 Building support operations. This 16 foot tall stack exhausts filtered building ventilation air. Particulate emissions are sampled. The building contains areas for investigating structural properties of irradiated materials.

Emission Unit ID: 361

300 EP-325-01-S

EP-325-01-S

This is a MAJOR, ACTIVELY ventilated emission unit.

325 Building Radiological Processing Laboratory

Emission Unit Information

Stack Height: 89.00 ft. 27.13 m. Stack Diameter 8.00 ft. 2.44 m.

Average Stack Effluent Temperature: 72 degrees Fahrenheit. 22 degrees Celsius.

Average Stack ExhaustVelocity: 47.10 ft/second. 14.36 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	2 in series
	Fan	3	4 in parallel (3 operational, 1 backup)

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 Appendix A; Appendix B, Method 114	Each radionuclide that could contribute greater than 10% of the potential TEDE	Particulates are continuously sampled and collected every two-weeks for gross alpha and gross beta analysis, and composited on a semi-annual basis and analyzed isotopically. Tritium samples are collected on a monthly basis for analysis.

Sampling Requirements Record Sample; tritium by silica gel

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This 89 foot tall stack exhausts filtered building air. Emissions were sampled using a record particulate sampler and a tritium sampler. The building contains radiochemistry laboratories and hot cells used for research process development, mixed waste treatment activities, and radioanalytical services.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Conducting General Laboratory Processes Research Activities in the 325 Building	AIR 06-646	7/5/2006	687

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.19E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Approved are the following laboratory activities conducted in the RPL:

- Characterizing chemical, radiochemical, and physical properties of samples (e.g., tank wastes, spent fuel, contaminated soils and water), as well as other gaseous materials, glass, ceramic, carbonaceous, or metallic waste forms.
- Performing research using high-level and low-level mixed tank wastes and their stimulants to test radiochemical process systems such as leaching, solvent extraction, ion exchange, vitrification, fuel dissolution, decontamination, evaporation, grouting, solid waste packaging/shipment, and high-level liquid waste shipping/receiving/transportation.
- Performing research and development for processing and immobilization support including waste separation, ion exchange, sludge washing/leaching, ultrafiltration, and oxidation/precipitation. Separated species are then immobilized into vitreous and other waste forms, which are subsequently characterized for product acceptability.
- Using a full suite of analytical capabilities for radiochemical and inorganic chemical analyses in support of process development, specializing in the analysis of highly radioactive materials and very complex sample matrices.
- Pretreatment of materials in preparation for analytical processing, waste treatment, and characterization.
- Developing methods for the separation of radioisotopes.
- Developing and testing radioisotope generators.
- Conducting Non-destructive assay (NDA).
- Characterizing and testing equipment for determining chemical and physical properties of spent nuclear fuels and associated materials to support processing and disposal pathways.
- Performing reactor dosimetry and hydrogen and helium measurements to characterize radiation damage in materials.
- Using instrumentation to conduct physical property measurement for rheological and chemical characterization of radiological and hazardous materials in support of process development.
- Measuring material particle size and density, zeta potential and rheology in support of general research as well as process development.
- Providing chemical and physical separations in support of radiological and hazardous material processing and disposal requirements. These technologies include: removal and concentration of hazardous and/or radioactive components for environmental remediation; separation of hazardous and/or radioactive materials, including solid/liquid phase separations; and, recovery of specific components for recycle and reuse.
- Characterizing complex reactor environments, including neutron fluence and spectral measurements, hydrogen and helium gas measurements, and extensive computer simulations of radiation damage effects.
- Developing thermal and vitrification processes to immobilize hazardous and radioactive materials into acceptable waste forms. Waste processing technology development includes design, process development, remote operations, and numerical and computational modeling.
- Performing nuclear magnetic resonance methods designed for investigation of radioactive materials in the environment, radioactive tank waste, plutonium bearing materials, and other DOE mission active areas as well as fundamental studies of actinide metal salts.
- Designing, installing, and testing radiochemical process systems (leaching, solvent extraction, ion exchange, vitrification, fuel dissolution, decontamination, evaporation, grouting, solid waste packaging and shipment, and high-level liquid waste shipping, receiving, and transportation).
- Using thermoanalytical instrumentation to measure reaction enthalpies, reaction kinetics and mass changes resulting from reactions, and determining the thermal sensitivity of the reaction.
- Perform analysis of reaction off-gases on a real-time or end-of-reaction basis to identify and quantify the gaseous reaction products, and investigate the thermal stabilities of candidate radioisotope waste forms, volatile radioisotope trapping materials and the potentially hazardous reactions between radioactive waste constituents.
- Separations and analyses of radionuclides for environmental measurements.
- Performing research with supercritical fluids to understand chemistry mechanisms and processes.
- Conducting wet chemistry techniques and the operation of specialized analytical instrumentation such as mass spectrometers, organic mass spectrometers, and the Inductively Coupled Plasma Spectrometers.
- Studies to decontaminate radioactive materials where metals may be hydrided or tritated and decontaminated in small electric furnaces in gloveboxes or fumehoods resulting in products (e.g., oxide materials) submitted for disposal.
- Research and development in processing and method to harden radioactive sources.
- Development of standards and testing methodologies for hardened radioactive sources.
- Analysis of samples for impurities and analysis of samples for purity.

The RPL also is approved to maintain two hot cell complexes for conducting work with highly radioactive materials. The High Level Radiochemistry Facility (HLRF) and Shielded Analytical Laboratory (SAL) hot cell complexes, and the stand alone mini-cells, provide unique, complimentary capabilities for conducting bench-scale to pilot-scale work with wide varieties and forms of radioactive materials. These capabilities include: radiochemical separation and purification; irradiated fuel/target sectioning and processing; metallography and ceramography; activated metals physical properties testing; thermal processing; materials physical properties testing (solid/liquid separation, centrifugation, settling behavior); radioanalytical and preparatory chemistry operations (acid dissolution, aqueous/solvent extraction or leaching, distillation, ion exchange, caustic fusion).

Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 2.09E+04 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Ac - 225		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ac - 227		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ac - 228		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 108		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 108 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 109 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 110		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 110 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 111		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Al - 26		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Al - 28		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Am - 241	3.50E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 242		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Am - 242 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Am - 243	5.40E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 245		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Ar - 37			Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ar - 39			Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ar - 41			Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ar - 42			Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
As - 74			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
As - 76			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
At - 217			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Au - 195			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Au - 198			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ba - 131			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ba - 133			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ba - 133	m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ba - 137	m	4.60E+04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ba - 139			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ba - 140			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ba - 141			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Ba - 142			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Be - 10			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Be - 7			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Bi - 207			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				
Bi - 210			Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.				

Bi - 211	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Bi - 212	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Bi - 213	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Bi - 214	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Bk - 249	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Bk - 250	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Br - 82	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Br - 83	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Br - 84	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Br - 85	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
C - 11	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
C - 14	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
C - 14	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
C - 15	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ca - 41	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ca - 45	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ca - 47	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cd - 109	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cd - 113 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cd - 113	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cd - 115	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Cd - 115 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 139		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 141		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 142		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 143		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ce - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cf - 249		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cf - 250		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cf - 251		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cf - 252	1.20E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cl - 36		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 242		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 243		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 244	1.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cm - 245		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 246		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 247		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cm - 248		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Co - 56		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Co - 57		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Co - 58		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Co - 60	1.60E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cr - 51		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cr - 55		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 131		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 134		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 134 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 135		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 136		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 137	1.70E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cs - 138		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 139		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cu - 64		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Es - 254		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu - 150		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu - 152		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu - 152 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu - 154	2.00E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 155	4.90E+03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 156		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu - 157		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
F - 18		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Fe - 55		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Fe - 59		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Fr - 221		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Fr - 223		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ga - 67		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ga - 72		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Gd - 148		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Gd - 149		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Gd - 151		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Gd - 152		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Gd - 153		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ge - 68		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
H - 3	3.00E+03	Gas	WAC 246-247-030(21)(a)
H - 3	1.30E+05	Gas	WAC 246-247-030(21)(a)
H - 3		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Hf - 175		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Hf - 178		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Hf - 178 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Hf - 181		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Hf - 182		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Hg - 203		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Ho - 166	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ho - 166 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 122	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 123	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 125	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 129	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 130	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 131	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 132	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 133	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 134	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 135	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 113 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 114	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 114 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 115	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 115 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ir - 192	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
K - 40	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
K - 42	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Kr - 81	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 83 m	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 85	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 85 m	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 87	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 88	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 89	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 90	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
La - 138	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
La - 140	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
La - 141	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
La - 142	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Lu - 177	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mg - 27	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 52	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 54	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 56	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mo - 93	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mo - 99	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
N - 13	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Na - 22	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Na - 24		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 91		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 91 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 92		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 93 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 94		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 95		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 95 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 97		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 97 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nd - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nd - 147		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ni - 56		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ni - 59		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ni - 63		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ni - 65		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 235		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 236		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 237	3.60E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Np - 238		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 239		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Np - 240	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Np - 240 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
O - 15	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
P - 32	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
P - 33	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pa - 231	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pa - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pa - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pa - 234 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 209	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 210	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 211	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 212	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 214	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pd - 107	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pd - 109	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 145	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 146	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 147	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 148	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 148 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Pm - 149		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pm - 151		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 208		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 209		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 210		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 211		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 212		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 213		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 214		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 215		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 216		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 218		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pr - 143		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pr - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pr - 144 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 234		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 236		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 237		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 238	5.70E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239	5.50E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 240	3.40E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 241	3.20E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Pu - 242	5.20E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Pu - 243	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Pu - 244	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 223	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 224	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 225	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 226	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ra - 228	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rb - 86	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rb - 87	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rb - 88	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rb - 89	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rb - 90	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rb - 90 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Re - 186	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Re - 187	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Re - 188	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rh - 102	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rh - 103 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rh - 105	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rh - 105 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Rh - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rn - 219	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rn - 220	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rn - 222	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 103	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 105	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 97	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
S - 35	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 124	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 125	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 126	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 126 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 127	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sc - 46	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sc - 47	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Se - 75	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Se - 79	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Si - 31	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sm - 145	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sm - 146	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Sm - 147		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sm - 151	5.40E+04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sm - 153		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sm - 157		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sn - 113		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sn - 117 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sn - 119 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sn - 121 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sn - 123		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sn - 125		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sn - 126		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sr - 85		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sr - 89		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sr - 90	3.60E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sr - 91		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sr - 92		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ta - 179		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ta - 182		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ta - 183	1.70E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Tb - 160		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tc - 101		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Tc - 95 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tc - 97		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tc - 97 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tc - 98		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tc - 99	1.80E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Tc - 99 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 121		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 121 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 123		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 123 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 125 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 127		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 127 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 129		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 129 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 131		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 131 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 132		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 133		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 133 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Te - 134		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Th - 227		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Th - 228	7.40E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Th - 229		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Th - 230		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Th - 231		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Th - 232	4.40E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Th - 233		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Th - 234		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ti - 44		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ti - 51		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tl - 204		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tl - 207		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tl - 208		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tl - 209		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tm - 170		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Tm - 171		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
U - 232	5.50E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 233	1.30E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 234	1.40E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 235	3.10E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 236	1.40E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 237		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

U - 238	6.10E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

U - 239		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
U - 240		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
V - 48		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
V - 49		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
W - 181		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
W - 185		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
W - 187		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
W - 188	1.70E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Xe - 122		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 123		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 125		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 127		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 131 m		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 133		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 133 m		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 135		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 135 m		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 137		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Xe - 138		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Y - 88		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Y - 90	1.20E+05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Y - 90 m — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 91 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 91 m — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 92 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 93 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Yb - 164 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Yb - 175 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Yb - 177 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zn - 65 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zn - 69 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zn - 69 m — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 88 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 89 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 93 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 95 — Liquid/Particulate Solid — WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ac - 225	Ac - 227	Ac - 228	Ag - 108 m	Ag - 108
Ag - 109 m	Ag - 110 m	Ag - 110	Ag - 111	Al - 26
Al - 28	Am - 241	Am - 242 m	Am - 242	Am - 243
Am - 245	Ar - 37	Ar - 39	Ar - 41	Ar - 42
As - 74	As - 76	At - 217	Au - 195	Au - 198
Ba - 131	Ba - 133	Ba - 133 m	Ba - 137 m	Ba - 139
Ba - 140	Ba - 141	Ba - 142	Be - 10	Be - 7
Bi - 207	Bi - 210	Bi - 211	Bi - 212	Bi - 213
Bi - 214	Bk - 249	Bk - 250	Br - 82	Br - 83
Br - 84	Br - 85	C - 11	C - 14	C - 15
Ca - 41	Ca - 45	Ca - 47	Cd - 109	Cd - 113 m

Cd - 113	Cd - 115 m	Cd - 115	Ce - 139	Ce - 141
Ce - 142	Ce - 143	Ce - 144	Cf - 249	Cf - 250
Cf - 251	Cf - 252	Cl - 36	Cm - 241	Cm - 242
Cm - 243	Cm - 244	Cm - 245	Cm - 246	Cm - 247
Cm - 248	Co - 56	Co - 57	Co - 58	Co - 60
Cr - 51	Cr - 55	Cs - 131	Cs - 134	Cs - 134 m
Cs - 135	Cs - 136	Cs - 137	Cs - 138	Cs - 139
Cu - 64	Es - 254	Eu - 150	Eu - 152	Eu - 152 m
Eu - 154	Eu - 155	Eu - 156	Eu - 157	F - 18
Fe - 55	Fe - 59	Fr - 221	Fr - 223	Ga - 67
Ga - 72	Gd - 148	Gd - 149	Gd - 151	Gd - 152
Gd - 153	Ge - 68	H - 3	Hf - 175	Hf - 178
Hf - 178 m	Hf - 181	Hf - 182	Hg - 203	Ho - 166
Ho - 166 m	I - 122	I - 123	I - 125	I - 129
I - 130	I - 131	I - 132	I - 133	I - 134
I - 135	In - 106	In - 113 m	In - 114 m	In - 114
In - 115	In - 115 m	Ir - 192	K - 40	K - 42
Kr - 81	Kr - 83 m	Kr - 85	Kr - 85 m	Kr - 87
Kr - 88	Kr - 89	Kr - 90	La - 138	La - 140
La - 141	La - 142	Lu - 177	Mg - 27	Mn - 52
Mn - 54	Mn - 56	Mo - 93	Mo - 99	N - 13
Na - 22	Na - 24	Nb - 91	Nb - 91 m	Nb - 92
Nb - 93 m	Nb - 94	Nb - 95	Nb - 95 m	Nb - 97
Nb - 97 m	Nd - 144	Nd - 147	Ni - 56	Ni - 59
Ni - 63	Ni - 65	Np - 235	Np - 236	Np - 237
Np - 238	Np - 239	Np - 240	Np - 240 m	O - 15
P - 32	P - 33	Pa - 231	Pa - 233	Pa - 234
Pa - 234 m	Pb - 209	Pb - 210	Pb - 211	Pb - 212
Pb - 214	Pd - 107	Pd - 109	Pm - 145	Pm - 146
Pm - 147	Pm - 148 m	Pm - 148	Pm - 149	Pm - 151
Po - 208	Po - 209	Po - 210	Po - 211	Po - 212
Po - 213	Po - 214	Po - 215	Po - 216	Po - 218
Pr - 143	Pr - 144	Pr - 144 m	Pu - 234	Pu - 236
Pu - 237	Pu - 238	Pu - 239	Pu - 240	Pu - 241
Pu - 242	Pu - 243	Pu - 244	Ra - 223	Ra - 224
Ra - 225	Ra - 226	Ra - 228	Rb - 86	Rb - 87
Rb - 88	Rb - 89	Rb - 90	Rb - 90 m	Re - 186
Re - 187	Re - 188	Rh - 102	Rh - 103 m	Rh - 105
Rh - 105 m	Rh - 106	Rn - 219	Rn - 220	Rn - 222
Ru - 103	Ru - 105	Ru - 106	Ru - 97	S - 35
Sb - 124	Sb - 125	Sb - 126	Sb - 126 m	Sb - 127
Sc - 46	Sc - 47	Se - 75	Se - 79	Si - 31
Sm - 145	Sm - 146	Sm - 147	Sm - 151	Sm - 153
Sm - 157	Sn - 113	Sn - 117 m	Sn - 119 m	Sn - 121 m
Sn - 123	Sn - 125	Sn - 126	Sr - 85	Sr - 89
Sr - 90	Sr - 91	Sr - 92	Ta - 179	Ta - 182
Ta - 183	Tb - 160	Tc - 101	Tc - 95 m	Tc - 97
Tc - 97 m	Tc - 98	Tc - 99	Tc - 99 m	Te - 121 m
Te - 121	Te - 123	Te - 123 m	Te - 125 m	Te - 127 m

Te - 127	Te - 129 m	Te - 129	Te - 131	Te - 131 m
Te - 132	Te - 133	Te - 133 m	Te - 134	Th - 227
Th - 228	Th - 229	Th - 230	Th - 231	Th - 232
Th - 233	Th - 234	Ti - 44	Ti - 51	Tl - 204
Tl - 207	Tl - 208	Tl - 209	Tm - 170	Tm - 171
U - 232	U - 233	U - 234	U - 235	U - 236
U - 237	U - 238	U - 239	U - 240	V - 48
V - 49	W - 181	W - 185	W - 187	W - 188
Xe - 122	Xe - 123	Xe - 125	Xe - 127	Xe - 131 m
Xe - 133	Xe - 133 m	Xe - 135	Xe - 135 m	Xe - 137
Xe - 138	Y - 88	Y - 90	Y - 90 m	Y - 91
Y - 91 m	Y - 92	Y - 93	Yb - 164	Yb - 175
Yb - 177	Zn - 65	Zn - 69	Zn - 69 m	Zr - 88
Zr - 89	Zr - 93	Zr - 95		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) For the I-131 Medical Isotope Project

The charcoal bed shall be rated at a minimum of 1,000 cubic feet per minute (cfm) and be 2" thick.

5) For the I-131 Medical Isotope Project:

Iodine samples shall be collected using a two-stage sample collection system. The sampling system shall consist of a 47mm in-line filter holder that contains either a removable activated carbon canister or filter paper coated with activated carbon. Two samplers shall be placed in series to evaluate potential breakthrough of the first sampling stage. The iodine samplers shall be installed on the current stack sampling system for RPL, downstream of the record particulate sampler. The iodine samples shall be analyzed using EPA Method G-1 (40 CFR 61, Appendix B).

6) For the I-131 Medical Isotope Project:

The exhaust from the hot cell shall be routed through an activated charcoal bed. A charcoal bed shall be procured and installed upstream of the HEPA filters. The filter assembly shall be a two-stage filter, containing a charcoal bed and a post-filter inside of the same outer housing. The post-filter shall be a particulate filter designed to remove any carbon particles that may dislodge from the bed from normal use, preventing these particles from reaching the primary and secondary stages of HEPA filtration downstream.

7) For the I-131 Medical Isotope Project:

The iodine sampling system shall be in continuous operation when the I-131 material for this project enters the RPL facility through completion of the project (when all iodine has been processed and shipped for offsite use).

8) For the I-131 Medical Isotope Project:

The removal efficiency for radio-iodine of the charcoal bed filter unit shall be a minimum of 90% and shall be installed and tested per ANSI 510. These procedures shall be developed in accordance with the guidance provided in ANSI N510. These procedures shall be provided to the department for review prior to starting the I-131 project.

9) For the Th-232 medical isotope project:

Before initiation of processing, the Rn-220 monitor shall be operational. The exhaust sample will be measured by a

Rn-220 monitor collected using the same isokinetic probe that is used to collect the record particulate sample. The radon monitor shall be installed downstream of the record particulate sample, measuring the sample stream that has already been pre-filtered by the record particulate sample.

10) For the Th-232 Medical Isotope Project:

Procedures for Rn-220 monitoring shall be forwarded to the department for review.

11) For the Th-232 Medical Isotope:

The Rn-220 gas that is generated during the process will be routed through a recovery system that is located inside of a hood in Room 510. As the Rn-220 (gaseous form) decays (55 second half-life), the resulting daughter products shall be collected in the recovery system. The recovery system shall be capable of collecting in excess of 80% of the Rn-220 that is generated.

12) For the Tritium Target Qualification Project (TTQP)

Sectioning of the TPBAR rods shall be performed in the hot cells in HLRF. Sectioning must be done inside Plexiglas containment.

13) For the Tritium Target Qualification Project (TTQP):

Project activities are limited to High Level Radiochemical Facility (HLRF), Shielded Analytical Laboratory (SAL), and Rooms 420, 418, and Room 48 in the basement.

14) For the Tritium Target Qualification Project (TTQP):

The "Mandatory Use Procedures" require that each step be read prior to performing the activity.

These procedures are those that involve the following:

* Operation of the furnace and gas clean-up system used to extract tritium from the Tritium Producing Burnable Absorber Rods
and;
* The transfer of the extracted tritium to hydride transport vessels.

15) For the Tritium Target Qualification Project (TTQP):

The tritium permeation testing shall be conducted in Room 48 of the basement in the laboratory hood or glovebox.

16) For the Waste Sludge Solidification Demonstration:

The objective is to demonstrate methods of solidification of waste sludge from the 105 K East Basin. The purpose for rendering the sludge as a solid is to allow for permanent storage at the Waste Isolation Pilot Plant (WIPP).

Core samples are taken from sludge found in the K East Basin (up to 4 liters of solids) and transported to the 325 Building (RPL) for initial study. The samples are collected in 4-liter poly bottles and shipped to RPL in PAS-1 containers accompanied by a chain-of-custody. All containers shall be visually inspected upon receipt and dose measurements taken. After receipt, the sample bottles are placed into a glove box or hot cell and combined into one composite. The sludge is allowed to settle from the mixture, and the water is decanted. The decanted water and a sample of the settle sludge are characterized for major constituents (e.g. nucleotides, organics). The remaining sludge is split into different test samples and each processed with a different solidification method (grout, absorbent, drying, etc). Characterization of each test sample will occur at RPL, with the exception of one long term grout-solidified monolith prepared for long term and WIPP-specific testing at the Central Waste Center (CWC). Once testing is completed, a recommendation is made for the most effective solidification process.

Once the initial study is complete, large scale testing begins and will nominally include up to 6.3 m^3 (the Spent Nuclear Fuel (SNF) project bounding volume is 7.5 m^3) of sludge material. Material from the K East Basin is to be transported to the 325 Building using a Sludge Transport Systems (STS).

The STS consists of:

- Large Diameter Container (LDC). A vertical stainless steel cylindrical tank designed to contain material from K East Basin. The container is approximately 5 feet in diameter and 10 feet high.
- Sludge transportation cask. The LDC is placed into a cylindrical stainless steel and lead shell which is to provide shielding and to seal the LDC from the outside.
- Transportation trailer. The sludge transportation cask is anchored onto a trailer. The sludge transportation trailer complies with federal regulations and state standards.

Note: The following information is for completeness. Radioactive air emissions from these activities are covered by other permits/processes.

The STS is staged in the north transfer bay near the K East North Loading Operation Pit (NLOP). The LDC is connected to the K East Basin's Sludge Retrieval System (SRS), and is filled with material. Once a sufficient volume of sludge is contained in the LDC, the excess water cover level is lowered so the tank holds approximately 2.5 m^3 of material. An inert gas (e.g., helium or argon) blanket is placed over the material inside the LDC and the tank's outlet and inlet ports are closed. A NucFil HEPA-type filter and rupture disk are placed on the tank's vent ports. The cask lid is then installed, sealing the LDC inside. Once the cask is sealed and secured, the STS is transported to the 325 Building loading dock by the High-Level Radiochemistry Facility (HLRF). Once the STS is staged in the desired location, the transportation cask is unsealed in an approved area.

Note: The following activities describe actions to be taken within the RPL.

Inside the building, the LDC inlet and outlet are opened and the material is sampled for analysis. After determining the acceptability of the material, it is pumped from the LDC into several shielded vessels. The materials in the vessels are then processed with the solidification method designated from the initial testing. Each vessel is covered with a lid vented with a NucFil HEPA-type filter. Each shield vessel is placed in an overpack container and stored inside the RPL until the material is ready for shipped to CWC. Once the LDC is emptied, it is rinsed. It is then placed back onto the STS in preparation for resealing in the transportation cask and for transport back to K Basin. Overall, three shipments of K East Basin sludge in the STS are planned at this time.

17) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

MEDICAL ISOTOPE RESEARCH (I-131 Project)

I-131 solution will be procured from an offsite vendor and shipped to the Pacific Northwest National Laboratory (PNNL). It is expected that multiple shipments of I-131 will be required throughout the project, due to storage concerns that are the result of the short half-life of I-131 (approximately eight days). The objective of these experiments is to combine the I-131 solution with an antibody solution (supplied by the customer). The test apparatus is a closed system that shall be set up inside of a hot cell located in Room 203 of the RPL.

One containment vessel (medical grade - intravenous type bag) shall be used for the I-131 solution, and the second vessel shall be used to contain the vendor-supplied antibody solution. Both solutions shall be transported to the mixing vessel by means of a peristaltic pump. The mixed solution will then be routed through an in-line purification system and dispensed into a medical grade product bag. Once processing is complete, the I-131 antibody shall be transferred from the product bag into small glass vials (inside the hot cell). The final product can then be shipped to the customer or a destination designated by the customer. Shipment from RPL must occur fairly quickly, due to the short half-life of I-131.

Processing will be performed using variable amounts of I-131 and will be conducted as separate batches. Current project is allowed to conduct multiple processing runs, with each run using from four to 100 curies (Ci) of I-131. The processing of the material will not alter the physical form of the I-131 liquid. No more than 300 Ci of I-131 per year is allowed.

18) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

MEDICAL ISOTOPE RESEARCH (Th-232 Project)

Th-232 parent material is approved to be present in the facility as either an oxide [ThO2] or a nitrate [Th(NO3)4]. The parent material shall be maintained in shipping containers, with sub-samples being periodically removed for performing laboratory testing. During the tests, the parent material may be subjected to processes (e.g., grinding or suspension in solution) to maximize the recovery of the desired isotopes. The preparation of the parent material and the capture process shall be performed in Room 510. The amount of parent material allowed to be processed annually under this NOC is estimated to be 30,000 kilograms. Parent material may be transported to RPL from off-site suppliers in multiple shipments throughout the year. The parent material shall be in the form of a granular oxide or nitrate (powder) that will be stored inside shipping containers at RPL until it is to be used. The shipping containers will be opened periodically to retrieve parent material for processing.

The prepared materials will then be loaded into a containment vessel and the vessel sealed. A transport line has been tapped into the lid of the containment vessel. The Rn-220 gas that is generated during batch processing exits the vessel through this transport line to a radon recovery system that is located inside of a laboratory hood in Room 510. The daughter products that result from the decay of Rn-220 are captured by the recovery system, and this system exhausts to a laboratory fume hood that is part of the RPL radiological exhaust system. The exhaust exits the facility through the RPL main stack (EP-325-01-S).

The radionuclides associated with this project are the Th-232 in the parent material, and the daughter products resulting from the decay of Th-232 (in order): Ra-228, Ac-228, Th-228, Ra-224, Rn-220, Po-216, Pb-212, Bi-212, Po-212, Tl-208, and Pb-208 (stable isotope).

19) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

Tritium Target Qualification Project (TTQP)

Tritium Target Qualification Project (TTQP) it is approved to perform the analysis of ten tritium-producing, burnable absorber rods (target rods) that were shipped to the RPL from the Idaho National Engineering Laboratory and eight additional target rods shipped from the Argonne National Laboratory West (ANL-W) to the RPL.

The processes approved under this activity includes the following:

Target Rod Sectioning (Activity 1) - Sections are cut from the tritium target rods for quantitative analysis using a diamond saw within a Plexiglas containment. Each section is disassembled, and the components are analyzed to determine gas-species concentrations. Selected sections are further analyzed for lithium burn-up, as well as tritium and helium content. The rods are then subjected to protium, metallography, and microprobe studies. During the sectioning of the rods, emissions from the hot cells of the High-Level Radiochemistry Facility (HLRF) are vented to the existing radiological exhaust system and eventually to the main exhaust stack.

Tritium Extraction and Analysis (Activity 2) - Tritium is extracted by heating either a 4-foot target rod, or components from the target rod sections. Following tritium extraction, the 4-foot target rod is sectioned and analyzed as described in Activity 1. Tritium extraction and analysis is performed at two separate locations within the Radiochemical Processing Laboratory (RPL). Small-scale tritium extraction tests are performed in Room 416, while full tritium-rod extraction tests are conducted in the hot cells of the HLRF. Radionuclide emissions not captured during the tritium extraction tests pass through a laboratory hood or glovebox to the existing ventilation system, and eventually through the main exhaust stack.

Ex-reactor Tritium Permeation Tests (Activity 3) - Measurements are taken to determine the cladding material permeability used in the target rods. The test is conducted in an enclosed test loop, of which a section is constructed from TARGET ROD cladding material. Tritium absorption/release kinetics validation, correlation development and hydrogen ingress characterization, safety testing, and mechanical testing are then conducted. The tritium permeation tests are performed in Laboratory 48 in the RPL basement. Preparation of lithium aluminate (LiAlO2) samples for lithium isotopic ratio analysis is conducted in Laboratory 419. Radionculide emissions not captured during the permeation tests are allowed to pass through a laboratory hood or glovebox, to the existing ventilation system, and

eventually through the main exhaust stack.

Other activities that will continue with the "ramp down" of the TTQP include clean-up of the furnace and other portions of the extraction system and subsequent waste disposal. During these activities, minor tritium releases are expected from hold-up within the system.

20) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

WASTE OPERATIONS

The approved activities in the Radiochemical Processing Laboratory (RPL) include waste treatment operations that occur in various areas of the facility. In the HWTU, hazardous materials and radioactive mixed waste shall be stored, dispensed, used, handled, packaged in drums, and treated using various small bench-scale treatment processes. Treatment processes used at the HWTU is limited to include pH adjustment, ion exchange, venting of gas cylinders, carbon absorption using polymer beads or mineral absorbents such as clays, chemical oxidation, chemical precipitation, chemical reduction, waste concentration by evaporation, neutralization, filtration, solvent extraction, solids washing, catalytic destruction, and grout encapsulation (cementation).

The compaction unit is allowed to reduce volumes of low-level radioactive and radioactive-mixed dry materials (such as gloves, wipes, and step-off pad waste). During each compaction event, radiological smear samples shall be collected to verify containment of radiological contamination.

Radioactive waste boxes and drums are allowed to be stored in a controlled, fenced area (outside of the RPL) at the northeast corner of the facility. If any intrusive work (i.e., sampling, etc.) is required that may have the potential to emit radionuclides, the container shall be moved inside the facility.

21) TTQP Project Specific Emission Control Systems

Molecular Sieve

A molecular sieve will be used to control emissions during the full-rod tritium extraction process to be performed in the HRLF.

The molecular sieve will be used until the exhaust gas concentration, as measured with an ion chamber, indicates that the sieve is approaching the point of breakthrough. At this point, a fresh molecular sieve bed will replace the spent bed.

Two-Stage Bubbler Trap

The tritium emission control system for the small-scale extraction activities in Laboratory 416 consists of a two-stage bubbler-type trapping system. The bubbler-type trapping system includes a glass tube that contains either water or oil. An inert sweep gas carries the tritium from the heated tritium target rod components to the bubbler where tritium is removed from the gas stream.

Uranium Getter

Cladding material permeability measurements during Activity 3 will use a uranium getter material as a part of the commercial tritium storage system.

Emission Unit ID: 362

300 EP-326-01-S

EP-326-01-S

This is a MINOR, ACTIVELY ventilated emission unit.

326 MATERIAL SCIENCE LAB

Emission Unit Information

Stack Height: 47.60 ft. 14.51 m. Stack Diameter 6.00 ft. 1.83 m.

Average Stack Effluent Temperature: 77 degrees Fahrenheit. 25 degrees Celsius.

Average Stack ExhaustVelocity: 32.40 ft/second. 9.88 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Fan	3	In parallel, common to both areas
Hoods, SEM	HEPA	2	In series
Hot cells and hoods	HEPA	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 326 Building support operations. This 47.6 foot tall stack exhausts both filtered and unfiltered air. Particulate emissions are sampled. The building contains laboratories and equipment for studies of metallurgical, chemical, and physical behavior of reactor components, fuel materials, mixed fission products mixed activation products, and ceramic composite materials.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Research at the 326 Facility	AIR 06-640	7/5/2006	677

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 8.52E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Included are the following type of research activities within the 326 Facility.

   Development and calibration of fiber optic chemical sensors, electrical and mechanical engineering support for nuclear instrumentation development and fabrication, design and engineering of special purpose radiation detectors and sampling systems, and operation of a continuous glass fiber draw capability to produce neutron sensitive scintillating glass fiber which is a new class of solid state radiation detectors.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.15E-03 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0 Alpha release rate based on AM-241	1.76E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta - 0 Beta release rate based on Co-60	1.33E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ag - 110 m	Am - 241	Am - 243	Ar - 37	Ar - 39
Ar - 41	Ba - 133	Bi - 207	C - 14	Ca - 45
Cd - 109	Ce - 144	Cf - 252	Cm - 244	Co - 56
Co - 57	Co - 58	Co - 60	Cr - 51	Cs - 134
Cs - 137	Cu - 64	Eu - 152	Eu - 154	Eu - 155
Eu - 156	Fe - 55	Gd - 149	Gd - 151	H - 3
I - 125	I - 129	I - 131	Kr - 83 m	Kr - 85
Kr - 85 m	Kr - 87	Kr - 88	Mn - 54	Mo - 93
Na - 22	Nb - 93 m	Nb - 94	Ni - 59	Ni - 63
Np - 237	Pu - 238	Pu - 239	Pu - 240	Pu - 242
Ra - 226	Rn - 222	Ru - 106	Sb - 124	Sb - 125
Sc - 46	Sn - 113	Sn - 119 m	Sn - 123	Sr - 85
Sr - 89	Sr - 90	Ta - 179	Ta - 182	Tc - 99
Te - 123	Th - 230	Th - 232	U - 234	U - 235
U - 236	U - 238	V - 49	W - 181	W - 185
Xe - 131 m	Xe - 133	Xe - 133 m	Xe - 135	Xe - 135 m
Xe - 137	Xe - 138	Zn - 65	Zr - 95	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

Emission Unit ID: 366

300 EP-329-01-S

EP-329-01-S

This is a MINOR, ACTIVELY ventilated emission unit.

329 BUILDING

Emission Unit Information

Stack Height: 62.50 ft. 19.05 m. Stack Diameter 5.00 ft. 1.52 m.

Average Stack Effluent Temperature: 77 degrees Fahrenheit. 25 degrees Celsius.

Average Stack ExhaustVelocity: 40.00 ft/second. 12.19 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	In series, (System includes up to 5 banks of 2 stages of HEPA filters in series, minimum of 1 bank of 2 testable filters in use)
	Fan	2	2 in parallel, 1 Standby (3 total)

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 329 Building support operations. This 62.5 foot tall stack exhausts filtered building air. Particulate emissions are sampled. The building contains laboratories for radioanalytical studies, environmental radionuclide studies, and radiation detection instrumentation development.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of Research Activities Conducted in the Chemical Sciences Laboratory (329 Building)	AIR 06-658	7/5/2006	701

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 9.40E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Research activities conducted in the 329 Building support the Hanford environmental mission and other key DOE missions of national and international importance. Research activities are performed on both radioactive and non-radioactive samples. The following processes are allowed to be performed in the 329 Building:

- Development of special purpose radiation detection and sampling/analysis systems.
- Development of electronics and software to enhance radiation detector performance.
- Radiation detection equipment used for radioisotope quantification that may involve chemical separations.

- Solid, liquid, and gas sample (both radioactive and non-radioactive) analysis in specialized laboratories.
- Wet chemistry techniques and the operation of specialized analytical instrumentation such as mass spectrometers, organic mass spectrometers, and inductively coupled plasma spectrometers.
- Separations and analyses of radionuclides and samples containing radionuclides.
- Preparation of radioactive standards (solid, liquid, and gas).
- Characterizing chemical, radiochemical, and physical properties of samples (e.g., tank wastes, spent fuel, contaminated soils and water), as well as other gaseous materials, glass, ceramic, carbonaceous, or metallic waste forms.
- Performing research using high-level and low-level mixed tank wastes and their simulants to test radiochemical process systems such as leaching, solvent extraction, ion exchange, vitrification, fuel dissolution, decontamination, evaporation, grouting, solid waste packaging/shipment, and high-level liquid waste shipping/receiving/transportation.
- Performing research and development for processing and immobilization support including waste separation, ion exchange, sludge washing/leaching, ultra filtration, oxidation/precipitation, species separation, immobilization, and characterization.
- Using a full suite of analytical capabilities for radiochemical and inorganic chemical analyses in support of process development, specializing in the analysis of highly radioactive materials and very complex sample matrices.
- Developing methods for the separation of radioisotopes.
- Glove box work and storage of higher activity materials in shielded storage areas.
- Developing and testing radioisotope generators.
- Conducting Non-Destructive Analysis (NDA).
- Processes involving the creation of mixed activation products (MAP) and mixed fission products (MFP), separation, analysis and research.
- Developing thermal and vitrification processes to immobilize hazardous and radioactive materials into acceptable waste forms. Waste processing technology development includes design, process development, remote operations, and numerical and computational modeling.
- Providing chemical and physical separations in support of radiological and hazardous material processing and disposal requirements. These technologies include: removal and concentration of hazardous and/or radioactive components for environmental remediation; separation of hazardous and/or radioactive materials, including solid/liquid phase separations; and, recovery of specific components for recycle and reuse.
- Separations and analyses of radionuclides for environmental measurements.
- Sampling and analysis of environmental samples including soils, vegetation and water/liquids; decommissioning materials; and tank wastes.
- Performing research with supercritical fluids to understand chemistry mechanisms and processes.
- Lab setup projects involving fume hood removals/upgrades and ductwork tie-in.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.34E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	5.60E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on Am-241.			
B/G - 0	9.20E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate based on Sr-90 and Cs-137.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ac - 225	Ac - 227	Ac - 228	Ag - 108 m	Ag - 108
Ag - 109 m	Ag - 110 m	Ag - 110	Ag - 111	Al - 26
Am - 241	Am - 242 m	Am - 242	Am - 243	Am - 245
Ar - 37	Ar - 39	Ar - 41	Ar - 42	As - 74
As - 76	At - 217	Au - 195	Au - 198	Ba - 131
Ba - 133	Ba - 133 m	Ba - 137 m	Ba - 139	Ba - 140
Ba - 141	Ba - 142	Be - 10	Be - 7	Bi - 207

Bi - 210	Bi - 211	Bi - 212	Bi - 213	Bi - 214
Bk - 249	Bk - 250	Br - 82	Br - 83	Br - 84
Br - 85	C - 11	C - 14	C - 15	Ca - 41
Ca - 45	Ca - 47	Cd - 109	Cd - 113 m	Cd - 113
Cd - 115 m	Cd - 115	Ce - 139	Ce - 141	Ce - 142
Ce - 143	Ce - 144	Cf - 249	Cf - 250	Cf - 251
Cf - 252	Cl - 36	Cm - 241	Cm - 242	Cm - 243
Cm - 244	Cm - 245	Cm - 246	Cm - 247	Cm - 248
Co - 56	Co - 57	Co - 58	Co - 60	Cr - 51
Cs - 131	Cs - 134	Cs - 134 m	Cs - 135	Cs - 136
Cs - 137	Cs - 138	Cs - 139	Cu - 64	Es - 254
Eu - 150	Eu - 152	Eu - 152 m	Eu - 154	Eu - 155
Eu - 156	Eu - 157	F - 18	Fe - 55	Fe - 59
Fr - 221	Fr - 223	Ga - 67	Ga - 72	Gd - 148
Gd - 149	Gd - 151	Gd - 152	Gd - 153	Ge - 68
H - 3	Hf - 175	Hf - 178	Hf - 178 m	Hf - 181
Hf - 182	Hg - 203	Ho - 166	Ho - 166 m	I - 122
I - 123	I - 125	I - 129	I - 130	I - 131
I - 132	I - 133	I - 134	I - 135	In - 106
In - 113 m	In - 114 m	In - 114	In - 115	In - 115 m
Ir - 192	K - 40	K - 42	Kr - 81	Kr - 83 m
Kr - 85	Kr - 85 m	Kr - 87	Kr - 88	Kr - 89
Kr - 90	La - 138	La - 140	La - 141	La - 142
Lu - 177	Mn - 52	Mn - 54	Mn - 56	Mo - 93
Mo - 99	N - 13	Na - 22	Na - 24	Nb - 91
Nb - 91 m	Nb - 92	Nb - 93 m	Nb - 94	Nb - 95
Nb - 95 m	Nb - 97	Nb - 97 m	Nd - 144	Nd - 147
Ni - 56	Ni - 59	Ni - 63	Ni - 65	Np - 235
Np - 236	Np - 237	Np - 238	Np - 239	Np - 240
Np - 240 m	O - 15	P - 32	P - 33	Pa - 231
Pa - 233	Pa - 234	Pa - 234 m	Pb - 209	Pb - 210
Pb - 211	Pb - 212	Pb - 214	Pd - 107	Pd - 109
Pm - 145	Pm - 146	Pm - 147	Pm - 148 m	Pm - 148
Pm - 149	Pm - 151	Po - 208	Po - 209	Po - 210
Po - 211	Po - 212	Po - 213	Po - 214	Po - 215
Po - 216	Po - 218	Pr - 143	Pr - 144	Pr - 144 m
Pu - 234	Pu - 236	Pu - 237	Pu - 238	Pu - 239
Pu - 240	Pu - 241	Pu - 242	Pu - 243	Pu - 244
Ra - 223	Ra - 224	Ra - 225	Ra - 226	Ra - 228
Rb - 86	Rb - 87	Rb - 88	Rb - 89	Rb - 90
Rb - 90 m	Re - 186	Re - 187	Re - 188	Rh - 102
Rh - 103 m	Rh - 105	Rh - 105 m	Rh - 106	Rn - 219
Rn - 220	Rn - 222	Ru - 103	Ru - 105	Ru - 106
Ru - 97	S - 35	Sb - 124	Sb - 125	Sb - 126
Sb - 126 m	Sb - 127	Sc - 46	Sc - 47	Se - 75
Se - 79	Sm - 145	Sm - 146	Sm - 147	Sm - 151
Sm - 153	Sm - 157	Sn - 113	Sn - 119 m	Sn - 121 m
Sn - 123	Sn - 125	Sn - 126	Sr - 85	Sr - 89
Sr - 90	Sr - 91	Sr - 92	Ta - 179	Ta - 182

Ta - 183	Tb - 160	Tc - 101	Tc - 95 m	Tc - 97
Tc - 97 m	Tc - 98	Tc - 99	Tc - 99 m	Te - 121 m
Te - 121	Te - 123	Te - 123 m	Te - 125 m	Te - 127 m
Te - 127	Te - 129 m	Te - 129	Te - 131	Te - 131 m
Te - 132	Te - 133	Te - 133 m	Te - 134	Th - 227
Th - 228	Th - 229	Th - 230	Th - 231	Th - 232
Th - 233	Th - 234	Ti - 44	Tl - 204	Tl - 207
Tl - 208	Tl - 209	Tm - 170	Tm - 171	U - 232
U - 233	U - 234	U - 235	U - 236	U - 237
U - 238	U - 239	U - 240	V - 48	V - 49
W - 181	W - 185	W - 187	W - 188	Xe - 122
Xe - 123	Xe - 125	Xe - 127	Xe - 131 m	Xe - 133
Xe - 133 m	Xe - 135	Xe - 135 m	Xe - 137	Xe - 138
Y - 88	Y - 90	Y - 90 m	Y - 91	Y - 91 m
Y - 92	Y - 93	Yb - 164	Yb - 175	Yb - 177
Zn - 65	Zn - 69	Zn - 69 m	Zr - 88	Zr - 89
Zr - 93	Zr - 95			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The emission unit monitoring system shall have the following activities performed:

a. A functional/calibration check of monitoring system instrumentation shall be performed annually.

Emission Unit ID: 369

200E P-291A001-001

291-A-1

This is a MAJOR, ACTIVELY ventilated emission unit.

PUREX

Emission Unit Information

Stack Height: 200.00 ft. 60.96 m. Stack Diameter 7.00 ft. 2.13 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 17.00 ft/second. 5.18 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Fiberglass Filter	1	(Deep Bed Fiberglass filter)
	HEPA	2	In series
	Fan	2	In parallel, one operating, one back-up

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Method 2 Appendix A Method 114 Appendix B 61.93(b)(2)(ii) ANSI N13.1	239/240Pu, 241Am	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the PUREX Plant involve surveillance and maintenance operations pending decontamination and decommissioning at the Hanford Site. This 200 foot tall stack exhausts filtered air from the canyon (cells A through M) and vessel and condenser vents. Emissions are sampled for particulate radionuclides and volatile 129I. The PUREX Plant formerly processed uranium nuclear fuel for the extraction of special nuclear materials. The PUREX Plant was deactivated in June 1997.

Emission Unit ID: 384

200E P-296A010-001

296-A-10

This is a MINOR, ACTIVELY ventilated emission unit.

PUREX

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	1 bank
	Fan	1	Intermittent, as needed. Prior approval of operation is required.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	1 week sample / year (when operating)

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the PUREX Storage Tunnels support surveillance and maintenance, and storage of used process equipment until final decontamination and decommissioning of the facility. This stack has not operated since 1996. When it did operate, it exhausted filtered air from Storage Tunnel No. 2, and particulate radionuclides were sampled. The PUREX Plant formerly processed uranium nuclear fuel for the extraction of special nuclear materials. The PUREX Plant was deactivated in June 1997.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Reactivation of PUREX Storage Tunnel Number 2	AIR 06-629	7/5/2006	665

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.90E-07 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Receiving up to 3.5 Mci of radioactive waste loaded into 22-ton steel waste disposal boxes (SWDBs). The SWDBs will be transferred by truck, transferred onto railcars, and placed into the PUREX Tunnel.

Steel Waste Disposal Boxes

Waste placed in the PUREX Tunnel will be received in SWDBs. The inner container will be a rectangular grout container, which is an open, carbon steel box. Dispersible waste will be contained in engineered containers placed (maximum of eight) in the rectangular grout container. A filled rectangular grout container could hold engineered containers as well as nondispersible waste materials. Nondispersible waste (e.g., filters, ion exchange

columns, cut-up metal tanks and racks, etc.) will be held directly inside the rectangular grout container. The rectangular overpack disposal container will be placed into a SWDB. This package configuration will be placed into the PUREX Tunnel.

The filled SWDB will be held by a SWDB overpack, which is inside the lower impact limiter. The SWDB overpack has a gasketed lid that is secured by bolts. The SWDB overpack is the containment boundary for the package, which is considered a closed container for transfer purposes. The upper impact limiter is bolted to the lower impact limiter, forming an additional seal. (The SWDB overpack and the impact limiter could be reused for subsequent transfers.)

Alternate packaging for receipt/storage, which will provide equivalent or greater degree of airborne control, would be presented to WDOH before use.

Transporting to PUREX

The upper and lower impact limiters form a seal for the SWDB. The package meets transportation requirements to move the material by truck to the PUREX Tunnel rail cut. As a closed container, there are no expected emissions during the transported phase.

Transfer to Railcars

The truck will be parked in the rail cut just outside the PUREX Tunnel. The upper impact limiter and SWDB overpack lid will be removed and set aside. A mobile crane will be used to transfer the SWDB from the truck to the railcar. (The impact limiter and overpack could be reused for subsequent transfers.) The railcar could remain in the rail cut, with appropriate postings, or could be moved just inside the exterior door into the outer area of the PUREX Tunnel while waiting the next transfer.

Placement of Waste Into PUREX Tunnel

At least two SWDBs will fit onto a single railcar. When the railcar is ready for placement into the PUREX Tunnel, the water-fillable door to the storage tunnel will be opened after closing the exterior door. The railcar will be placed into the storage tunnel and allowed to roll slowly to its storage position. Once the railcar is in position, the water-fillable door will be closed. The initial transfer could involve more than one railcar, and could include the majority of the total inventory to be transferred.

Storage of Waste in Tunnel

The PUREX Tunnel has been used for storage of radioactive and mixed waste from the PUREX Plant and from other onsite sources. Material selected for storage in the PUREX Tunnel is loaded on railcars modified to serve as both transport and storage platforms. The railcar storage positions are numbered sequentially, commencing with Position 1 that abuts the railstop bumper at the south end of the tunnel. Position 2 is the location of the railcar that abuts the railcar in position 1 and so forth. Each railcar is retrievable; however, because the railcars are stored on a single, dead-end railroad track, the railcars can be removed only in reverse order (i.e., last in, first out). Currently, 28 railcars are placed in the PUREX Tunnel. Additional waste could be placed into the remaining (approximately 12) railcar positions over the next 10 years.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 7.80E-04 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Release rates are not listed; emission release rates are controlled by special conditions.

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) All transfers of additional radioactive materials from various onsite facilities to the PUREX Tunnel must take place during the period in fiscal years 2000 through 2010.

5) Each SWDB container must be equipped with a minimum of two NucFil filters in series. If the container has dispersible material, it must have three NucFil filters. A maximum of twelve rail cars containing waste may be added to the tunnel.

6) If the stack is opened for any three-month period between transfers an NDA analysis of the filters is required. Environmental air samplers N158, N985, N970, N957, N969, N977 and N978 may not be removed without WDOH approval.

7) If the tunnel is opened for more than three months between transfers an NDA of the filters is required.

8) Periodic confirmatory measurements to confirm low emissions from the 296-A-10 stack will be performed by NDA. NDA provides detection of cesium-137 loaded on HEPA filters. The loading of strontium-90, plutonium-239/240 and americium-241 on the HEPA filters will be calculated from ratios with cesium-137 from reported 1995 actual emissions. NDA methodology for the 296-A-10 stack is provided in 97-EAP-225

9) Periodically smears will be taken of the SWDBs during transfer operations prior to insertion into the tunnel. Records of smears, HEPA tests and NDA analysis must be made available to DOH upon request.

10) Stack 296-A-10 HEPAs must be tested and determined to be operational prior to transfer of waste. This includes testing and nondestructive analysis/assay (NDA) of the testing of the high-efficiency particulate air (HEPA) filters on the tunnel exhauster as a baseline for determination of filter loading after the placement was completed.

11) The flow sampling system will be upgraded to include the installation of test ports that will conform to 40 CFR 60, Appendix A.

12) The processes will consist of receiving up to 3.5 million curries of radioactive waste loaded into 22-ton steel waste disposal boxes (SWDBs). The SWDBs will be transferred by truck, transferred onto rail cars, and placed into the PUREX Tunnel.

13) The required average stack flow rate is 2.0 cubic meters per second. The stack must have a single stage of HEPA filters (3x3) with a particulate removal efficiency of at least 99.95 percent.

14) The stack will operate during waste placement. Depending on the length of time before the next transfer, the stack should be shutdown and capped between transfers, especially if the next transfer is not expected for a year or more. If the next transfer is expected within the same year, the stack can be operated between transfers. Testing of the HEPA filters will be performed annually. NDA would be required each year when a rail car is placed in the tunnel, or when the stack is uncapped and used for powered ventilation. During years in which no waste is placed in the PUREX Tunnel and the 296-A-10 stack is capped (weather tight), testing of the HEPAs and NDA analysis would not be required until the stack is reactivated for the next transfer.

15) The steel waste disposal boxes (SWDBs) are engineered to minimize emissions during the loading, transportation, and transfer processes. Only waste received in SWDBs will be placed in the PUREX Tunnel. Dispersible waste must be contained in engineered containers placed (maximum of eight) in the rectangular grout container. Nondispersible waste (e.g., filters, ion exchange columns, cut-up metal tanks and racks, etc.) must be held directly inside the rectangular grout container.
Alternate packaging for receipt/storage, must provide equivalent or greater degree of airborne control, and be approved by WDOH before use.

16) Up to 3.5 million curries of radioactive waste can be placed into the remaining 12 rail car positions of the PUREX Tunnel over the next ten years. Up to one percent (35 thousand curies) of the additional waste can be transuranic.

Emission Unit ID: 385

400 P-437MN&ST-001

437-MN&ST

This is a MINOR, ACTIVELY ventilated emission unit.

437 Maintenance and Storage (MASF)

Emission Unit Information

Stack Height: 30.00 ft. 9.14 m. Stack Diameter 8.00 ft. 2.44 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 4.90 ft/second. 1.49 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Fan	2	In parallel, serves all MN&ST, intermittent use
Shipping Cask Maintenance and Decon Glove Box	Prefilter	1	
Shipping Cask Maintenance and Decon Glove Box	HEPA	1	2 parallel flow paths, minimum of one HEPA operational
Decon 1 & 2 Activities	HEPA	1	2 parallel flow paths, minimum of one HEPA operational
Liquid Radioactive Waste Loadout Facility Ventilation	Prefilter	1	
Liquid Radioactive Waste Loadout Facility Ventilation	HEPA	1	
Radiological Waste Tank Room Ventilation	Prefilter	1	
Radiological Waste Tank Room Ventilation	HEPA	1	
Waste Tank 1 & 2 Vents	HEPA	1	1 stage with 2 parallel flowpaths
Contaminated Equpment Repair Area	Prefilter	1	
Contaminated Equpment Repair Area	HEPA	1	2 in parallel

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the MASF support surveillance and maintenance operations at the Hanford Site. This 30 foot tall stack exhausts filtered air from MASF. Particulate emissions are sampled. MASF, or the 437 Building, is a multipurpose service center supporting the specialized maintenance and storage requirements of the Fast Flux

Test Facility (FFTF). MASF provides the capability for decontamination, repair, and storage of non fueled components and hardware for FFTF.

Emission Unit ID: 389

200W P-296Z005-001

296-Z-5

This is a MINOR, ACTIVELY ventilated emission unit.

PLUTONIUM FINISHING PLANT(Z PLANT)

Emission Unit Information

Stack Height: 28.00 ft. 8.53 m. Stack Diameter 2.80 ft. 0.85 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 28.00 ft/second. 8.53 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	2 parallel banks with each bank containing 4 sets of 2-stage HEPAs; one set per bank operational. Abatement credit given for one HEPA filter in each bank.
	Fan	1	Each bank has 2 fans in parallel. Only one fan in each bank required to be operating.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Actions to assure quality of periodic confirmatory measurement as described in section 4.1 of the Standard Conditions.	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 2736 ZB Building include outer can welding, testing, inspections, and surveillance and maintenance in support of the operations mission at the Hanford Site. This 28 foot tall stack exhausts filtered air from the 2736 ZB Building at the PFP Complex.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Deactivation of the Plutonium Finishing Plant Complex	AIR 06-664	7/5/2006	709

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 6.70E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed activities involve transitioning the PFP Complex to a state of low-risk, low-cost, long-term surveillance and maintenance pending final disposition. All work would be performed in accordance with the approved radiological control procedures and as low as reasonably achievable (ALARA) program requirements as implemented by the project radiological control manual, as amended. These requirements would be carried out

through the activity work packages and associated radiological work permits.

This activity includes deactivation of buildings and also includes deactivation of systems no longer necessary once stabilization and storage activities and planned legacy hold-up removal have been concluded; removal/disposition of equipment/components; contamination characterization and reduction/mitigation; packaging plutonium holdup material meeting waste acceptance criteria; maintaining and operating muffle furnaces, as needed, for removed plutonium holdup material; and demolition of radiologically contaminated, non-process ancillary buildings.

This activity also includes deactivation activities or activities to prepare and place a facility in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program while being protective of personnel, the public, and the environment until demolition of former processing and material storage buildings occurs. Deactivation activities would include those actions foreseeably necessary for implementation of the proposed action, such as associated transportation activities, waste removal and disposal, and award of grants and contracts. Specific actions could include the following work involving the potential for radioactive contamination:
- Draining and/or de-energizing systems as appropriate.
- Stabilizing contaminated areas (e.g., with fixatives, sealants, paint).
- Stabilizing or removing gloveboxes, process equipment, tanks, piping, fume hoods, and support equipment.
- Removing fencing and paved parking areas adjacent to facilities.
- Installing alternate environmental monitoring, surveillance, and safety components (e.g., lighting, fencing) if required.
- Removing/packaging radioactive (including equipment calibration sources and laboratory standards) and hazardous materials and waste, including stabilization and/or removal of asbestos, and removal, cleanup, and disposition of polychlorinated biphenyls and other regulated materials and transportation to existing waste management facilities.
- Removing equipment and system components.
- Size-reducing process equipment for disposal as waste.
- Performing physical or chemical treatment processes (e.g., neutralization, solidification, filtering) to render a material less hazardous or to reduce the volume (such processes will not increase the potential release rates)..
- Decontamination to support the excess of surplus equipment.
- Removing excess combustible material.
- Disconnecting utilities, piping, and communication service systems (if the systems are not necessary to maintain required environmental monitoring or building safety systems), including associated excavation.
- Ensuring adequate freeze and heat protection.
- Stabilizing, reducing, combining, or removing waste materials at outdoor locations within the PFP Complex (such processes will not increase the potential release rates provided in this NOC).
- Sealing cracks, gratings, and openings to the building exterior, and repairing roofs.
- Conducting general housekeeping activities (e.g., vacuuming, sweeping, dusting) in areas where radiological contamination is not anticipated (e.g., radiological buffer area) but could be encountered.
- Removing or reducing radioactive or hazardous contamination from facilities and equipment by washing, heating, chemical or electrochemical action, mechanical cleaning, or other similar techniques.
- Removing residual plutonium holdup material, which might remain throughout the PFP Complex after stabilization activities described in the PFP EIS have been completed; packaging residual plutonium holdup meeting waste acceptance criteria for shipment to an onsite waste management facility, or thermally stabilizing material in muffle furnace operations and packaging for storage in existing PFP Complex vaults.
- Designing and executing changes to utility service systems and/or utility structures necessary to place a facility in surveillance and maintenance, pending demolition.
- Conducting final process operations to stabilize or eliminate residual operational materials or effluents, such as final process runs; cleaning of vessels, valve pits and pipe trenches; installation and operation of small evaporators; flushing piping systems; removal or replacement of filters; and other similar closeout actions.
- Demolishing non-process ancillary buildings.
- Deactivation activities will require actions to provide for continued routine maintenance, repair, and replacement-in-kind of operating portions of PFP.

Other actions include:
- Remove residual plutonium from gloveboxes, filterboxes, equipment, piping, ductwork, and the building

surfaces and package for disposition to onsite or offsite disposal facilities.
- Remove internal equipment from gloveboxes and building equipment/system components and package for disposition to onsite or offsite disposal facilities.
- Decontaminate gloveboxes, filterboxes, ductwork, and equipment to less than transuranic levels if possible.
- Remove gloveboxes, filterboxes, ductwork, and equipment and package for disposition to onsite or offsite disposal facilities.
- Decontaminate or fix contamination on building interior and exterior.
- Disconnect utilities and services not necessary for monitoring.
- Perform radiological and chemical characterization in preparation for dismantlement.

In preparation for the proposed transition activities, housekeeping, assays, preventive maintenance, minor decontamination, and reactivation of glovebox access ports would occur.

See additional process description in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 9.00E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0 Using Pu-239 as a conservative alpha isotope.	5.00E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta - 0 Using Sr-90 as a conservative beta isotope.	1.20E-07	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Np - 237	Pu - 238	Pu - 239
Pu - 240	Pu - 241	Pu - 242	U - 233	U - 234
U - 235	U - 236	U - 237	U - 238	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed methods for removing residual contamination from equipment/systems and for removing equipment would be similar to methods in use today throughout the industry and the DOE Complex. Both direct contact and remote technologies/techniques could be used. General technologies/techniques include heating, crushing, size reducing, and cutting. These could involve laboratory analyses and nondestructive assay; chemical cleaning, brushing, washing, scrubbing, vacuum cleaning, and abrasive jetting; using nibblers, shears, circular saws; potentially a remote-operated laser; and other similar methods. It is expected that should new technology become available, such technology would be evaluated for application in the PFP deactivation activities, and could be used if no increase in the potential-to-emit described in this NOC would result.

5) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The PFP deactivation activities include the following:
- Size reduction of equipment will be by mechanical means and may be accomplished by compaction, disassembling by use of wrenches, nibblers, shears, cutters, grinders, saws, or other similar methods. This equipment may be manually, hydraulically, pneumatically or electrically powered.

- Decontamination methods include: Scraping, sweeping, chemical cleaning, brushing, washing, scrubbing, scabbling, grinding, vacuum cleaning, strippable coatings, washing using wet rags, spraying, abrasive jetting, low pressure and high pressure wash using water and/or chemicals cleaners, use of fixatives and/or physical removal of contamination by use of mechanical means such as chipping or cutting. The application of fixatives for contamination control would be accomplished via aerosol fogging, paint brush/roller, hand-held spray bottle, or an electric or pneumatic powered sprayer.
- Containment of waste may be accomplished by coating the material with a fixative or placing the material in containers, bags and/or wrapping in plastic sheeting, utilizing adhesive tape, heat sealing or mechanical closure to prevent release of radiological contamination.
- Miscellaneous mechanical processes that could be used to support the proposed activity could include threading of piping, use of hot taps on piping, capping and plugging piping using threaded pipe components and expanding/compressive plugs or caps, drilling of holes in metal and concrete, core drilling concrete surfaces, installation of anchor bolts, installation and removal of bolts, installation of hose and tubing connectors, compression fittings, installation and removal of pumps, agitators and process control filters.

6) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Excavation will take place in the PFP Complex to support site stabilization, isolating/blanking utilities, fence removal/installation/relocation, and soil sampling/cleanup. Access to underground piping and cable would be gained by use of a bucket-type excavator. Manual digging methods with shovels, picks, and rakes also could be used. Contaminated soil removed and covered during excavation activities would remain covered until replaced into the excavation or otherwise dispositioned (backfill would consist of the original material removed or ‘clean’ soil).

If needed or chosen for use during these activities, the categorical NOCs for sitewide use of the guzzler, a portable temporary radioactive air emissions unit (PTRAEU) exhauster, or HEPA filtered vacuum radioactive air emission unit could be used.
Wastes generated during deactivation would be packaged appropriately. Waste would be generated/packaged throughout the PFP Complex (i.e., in structures with registered stacks, in non-HEPA filtered structures, or outdoors), resulting in filtered releases and/or diffuse and fugitive emissions. Wastes could be placed in various containers such as plastic bags, metal drums, and standard waste boxes. These wastes could be transferred to other locations within the PFP Complex for interim storage and/or repackaging before subsequent transport to approved locations/facilities pending final disposition.

If necessary, personnel decontamination activities would be conducted in the decontamination trailer (DOE/RL-2003-42).

7) The total abated emission limit for the 296-Z-5 emission unit is limited to 2.8E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the potential-to-emit for this emission unit is limited to 5.5E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

8) Unless maximum fan capacity for operating fans is used, effluent flowrate for this minor stack is derived by direct velocity measurement through individual HEPA filter paths within the system The flow rates through individual HEPA filter is performed annually, using multiple transverse velocity measurements using a pitot tube. Flow is derived by averaging the velocity measurement times the duct area. Stack flow is derived by summing the effluent flow from the contributing HEPA filters. The effluent flow rates are used to establish effluent discharge volume by multiplying the flow rate by the time of operation.

9) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

-Outer Can Weld Module. The Outer Can Weld Module will receive a leak-checked BTC. The BTC shall be placed in an outer container. The outer can head space shall then be backfilled with helium, and an outer container lid shall be welded onto the container in accordance with the requirements of DOE Standard 3013.

-Outer Can Leak Test Module. The Outer Can Leak Test Module will receive an outer welded container (3013 package) and operations in this module will verify that the package meets or exceeds the leak tightness requirements

of 3013.

-NDA Laboratory Modification Module. The Nondestructive Analysis (NDA) Laboratory will receive the 3013 package and will analyze the 3013 package for isotopic distribution, heat load, and container baseline.

10) As the required indication device for the Z-5 emission unit, the differential pressure magnehelic gauges associated with the final stage of HEPA filters will have a functional test conducted annually.

Emission Unit ID: 390

200W P-296Z006-001

296-Z-6

This is a MINOR, ACTIVELY ventilated emission unit.

PLUTONIUM FINISHING PLANT(Z PLANT)

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 2.50 ft. 0.76 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 36.40 ft/second. 11.09 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	2 parallel banks with each bank containing a 2-stage HEPA filter; one bank operational. Abatement credit given for one HEPA filter in the operating bank.
	Fan	1	2 fans in parallel. Only one fan required to be operating.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Actions to assure quality of periodic confirmatory measurement as described in section 4.1 of the Standard Conditions.	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 2736-Z and 2736-ZA buildings include storage vault operation in support of the PFP operations mission at the Hanford Site. This 15 foot tall stack exhausts filtered air from the 2736 Z and 2736 ZA Buildings and the plutonium storage vault ventilation system at the PFP Complex.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Deactivation of the Plutonium Finishing Plant Complex	AIR 06-664	7/5/2006	709

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 6.70E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed activities involve transitioning the PFP Complex to a state of low-risk, low-cost, long-term surveillance and maintenance pending final disposition. All work would be performed in accordance with the approved radiological control procedures and as low as reasonably achievable (ALARA) program requirements as implemented by the project radiological control manual, as amended. These requirements would be carried out through the activity work packages and associated radiological work permits.

This activity includes deactivation of buildings and also includes deactivation of systems no longer necessary once stabilization and storage activities and planned legacy hold-up removal have been concluded; removal/disposition of equipment/components; contamination characterization and reduction/mitigation; packaging plutonium holdup material meeting waste acceptance criteria; maintaining and operating muffle furnaces, as needed, for removed plutonium holdup material; and demolition of radiologically contaminated, non-process ancillary buildings.

This activity also includes deactivation activities or activities to prepare and place a facility in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program while being protective of personnel, the public, and the environment until demolition of former processing and material storage buildings occurs. Deactivation activities would include those actions foreseeably necessary for implementation of the proposed action, such as associated transportation activities, waste removal and disposal, and award of grants and contracts. Specific actions could include the following work involving the potential for radioactive contamination:

- Draining and/or de-energizing systems as appropriate.
- Stabilizing contaminated areas (e.g., with fixatives, sealants, paint).
- Stabilizing or removing gloveboxes, process equipment, tanks, piping, fume hoods, and support equipment.
- Removing fencing and paved parking areas adjacent to facilities.
- Installing alternate environmental monitoring, surveillance, and safety components (e.g., lighting, fencing) if required.
- Removing/packaging radioactive (including equipment calibration sources and laboratory standards) and hazardous materials and waste, including stabilization and/or removal of asbestos, and removal, cleanup, and disposition of polychlorinated biphenyls and other regulated materials and transportation to existing waste management facilities.
- Removing equipment and system components.
- Size-reducing process equipment for disposal as waste.
- Performing physical or chemical treatment processes (e.g., neutralization, solidification, filtering) to render a material less hazardous or to reduce the volume (such processes will not increase the potential release rates)..
- Decontamination to support the excess of surplus equipment.
- Removing excess combustible material.
- Disconnecting utilities, piping, and communication service systems (if the systems are not necessary to maintain required environmental monitoring or building safety systems), including associated excavation.
- Ensuring adequate freeze and heat protection.
- Stabilizing, reducing, combining, or removing waste materials at outdoor locations within the PFP Complex (such processes will not increase the potential release rates provided in this NOC).
- Sealing cracks, gratings, and openings to the building exterior, and repairing roofs.
- Conducting general housekeeping activities (e.g., vacuuming, sweeping, dusting) in areas where radiological contamination is not anticipated (e.g., radiological buffer area) but could be encountered.
- Removing or reducing radioactive or hazardous contamination from facilities and equipment by washing, heating, chemical or electrochemical action, mechanical cleaning, or other similar techniques.
- Removing residual plutonium holdup material, which might remain throughout the PFP Complex after stabilization activities described in the PFP EIS have been completed; packaging residual plutonium holdup meeting waste acceptance criteria for shipment to an onsite waste management facility, or thermally stabilizing material in muffle furnace operations and packaging for storage in existing PFP Complex vaults.
- Designing and executing changes to utility service systems and/or utility structures necessary to place a facility in surveillance and maintenance, pending demolition.
- Conducting final process operations to stabilize or eliminate residual operational materials or effluents, such as final process runs; cleaning of vessels, valve pits and pipe trenches; installation and operation of small evaporators; flushing piping systems; removal or replacement of filters; and other similar closeout actions.
- Demolishing non-process ancillary buildings.
- Deactivation activities will require actions to provide for continued routine maintenance, repair, and replacement-in-kind of operating portions of PFP.

Other actions include:

- Remove residual plutonium from gloveboxes, filterboxes, equipment, piping, ductwork, and the building surfaces and package for disposition to onsite or offsite disposal facilities.

- Remove internal equipment from gloveboxes and building equipment/system components and package for disposition to onsite or offsite disposal facilities.
- Decontaminate gloveboxes, filterboxes, ductwork, and equipment to less than transuranic levels if possible.
- Remove gloveboxes, filterboxes, ductwork, and equipment and package for disposition to onsite or offsite disposal facilities.
- Decontaminate or fix contamination on building interior and exterior.
- Disconnect utilities and services not necessary for monitoring.
- Perform radiological and chemical characterization in preparation for dismantlement.

In preparation for the proposed transition activities, housekeeping, assays, preventive maintenance, minor decontamination, and reactivation of glovebox access ports would occur.

See additional process description in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 9.00E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0 Using Pu-239 as a conservative alpha isotope.	5.00E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta - 0 Using Sr-90 as a conservative beta isotope.	1.20E-07	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Np - 237	Pu - 238	Pu - 239
Pu - 240	Pu - 241	Pu - 242	U - 233	U - 234
U - 235	U - 236	U - 237	U - 238	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed methods for removing residual contamination from equipment/systems and for removing equipment would be similar to methods in use today throughout the industry and the DOE Complex. Both direct contact and remote technologies/techniques could be used. General technologies/techniques include heating, crushing, size reducing, and cutting. These could involve laboratory analyses and nondestructive assay; chemical cleaning, brushing, washing, scrubbing, vacuum cleaning, and abrasive jetting; using nibblers, shears, circular saws; potentially a remote-operated laser; and other similar methods. It is expected that should new technology become available, such technology would be evaluated for application in the PFP deactivation activities, and could be used if no increase in the potential-to-emit described in this NOC would result.

5) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The PFP deactivation activities include the following:
- Size reduction of equipment will be by mechanical means and may be accomplished by compaction, disassembling by use of wrenches, nibblers, shears, cutters, grinders, saws, or other similar methods. This equipment may be manually, hydraulically, pneumatically or electrically powered.
- Decontamination methods include: Scraping, sweeping, chemical cleaning, brushing, washing, scrubbing,

scabbling, grinding, vacuum cleaning, strippable coatings, washing using wet rags, spraying, abrasive jetting, low pressure and high pressure wash using water and/or chemicals cleaners, use of fixatives and/or physical removal of contamination by use of mechanical means such as chipping or cutting. The application of fixatives for contamination control would be accomplished via aerosol fogging, paint brush/roller, hand-held spray bottle, or an electric or pneumatic powered sprayer.
- Containment of waste may be accomplished by coating the material with a fixative or placing the material in containers, bags and/or wrapping in plastic sheeting, utilizing adhesive tape, heat sealing or mechanical closure to prevent release of radiological contamination.
- Miscellaneous mechanical processes that could be used to support the proposed activity could include threading of piping, use of hot taps on piping, capping and plugging piping using threaded pipe components and expanding/compressive plugs or caps, drilling of holes in metal and concrete, core drilling concrete surfaces, installation of anchor bolts, installation and removal of bolts, installation of hose and tubing connectors, compression fittings, installation and removal of pumps, agitators and process control filters.

6) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Excavation will take place in the PFP Complex to support site stabilization, isolating/blanking utilities, fence removal/installation/relocation, and soil sampling/cleanup. Access to underground piping and cable would be gained by use of a bucket-type excavator. Manual digging methods with shovels, picks, and rakes also could be used. Contaminated soil removed and covered during excavation activities would remain covered until replaced into the excavation or otherwise dispositioned (backfill would consist of the original material removed or ‘clean’ soil).

   If needed or chosen for use during these activities, the categorical NOCs for sitewide use of the guzzler, a portable temporary radioactive air emissions unit (PTRAEU) exhauster, or HEPA filtered vacuum radioactive air emission unit could be used.
   Wastes generated during deactivation would be packaged appropriately. Waste would be generated/packaged throughout the PFP Complex (i.e., in structures with registered stacks, in non-HEPA filtered structures, or outdoors), resulting in filtered releases and/or diffuse and fugitive emissions. Wastes could be placed in various containers such as plastic bags, metal drums, and standard waste boxes. These wastes could be transferred to other locations within the PFP Complex for interim storage and/or repackaging before subsequent transport to approved locations/facilities pending final disposition.

   If necessary, personnel decontamination activities would be conducted in the decontamination trailer (DOE/RL-2003-42).

7) The total abated emission limit for the 296-Z-6 emission unit is limited to 2.8E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the potential-to-emit for this emission unit is limited to 5.5E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

8) The secure vault storage locations in the 2736Z Building shall accommodate the 3013 packages. These packages shall be sealed, offering no additional potential-to-emit (PTE).

9) As the required indication device for the Z-6 emission unit, the differential pressure magnehelic gauges associated with the final stage of HEPA filters will have a functional test conducted annually.

10) Unless maximum fan capacity for operating fans is used, effluent flowrate for this minor stack is derived by direct velocity measurement through individual HEPA filter paths within the system. The flow rates through individual HEPA filter is performed annually, using multiple transverse velocity measurements using a pitot tube. Flow is derived by averaging the velocity measurement times the duct area. Stack flow is derived by summing the effluent flow from the contributing HEPA filters. The effluent flow rates are used to establish effluent discharge volume by multiplying the flow rate by the time of operation.

Emission Unit ID: 393

200W P-291Z001-001

291-Z-1

This is a MAJOR, ACTIVELY ventilated emission unit.

PLUTONIUM FINISHING PLANT(Z PLANT)

Emission Unit Information

Stack Height: 200.00 ft. 60.96 m. Stack Diameter 13.50 ft. 4.11 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 33.80 ft/second. 10.30 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
Operating Area	HEPA	1	Multiple parallel filter banks available.
Operating Area	Fan	1	Multiple parallel fans available

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Alternative effluent flow rate not to exceed 290,000 cfm. Method 114 appendix B 61.93(b)(2)(ii) ANSI N13.1	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This 200 foot tall stack exhausts filtered air from the 234 5Z, 236 Z, and 242 Z Buildings at the PFP Complex. Activities at the 234-5Z, 236-Z, and 242-Z buildings include characterization, systems deactivation, and equipment removal/disposition in support of the PFP deactivation mission at the Hanford Site. This activity also includes deactivation activities or activities to prepare and place a facility in a safe and stable condition to minimize the long term cost of a surveillance and maintenance program while being protective of personnel, the public, and the environment until demolition of former processing and material storage buildings occurs.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Deactivation of the Plutonium Finishing Plant Complex	AIR 06-664	7/5/2006	709

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 6.70E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed activities involve transitioning the PFP Complex to a state of low-risk, low-cost, long-term surveillance and maintenance pending final disposition. All work would be performed in accordance with the approved radiological control procedures and as low as reasonably achievable (ALARA) program requirements as implemented by the project radiological control manual, as amended. These requirements would be carried out through the activity work packages and associated radiological work permits.

This activity includes deactivation of buildings and also includes deactivation of systems no longer necessary once stabilization and storage activities and planned legacy hold-up removal have been concluded; removal/disposition of equipment/components; contamination characterization and reduction/mitigation; packaging plutonium holdup material meeting waste acceptance criteria; maintaining and operating muffle furnaces, as needed, for removed plutonium holdup material; and demolition of radiologically contaminated, non-process ancillary buildings.

This activity also includes deactivation activities or activities to prepare and place a facility in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program while being protective of personnel, the public, and the environment until demolition of former processing and material storage buildings occurs. Deactivation activities would include those actions foreseeably necessary for implementation of the proposed action, such as associated transportation activities, waste removal and disposal, and award of grants and contracts. Specific actions could include the following work involving the potential for radioactive contamination:
- Draining and/or de-energizing systems as appropriate.
- Stabilizing contaminated areas (e.g., with fixatives, sealants, paint).
- Stabilizing or removing gloveboxes, process equipment, tanks, piping, fume hoods, and support equipment.
- Removing fencing and paved parking areas adjacent to facilities.
- Installing alternate environmental monitoring, surveillance, and safety components (e.g., lighting, fencing) if required.
- Removing/packaging radioactive (including equipment calibration sources and laboratory standards) and hazardous materials and waste, including stabilization and/or removal of asbestos, and removal, cleanup, and disposition of polychlorinated biphenyls and other regulated materials and transportation to existing waste management facilities.
- Removing equipment and system components.
- Size-reducing process equipment for disposal as waste.
- Performing physical or chemical treatment processes (e.g., neutralization, solidification, filtering) to render a material less hazardous or to reduce the volume (such processes will not increase the potential release rates)..
- Decontamination to support the excess of surplus equipment.
- Removing excess combustible material.
- Disconnecting utilities, piping, and communication service systems (if the systems are not necessary to maintain required environmental monitoring or building safety systems), including associated excavation.
- Ensuring adequate freeze and heat protection.
- Stabilizing, reducing, combining, or removing waste materials at outdoor locations within the PFP Complex (such processes will not increase the potential release rates provided in this NOC).
- Sealing cracks, gratings, and openings to the building exterior, and repairing roofs.
- Conducting general housekeeping activities (e.g., vacuuming, sweeping, dusting) in areas where radiological contamination is not anticipated (e.g., radiological buffer area) but could be encountered.
- Removing or reducing radioactive or hazardous contamination from facilities and equipment by washing, heating, chemical or electrochemical action, mechanical cleaning, or other similar techniques.
- Removing residual plutonium holdup material, which might remain throughout the PFP Complex after stabilization activities described in the PFP EIS have been completed; packaging residual plutonium holdup meeting waste acceptance criteria for shipment to an onsite waste management facility, or thermally stabilizing material in muffle furnace operations and packaging for storage in existing PFP Complex vaults.
- Designing and executing changes to utility service systems and/or utility structures necessary to place a facility in surveillance and maintenance, pending demolition.
- Conducting final process operations to stabilize or eliminate residual operational materials or effluents, such as final process runs; cleaning of vessels, valve pits and pipe trenches; installation and operation of small evaporators; flushing piping systems; removal or replacement of filters; and other similar closeout actions.
- Demolishing non-process ancillary buildings.
- Deactivation activities will require actions to provide for continued routine maintenance, repair, and replacement-in-kind of operating portions of PFP.

Other actions include:
- Remove residual plutonium from gloveboxes, filterboxes, equipment, piping, ductwork, and the building surfaces and package for disposition to onsite or offsite disposal facilities.
- Remove internal equipment from gloveboxes and building equipment/system components and package for

disposition to onsite or offsite disposal facilities.
- Decontaminate gloveboxes, filterboxes, ductwork, and equipment to less than transuranic levels if possible.
- Remove gloveboxes, filterboxes, ductwork, and equipment and package for disposition to onsite or offsite disposal facilities.
- Decontaminate or fix contamination on building interior and exterior.
- Disconnect utilities and services not necessary for monitoring.
- Perform radiological and chemical characterization in preparation for dismantlement.

In preparation for the proposed transition activities, housekeeping, assays, preventive maintenance, minor decontamination, and reactivation of glovebox access ports would occur.

See additional process description in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 9.00E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241	1.70E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 238	6.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239	9.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 240	6.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 241	1.70E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Np - 237	Pu - 238	Pu - 239
Pu - 240	Pu - 241	Pu - 242	U - 233	U - 234
U - 235	U - 236	U - 237	U - 238	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed methods for removing residual contamination from equipment/systems and for removing equipment would be similar to methods in use today throughout the industry and the DOE Complex. Both direct contact and remote technologies/techniques could be used. General technologies/techniques include heating, crushing, size reducing, and cutting. These could involve laboratory analyses and nondestructive assay; chemical cleaning, brushing, washing, scrubbing, vacuum cleaning, and abrasive jetting; using nibblers, shears, circular saws; potentially a remote-operated laser; and other similar methods. It is expected that should new technology become available, such technology would be evaluated for application in the PFP deactivation activities, and could be used if no increase in the potential-to-emit described in this NOC would result.

5) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The PFP deactivation activities include the following:
- Size reduction of equipment will be by mechanical means and may be accomplished by compaction, disassembling by use of wrenches, nibblers, shears, cutters, grinders, saws, or other similar methods. This equipment may be manually, hydraulically, pneumatically or electrically powered.
- Decontamination methods include: Scraping, sweeping, chemical cleaning, brushing, washing, scrubbing, scabbling, grinding, vacuum cleaning, strippable coatings, washing using wet rags, spraying, abrasive jetting, low pressure and high pressure wash using water and/or chemicals cleaners, use of fixatives and/or physical removal of contamination by use of mechanical means such as chipping or cutting. The application of fixatives for contamination control would be accomplished via aerosol fogging, paint brush/roller, hand-held spray bottle, or an electric or pneumatic powered sprayer.
- Containment of waste may be accomplished by coating the material with a fixative or placing the material in containers, bags and/or wrapping in plastic sheeting, utilizing adhesive tape, heat sealing or mechanical closure to prevent release of radiological contamination.
- Miscellaneous mechanical processes that could be used to support the proposed activity could include threading of piping, use of hot taps on piping, capping and plugging piping using threaded pipe components and expanding/compressive plugs or caps, drilling of holes in metal and concrete, core drilling concrete surfaces, installation of anchor bolts, installation and removal of bolts, installation of hose and tubing connectors, compression fittings, installation and removal of pumps, agitators and process control filters.

6) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Excavation will take place in the PFP Complex to support site stabilization, isolating/blanking utilities, fence removal/installation/relocation, and soil sampling/cleanup. Access to underground piping and cable would be gained by use of a bucket-type excavator. Manual digging methods with shovels, picks, and rakes also could be used. Contaminated soil removed and covered during excavation activities would remain covered until replaced into the excavation or otherwise dispositioned (backfill would consist of the original material removed or ‘clean’ soil).

If needed or chosen for use during these activities, the categorical NOCs for sitewide use of the guzzler, a portable temporary radioactive air emissions unit (PTRAEU) exhauster, or HEPA filtered vacuum radioactive air emission unit could be used.
Wastes generated during deactivation would be packaged appropriately. Waste would be generated/packaged throughout the PFP Complex (i.e., in structures with registered stacks, in non-HEPA filtered structures, or outdoors), resulting in filtered releases and/or diffuse and fugitive emissions. Wastes could be placed in various containers such as plastic bags, metal drums, and standard waste boxes. These wastes could be transferred to other locations within the PFP Complex for interim storage and/or repackaging before subsequent transport to approved locations/facilities pending final disposition.

If necessary, personnel decontamination activities would be conducted in the decontamination trailer (DOE/RL-2003-42).

7) The total abated emission limit for the 291-Z-1 emission unit is limited to 1.8E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the potential-to-emit for this emission unit is limited to 3.5E+02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

8) Fuel De-Inventory

This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

PFP will repackage fuel assemblies and/or fuel pins into storage and/or transport containers for staging at PFP. These containers would be loaded via crane operations onto trucks for transport either to storage onsite or to appropriate offsite facilities pending final disposition. Fuel assemblies and/or fuel pins could be mechanically handled by transferring directly to containers (emissions would be considered as diffuse and fugitive if work conducted in locale providing potential for unfiltered emissions). Fuel pins could be transferred to glovebox(es) (emissions discharging through the 291-Z-1 or 296-Z-7 stacks) where they would be size reduced (using bolt cutters or equivalent means) and placed into a container. The pins/containers could be subjected to NDA at any point(s)

during repackaging activities.

Minor alterations (e.g., removing interior walls, installation of temporary scaffolding) to the 234-5Z Building would be necessary to support fuel de-inventory operations.

9) Air movers or newly added ducting fitted with HEPA filters (testable) [not to include HEPA Vacs] that exhaust upstream of the existing Z-1 stack monitor are approved for use if their emissions (1) will not result in greater than an accumulative 1% contribution to the stack flow and (2) would not increase the project PTE (i.e., would be limited to the PTE currently addressed in the NOC specific to the Z-1 stack or the diffuse/fugitive emissions described in the NOC as a fraction of the Z-1 PTE).

Emission Unit ID: 395

400 P-FFTFRESB-001

FFTF-RE-SB

This is a MINOR, ACTIVELY ventilated emission unit.

FAST FLUX TEST FACILITY COMPLEX

Emission Unit Information

Stack Height: 20.00 ft. 6.10 m. Stack Diameter 4.40 ft. 1.34 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 13.10 ft/second. 3.99 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Fan	1	Intermettent use No other controls

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the FFTF support surveillance and maintenance operations for decontamination and deactivation at the Hanford Site. This 20 foot tall stack, located in the Lower Reactor Service Building (RSB), exhausts unfiltered air from the lower level of the RSB. Particulate emissions are sampled. This facility is a 400 megawatt thermal, sodium cooled, low pressure, high temperature reactor plant, had been used for irradiation testing of breeder reactor fuels and materials. It has not has not operated since 1993.

Emission Unit ID: 396

400 P-FFTFHTTR-001

FFTF-HT-TR

This is a MINOR, ACTIVELY ventilated emission unit.

FAST FLUX TEST FACILITY COMPLEX

Emission Unit Information

Stack Height: 29.00 ft. 8.84 m. Stack Diameter 2.20 ft. 0.67 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 17.40 ft/second. 5.30 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	Emergency standby
	HEPA	1	Emergency standby
	Fan (Booster)	1	Emergency standby
	Fan	2	In parallel, intermittent use

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the FFTF support surveillance and maintenance operations for decontamination and deactivation at the Hanford Site. This 29 foot tall stack, associated with the Heat Transport System South, exhausted ordinarily unfiltered air from portions of FFTF that are exterior to the containment. Particulate emissions are sampled. This facility is a 400 megawatt thermal, sodium cooled, low pressure, high temperature reactor plant, had been used for irradiation testing of breeder reactor fuels and materials. It has not has not operated since 1993.

Emission Unit ID: 397

400 P-FFTFCBEX-001

FFTF-CB-EX

This is a MINOR, ACTIVELY ventilated emission unit.

FAST FLUX TEST FACILITY COMPLEX

Emission Unit Information

Stack Height: 47.00 ft. 14.33 m. Stack Diameter 4.90 ft. 1.49 m.

Average Stack Effluent Temperature: 70 degrees Fahrenheit. 21 degrees Celsius.

Average Stack ExhaustVelocity: 19.80 ft/second. 6.04 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
Bldg 405 Process Operations	Prefilter	1	Emergency standby
Bldg 405 Process Operations	HEPA	1	Emergency standby
Bldg 405 Process Operations	Fan	2	In parallel (intermittent use)
Access Control Area Process Operations	Prefilter	1	Emergency standby
Access Control Area Process	HEPA	1	Emergency standby
Access Control Area Process	Fan	2	2 in parallel, one leg has 2 in series, intermittent use

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA Tritium	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the FFTF support surveillance and maintenance operations for decontamination and deactivation at the Hanford Site. This 47 foot tall stack also referred to as the Combined Exhaust, exhausts unfiltered air from the reactor containment and gases from the argon processing system. Emissions are sampled using record sampler to collect particulate radionuclides and tritium in the form of tritiated water vapor, also called HTO. This facility is a 400 megawatt thermal, sodium cooled, low pressure, high temperature reactor plant, had been used for irradiation testing of breeder reactor fuels and materials. It has not has not operated since 1993.

Emission Unit ID: 398

400 Sodium Storage Facility

FFTF-402-1

This is a MINOR, ACTIVELY ventilated emission unit.

FAST FLUX TEST FACILITY COMPLEX

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

NONE WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		TOTAL ALPHA TOTAL BETA	

Sampling Requirements None

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status The mission of the Sodium Storage Facility (SSF) is to receive molten sodium coolant from the Fast Flux Test Facility (FFTF) and store the sodium in a solid state for an extended period. Approximately 984,100 liters of sodium from the FFTF will be offloaded to tank storage in SSF. Unused, carbon steel sodium tanks (three 302,800 liter tanks and one 196,800 liter tank) originally built for the Clinch River Breeder Reactor Plant have been installed adjacent to the FFTF complex.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Construction and Operation of Sodium Storage Facility	AIR 06-611	7/5/2006	639

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.60E-06 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Offloading approximately 984,100 liters of sodium from the FFTF to tank storage in the Sodium Storage Facility (SSF). Unused, carbon steel sodium tanks (three 302,800-liter tanks and one 196,800-liter tank) originally built for the Clinch River Breeder Reactor Plant shall be transported from their current location in the 300 Area and installed adjacent to the FFTF complex. Once the storage tanks are in place, a concrete building will be constructed around and over them to provide shielding and weather protection for the tanks and associated equipment. The sodium will be stored in a solid state, under an inert nitrogen or argon gas blanket.

Sodium shall be transferred to the SSF in batches from several different sodium storage/drain vessels within the FFTF. Following the transfer, the sodium shall be allowed to solidify.

Sodium transfers shall be accomplished in the following manner:

1. The receiving tank and interconnecting piping shall be preheated to between 150øC and

200øC by electric heaters.

2. When the proper temperatures have been established, the sodium shall be transferred from the supply tank to the receiving tank by establishing a differential pressure between the supply tank and receiving tank as needed to facilitate the transfer of sodium between the tanks.

The supply tank shall be pressurized using the existing FFTF argon piping. The receiving tank in the SSF will be evacuated using a vacuum pump and a high-efficiency particulate air (HEPA) type process filter connected to the tanks at the tank vent line.

3. The gas system valves shall be operated as needed to maintain the covergas differential pressure and the sodium valves opened, allowing the sodium to flow from one tank to the other. The transfers will occur in batches, with more than one cycle needed to completely fill one SSF storage tank. The inert gas displaced from the tanks during the filling evolution shall be directed out the HEPA or HEPA type filtered exhaust paths.

4. After all the transfers for a tank are complete, the inert gas system shall be used to establish the desired cover gas pressure and the tank shall be allowed to cool to ambient temperature, allowing the sodium to solidify.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.60E-06 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Cs - 137	1.70E-11	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Any radionuclide on the chart of nuclides could be encountered during Sodium Storage Facility loading operations. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate or gaseous form. Although any radionuclide could be present, for conservatism all beta-gamma is assumed to be Cs-137 and all alpha is assumed to be Pu-239 for dose			
H - 3	4.60E-02	Gas	WAC 246-247-030(21)(a)
Any radionuclide on the chart of nuclides could be encountered during Sodium Storage Facility loading operations. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate or gaseous form. Although any radionuclide could be present, for conservatism all beta-gamma is assumed to be Cs-137 and all alpha is assumed to be Pu-239 for dose			
Na - 22	3.50E-08	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Any radionuclide on the chart of nuclides could be encountered during Sodium Storage Facility loading operations. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate or gaseous form. Although any radionuclide could be present, for conservatism all beta-gamma is assumed to be Cs-137 and all alpha is assumed to be Pu-239 for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
Pu - 239	2.30E-13	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Any radionuclide on the chart of nuclides could be encountered during Sodium Storage Facility loading operations. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate or gaseous form. Although any radionuclide could be present, for conservatism all beta-gamma is assumed to be Cs-137 and all alpha is assumed to be Pu-239 for dose			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Cs - 137 H - 3 Na - 22 Pu - 239

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) During the periods when sodium transfers are performed, the estimated emissions from the SSF shall be calculated using the following method.

Assumptions:
The equivalent of one tank volume at standard temperature and pressure is evacuated after the initial contamination-free pump down.

If the uncontaminated receiving tank is initially evacuated, it may provide a sufficient pressure drop to complete the sodium transfer with no release of contaminated gas; however, for purposes of providing a conservative estimate of potential emissions it is assumed an entire tank volume of contaminated cover gas is released to the atmosphere.

The concentration of tritium in the primary sodium, conservatively assumed to fill three of the 302,800-liter tanks, is the same as historical concentrations of tritium in the reactor cover gas in 1992 (about 5 x 10-5 uCi/ml).

The concentration of tritium in the secondary sodium (assumed to fill the 196,800 liter tank) is equal to the historical concentration of the secondary sodium cover gas in 1992 (about 4E-6 uCi/ml). The remaining 52,996 liters of secondary sodium will go to a 302,800 liter tank.

The amount of tritium released during the fill of one tank with primary sodium would be:

(Volume of sodium transferred in liters) (103 ml/liter) (5 E-5 uCi/ml) = Amount in uCi

This shall be tracked via an approved log.

5) During the storage periods when no new sources are added to the SSF, the sodium shall be in a solid form after cooling. Radiological smear surveys of the facility and monitoring described in section 5 of the general condition in this license shall provide periodic confirmatory measurement.

Emission Unit ID: 399

400 P-437-002

437-1-61

This is a MINOR, ACTIVELY ventilated emission unit.

437 Maintenance and Storage (MASF)

Emission Unit Information

Stack Height: 38.40 ft. 11.70 m. Stack Diameter 1.10 ft. 0.34 m.

Average Stack Effluent Temperature: 72 degrees Fahrenheit. 22 degrees Celsius.

Average Stack ExhaustVelocity: 18.75 ft/second. 5.72 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	16 Parallel flow paths, each path provides 1 prefilter minimum of 1 in operation intermettent operation
	HEPA	1	16 Parallel flow paths, each path provides 1 prefilter minimum of 1 in operation; intermettent operation
	Fan	1	Intermettent operation

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 week sample/ year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the MASF support surveillance and maintenance operations at the Hanford Site. This 38.4 foot tall stack exhausts filtered air from Maintenance and Storage Facility (MASF). Particulate emissions are sampled. MASF, or the 437 Building, is a multipurpose service center supporting the specialized maintenance and storage requirements of the Fast Flux Test Facility (FFTF). MASF provides the capability for decontamination, repair, and storage of non fueled components and hardware for FFTF.

Emission Unit ID: 402

200E P-296B001-001

296-B-1

This is a MAJOR, ACTIVELY ventilated emission unit.

B- PLANT

Emission Unit Information

Stack Height: 90.00 ft. 27.43 m. Stack Diameter 2.67 ft. 0.81 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	2	Two trains, one bank in each train
	HEPA	4	Two trains, 2 banks in each train
	Fan	2	Only one fan operates at a time.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	137Cs, 90Sr	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the B Plant Canyon involve surveillance and maintenance. This 90 foot tall stack exhausts filtered air from the main canyon and process cells in the 221 B Building, from the process cell in the 212 B Building, and from the 224 B Building via the vessel vent. Particulate emissions are sampled. The B Plant Complex separated plutonium from spent nuclear fuel, but its operations were later reconfigured to remove Sr90 and Cs 137 from high-level liquid waste. The main canyon building, 221 B, contains radioactive contamination from various production campaigns. The B Plant Complex, excluding WESF, was deactivated in 1998. Typical activities include routine maintenance of the emissions unit and surveillance and maintenance of the building.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
B Plant Modification of the Ventilation System (Emission Point: 296-B-1)	AIR 06-615	7/5/2006	645

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.52E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Installation of exhaust ductwork, installation of air clean-up train equip. and fans, installation of a new exhaust stack, isolation & ventilation of existing filter banks, isolation of existing stack & exhaust fans, and operation of the installed systems.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 7.87E+01 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241	2.56E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Cs - 137	8.40E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Pu - 238	3.60E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Pu - 239/240	3.84E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Sb - 125		Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% fo the abated dose.			
Sr - 90	3.48E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Y - 90		Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% fo the abated dose.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Cs - 137	Pu - 238	Pu - 239/240	Sb - 125
Sr - 90	Y - 90			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The new HEPA filters must be fully compatable with ANSI 509/510 standards.

Emission Unit ID: 404

200E P-296B002-001

296-B-2

This is a MAJOR, PASSIVELY ventilated emission unit.

B- PLANT

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.20 ft. 0.06 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	In series(passive ventilation)

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Alternative monitoring method approved is NDA testing on the second in-line HEPA filter.	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Annual

Sampling Requirements Annual nondestructive analysis

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the B Plant Canyon involve surveillance and maintenance. The purpose for which the vent was installed is no longer valid, so the vent is no longer needed, the discharge points were capped, and a closure report was submitted July 22, 2003.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
B Plant Modification of the Ventilation System (Emission Point: 296-B-1)	AIR 06-615	7/5/2006	645

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.52E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Installation of exhaust ductwork, installation of air clean-up train equip. and fans, installation of a new exhaust stack, isolation & ventilation of existing filter banks, isolation of existing stack & exhaust fans, and operation of the installed systems.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 7.87E+01 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Cs - 137	6.38E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239/240		Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% fo the abated dose.

Sr - 90	1.10E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Y - 90		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% fo the abated dose.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Cs - 137 Pu - 239/240 Sr - 90 Y - 90

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) In lieu of annual testing, the record HEPA filter (second filter) shall have an efficiency greater than 90% for particles with a median diameter of 0.3 micron as specified by the manufacturer and doesn't need to be tested.
5) Change the frequency of NDA on the record filter from quarterly to annually.
6) If a valve is found to be leaking, the Department of Health must be notified prior to replacement to determine if a notice of construction is needed for the procedure.
7) Perform aerosol testing of the record filter annually.
8) The HEPA filter associated with the venting of the retired filters plus the sand filter must use the alternative method for collecting the record samples and HEPA maintenance. The alternate method requires the quarterly nondestructive analysis of the second HEPA in series. The logs of these analyses are used to track emissions. The records must be available during DOH inspections for a representative tracking period, and are otherwise subject to the 5 year readily retrievable requirement of WAC 246-247-080(8). (note:please see Conditon 11 for new NDA frequency. NOC Revision Form approved September 5, 2000)
9) The new HEPA filters must be fully compatable with ANSI 509/510 standards.

Emission Unit ID: 412

300 EP-331-01-V

EP-331-01-V

This is a MAJOR, ACTIVELY ventilated emission unit.

331 LIFE SCI LAB

Emission Unit Information

Stack Height: 62.00 ft. 18.90 m. Stack Diameter 6.50 ft. 1.98 m.

Average Stack Effluent Temperature: 76 degrees Fahrenheit. 24 degrees Celsius.

Average Stack ExhaustVelocity: 28.00 ft/second. 8.53 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
1	Fan	1	1 of 2 fans operating
1	HEPA	1	Required for room or hood where dispersible material is used
2	Fan	1	1 of 3 fans operating
2	HEPA	1	Required for room or hood where dispersible material is used

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Appendix B, Method 114(3)	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This 62 foot tall stack exhausts filtered building ventilation air. Particulate emissions are sampled. The mission of the 331 Building is to conduct fundamental science and to develop environmental technology. Research activities conducted in the 331 Building support the Hanford Site environmental mission and other key DOE missions of national and international importance. Research activities performed within the 331 Building include the use of radioactive materials. Laboratory processes are conducted "continuously" (i.e., year round, during normal business, swing shift, night shift, and weekend hours). The 331 Building provides research capabilities to study the interactions of chemicals and radionuclides with plants, animals, and microorganisms and the fate of chemicals and radionuclides in the environment. The building also has research capabilities for conducting studies on the uptake and transformation effects of radioactive material and chemicals in soils, plants, animals, and microorganisms.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Life Sciences Laboratory-1 (331 Building)	AIR 06-665	7/5/2006	710

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 9.10E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16),

may be conducted.

The mission of the 331 Building is to conduct fundamental science and to develop environmental technology. Research activities conducted in the 331 Building support the Hanford Site environmental mission and other key DOE missions of national and international importance. Research activities performed within the 331 Building include the use of radioactive materials. Laboratory processes are conducted "continuously" (i.e., year-round, during normal business, swing-shift, night-shift, and weekend hours). The 331 Building provides research capabilities to study the interactions of chemicals and radionuclides with plants, animals, and microorganisms and the fate of chemicals and radionuclides in the environment. The building also has research capabilities for conducting studies on the uptake and transformation effects of radioactive material and chemicals in soils, plants, animals, and microorganisms.

The inventory of radioactive material in the building can include gram quantities of fissionable materials and up to curie quantities of other radionuclides. The laboratory activities conducted in the 331 Building include:

·Experimental studies with molecular and cellular processes.
·Studies to determine precise cross-species and low-dose extrapolation of health risks and to understand disease mechanisms.
·Basic and applied research concerning microorganisms and/or their processes in various environments.
·Subsurface microbiology including the physiology and ecology of subsurface microorganisms, degradation of organic contaminants and bioremediation, enzymatic reductions of metals, and biogeochemical cycling of nutrients.
·Studies investigating macromolecular structure and dynamics and consequences of observables on molecular function.
·Development of instrumentation and analytical methods.
·Development of comprehensive environmental monitoring programs.
·Development of advanced scientific and technological solutions for long-term stewardship of waste sites.
·Waste management activities including satellite accumulation areas and <90 day storage areas.
·Characterizing and monitoring aquatic and terrestrial ecosystems including the development and monitoring of new technologies and methods.
·Studies of impacts of water use practices on fisheries and wildlife and the response of the ecosystems to engineered structures and natural and man-induced stresses.
·Activities involving nuclear process engineering, radiomaterials characterization, and radiochemical separations and processing.
·Studies of the health effects of chemical and radiation exposure on animals (rodents) and in cells grown in culture.
·Examining the uptake and transformation effects of radionuclides in soils, plants, animals and microorganisms.
·Studies with radioactive tracer materials in biological and non-biologic systems.
·Research to promote the understanding of the chemical and biological processes that govern the mobility and degradation of a range of inorganic, radionuclide and organic contaminants in soils, sediments, and ground water systems.
·Measurements of exposures to physical, radiological, and chemical agents.
·Developing technology for the separation, purification, production, and delivery of radioisotopes (e.g., for medical purposes, and standards development).
·Research and laboratory activities that may include processes where the temperature may be equal to or exceed 100ºC.
·Research activities involving mixed activation products (MAP) and mixed fission products (MFP).
·Laboratory setup projects involving fume hood removals/upgrades and ductwork tie-in.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 3.60E+00 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Ac - 225	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Ac - 227		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ac - 228		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 108		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 108 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 109 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 110		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 110 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ag - 111		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Al - 26		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Al - 28		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Am - 241		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Am - 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Am - 242		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Am - 242 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Am - 243	8.40E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 245		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ar - 37		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ar - 39		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ar - 41		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ar - 42		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
As - 74		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

As - 76	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

At - 217	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Au - 195	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Au - 198	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ba - 131	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ba - 133	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ba - 133 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ba - 137 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ba - 139	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ba - 140	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ba - 141	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Ba - 142	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Be - 10	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Be - 7	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Bi - 207	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Bi - 210	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Bi - 211	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Bi - 212	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Bi - 213	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Bi - 214	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Bk - 249	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Bk - 250	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Br - 82	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Br - 83	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Br - 84	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Br - 85	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
C - 11	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
C - 14	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
C - 14	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
C - 15	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ca - 41	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ca - 45	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ca - 47	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cd - 109	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cd - 113 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cd - 113	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cd - 115	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cd - 115 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ce - 139	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ce - 141	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ce - 142	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ce - 143	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Ce - 144	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cf - 249	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cf - 250	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cf - 251	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cf - 252	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cl - 36	Gas	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 242	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 243	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 244	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 245	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 246	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 247	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cm - 248	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Co - 56	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Co - 57	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Co - 58	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Co - 60	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cr - 51	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cr - 55	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cs - 131	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Cs - 134	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 134 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 135	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 136	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 137	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 137	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 138	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 139	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cu - 64	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Es - 254	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 150	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 152	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 152 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 154	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 155	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 156	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 157	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
F - 18	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Fe - 55	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Fe - 59	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Fr - 221	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Fr - 223	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ga - 67	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ga - 72	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Gd - 148	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Gd - 149	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Gd - 151	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Gd - 152	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Gd - 153	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ge - 68	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
H - 3	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
H - 3	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Hf - 175	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Hf - 178	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Hf - 178 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Hf - 181	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Hf - 182	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Hg - 203	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ho - 166	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ho - 166 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 122	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 123	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

I - 125	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 129	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 130	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 131	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 131	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 132	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 133	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 134	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 135	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 113 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 114	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 114 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 115	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
In - 115 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ir - 192	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
K - 40	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
K - 42	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 81	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 83 m	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 85	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Kr - 85 m	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 87	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 88	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 89	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Kr - 90	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
La - 138	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
La - 140	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
La - 141	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
La - 142	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Lu - 177	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mg - 27	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 52	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 54	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 56	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mo - 93	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mo - 99	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
N - 13	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Na - 22	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Na - 24	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Nb - 91	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Nb - 91 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Nb - 92		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 93 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 94		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 95		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 95 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 97		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nb - 97 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nd - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Nd - 147		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ni - 56		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ni - 59		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ni - 63		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Ni - 65		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 235		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 236		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 237	1.20E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Np - 238		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 239		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 240		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Np - 240 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
O - 15		Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

P - 32	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
P - 33	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pa - 231	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pa - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pa - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pa - 234 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 209	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 210	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 211	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 212	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pb - 214	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pd - 107	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pd - 109	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 145	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 146	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 147	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 148	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 148 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 149	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pm - 151	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Po - 208	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Po - 209		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 210		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 211		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 212		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 213		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 214		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 215		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 216		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Po - 218		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pr - 143		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pr - 144		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pr - 144 m		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 234		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 236		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 237		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 238	2.60E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239	9.20E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 240	2.90E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 241		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 242		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Pu - 243		Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

Pu - 244	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ra - 223	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ra - 224	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ra - 225	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ra - 226	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ra - 228	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rb - 86	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rb - 87	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rb - 88	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rb - 89	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rb - 90	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rb - 90 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Re - 186	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Re - 187	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Re - 188	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rh - 102	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rh - 103 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rh - 105	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rh - 105 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rh - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rn - 219	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Rn - 220	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Rn - 222	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 103	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 105	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 97	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
S - 35	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 124	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 125	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 126	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 126 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 127	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sc - 46	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sc - 47	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Se - 75	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Se - 79	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Si - 31	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sm - 145	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sm - 146	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sm - 147	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sm - 151	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Sm - 153	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sm - 157	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sn - 113	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sn - 117 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sn - 119 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sn - 121 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sn - 123	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sn - 125	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sn - 126	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sr - 85	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sr - 89	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sr - 90	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sr - 91	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sr - 92	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ta - 179	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ta - 182	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ta - 183	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tb - 160	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tc - 101	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tc - 95 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tc - 97	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Tc - 97 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tc - 98	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tc - 99	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tc - 99 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 121	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 121 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 123	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 123 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 125 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 127	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 127 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 129	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 129 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 131	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 131 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 132	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 133	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 133 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Te - 134	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Th - 227	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Th - 228	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Th - 229	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Th - 230	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Th - 231	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Th - 232	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Th - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Th - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ti - 44	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ti - 51	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tl - 204	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tl - 207	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tl - 208	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tl - 209	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tm - 170	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tm - 171	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 232	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 235	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 236	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 237	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

U - 239	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 240	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
V - 48	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
V - 49	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
W - 181	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
W - 185	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
W - 187	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
W - 188	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 122	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 123	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 125	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 127	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 131 m	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 133	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 133 m	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 135	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 135 m	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 137	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Xe - 138	Gas	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Y - 88	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Y - 90	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Y - 90 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 91	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 91 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 92	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Y - 93	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Yb - 164	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Yb - 175	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Yb - 177	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zn - 69	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zn - 69 m	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 88	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 89	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 93	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ac - 225	Ac - 227	Ac - 228	Ag - 108 m	Ag - 108
Ag - 109 m	Ag - 110 m	Ag - 110	Ag - 111	Al - 26
Al - 28	Am - 241	Am - 242 m	Am - 242	Am - 243
Am - 245	Ar - 37	Ar - 39	Ar - 41	Ar - 42
As - 74	As - 76	At - 217	Au - 195	Au - 198
Ba - 131	Ba - 133	Ba - 133 m	Ba - 137 m	Ba - 139
Ba - 140	Ba - 141	Ba - 142	Be - 10	Be - 7
Bi - 207	Bi - 210	Bi - 211	Bi - 212	Bi - 213
Bi - 214	Bk - 249	Bk - 250	Br - 82	Br - 83
Br - 84	Br - 85	C - 11	C - 14	C - 15
Ca - 41	Ca - 45	Ca - 47	Cd - 109	Cd - 113 m
Cd - 113	Cd - 115 m	Cd - 115	Ce - 139	Ce - 141
Ce - 142	Ce - 143	Ce - 144	Cf - 249	Cf - 250

Cf - 251	Cf - 252	Cl - 36	Cm - 241	Cm - 242
Cm - 243	Cm - 244	Cm - 245	Cm - 246	Cm - 247
Cm - 248	Co - 56	Co - 57	Co - 58	Co - 60
Cr - 51	Cr - 55	Cs - 131	Cs - 134	Cs - 134 m
Cs - 135	Cs - 136	Cs - 137	Cs - 138	Cs - 139
Cu - 64	Es - 254	Eu - 150	Eu - 152	Eu - 152 m
Eu - 154	Eu - 155	Eu - 156	Eu - 157	F - 18
Fe - 55	Fe - 59	Fr - 221	Fr - 223	Ga - 67
Ga - 72	Gd - 148	Gd - 149	Gd - 151	Gd - 152
Gd - 153	Ge - 68	H - 3	Hf - 175	Hf - 178
Hf - 178 m	Hf - 181	Hf - 182	Hg - 203	Ho - 166
Ho - 166 m	I - 122	I - 123	I - 125	I - 129
I - 130	I - 131	I - 132	I - 133	I - 134
I - 135	In - 106	In - 113 m	In - 114 m	In - 114
In - 115	In - 115 m	Ir - 192	K - 40	K - 42
Kr - 81	Kr - 83 m	Kr - 85	Kr - 85 m	Kr - 87
Kr - 88	Kr - 89	Kr - 90	La - 138	La - 140
La - 141	La - 142	Lu - 177	Mg - 27	Mn - 52
Mn - 54	Mn - 56	Mo - 93	Mo - 99	N - 13
Na - 22	Na - 24	Nb - 91	Nb - 91 m	Nb - 92
Nb - 93 m	Nb - 94	Nb - 95	Nb - 95 m	Nb - 97
Nb - 97 m	Nd - 144	Nd - 147	Ni - 56	Ni - 59
Ni - 63	Ni - 65	Np - 235	Np - 236	Np - 237
Np - 238	Np - 239	Np - 240	Np - 240 m	O - 15
P - 32	P - 33	Pa - 231	Pa - 233	Pa - 234
Pa - 234 m	Pb - 209	Pb - 210	Pb - 211	Pb - 212
Pb - 214	Pd - 107	Pd - 109	Pm - 145	Pm - 146
Pm - 147	Pm - 148 m	Pm - 148	Pm - 149	Pm - 151
Po - 208	Po - 209	Po - 210	Po - 211	Po - 212
Po - 213	Po - 214	Po - 215	Po - 216	Po - 218
Pr - 143	Pr - 144	Pr - 144 m	Pu - 234	Pu - 236
Pu - 237	Pu - 238	Pu - 239	Pu - 240	Pu - 241
Pu - 242	Pu - 243	Pu - 244	Ra - 223	Ra - 224
Ra - 225	Ra - 226	Ra - 228	Rb - 86	Rb - 87
Rb - 88	Rb - 89	Rb - 90	Rb - 90 m	Re - 186
Re - 187	Re - 188	Rh - 102	Rh - 103 m	Rh - 105
Rh - 105 m	Rh - 106	Rn - 219	Rn - 220	Rn - 222
Ru - 103	Ru - 105	Ru - 106	Ru - 97	S - 35
Sb - 124	Sb - 125	Sb - 126	Sb - 126 m	Sb - 127
Sc - 46	Sc - 47	Se - 75	Se - 79	Si - 31
Sm - 145	Sm - 146	Sm - 147	Sm - 151	Sm - 153
Sm - 157	Sn - 113	Sn - 117 m	Sn - 119 m	Sn - 121 m
Sn - 123	Sn - 125	Sn - 126	Sr - 85	Sr - 89
Sr - 90	Sr - 91	Sr - 92	Ta - 179	Ta - 182
Ta - 183	Tb - 160	Tc - 101	Tc - 95 m	Tc - 97
Tc - 97 m	Tc - 98	Tc - 99	Tc - 99 m	Te - 121 m
Te - 121	Te - 123	Te - 123 m	Te - 125 m	Te - 127 m
Te - 127	Te - 129 m	Te - 129	Te - 131	Te - 131 m
Te - 132	Te - 133	Te - 133 m	Te - 134	Th - 227

Th - 228	Th - 229	Th - 230	Th - 231	Th - 232
Th - 233	Th - 234	Ti - 44	Ti - 51	Tl - 204
Tl - 207	Tl - 208	Tl - 209	Tm - 170	Tm - 171
U - 232	U - 233	U - 234	U - 235	U - 236
U - 237	U - 238	U - 239	U - 240	V - 48
V - 49	W - 181	W - 185	W - 187	W - 188
Xe - 122	Xe - 123	Xe - 125	Xe - 127	Xe - 131 m
Xe - 133	Xe - 133 m	Xe - 135	Xe - 135 m	Xe - 137
Xe - 138	Y - 88	Y - 90	Y - 90 m	Y - 91
Y - 91 m	Y - 92	Y - 93	Yb - 164	Yb - 175
Yb - 177	Zn - 65	Zn - 69	Zn - 69 m	Zr - 88
Zr - 89	Zr - 93	Zr - 95		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) To account for all the radioisotopes that may be affected by a process in which the temperature may be equal to or exceed 100 degrees Celsius, a release factor of one is applied to a gaseous form of Am-241 and Cs-137.

5) Total design flow through each HEPA filter bank shall not exceed the maximum rated flow rate for the individual HEPA filters multiplied by the number of filters. This does not limit the design flow rate of the stack, just that of the filters.

Emission Unit ID: 417

300 EP-3730-01-S

EP-3730-01-S

This is a MINOR, ACTIVELY ventilated emission unit.

3730 GAMMA IRRAD FAC

Emission Unit Information

Stack Height: 19.30 ft. 5.88 m. Stack Diameter 0.66 ft. 0.20 m.

Average Stack Effluent Temperature: 83 degrees Fahrenheit. 28 degrees Celsius.

Average Stack ExhaustVelocity: 12.20 ft/second. 3.72 m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	In series
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	2 week sample/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 3730 Building support operations. This 19.3 foot tall stack exhausts filtered building ventilation air. Particulate emissions are sampled. The building contains a hot cell for metallurgical studies of specimens of irradiated metals.

Emission Unit ID: 422

300 P-340DECON-001

340 Decon

This is a MINOR, ACTIVELY ventilated emission unit.

340 BUILDING

Emission Unit Information

Stack Height: 27.00 ft. 8.23 m. Stack Diameter 2.50 ft. 0.76 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	3 in parallel, Change Room doesn't pass through prefilter
	HEPA	2	In series, both HEPA filters are tested as a single unit
	Fan	1	
	Moisture separator	1	Serves the decon sump

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	4 weeks/year

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 340 Building support surveillance and maintenance deactivation operations at the Hanford Site. This 27 foot tall stack exhausts filtered air from the 340 Building Decontamination Room. Within the 340 Complex is the 340 A Building, which contains six aboveground tanks that had been used to store temporarily liquid mixed waste. Those tanks have been flushed and are currently empty. The 340 B Building was used for the railcar loadout of liquid mixed waste, and was shut down in 1998. The 340 B Building is currently used to store nonradioactive and radioactive solid waste. The 340 Vault houses two tanks, which have been emptied to the maximum extent practical. Operations within the vaults have permanently ceased.

Emission Unit ID: 423

300 P-340NTEX-001

340-NT-EX

This is a MINOR, ACTIVELY ventilated emission unit.

340 BUILDING

Emission Unit Information

Stack Height: 18.00 ft. 5.49 m. Stack Diameter 1.60 ft. 0.49 m.

Average Stack Effluent Temperature: 68 degrees Fahrenheit. 20 degrees Celsius.

Average Stack ExhaustVelocity: 16.60 ft/second. 5.06 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	3 parallel flow paths, (Minimum of 2 active flow paths providing 1 stage prefiltration and 2 stages HEPA filtration)
	HEPA	2	In series. 3 parallel flow paths, (Minimum of 2 active flow paths providing 1 stage prefiltration and 2 stages HEPA filtration)
	Fan	2	In parallel, (only one fan operates at a time, one is a backup)
	Moisture separator	1	Serves the vessel off-gas portion of the treatment system

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Actions to assure quality of periodic confirmatory measurement as described in section 4.1 of the Standard Conditions.	Total Alpha and Total Beta.	The sample requirements is to take 4 one week duration samples each year (utilizing the stack record sampling system).

Sampling Requirements Record Sampling

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the 340 A Building support surveillance and maintenance deactivation operations at the Hanford Site. This 20 foot tall stack exhausts filtered air from the 340 Building vault, the 340 Building vault tanks, the 340 A Building aboveground storage tanks, and the associated piping system. Particulate emissions are sampled. The 340 NT EX Emission unit is in surveillance and maintenance mode for ongoing current activities. These include activities like entries into the vault area to calibrate equipment in the sump, perform inspections currently required by Ecology, or corrective maintenance to remove precipitation, which might accumulate via leakage through the vault roof or doorways. Maintenance and surveillance activities do not increase the potential to emit.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of the 340 Waste Storage	AIR 06-661	7/5/2006	704

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.00E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The 340-NT-EX Emission unit is in surveillance and maintenance mode for ongoing current activities. These include activities like entries into the vault area to calibrate equipment in the sump, perform inspections currently required by Ecology, or corrective maintenance to remove precipitation which might accumulate via leakage through the vault roof or doorways.

   Per the approved release fraction calculation based on effluent stream samples collected upstream of all abatement controls, no activities may be performed upstream of the abatement controls. The only activities allowed are maintenance and surveillance that will not disturb the source term and will not increase the potential-to-emit.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.00E-03 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	2.90E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(d)
Alpha release rate based on Am-241. See condition 24 for approval of alternative release fraction and basis.			
Am - 241	1.90E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(d)
See condition 24 for approval of alternative release fraction and basis.			
B/G - 0	2.50E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(d)
Beta/Gamma release rate based on Sr-90. See condition 24 for approval of alternative release fraction and basis.			
Co - 57		Liquid/Particulate Solid	WAC 246-247-030(21)(d)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Co - 60	4.40E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(d)
See condition 24 for approval of alternative release fraction and basis.			
Cs - 134		Liquid/Particulate Solid	WAC 246-247-030(21)(d)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Cs - 137	1.30E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(d)
See condition 24 for approval of alternative release fraction and basis.			
Eu - 152		Liquid/Particulate Solid	WAC 246-247-030(21)(d)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu - 154		Liquid/Particulate Solid	WAC 246-247-030(21)(d)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Eu - 155		Liquid/Particulate Solid	WAC 246-247-030(21)(d)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			
Sb - 125		Liquid/Particulate Solid	WAC 246-247-030(21)(d)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Co - 57	Co - 60	Cs - 134	Cs - 137
Eu - 152	Eu - 154	Eu - 155	Sb - 125	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The current abatement controls must be maintained and be operational until the source term is removed or as approved by the department.

5) The department approves the release fractions as demonstrated by the upstream air sampling and doses calculated and reported via letter 03-RCA-0231, dated May 8, 2003. The basis of this approval is the assurance that any increase in potential-to-emit will be determined prior to commencement of any source term disturbing activity. This determination shall be maintained as part of the air emissions record and will be available for inspection upon request.

Emission Unit ID: 435

200E P-296H212 001

296-H-212 (CSB)

This is a MAJOR, ACTIVELY ventilated emission unit.

CANISTER STORAGE BLDG (CSB)

Emission Unit Information

Stack Height: 75.00 ft. 22.86 m. Stack Diameter 2.30 ft. 0.70 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: 34.50 ft/second. 10.52 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	double stage, operates in parallel, one HEPA at a time and one in backup mode
	Fan	2	operates in parallel, one fan at a time and one in backup mode

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Appendix B, Method 114(3)	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	The record filter is to be counted annually (either a destructive or non-destructive technique) using a gamma spectrometer calibrated to Cs-137.

Sampling Requirements The record filter is replaced monthly and analyzed quarterly (either destructive or non-destructive technique) using a gamma spectrometer calibrated to Cs-137.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the CSB support surveillance and maintenance operations for safe storage of SNF at the Hanford Site. This 75 foot tall stack exhausts filtered air from the 212 H Building. Particulate emissions are sampled. This facility began operations in December 2000. It has storage tubes for housing specially engineered canisters that hold irradiated fuel from the 100 K Spent Fuel Storage Basins. Before fuel is received at the CSB, it passes through the Cold Vacuum Drying Facility (CVDF) where it is dried.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Canister Storage Building, Building 212-H	AIR 06-620	7/5/2006	652

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.64E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The use of the Canister Storage Building (CSB) for storage of spent nuclear fuel (SNF). The CSB shall consist of load-in/load-out areas, mechanical and electrical support areas, a multi-canister overpack (MCO) weld/sample station, and a subgrade vault storage area. The SNF shall be received in MCOs that shall be shipped in a cask.

The subgrade reinforced concrete vault area shall accommodate three equal-sized, below grade compartments with each compartment cooled by natural convection and having separate air inlet and exhaust plenums. Because there is physical separation from the SNF source term to the air space in this below grade vault, there is no control technology or emission monitoring of the exhaust from this area. The physical separation shall consist of the following barriers: MCO and storage tube.

Over the vault shall be a structural steel and metal sided building with heating and ventilation systems, and a material handling machine for use in the handling and movement of MCOs. The air space above the operating deck shall be at a negative pressure with respect to atmosphere during all MCO handling, storage, and monitoring operations. The exhaust from this portion of the building ventilation system shall be filtered by testable high-efficiency particulate air (HEPA) filters and sampled before exhausting through a separate building operating area stack. An operating deck shall separate the subgrade vault from the above grade level working area.

A continuous air emission monitoring system (CAEMS) shall be installed in the process exhaust stack.

There shall be no more than 226 penetration holes in the operating deck in each of the three compartments in the vaulted area. MCOs containing the SNF shall be stored in the 226 vertical steel storage tubes in the north vault (also know as vault 1). Vaults 2 and 3 shall be used for the storage of sealed/immobilized high-level waste.

The steel storage tubes shall prevent migration of radiological contamination and shall be inserted through existing penetrations and extend from the operating deck to the floor of the vault. Access to the interior of the tubes shall be through penetrations in the operating deck. Each tube shall contain no more than two MCOs and be equipped with a shield plug that shall be vented to the operating deck but which can also be isolated.

The function of the MCO shall be to confine, contain, and maintain the SNF in a critically safe array to ensure safe operations and to support processing the 105 K Basins SNF at the Cold Vacuum Drying Facility, processing the Shippingport PWR SNF at the T Plant, and transport to the CSB.

A cover cap shall be welded on top of the MCO covering the MCO shield plug. This shall be performed at the sample and weld station located in the CSB, thus hermetically sealing the SNF contained in the MCO.

The sampling and weld station shall be located at the south end of the CSB operating area. This area shall consist of seven process pits, four feet in diameter and 19 feet 8 inches deep. Two of the pits shall be equipped for MCO gas sampling and for welding the cover caps on the MCOs. Weld inspection and helium leak checking of the seal weld shall also be accomplished here.

An exhaust enclosure shall be provided for confinement around the top of the MCO during sampling and welding. The function of the enclosure shall be to capture any potential airborne contamination. Airflow shall be into the enclosure. An exhaust duct shall run from the enclosure to a fan and through a testable HEPA filter that shall exhaust into the building ventilation exhaust system for the CSB operating area upstream of the building exhaust testable HEPA filters.

The tube vent and purge cart will house the storage tube purge system, which shall monitor and maintain an inert gas environment around any MCO placed in the overpack storage tubes and to monitor the atmosphere in any of the other storage tubes as required. The vent and purge cart may be driven to any of the 226 storage tubes.

The vent and purge cart equipment shall include inert gas supply cylinders, flexible steel hoses, an airtight sampling connection, a radioactive gas monitor, a hydrogen gas monitor and associated interlocks and alarms, a vacuum pump and its cooling unit, a HEPA filter, and an oxygen monitor and associated alarms.

The heating, ventilation, and air conditioning (HVAC) system shall provide contamination confinement and contamination control within the CSB. The HVAC system shall provide a controlled pressure gradient flow of air from outside the CSB inward through uncontaminated areas to potentially contaminated areas of the building and out through HEPA filters and a monitored exhaust.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 3.64E+01 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Ag - 110	1.42E-09	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ag - 110 m	1.07E-07	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 241	1.87E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 242	9.74E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 242 m	9.79E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 243	6.00E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ba - 137 m	6.25E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
C - 14	8.66E-01	gas	WAC 246-247-030(21)(a)
C - 14	6.90E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cd - 113 m	1.77E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ce - 144	4.57E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cm - 242	8.09E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cm - 244	7.19E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Co - 60	1.98E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cs - 134	7.94E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cs - 135	3.87E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cs - 137	6.59E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 152	4.72E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 154	5.35E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 155	1.10E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Fe - 55	1.83E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Gd - 153	6.39E-10	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
H - 3	3.65E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
H - 3	4.58E+01	gas	WAC 246-247-030(21)(a)
I - 129	6.34E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
I - 129	7.96E-03	gas	WAC 246-247-030(21)(a)

In - 113 m	1.07E-12	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Kr - 85	7.38E+02	gas	WAC 246-247-030(21)(a)
Kr - 85	5.88E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Nb - 93 m	1.23E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Nb - 95	1.87E-17	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Nb - 95 m	6.25E-20	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ni - 59	2.05E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ni - 63	2.24E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Np - 237	2.86E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pd - 107	8.14E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pm - 147	2.31E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pr - 144	4.51E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pr - 144 m	5.50E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 238	5.55E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239	1.09E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 240	5.95E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 241	3.34E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 242	2.74E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Rh - 106	9.09E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ru - 106	9.09E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sb - 124	1.51E-23	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sb - 125	1.67E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sb - 126	1.09E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sb - 126 m	7.79E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Se - 79	4.31E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sm - 151	8.79E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sn - 113	1.07E-12	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Sn - 119 m	1.48E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sn - 121 m	3.98E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sn - 123	8.69E-11	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sn - 126	7.79E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sr - 90	5.05E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Tb - 160	1.38E-20	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Tc - 99	1.44E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 123 m	1.38E-16	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 125 m	4.09E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 127	4.74E-12	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 127 m	4.84E-12	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 234	4.37E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 235	1.68E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 236	6.34E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 238	3.48E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Y - 90	5.05E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Y - 91	1.11E-19	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Zr - 93	2.00E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Zr - 95	8.44E-18	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ag - 110 m	Ag - 110	Am - 241	Am - 242 m	Am - 242
Am - 243	Ba - 137 m	C - 14	Cd - 113 m	Ce - 144
Cm - 242	Cm - 244	Co - 60	Cs - 134	Cs - 135
Cs - 137	Eu - 152	Eu - 154	Eu - 155	Fe - 55
Gd - 153	H - 3	I - 129	In - 113 m	Kr - 85
Nb - 93 m	Nb - 95	Nb - 95 m	Ni - 59	Ni - 63
Np - 237	Pd - 107	Pm - 147	Pr - 144	Pr - 144 m
Pu - 238	Pu - 239	Pu - 240	Pu - 241	Pu - 242
Rh - 106	Ru - 106	Sb - 124	Sb - 125	Sb - 126
Sb - 126 m	Se - 79	Sm - 151	Sn - 113	Sn - 119 m
Sn - 121 m	Sn - 123	Sn - 126	Sr - 90	Tb - 160
Tc - 99	Te - 123 m	Te - 125 m	Te - 127 m	Te - 127
U - 234	U - 235	U - 236	U - 238	Y - 90
Y - 91	Zr - 93	Zr - 95		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) Continuous monitoring must be in place prior to operating. This will include continuous ambient air sampling for this project. The ambient air monitors shall be checked for operability at least once per week, and if an ambient air monitor is found not operating, the ambient air monitor shall be returned to service within seven working days from when it was found not operating. Notification to DOH per (WAC 246-247-080(5)) is required when an ambient air monitor is shut down for more than seven consecutive working days from time of discovery. At that time, i.e. when the ambient air monitor is shut down for more than seven consecutive days from time of discovery, operations involving the handling of spent nuclear fuel shall be suspended until the ambient air monitor is returned to service.

5) The differential pressure shall be monitored and recorded daily during operational rounds to determine impacts due to moisture. If the differential pressures are outside of the designed operating range, the cause will be determined and the department will be notified within 24 hours.

6) The process for validating the process parameters with respect to storing the MCOs in a sealed configuration is approved, however, the total number of representative samples was not given to us. By telephone, it was indicated that the total number of MCOs tested should not exceed twelve. Twelve is the limit, unless a more specific number is negotiated with the department.

7) Total system flow shall not exceed 9,000 CFM (allowing for the tolerances of the measuring devices).

8) Ventilation systems used to control the release of particulate airborne radiological contamination from individual processes must include:

   1. MHM cask extract ventilation and HEPA exhaust system.
   2. Sampling/weld station ventilation and HEPA exhaust system.
   3. Overpack storage tube purge system.
   4. Temporary containment enclosure with HEPA exhaust system for contamination control.
   5. The building HEPA filters are still required.
   6. All controls must be ANSI N509/510 compliant

Emission Unit ID: 436

100K P-296K142 001

296-K-142

This is a MAJOR, ACTIVELY ventilated emission unit.

COLD VACUUM DRY FACILITY (CVD)

Emission Unit Information

Stack Height: 48.00 ft. 14.63 m. Stack Diameter 2.50 ft. 0.76 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: 54.90 ft/second. 16.73 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
Process Bay Local Exhaust	Isolation Damper	2	
Process Bay Local Exhaust	Backdraft Damper	2	
Process Bay Recerculation	HEPA	4	
Process Bay Recerculation	Fan	4	
Process Bay General Exhaust	HEPA	1	Two Stage HEPA.
Process Bay General Exhaust	Prefilter	1	
Process Bay General Exhaust	Backdraft Damper	2	
Process Bay General Exhaust	Isolation Damper	2	
Process Bay General Exhaust	Fan	2	
Process Bay Local Exhaust	HEPA	1	Two stage HEPA.
Process Bay Local Exhaust	Fan	2	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Appendix B, Method 114	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Monthly Sample

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This 48 foot tall stack exhausts filtered air from the Cold Vacuum Drying Facility (CDVF). Activities at CDVF involve operations in support of irradiated fuel management. Particulate emissions are sampled. CVDF receives irradiated N Reactor fuel that was stored in the 105 KE and 105 KW Basins. The fuel is dried at CVDF before shipment to the Canister Storage Building.

This Emission Unit has 1 active Notice(s) of Construction.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.95E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The CVDF located to the west of the K Basins in the 100 K Area of the Hanford Site. The CVDF is limited to the following three adjoining radiological areas: the process bay area, the process support area, and the process water tank room. The process bay area shall contain four process bays and one bay used to off load water. Immediately adjacent and contiguous to the process bay area is the process support area, a steel-framed, two-story metal building that encloses the traffic corridor, process bay support rooms, and the second floor mechanical equipment room. Immediately adjacent to the process bay area on the north side is a single-story concrete and structural steel building that encloses the process water tank room.

Each operational process bay shall contain a process equipment skid, a safety-class helium system, a process hood, and a process bay recirculation heating, ventilation, and air conditioning (HVAC) system. Each process equipment skid shall contain a vacuum and purge system and a tempered water (annulus) system.

The CVDF interfaces with the 100 K Area, Hanford Site infrastructure services, and the Canister Storage Basin (CSB). The CVDF operation interfaces with K Basins operations by receiving cask- MCO packages for processing. Water removed from the MCO and water used for system flushes shall be cleaned and transported by tanker truck for appropriate dispositioning. The CVDF also interfaces with the CSB operation when the cask-MCO packages are shipped to the CSB after the cold vacuum drying process has been completed.

The stack sample line shall be reconfigured in a manner to facilitate inspections and testing as required by ANSI N13.1-1999 (i.e. removable spool piece(s) and tees for installation of pressure gauges). During reconfiguration, there will be no stack sampling and no MCO processing within the facility.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.27E+01 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Ag - 110	2.57E-10	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ag - 110 m	1.94E-08	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 241	3.39E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 242	1.76E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 242 m	1.77E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 243	1.09E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ba - 137 m	1.13E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
C - 14	1.35E-01	gas	WAC 246-247-030(21)(a)
C - 14	3.46E-04	solid	WAC 246-247-030(21)(a)
Cd - 113 m	3.21E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Cd - 115 m	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ce - 141	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ce - 144	8.27E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cm - 242	1.47E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cm - 244	1.30E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Co - 60	3.58E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cs - 134	1.44E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cs - 135	7.01E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cs - 137	1.19E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 152	8.55E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 154	9.68E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 155	2.00E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Fe - 55	1.66E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Gd - 153	1.16E-10	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
H - 3	7.13E+00	gas	WAC 246-247-030(21)(a)
H - 3	1.83E-02	solid	WAC 246-247-030(21)(a)
I - 129	1.24E-03	gas	WAC 246-247-030(21)(a)
I - 129	3.18E-06	solid	WAC 246-247-030(21)(a)
In - 113 m	1.94E-13	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Kr - 85	1.15E+02	gas	WAC 246-247-030(21)(a)
Kr - 85	2.95E-01	solid	WAC 246-247-030(21)(a)
Nb - 93 m	2.23E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Nb - 95	3.38E-18	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Nb - 95 m	1.13E-20	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ni - 59	3.71E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ni - 63	4.06E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Np - 237	5.17E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Pd - 107	1.47E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pm - 147	4.18E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pm - 148	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pm - 148 m	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pr - 143	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pr - 144	8.17E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pr - 144 m	9.95E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 238	1.00E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239	1.97E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 240	1.08E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 241	6.04E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 242	4.97E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Rh - 103 m	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Rh - 106	1.65E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ru - 103	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ru - 106	1.65E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sb - 124	2.74E-24	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sb - 125	3.03E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sb - 126	1.97E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sb - 126 m	1.41E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Se - 79	7.80E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sm - 151	1.59E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sn - 113	1.94E-13	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sn - 119 m	2.69E-07	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sn - 121 m	7.20E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sn - 123	1.57E-11	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sn - 126	1.41E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Sr - 89	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sr - 90	9.14E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Tb - 160	2.51E-21	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Tc - 99	2.61E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 123 m	2.50E-17	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 125 m	7.40E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 127	8.85E-13	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 127 m	8.77E-13	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 129	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 129 m	0.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 234	7.91E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 235	3.05E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 236	1.15E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 238	6.30E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Y - 90	9.14E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Y - 91	2.02E-20	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Zr - 93	3.62E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Zr - 95	1.53E-18	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ag - 110 m	Ag - 110	Am - 241	Am - 242 m	Am - 242
Am - 243	Ba - 137 m	C - 14	Cd - 113 m	Cd - 115 m
Ce - 141	Ce - 144	Cm - 242	Cm - 244	Co - 60
Cs - 134	Cs - 135	Cs - 137	Eu - 152	Eu - 154
Eu - 155	Fe - 55	Gd - 153	H - 3	I - 129
In - 113 m	Kr - 85	Nb - 93 m	Nb - 95	Nb - 95 m
Ni - 59	Ni - 63	Np - 237	Pd - 107	Pm - 147
Pm - 148 m	Pm - 148	Pr - 143	Pr - 144	Pr - 144 m
Pu - 238	Pu - 239	Pu - 240	Pu - 241	Pu - 242
Rh - 103 m	Rh - 106	Ru - 103	Ru - 106	Sb - 124
Sb - 125	Sb - 126	Sb - 126 m	Se - 79	Sm - 151
Sn - 113	Sn - 119 m	Sn - 121 m	Sn - 123	Sn - 126
Sr - 89	Sr - 90	Tb - 160	Tc - 99	Te - 123 m
Te - 125 m	Te - 127 m	Te - 127	Te - 129 m	Te - 129
U - 234	U - 235	U - 236	U - 238	Y - 90
Y - 91	Zr - 93	Zr - 95		

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The following shut down of the CVDF emission control systems under circumstances specified are allowed and are excluded from the 24 hour reporting requirements:

   a) Shutdown of the process bay recirculation system when there is no MCO processing within that bay.
   b) Shutdown of the process bay local exhaust system when there is no MCO processing within that bay.
   c) Shutdown of the general exhaust system for no more than eight hours during which time there will be no MCO within the CVDF nor transfer of water from process water conditioning tank PWC-TK-4001 to a tanker truck for disposal nor opening of the process bay roll up doors.

5) The first annual leak testing of the stack emissions sample line is allowed to be deferred until January 2002 to allow installation of an access port in the stack. Future annual leak test shall be based on this new test date.

Emission Unit ID: 438

200W S-296S023-001

296-S-23

This is a MINOR, ACTIVELY ventilated emission unit.

219-S Building

Emission Unit Information

Stack Height: 21.50 ft. 6.55 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 78 degrees Fahrenheit. 26 degrees Celsius.

Average Stack ExhaustVelocity: 42.46 ft/second. 12.94 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Prefilter	1	
	HEPA	2	In series
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	1 every 2 years

Sampling Requirements NDA

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is an exhauster that is used to ventilate a hood located in the 219-S Sample Gallery. The hood is used to collect samples from two of the waste tanks located in the 219-S Waste Handling Facility. The emission unit is a hood exhauster ventilation system that operates intermittently.

Emission Unit ID: 439

200W J-CWC 001

Central Waste Complex

This is a MINOR, ACTIVELY ventilated emission unit.

Central Waste Complex

Abatement Technology NONE WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)		Near field ambient monitoring program as specified in the Conditions and Limitations.

Sampling Requirements Environment Sampling; Ambient air monitors N-449, N-457, N-964, and N-433.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status The Central Waste Complex (CWC) stores low level (LLW), low level mixed (LLMW), TRU, TRU mixed, and Toxic Substance Control Act (TSCA) regulated waste. It is designed for receipt and storage of contact handled waste packages. Each waste package is characterized before receipt and based on this information; incompatible forms of waste are physically segregated.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Central Waste Complex (CWC) Operations	AIR 06-622	7/5/2006	654

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.40E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

the process of managing five primary types of waste: low-level (LLW), low-level mixed (LLMW), transuranic (TRU), TRU-mixed waste and Toxic Substance Control Act (TSCA) regulated waste. The LLW typically contains rags, paper, rubber gloves, disposal supplies, tools, industrial waste (e.g., failed equipment), solidified wastes that are contaminated with radioactive material. This waste is considered LLW if it contains radioactive material and is not classified as TRU waste, high-level waste, or spent nuclear fuel.

TRU and TRU-mixed waste typically contains rags, paper, rubber gloves, disposable supplies, tools, industrial waste (e.g., failed equipment), solidified process byproducts, and laboratory wastes that are contaminated with TRU material. This waste must contain at least 100 nCi of TRU material per gram of waste or it is considered LLW. The TRU waste accepted by CWC may contain varying concentrations of TRU radionuclides and limited amounts of non-TRU radionuclides. With some exceptions allowed based on safety analysis, the TRU content of waste containers is generally limited to 53 239/240 Pu dose equivalent curies (DE-Ci), where the DE-Ci is derived by multiplying the isotopic composition (i.e., weight fractions of the various TRU isotopes) by the specific activities of each isotope, and then converting that number with corrections factors taken from the Hanford Site Solid Waste Acceptance Criteria. The DE-Ci unit is designed to control inhalation dose impacts

independent of radionuclide type. The radionuclides Pu-39 and Pu-240 are considered equivalent and are combined for calculation purposes.

The unabated emissions shall be tracked by DE curies.

The CWC stores low-level (LLW), low-level mixed (LLMW), transuranic (TRU), TRU-mixed and TSCA regulated waste.

The CWC is designed for the receipt and storage of contact-handled waste packages, which are defined as packages having surface dose rate of less than 2 mSv/h (200 mrem/h), but can store packages above this limit in accordance with the approved safety analysis. Each waste package is characterized before receipt and based on this information; incompatible forms of waste are physically segregated.

CWC personnel receive and inspect waste packages at the Waste Receiving and Staging Area. Transport off-load operations are performed by hand truck, forklift, or crane by qualified personnel. Packages are transported, generally by forklift to the assigned facility.

Waste containers are not opened during normal operations at the CWC buildings. Under normal operating conditions there is no airborne release of radioactive material expected from opening waste containers.

Inventories of TRU content, non-TRU radionuclides, and hazardous waste constituents are controlled at all waste storage facilities at the CWC. The inventory control system ensures that each building, building quadrant, or module will comply with its established inventory limit.

TRU waste containers are generally equipped with a pressure relief vent device, such as the NucFil filter. This filter allows the release of any gases that may be produced as a result of radiolysis inside the container, while preventing release of any particulate matter.

Waste shipments are transported to the Waste Receiving and Staging Area where the waste containers are radiologically surveyed and the exterior visually inspected for physical integrity. Waste records are checked for completeness and accuracy in accordance with procedures that provide instructions for performing detailed entry-by-entry reviews of waste records. To the extent practicable, this work is performed before unloading. However, partial unloading of a shipment may be necessary to complete a thorough survey and inspection. Verification of container contents, which may involve the opening of containers and sampling of waste contents, is performed at a facility separate from the CWC (e.g., T-Plant).

Waste packages meeting all acceptance criteria are accepted for storage. Non-compliant waste packages (e.g., with paperwork errors or omissions and damaged containers) are held until the non-compliant condition is corrected to the satisfaction of the responsible Solid Waste Manager or designee.

To detect leaking or deteriorating containers, or deterioration of the containment system, all waste containers are inspected in accordance with regulatory requirements.

PermaCon unit:

This approval also allows the placement of a modular containment PermaCon unit within the 2404WC Building (or similar CWC building) for the purpose of sampling the head space gas within solid waste storage containers.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.80E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

DE - 0	9.38E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(e)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ac - 228	Am - 241	Am - 243	Ar - 41	Ba - 137
Bi - 212	Bi - 214	C - 14	Ce - 141	Ce - 144

Cf - 252	Cm - 242	Cm - 243	Cm - 244	Co - 58
Co - 60	Cr - 51	Cs - 134	Cs - 137	Eu - 152
Eu - 154	Eu - 155	Fe - 59	H - 3	I - 129
I - 131	K - 40	Kr - 85	Mn - 54	Nb - 95
Np - 237	Pb - 212	Pb - 214	Pm - 147	Po - 210
Po - 212	Po - 216	Pu - 238	Pu - 239	Pu - 240
Pu - 241	Pu - 242	Ra - 224	Ra - 226	Rn - 220
Ru - 103	Ru - 106	Sb - 124	Sb - 125	Sn - 113
Sr - 89	Sr - 90	Tc - 99	Th - 228	Th - 232
Th - 234	Tl - 208	U - 232	U - 233	U - 234
U - 235	U - 236	U - 238	Y - 90	Zn - 65
Zr - 95				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) Container inventory shall be tracked (logged) using the SWITS database.
5) Periodic confirmatory sampling is required. It must consist of: sampling quarterly using a portable sampler for a two-week interval inside the CWC building (excluding outdoor pads) containing vented containers with the highest cumulative inventory of DE curies during the quarter sampled. (Samples will be handled following the applicable sections of 40 CFR 61, Appendix B, Method 114.)
6) The facility must maintain a log in an approved format (SWITS database) for this activity or emission unit.
7) The required controls are:

   Emissions control for vented containers within the CWC will consist of NucFil {tm} filters. (Under normal operating conditions, non-vented containers are not expected to produce radioactive emissions.)

   A NucFil {tm} filter consists of a porous carbon/carbon composite of non-activated carbon fibers housed in stainless steel that as a minimum, restricts the release of 99.95% of particles with a mean 0.3 microns in size.

   In addition, housekeeping (e.g., decontamination and replacing leaking containers as needed) and frequent smears throughout the CWC will be used to ensure that the emission control equipment is working properly. Smears that exceed 20 dpm/100 sqcm for alpha and 1,000 dpm/100 sqcm for beta/gamma contamination will be investigated to determine the cause of the contamination and appropriate corrective actions will be implemented.
8) The radioactive isotopes identified in condition 3 represent all of the significant radionuclides historically present at the Central Waste Complex (CWC), including some that are not significant. Any radionuclide on the chart of the nuclides could be present or received at CWC in the future. Periodic confirmatory measurements to verify low emissions are preformed by taking a two-week air sample on a quarterly basis and analyzing for total alpha and total beta. Although any radionuclide could be present for conservatism all alpha is assumed to be Am-241 and all beta is assumed to be Cs-137 for dose calculation estimates.

Emission Unit ID: 443

300 300 Area Emissions

300 Area Diffuse/Fugitive

This is a MINOR, FUGITIVE, non-point source emission unit.

300 Diffuse/Fugitive Emissions

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Administrative Controls		Abatement controls as required in the following Conditions and Limitations.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Per the sitewide ambient monitoring program

Sampling Requirements Per the sitewide ambient monitoring program samples will be collected from the existing near-facility monitoring stations

Additional Requirements

See Section 5 of the general conditions in this license for additional information.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Diffuse and fugitive emissions are generally associated with sources that are not actively ventilated such as inactive buildings or excavation activities. This emission unit (300 Area Diffuse/Fugitive) is an ongoing source of emissions.

This Emission Unit has 2 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of the Radiological Counting Facility	AIR 06-639	7/5/2006	675

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.40E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)) may be conducted.

The radiological analyses performed in the RCF are used to identify the need for additional analyses and worker protection or operational decisions. Various types of sample media are prepared and analyzed including soil, groundwater, filters, smears, and miscellaneous materials (e.g., pipe, concrete, clothing, oil, and surface water). In addition, a limited number of radiological standards are prepared each year in the RCF. Each sample is field screened and labeled prior to acceptance into the RCF. The annual sample load through the RCF is expected to be less than 2000 liters of soil, solid, liquid and miscellaneous samples per year. This does not include smears, air filters or any other sample that does not require invasive sample preparation techniques. Sample logs and facility operators verify the annual sample load. The facility acceptance criteria for samples requiring invasive preparation is 5 mrem/hour or less on contact.

Sample preparation typically involves physical processes (e.g., evaporation of liquids, wet ball milling of soils and other solids), mounting of air filters and other smears, and depositing the prepared material on planchets prior to counting rather than radiochemistry. Sample preparation activities may be conducted in an enclosure

(e.g., glove bag), depending on the sample activity level or contaminants determined by field screening.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.41E-03 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0 Alpha release rate based on Am-241.	6.36E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
B/G - 0 Beta/Gamma release rate based on Cs-137.	4.31E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	C - 14	Co - 60	Cs - 137
Eu - 152	Eu - 154	Eu - 155	H - 3	Ni - 63
Pu - 234	Pu - 238	Pu - 239	Pu - 240	Pu - 241
Pu - 242	Ra - 226	Ra - 228	Sr - 90	Tc - 99
Th - 228	Th - 232	U - 234	U - 235	U - 236
U - 238				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) It is recognized that other radionuclides may be present in very limited quantities.

5) Radiological material is controlled through the use of standard radiological control procedures. Sample activities at the Radiological Counting Facility are conducted under a radiological work permit. Samples are opened in a small contamination area (CA) that is established just prior to opening the sample. After sample handling activities (e.g., sample preparation or counting) are completed, the area is surveyed and the CA is removed.

6) The facility must maintain a log for this activity or emission unit per (WAC 246-247-060(5)).

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.70E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   This license is limited to the excavation in the vicinity of 300 Area structures and facilities in support of site stabilization and removing/isolating/blanking utilities; obtaining samples during 300 Area deactivation activities; and activities related to access to maintenance, replacement-in-kind, and non-radiological equipment. Access to underground piping and cable shall be gained by use of an excavator or by drilling. Manual digging methods with shovels, picks, and rakes shall also be used. Samples may be obtained by excavation or other coring or drilling methods. Backfill shall be made with the original material removed or brought in 'clean' soil.

   This license does not incorporate specific large remediation actions or final cleanup in the context of Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA).

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.70E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.00E-06
Beta - 0	4.30E-05

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The radionuclides of concern are strontium-90 (representing beta/gamma contamination during excavation, and uranium-234 (representing alpha contamination).

5) When a Portable/Temporary Radioactive Air Emission Unit (PTRAEU) is used during 300 excavation activities, the conditions, controls, monitoring requirements and limitations of the PTRAEU NOC, latest approved version, shall be required.

6) When the sitewide Guzzler is used during 300 excavation activities, the conditions, controls, monitoring requirements and limitations of the sitewide Guzzler NOC, latest approved version, shall be required.

7) The following controls are approved as low as reasonably achievable control technology (ALARACT) for excavation activities in the 300 Area:

   a) Health physics coverage shall be provided during all excavation activities;

   b) Appropriate controls such as water, fixatives, covers, containment tents, or windscreens shall be applied, if needed, as determined by the health physics personnel;

c) After leveling, the soil surface radiological contamination levels shall be verified less than 5,000 dpm/100 cm2 beta/gamma and less than 100 dpm/100 cm2 alpha. If contamination is present above these levels, soil shall be removed and containerized for disposal or covered or fixed to provide containment of the contamination;

d) As appropriate, before starting work on isolating utilities and piping, removable contamination in the affected area(s) shall be reduced to ALARA. Measures such as expandable foam, fixatives, or glovebags shall also be used as necessary to help reduce contamination;

e) If field surveys during excavation identify localized areas of contamination greater than 5,000 dpm/100 cm2 beta/gamma and 100 dpm/100 cm2 alpha, additional surveys shall be conducted on the perimeter of the 'hot spot' to verify the localized nature, ensuring that the overall average contamination limits are not exceeded;

f) Excavated soils will be stockpiled in appropriately posted area(s) adjacent to excavation locations;

g) Soil stockpiles that are inactive for greater than 24 hours shall require positive dust control measures be applied;

h) All soil excavation activities operating under this NOC must cease operations when sustained wind conditions reach or exceed 20 miles per hour.

8) The periodic confirmatory measurements for 300 Area excavation activities shall consist of radiological surveys (smear samples). To confirm that the actual emissions remain below the estimated emissions the surveys shall be performed to demonstrate that contamination levels are below 5,000 dpm/100 cm^2 beta/gamma and 100 dpm/100 cm^2 alpha.

9) When a HEPA Filtered Vacuum Radioactive Air Emission Unit (HEPA VAC) is used during 300 excavation activities, the conditions, controls, monitoring requirements and limitations of the HEPA VAC NOC, latest approved version, shall be required.

Emission Unit ID: 447

Hanford Sitewide type-1, type-2, type-3

type-1, type-2, type-3

This is a MINOR, ACTIVELY ventilated emission unit.

PTRAEU

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Type-1
	HEPA	1	Type-2 and Type-3
	Charcoal filter	1	Type-2 and Type-3

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114	GROSS ALPHA/BETA	Annual, unless specified by the NOC.

Sampling Requirements One of the following methods may be chosen for actual emissions reporting: nondestructive assay, record sampler, or continuous air monitoring, whichever is more appropriate.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Type I PTRAEUs are portable ventilation filter units. Type II PTRAEUs are mobile sample preparation units. Type III PTRAEUs are mobile screening and analysis units. These units are periodically used throughout the Hanford Site. This emission unit is a portable high efficiency particulate air filter that is used in temporary locations for small jobs where ventilation is needed to protect the worker and environment from potential releases of radiological air emissions. The emission units used by operations were permitted under approvals for projects associated with entries into pits, diversion boxes and other structures where ventilation systems were not available. The emission units are operated on an intermittent basis. The emission unit is currently available for operations support under the current approvals listed.

This Emission Unit has 5 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Portable/Temporary Radionuclide Airborne Emissions Units (PTRAEU)	AIR 06-628	7/5/2006	664

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.91E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Type I PTRAEUs are portable ventilation-filter units. Type II PTRAEUs are mobile sample preparation units. Type III PTRAEUs are mobile screening and analysis units. Each type of PTRAEU is described in the following paragraphs.

   Most of the PTRAEUs are portable ventilation-filterunits (Type I) with a capacity from approximately 50 to 2,000+ cubic feet per minute exhaust flow rate. The portable ventilation-filter units control radionuclide emissions by providing filtered ventilation on sites where work activities potentially could disturb areas with radioactive contamination. Type I units that are vacuums are listed to be used as ventilation units. If the vacuum is used in any other manner/process, the WDOH must approve its use under separate application before the activity commences.

Mobile sample preparation units (Type II) decrease the chance of unintentional cross-contamination of samples and enhance personnel radiological safety. The sample preparation units enable technicians to remove material from core barrels, homogenize the material, and fill prescribed sample containers for onsite and offsite analysis. In enclosed, self-contained sample preparation units, radiological exposure and interference from environmental conditions (i.e. wind, precipitation, and exhaust fumes) are minimized.

Mobile sample screening and analysis units (Type III) provide preliminary screening of samples to determine potential problem areas at a site. The units also screen samples to identify those samples requiring further in-depth analysis. Screening samples decreases the number of samples transported for analysis. The fast turnaround analysis time can provide results for a field situation requiring expeditious response.

The source of radionuclides handled by the mobile sample preparation facilities and mobile screening and analysis facilities is contaminated soils and/or liquids extracted from cribs, ditches, ponds, burial sites, and other such areas with surficial soil contamination. An additional source of radionuclides is preparation of radioactive standards to be used for instrument calibration.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.90E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Release rates are not listed; emission release rates are controlled by special conditions.

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) Department of Health reserves the right to request an nondestructive analysis/assay (NDA) after each exhaust job assignment (WAC 246-247-075(3)). The monitoring includes: emission estimates to include the methodology, all monitoring measurement results taken during the operation, copy of all logs submitted to the department on June 30th. One of the following methods may be chosen for actual emissions reporting, nondestructive assay, record sampler, or continuous air monitoring, whichever is more appropriate.

5) Ductwork, seams, and potential release locations on the portable exhausters are to be monitored on a routine basis for potential radionuclide releases and noted on the log sheets (e.g., post survey results negative). These routine checks should be kept as retrievable records.

6) The required possession quantity is RHL's calculated for a daily use because many of the activities are of short duration. In calculating the RHL's, 0.1 mrem per year criteria will be used as a beginning point and the source term, which can be handled each day, is back calculate.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 9.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Management of radioactive contamination during roof replacement activities.

All work shall be performed in accordance with written contractor radiological control requirements (associated with posting and downposting requirements for doing work in outdoor contamination areas and fixed contamination areas) and the as low as reasonably achievable (ALARA) program requirements. These requirements are to be carried out through activity work packages/procedures and associated radiological work permits.

Types of facilities allowed to use this NOC are active and operational, currently in surveillance and maintenance (S&M) mode, or in transition to S&M mode.

Activities are non-routine activities that have a potential to create a new temporary emission source and/or a modification of a source(s) of diffuse and fugitive emissions at facilities on the Central Plateau.

Screening Surveys

Roof replacement activities include radiological surveys to determine if radioactive contamination is present and the extent of such contamination. Spot contamination (e.g., bird droppings) managed before commencement of roof replacement work is handled per existing methods and is considered a routine housekeeping activity (similar to spot contamination found at ground levels).

Managing Radioactive Contamination

Contaminated roofing materials may be removed by manual or powered methods, including saws or other cutting devices, shovels, wheelbarrows, conveyors, chutes, or other similar equipment (conveyors or chutes may be used only for packaged radioactive waste or for non-contaminated roofing material). Radioactive waste shall be managed in accordance with existing onsite requirements and waste acceptance criteria. Radioactive waste either shall be containerized in drums, skiffs, boxes, or other containers, or handled as bulk waste (e.g., dump truck) and transferred to the appropriate disposal facility. Management of radioactive contamination is allowed to include removal and subsequent size reduction of contaminated equipment from a roof as well as isolation and blanking of utilities, vents, and ductwork.

Accumulated rainwater that has contacted contamination areas shall be allowed to evaporate in place or is characterized, collected, and managed in accordance with stormwater discharge requirements or transferred to an appropriate disposal facility.

A graded approach is allowed to be used to match controls with expected contamination levels per radiological control manuals and methods. Radiological contamination that is encountered will either be managed as a fixed contamination area (i.e., less than 20 dpm/100 cm2 smearable alpha and less than 1,000 dpm/100 cm2 smearable beta) or will be managed as a contamination area (radiological contamination levels are between 20 and 2,000 dpm/100 cm2 alpha or between 1,000 and 100,000 dpm/100 cm2 beta) using appropriate controls to minimize worker exposure. These controls include water for dust suppression, fixatives, covers, windscreens, or greenhouses (with PTRAEU exhausters) that will be applied, if needed, as determined by the Health Physics organization, and consist of ALARA techniques.

Process descriptions and abatement controls, as described in the latest approved revisions of the Guzzler NOC (99-SID-021), the PTRAEU NOC (DOE/RL-96-75), or the HEPA Vacuum NOC (DOE/RL-97-50) shall be used; however, the activity-specific operational controls and tracking requirements shall follow these approval conditions. The Guzzler, PTRAEU, and HEPA vacuum units shall have a removal efficiency of 99.95% for radioactive airborne particles.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.80E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.50E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
License PTE limit bounds 1.5E-04 Ci/yr 241Am and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during roof replacement activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 137Cs for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents			
B/G - 0	7.50E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
License PTE limit bounds 7.5E-03 Ci/yr 137Cs and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during roof replacement activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 137Cs for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241 Cs - 137

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) For dose modeling, the radionuclides of concern shall use cesium-137 (representing beta/gamma emitters) and americium-241 (representing alpha emitters).

5) The total radionuclide content of the material removed shall be tracked on a WDOH approved log.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.90E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 4.90E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Categorical approval for facility entry and surveillance. The facilities covered under this NOC will be entered through a door or other existing access location to perform the activities as described below:

Accessing Facilities:
Accessing facilities shall be performed in accordance using the controls determined by the containment matrix from RPP Administration, HNF-IP-0842, Volume VII, Section 3.1, "Radiological Control".

Inspection/Surveillance:

-Visual inspections will be conducted to evaluate facilities integrity for future decommissioning work, to assure that utilities have been shut off, and/or identification of any environmental, radiological, or safety concerns.

Photographing/Videotaping:

-Photographing and videotaping are performed to assist personnel in recording a facility contents and to obtain knowledge of a facility and its contents. Photography/videotaping also assists personnel in planning future decommissioning work.

Sampling/Surveys:

-Swipes, smears, air sampling, and other surveys may be performed to characterize contamination levels present in a facility. These activities may be performed on containers, other equipment and interior surfaces associated with a facility.

-Removal of access port shield plugs may be performed to allow installation of video equipment and/or to perform radiological surveys.

-Electrical equipment inspections may be performed to assure that power has been shut off from facilities or to assure that equipment is in safe operation.

Housekeeping:

-Housekeeping will be performed to assure that a facility is in a safe condition that would not threaten workers safety or the environment. Housekeeping may include collecting containers, or miscellaneous debris for proper disposal.

Fixative Application

-Application of fixative materials serves to reduce the spread of contamination. The process of applying fixative materials varies depending on the type of material being applied. Fixative application may include using a glycerin-based substance followed by a permanent polymer urea based material or the glycerin-based substance alone, or other such process, which do not cause resuspension of smearable contamination.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	2.80E-04	Beta - 0	4.00E-01	Gamma - 0	4.50E-02

4) Activities to this NOC are limited to no more than 2,160 hours/calendar year. This shall be documented on an approved log.
5) The annual possession quantity must be tracked for each entry.
6) The following radionuclides are allowed under this NOC: 3H, 14C, 59Ni, 60Co, 63Ni, 79Sc, 90Sr, 90Y, 93Zr, 93mNb, 99Tc, 106Ru, 113mCd, 125Sb, 126Sn, 129I, 134Cs, 137Cs, 137mBa, 151Sm, 152Eu, 154Eu, 155Eu, 227Ac, 228Ra, 229Th, 231Pa, 232Th, 232U, 233U, 234U, 235U, 236U, 237Np, 238Pu, 238U, 239Pu, 240Pu, 241Am, 241Pu, 242Cm, 243Cm, and 244Cm
7) The radiological control technology for all entries conducted under this NOC must follow the containment matrix HNF-IP-0842, Volume VII, Radiological Control.
8) The U.S. DOE shall monitor this emission unit as detailed in the most current PTRAEU Notice of Construction.
9) This NOC does not allow any decontaminating and decommissioning work to commence.
10) This NOC is only applicable to tank farm facilities.
11) Whenever active ventilation is in operation, a PTRAEU emission unit must be used as approved by the current PTRAEU NOC. All of the applicable Conditions and Limitations stated for the PTRAEU NOC approval must be adhered to and clearly documented. This includes the emission limits and controls. Emissions from these activities shall be subtracted from the overall handling limit of the PTRAEU NOC and reported under the Categorical Tank Farm Facility Entry and Surveillance NOC.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Work shall be performed outside of some tank farm fence boundaries such as the 241-AN, 241-AP, 241-AW, 241-AZ, and 241-SY tank farms; between the 241-AP tank farm and the 244-A double contained receiver tank as well as between the 244-S double-contained receiver tank and the 241-SY tank farm; the 219-S Waste Handling Facility located at the 222-S Laboratory; and near the 241-A-A valve pit (241-A Single-Shell Tank Farm).

EXCAVATION

Excavation within a tank farm, or in a known radioactive contamination area outside of a tank farm, shall be performed in accordance with As Low As Reasonably Achievable Control Technology (ALARACT) Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), or non-mechanical methods such as vacuum excavation (Guzzler) in accordance with the latest WDOH approved Notice of Construction. Outside of a tank farm, in non-contaminated areas, excavation (or berm construction) may be performed using mechanical methods such as: trenchers, backhoes, and scrapers, in addition to hand tools or non-mechanical methods. Areas may be encountered during excavation where components are covered by very hard soil or controlled density fill (low-strength concrete). Mechanical impact tools, such as jackhammer/rototool, would be used to break up such areas before excavation. Removal of excavated material is normally done by mechanical methods such as a crane with skip bucket, powered skip, or front-end loader. Excavated material is placed in spoil piles. (NOTE: Industrial safety requirements may require use of intermediate transfer piles.) Contaminated soil (>100,000 dpm/100 cm2 beta/gamma) is segregated from other soil. Excavated areas shall be backfilled with the excavated soil or soil containing less contamination than the soil that was excavated. Backfilling of excavated areas is accomplished by first placing controlled density fill material when used, then soil in layers, into the excavated area. The distance from the skip bucket, powered skip, and front-end loader to the top of the excavation area is minimized. Contaminated soil is the first soil placed in the excavated areas, then covered with other excavated soil. To meet density requirements, soil compaction is done using hand-guided mechanical compaction equipment. Outside of a tank farm, in a non-contamination area, vibratory roller compactors may be used.

Excavation shall also be conducted to allow for the pouring of concrete pads for future placement of equipment within the tank farms.

PIT WORK

Frequently performed activities shall be done in accordance with activity descriptions found in ALARACT Demonstrations (HNF-4327):

- ALARACT 4 "Packaging and Transportation of Waste"
- ALARACT 6 "Pit Access"
- ALARACT 12 "Packaging and Transportation of Equipment & Vehicles"
- ALARACT 13 "Installation, Operation, and Removal of Tank Equipment"
- ALARACT 14 "Pit Work" and, if required,
- ALARACT 15 "Size Reduction of Waste Equipment for Disposal."

The process is establishment of controls to prevent the spread of radioactive contamination, removal of pit cover

blocks by heavy rigging methods, decontamination of pit by water washing (pressure and non-pressure methods), application of fixative material on contamination, disconnection of equipment, equipment removal by manual or mechanical methods, package equipment for disposal (size reduction if necessary), pit surface preparation by manual abrasion (scrapping, sanding, chipping; on a surface that is damp or has fixative) of existing pit coating, application of pit coating material by manual methods or pressure spray methods, installation of new or replacement equipment, installation of pit cover blocks by heavy rigging, packaging of waste, and transportation of waste and removed equipment.

Project pit activities will include preparation of pit surfaces and coring of walls or cover blocks. Project pit surface preparation is accomplished by mechanical abrasion of the existing pit coating, concrete substrate, and steel surfaces as needed. Needle guns, sanders, wet blasting, and grinders are typical tools used. In addition, surface preparation also may include repair of cracked concrete/concrete coatings. Repair will require removal of cracked material to allow application of grouting material. Removal of cracked material may be performed using manual and power tools, and may also include using a HEPA vacuum to assist in the removal of loose debris. Coring of pit walls and/or cover blocks for new nozzles or equipment installation comprised of replacing wall nozzles, leak detectors, cover blocks, pipe snub-outs, and jumpers will also be performed. A new AZ valve pit will be constructed and connected to the AZ tanks.

PIPE CUTS

The cutting of waste transfer lines, tank risers, or contaminated piping shall be made using a low or high speed reciprocating or cut-off saw (sawzall, bandsaw) or other mechanical methods, such as a tri-tool. Surveys of the exterior and/or interior of the pipe/riser shall be used to determine containment selection in accordance with Radiological Containment Selection, Design, & Specification Guide RPP-7933. Continuous health physic technician coverage shall be present during all pipe work activities. Abrasive methods, such as grinders or sanders, may be used to prepare the cut area for connection to the new section of transfer line. Mating of the new piping to the existing transfer lines or tank riser, and other similar connections if necessary, will be performed using mechanical connection methods or welded flange connections.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	8.93E-04	Co - 60	1.06E-03	Cs - 137	7.11E+00
Eu - 152	1.95E-02	Eu - 154	3.32E-02	Pu - 238	6.98E-04
Pu - 239	6.39E-03	Pu - 240	2.31E-03	Pu - 241	5.08E-02
Pu - 242	6.90E-08	Sr - 90	3.97E+01	U - 233	1.46E+00
Y - 90	3.96E+02				

4) The Annual Possession Quantity and Potential-to-Emit to the MEI shall be tracked on a WDOH approved log.
5) The Radiological Containment Selection, Design & Specifications Guide, RPP-7933, Revision 0 shall be used. Changes made to RPP-7933, Revision 0 shall be provided to WDOH. The Department retains the right to change or add approval conditions and limitations based on the changes to RPP-7933.
6) To determine the potential-to-emit and calculate the annual dose to the Maximally Exposed Individual all gross alpha contamination shall be assumed to be Am-241 and all gross beta contamination shall be assumed to be Sr-90.
7) When HEPA vacuums are used they shall follow all the requirements of the latest revision of the Radioactive Air Emissions Notice of Construction for HEPA Vacuums.
8) When Portable Temporary Radioactive Air Emission Units are used they shall follow all the requirements of the latest revision of the Radioactive Air Emissions Notice of Construction for Portable Temporary Radioactive Air Emission Units (DOE/RL-96-75).

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.60E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

This consolidated T-Plant license supersedes all radioactive air licenses for 291-T-1.

a. This approval subsumes those activities approved in three previous license approvals, retains/revises the specific conditions and limitations of those approvals, and replaces them as the radioactive air license for T-Plant:

i. AIR 03-1208 (NOC ID # 445, "Storage in T-Plant Complex of Sludge from K-Basins")
ii. AIR 01-1010 (NOC ID # 499, "T-Plant Complex Fuel Removal Project")
iii. AIR 02-704 (NOC ID # 500, "Entering and Characterizing of the 224-T Facility Process Cells")

b. With additional conditions and limitations provided herein, this approval also extends to new activities discussed in the NOC application "Radioactive Air Emissions Notice of Construction for Consolidated T Plant Operations", DOE/RL-2004-50, Rev. 0, September, 2004, described briefly:

i. Receipt, Storage, Treatment, and Load out of Contact-Handled and Remote-Handled Transuranic (TRU) and Transuranic Mixed Waste (M-91Initiative)
ii. Treatment (in addition to storage) of K-Basin Sludge from the North Load out Pit (NLOP)
iii. Such activities considered routine at T Plant as are described in succeeding conditions.

Activities a)i through a)iii may emit radioactive air through 291-T-1. Additionally, activity a)iii may emit to the 200 Areas Diffuse & Fugitive emission unit and to Portable Temporary Radioactive Air Emission Units.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.20E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	9.86E-05
Beta - 0	5.11E-03

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) All activities involving radioactive materials shall be conducted in accordance with radiation control procedures

approved in accord with applicable QA program. (WAC 246-247-040(5))

5) Characterization activities shall be stopped if general surface contamination levels in the containment tent reach 40,000 dpm/100 cm^2 alpha or 2,000,000 dpm/100 cm^2 beta/gamma or if general air concentration levels in the containment tent reach 2.0 E-9 microcuries/milliliter alpha or 2.0 E-6 microcuries/milliliter beta/gamma. In this event the Department of Health shall be notified of existing conditions and work stoppage. Following such a work stoppage, activities in the process cells shall not continue until a review of the work and encountered conditions has been performed and a determination made, in concurrence with the Department of Health, that no threat to the environment exists, or proper controls have been put in place to mitigate any further threat. (WAC 246-247-040(5))

6) If a Portable/Temporary Radioactive Air Emission Unit (PTRAEU) is used, the conditions, controls, monitoring requirements and limitations of the latest approved version of the PTRAEU Notice of Construction shall be required. (WAC 246-247-060(5)) (WAC 246-247-080(7))

7) Periodic confirmatory measurements (PCM) for emissions from the containment tent shall be performed and shall consist of the radiological surveys and CAM readings/log papers from the containment tent. Compliance shall be demonstrated by showing that actual emissions are inherently less than the estimated emissions, which are based and calculated from the same contamination levels. (WAC 246-247-040(5))

8) The dose to the maximally exposed member of the public from unabated emissions associated with this NOC and exhausted by the PTREAU shall not exceed 1.12E-03 mrem/year. For the purposes of dose estimation, gross beta air concentrations associated with this emission point shall be conservatively assumed to consist entirely of Sr-90. Gross alpha air concentrations associated with this emission point shall be conservatively assumed to consist entirely of Pu-239. (WAC 246-247-040(5))

9) When a HEPA Filtered Vacuum Radioactive Air Emission Unit (HEPA VAC) is used, the conditions, controls, monitoring requirements and limitations of the latest approved revision of the HEPA VAC Notice of Construction shall be required. (WAC 246-247-060(5)) (WAC 246-247-080(7))

Emission Unit ID: 448

Hanford Sitewide Sitewide Vented Containers

Vented Containers

This is a MINOR, ACTIVELY ventilated emission unit.

PTRAEU

Abatement Technology NONE WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	Air - every 2 weeks continuous/deposition - annually

Sampling Requirements Environment Sampling

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Containers are used to store mixed and/or radioactive waste generated on and off the Hanford Site. Venting devices are installed when there is the potential for non radioactive gases (i.e., hydrogen) to be generated because of radiolysis.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Sitewide Vented Container Storage	AIR 06-613	7/5/2006	641

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.10E-09 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Containers are used to store mixed and/or radioactive waste generated on and off the Hanford Site. Venting devices are installed when there is the potential for non-radioactive gases (i.e., hydrogen) to be generated as a result of radiolysis.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.50E-05 mrem/year. Approved are the associated potential release rates (Curies/year) of:

   Release rates are not listed; emission release rates are controlled by special conditions.

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) Containers other than drums are also approved if they meet the conditions of this NOC.
5) Establishes a categorical As Low As Reasonably Achievable Control Technology (ALARACT) demonstration for existing Hanford Site vented containers.
6) Establishes a categorical Best Available Radionuclide Control Technology (BARCT) demonstration for all future Hanford Site vented containers (i.e., up to 10,000 vented container units (UVC) based on total unabated emissions and 27,000,000 UVC based on total abated emissions offering less than 0.1mrem/year to the MEI).
7) NucFil(TM) filter or an equivalent filter shall be BARCT and ALARACT. Vent clips are accepted as ALARACT for existing systems to date, however, when conditions require repackaging vent clips shall be replaced by NucFil(TM) or equivalent filters.
8) Pu239/240 equivalent curies (PE-Ci) represents the radionuclide of concern as discussed in the Hanford Site Solid Waste Acceptance Criteria, WHC-EP-0063, 1994, Westinghouse Hanford Company, Richland Washington.
9) The vented container Latitude and Longitude coordinates (46 degrees 22' 13.8", 119 degrees 16' 12.3") refer to the location resulting in the highest impact to the MEI.
10) These containers are used for storing mixed and or radioactive waste generated on or off Hanford Site.
11) WDOH accepts vent clips as ALARACT since they are no longer installed.

Emission Unit ID: 454

200 200 Area ISA

200 Area Interim Storage Area (ISA)

This is a MINOR, ACTIVELY ventilated emission unit.

200 diffuse/fugitive emissions

Abatement Technology

NONE WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)			Annual

Sampling Requirements Smear Survey

Additional Requirements

See Section 5 of the general conditions in this license for additional information.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status The 200 Area Interim Storage Area (ISA) consists of concrete pads, perimeter fencing, and lighting, access for transporters and mobile cranes, and conduit for electrical service and instrumentation. The ISA is operated for interim storage of non defense production reactor SNF in dry cask storage systems (DCSSs).

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Construction and Operation of the 200 Area Interim Storage Area (ISA)	AIR 06-618	7/5/2006	650

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.92E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The construction and operation of the 200 Area ISA. The 200 Area ISA will be constructed and operated for the interim storage of non-defense production reactor SNF in dry cask storage systems (DCSSs). [Note: Dry cask storage system is a generic term referring to the various storage systems employed for SNF storage at the 200 Area ISA and does not refer to a specific storage system.]

Dry Cask Storage System Interim Storage

Once the DCSSs are prepared for interim storage the systems can be transferred to the 200 Area ISA for interim storage. Up to sixty Interim Storage Casks (ISCs) storing FFTF SNF, 7 NAC-1 casks storing LWR SNF, and 12 NRF TRIGA casks and 2 DOT-6M containers storing TRIGA<tm> SNF will be required for storage at the 200 Area ISA. Each of the dry cask storage systems will be transported via road to the 200 Area ISA and unloaded using a mobile crane. Each DCSS will be placed at a specific location within the 200 Area ISA.

Dry Cask Storage System Equipment

Different DCSSs are utilized for the different SNF types to be stored at the 200 Area ISA to accommodate the particular characteristics of the SNF. The FFTF SNF DCSS, the NRF TRIGA SNF DCSS, and the LWR SNF DCSS.

200 Area ISA Design and Construction

The 200 Area ISA consists of concrete pads, perimeter fencing and lighting, access for transporters and mobile cranes, and conduit for potential future electrical service and instrumentation. This construction will not involve contaminated items. The 200 Area ISA will be situated within the current CSB construction site. This site is currently not a radiological area nor does it contain an underground radioactive material area. No contaminated excavation will be involved.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.92E-03 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241	2.65E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 242	1.11E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Am - 242 m	1.12E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ba - 137 m	1.18E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
C - 14	5.75E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ce - 144	1.92E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cm - 242	1.21E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Co - 60	1.07E+03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cs - 134	1.56E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Cs - 137	1.25E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 154	3.30E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Eu - 155	1.21E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Fe - 55	1.01E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
H - 3	3.62E+00	gas	WAC 246-247-030(21)(a)
I - 129	3.07E-04	gas	WAC 246-247-030(21)(a)
Kr - 85	3.07E+01	gas	WAC 246-247-030(21)(a)
Mn - 54	9.55E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ni - 63	9.18E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Np - 237	1.15E-09	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pm - 147	9.64E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pr - 144	1.92E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 238	1.30E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

Pu - 239	5.56E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 240	4.81E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 241	1.79E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Rh - 106	5.51E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Ru - 106	5.51E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sb - 125	1.21E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sm - 151	5.15E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Sr - 90	4.55E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Tc - 99	1.83E-07	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Te - 125 m	2.95E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 235	9.70E-12	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
U - 238	1.01E-09	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Y - 90	4.55E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 242 m	Am - 242	Ba - 137 m	C - 14
Ce - 144	Cm - 242	Co - 60	Cs - 134	Cs - 137
Eu - 154	Eu - 155	Fe - 55	H - 3	I - 129
Kr - 85	Mn - 54	Ni - 63	Np - 237	Pm - 147
Pr - 144	Pu - 238	Pu - 239	Pu - 240	Pu - 241
Rh - 106	Ru - 106	Sb - 125	Sm - 151	Sr - 90
Tc - 99	Te - 125 m	U - 235	U - 238	Y - 90

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) Any detectable contamination above 2200 dpm/100 cm ^2 Beta-Gamma or 220 dpm/100 cm^2 Alpha as a result of the ISA specific monitoring shall be reported to the department.

5) Periodic confirmatory monitoring shall consist of annual smears or swipes of the outer surfaces of the containers using hand held survey instruments capable of detecting contamination above 2200 dpm/100 cm ^2 Beta-Gamma or 220 dpm/100 cm^2 Alpha.

6) The emission limit for this emission unit is no smearable contamination above 2200 dpm/100 cm ^2 Beta-Gamma or 220 dpm/100 cm^2 Alpha using standard portable instruments used, and survey methods followed at Hanford (WAC 246-247-040(5)).

Emission Unit ID: 455

Hanford Sitewide W-PORTEX 007

HEPA vacuums

This is a MINOR, ACTIVELY ventilated emission unit.

PTRAEU

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)			

Sampling Requirements None

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status (HEPA Vacuum Units) are portable cleaners with exhaust flow rates ranging from 50 to 300 cubic feet per minute. The units control radionuclide emissions by providing filtered vacuuming for surfaces that radioactively are contaminated. HVUs fall into two categories of use, those used for the reduction of smearable contamination, and those used to reduce fixed contamination.

This Emission Unit has 3 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
HEPA Filtered Vacuum Radioactive Air Emission Units (HVU)	AIR 06-627	7/5/2006	663

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.50E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The use of specified HVUs located and operated on the Hanford Site, and represents establishment of unregistered, portable and temporary, insignificant emission units.

For the purposes of estimating (modeling) offsite exposures for this application, all applicable HVU emissions at an individual facility (e.g., B Plant Complex, C Tank Farm, SX Tank Farm, T Plant Complex, 100-K East Basin, 100-K West Basin, 324 Building, 340 Complex, etc.) or activity (e.g., D&D of a building) will be considered as a single emission point for that facility.

HVUs are portable cleaners with exhaust flow rates ranging from 50 to 300 cubic feet per minute. The units control radionuclide emissions by providing filtered vacuuming for surfaces that radioactively are contaminated.

HVUs fall into two categories of use, those used for the reduction of smearable contamination and those used to reduce fixed contamination. For smearable contamination, the use of HVUs is limited to reduction of contamination on hard surfaces (e.g., concrete, permanently installed metal equipment such as risers, ventilation system components, piping, etc.). Soil matrices are excluded from this NOC. Smearable contamination on these hard surfaces will not exceed limits established in DOE/RL-96-109. These limits, if exceeded, require the affected are to be posted as a high contamination area. The limits are 2,000 disintegrations per minute per 100 square centimeters (dpm/100 cm2) alpha contamination and 100,000 dpm/100 cm2 beta/gamma contamination.

An exception to these limits is restricted to spot surface contamination areas found during outdoor radiological field surveys, and to clean up localized, radiologically contaminated material (e.g., dust, dirt, bird droppings, animal feces, insects, spider webs, tumbleweed fragments, etc.). These types of materials could have beta/gamma contamination levels exceeding 1 million dpm/100 cm2, but are very localized (i.e., a few square meters, rather than hundreds of square meters) and could occur in contamination areas, buffer zones, and clean zones. This exception does not apply to areas normally posted as high contamination areas.

The second category of use is for reduction of fixed contamination, involving the removal and/or penetration of contaminated surfaces. This category of use includes using HVUs and associated shrouded tools for sanding, stripping, spalling, drilling, and cutting operations. Limits in areas of fixed contamination to ensure compliance will be established before these tools are used.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.97E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	3.09E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate for 100 Areas, emission calculations will assume Pu-239/240			
Alpha - 0	2.29E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate for 300 Area, emission calculation will assume Pu-239/240.			
Alpha - 0	3.44E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate for 400 Area, emission calculation will assume Pu-239/240.			
Alpha - 0	4.57E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate for 200 East Area, emission calculation will assume Pu-239/240			
Alpha - 0	7.70E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate for 200 West Area, emission calculation will assume Pu-239/240.			
B/G - 0	3.88E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
B/G release rate for 200 West Area, emission calculations will assume Sr-90.			
B/G - 0	1.16E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
B/G release rate for 300 Area, emission calculations will assume Sr-90.			
B/G - 0	1.74E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
B/G release rate for 400 Area, emission calculations will assume Sr-90.			
B/G - 0	1.56E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
B/G release rate for 100 Areas, emission calculations will assume Sr-90.			
B/G - 0	2.30E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
B/G release rate for 200 East Area, emission calculations will assume Sr-90.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Pu - 239/240 Sr - 90

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) All HEPA vacuum logs shall be submitted to the department on a quarterly basis (beginning with the first quarter of 2002). This submittal shall be to the department 30 days after the end of each quarter.

5) Monitoring requirements are as follows: In the event that the exhauster is used on different emission units, the Department of Health reserves the right to request a nondestructive analysis/assay (NDA) after each exhaust job assignment (WAC 246-247-075(3)). The monitoring includes: emission estimates to include the methodology, all monitoring measurement results taken during the operation, copy of all logs kept on site and the summary submitted to the department on June 30th.

Log sheets will include the following information:

Results of smears on the exhaust ports;
Maximum contamination level encountered or analysis results,
area cleaned,
and air emission source constituents if other than plutonium 239 and strontium 90 potential radionuclide releases.

6) The approved process is as follows: The HVU's fall into two categories. The firse category is the use if the HVU's for the reduction of smearable contamination (including the special cases listed in Appendix C) and the other is to reduce fixed contamination. Soil matrices are excluded from this NOC.

7) The required controls are described as follows: The HVU's must be field tested annually requiring an aerosol test/efficiency test or equivalent pass/fail criteria of 95.95% using an aerosol defined in ASME N510 or approved equivalent. In addition, the HVU's filtration systems are to be tested whenever the configuration is modified and/or the filtration system is opened. A smear of the exhaust port shall be conducted before and after each use of HVU's. If the exhaust port smear is positive, the unit shall be tagged and removed from service.

8) This NOC shall be revised no later than September 1, 2002. Revision 2 was received in September, 2002. The NOC application was determined to be incomplete, a new NOC application shall be submitted.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 9.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Management of radioactive contamination during roof replacement activities.

All work shall be performed in accordance with written contractor radiological control requirements (associated with posting and downposting requirements for doing work in outdoor contamination areas and fixed contamination areas) and the as low as reasonably achievable (ALARA) program requirements. These requirements are to be carried out through activity work packages/procedures and associated radiological work permits.

Types of facilities allowed to use this NOC are active and operational, currently in surveillance and maintenance (S&M) mode, or in transition to S&M mode.

Activities are non-routine activities that have a potential to create a new temporary emission source and/or a modification of a source(s) of diffuse and fugitive emissions at facilities on the Central Plateau.

Screening Surveys

Roof replacement activities include radiological surveys to determine if radioactive contamination is present and the extent of such contamination. Spot contamination (e.g., bird droppings) managed before commencement of roof replacement work is handled per existing methods and is considered a routine housekeeping activity (similar to spot contamination found at ground levels).

Managing Radioactive Contamination

Contaminated roofing materials may be removed by manual or powered methods, including saws or other cutting devices, shovels, wheelbarrows, conveyors, chutes, or other similar equipment (conveyors or chutes may be used only for packaged radioactive waste or for non-contaminated roofing material). Radioactive waste shall be managed in accordance with existing onsite requirements and waste acceptance criteria. Radioactive waste either shall be containerized in drums, skiffs, boxes, or other containers, or handled as bulk waste (e.g., dump truck) and transferred to the appropriate disposal facility. Management of radioactive contamination is allowed to include removal and subsequent size reduction of contaminated equipment from a roof as well as isolation and blanking of utilities, vents, and ductwork.

Accumulated rainwater that has contacted contamination areas shall be allowed to evaporate in place or is characterized, collected, and managed in accordance with stormwater discharge requirements or transferred to an appropriate disposal facility.

A graded approach is allowed to be used to match controls with expected contamination levels per radiological control manuals and methods. Radiological contamination that is encountered will either be managed as a fixed contamination area (i.e., less than 20 dpm/100 cm2 smearable alpha and less than 1,000 dpm/100 cm2 smearable beta) or will be managed as a contamination area (radiological contamination levels are between 20 and 2,000 dpm/100 cm2 alpha or between 1,000 and 100,000 dpm/100 cm2 beta) using appropriate controls to minimize worker exposure. These controls include water for dust suppression, fixatives, covers, windscreens, or greenhouses (with PTRAEU exhausters) that will be applied, if needed, as determined by the Health Physics organization, and consist of ALARA techniques.

Process descriptions and abatement controls, as described in the latest approved revisions of the Guzzler NOC (99-SID-021), the PTRAEU NOC (DOE/RL-96-75), or the HEPA Vacuum NOC (DOE/RL-97-50) shall be used; however, the activity-specific operational controls and tracking requirements shall follow these approval conditions. The Guzzler, PTRAEU, and HEPA vacuum units shall have a removal efficiency of 99.95% for radioactive airborne particles.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.80E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.00E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
License PTE limit bounds 1.0E-03 Ci/yr 241Am and release fraction of 1.0. Any radionuclide on the chart of the nuclides could be encountered during roof replacement activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 137Cs for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.			
B/G - 0	5.00E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
License PTE limit bounds 5.0E-02 Ci/yr 137Cs and release fraction of 1.0. Any radionuclide on the chart of the nuclides could be encountered during roof replacement activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 137Cs for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) For dose modeling, the radionuclides of concern shall use cesium-137 (representing beta/gamma emitters) and americium-241 (representing alpha emitters).

5) The total radionuclide content of the material removed shall be tracked on a WDOH approved log.

6) Total sum of the potential release rates of the Guzzler and HEPA Vacuums shall not exceed 1.0 E-3 Ci/Year Alpha and 5.0 E-2 Ci/Year Beta/Gamma.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.30E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Approved is the retrieval (unearth) and inspection of containers of suspect-transuranic (TRU) and TRU waste from trenches in the Low Level Burial Grounds (LLBG) and install NucFil filters or equivalent (as approved by the department) in the unvented (or inadequately vented) TRU containers. Venting and headspace gas sampling (HSGS) may be performed at the LLBG (in place with engineering controls or within venting enclosure) or at the following facilities licensed for such work (CWC, WRAP, or T Plant Complex). In addition, LLW containers posing a safety hazard (e.g., potential for pressurization, bulging, or similar abnormal condition) may also be vented.

   Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 5.40E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.90E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Alpha release rate based on Am-241. Release rate for contaminated soil removal using HEPA Vacuum. See condition 4.			
B/G - 0	1.30E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Beta/Gamma release rate based on Cs-137. Release rate for contaminated soil removal using HEPA Vacuum. See condition 4.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Cf - 252	Cm - 244	Cs - 134
Cs - 137	Eu - 152	Eu - 154	Pu - 238	Pu - 239/240
Pu - 241	Sr - 90	U - 234	U - 235	U - 236
U - 238				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) HVU potential unabated release rates of 1.9 E-3 Ci/yr alpha (based on americium-241) and 1.3 E-2 Ci/yr beta (based on cesium-137) is based on a release fraction of 1. This alternative release fraction is approved as being conservative for this emission unit.

5) HVUs shall be tested at 99.95% removal efficiency and shall be aerosol tested annually using ANSI N-510 as guidance for non-ANSI N-509 systems. Records of this testing shall be maintained on file.

6) It is recognized that other radionuclides may be present in very limited quantities.

7) Use of HVUs for control of localized spot contamination will be done in accordance with the HVU NOC (DOE-RL-97-50, as amended).

Emission Unit ID: 461

200 W-PORTEX 011

Permacon Unit

This is a MINOR, ACTIVELY ventilated emission unit.

Miscellaneous Support Facilities

Abatement Technology NONE WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)		Quartery frequency revisited after a year for changes to annual.

Sampling Requirements Quarterly for 2 weeks of operations

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status The PermaCon supports waste management operations at the Central Waste Complex. It is physically housed within a Central Waste Complex building. It samples headspace gas within solid waste storage containers.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Central Waste Complex (CWC) Operations	AIR 06-622	7/5/2006	654

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.40E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

the process of managing five primary types of waste: low-level (LLW), low-level mixed (LLMW), transuranic (TRU), TRU-mixed waste and Toxic Substance Control Act (TSCA) regulated waste. The LLW typically contains rags, paper, rubber gloves, disposal supplies, tools, industrial waste (e.g., failed equipment), solidified wastes that are contaminated with radioactive material. This waste is considered LLW if it contains radioactive material and is not classified as TRU waste, high-level waste, or spent nuclear fuel.

TRU and TRU-mixed waste typically contains rags, paper, rubber gloves, disposable supplies, tools, industrial waste (e.g., failed equipment), solidified process byproducts, and laboratory wastes that are contaminated with TRU material. This waste must contain at least 100 nCi of TRU material per gram of waste or it is considered LLW. The TRU waste accepted by CWC may contain varying concentrations of TRU radionuclides and limited amounts of non-TRU radionuclides. With some exceptions allowed based on safety analysis, the TRU content of waste containers is generally limited to 53 239/240 Pu dose equivalent curies (DE-Ci), where the DE-Ci is derived by multiplying the isotopic composition (i.e., weight fractions of the various TRU isotopes) by the specific activities of each isotope, and then converting that number with corrections factors taken from the Hanford Site Solid Waste Acceptance Criteria. The DE-Ci unit is designed to control inhalation dose impacts independent of radionuclide type. The radionuclides Pu-39 and Pu-240 are considered equivalent and are combined for calculation purposes.

The unabated emissions shall be tracked by DE curies.

The CWC stores low-level (LLW), low-level mixed (LLMW), transuranic (TRU), TRU-mixed and TSCA regulated waste.

The CWC is designed for the receipt and storage of contact-handled waste packages, which are defined as packages having surface dose rate of less than 2 mSv/h (200 mrem/h), but can store packages above this limit in accordance with the approved safety analysis. Each waste package is characterized before receipt and based on this information; incompatible forms of waste are physically segregated.

CWC personnel receive and inspect waste packages at the Waste Receiving and Staging Area. Transport off-load operations are performed by hand truck, forklift, or crane by qualified personnel. Packages are transported, generally by forklift to the assigned facility.

Waste containers are not opened during normal operations at the CWC buildings. Under normal operating conditions there is no airborne release of radioactive material expected from opening waste containers.

Inventories of TRU content, non-TRU radionuclides, and hazardous waste constituents are controlled at all waste storage facilities at the CWC. The inventory control system ensures that each building, building quadrant, or module will comply with its established inventory limit.

TRU waste containers are generally equipped with a pressure relief vent device, such as the NucFil filter. This filter allows the release of any gases that may be produced as a result of radiolysis inside the container, while preventing release of any particulate matter.

Waste shipments are transported to the Waste Receiving and Staging Area where the waste containers are radiologically surveyed and the exterior visually inspected for physical integrity. Waste records are checked for completeness and accuracy in accordance with procedures that provide instructions for performing detailed entry-by-entry reviews of waste records. To the extent practicable, this work is performed before unloading. However, partial unloading of a shipment may be necessary to complete a thorough survey and inspection. Verification of container contents, which may involve the opening of containers and sampling of waste contents, is performed at a facility separate from the CWC (e.g., T-Plant).

Waste packages meeting all acceptance criteria are accepted for storage. Non-compliant waste packages (e.g., with paperwork errors or omissions and damaged containers) are held until the non-compliant condition is corrected to the satisfaction of the responsible Solid Waste Manager or designee.

To detect leaking or deteriorating containers, or deterioration of the containment system, all waste containers are inspected in accordance with regulatory requirements.

PermaCon unit:

This approval also allows the placement of a modular containment PermaCon unit within the 2404WC Building (or similar CWC building) for the purpose of sampling the head space gas within solid waste storage containers.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.80E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	9.50E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Alpha release rate based on Am-241.			
Beta - 0	7.60E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Beta release rate based on Sr-90.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Ac - 228	Am - 241	Am - 243	Ar - 41	Ba - 137
Bi - 212	Bi - 214	C - 14	Ce - 141	Ce - 144
Cf - 252	Cm - 242	Cm - 243	Cm - 244	Co - 58
Co - 60	Cr - 51	Cs - 134	Cs - 137	Eu - 152

Eu - 154	Eu - 155	Fe - 59	H - 3	I - 129
I - 131	K - 40	Kr - 85	Mn - 54	Nb - 95
Np - 237	Pb - 212	Pb - 214	Pm - 147	Po - 210
Po - 212	Po - 216	Pu - 238	Pu - 239	Pu - 240
Pu - 241	Pu - 242	Ra - 224	Ra - 226	Rn - 220
Ru - 103	Ru - 106	Sb - 124	Sb - 125	Sn - 113
Sr - 89	Sr - 90	Tc - 99	Th - 228	Th - 232
Th - 234	Tl - 208	U - 232	U - 233	U - 234
U - 235	U - 236	U - 238	Y - 90	Zn - 65
Zr - 95				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) A fixed head sampler, located inside the PermaCon near the exhaust stack, shall be used at least quarterly (for the period of operation or two weeks which ever is lower) to obtain samples of the airspace within the PermaCon unit during operation for each quarter that the PermaCon is operated.

5) Emissions from the PermaCon shall be vented through a 2,000 cfm or less testable HEPA filter exhauster.

6) The isotopes identified in Condition 3 represent all of the significant radionuclides historically present at the Central Waste Complex (CWC), including some that are not significant. Any radionuclide on the chart of the nuclides could be present or received at CWC in the future. Periodic confirmatory measurements to verify low emissions are preformed by taking a two-week air sample on a quarterly basis and analyzing for total alpha and total beta. Although any radionuclide could be present for conservatism all alpha is assumed to be Am-241 and all beta is assumed to be Cs-137 for dose calculation estimates.

Emission Unit ID: 465

200 J-NONPOINT 012

Purgewater Modutanks

This is a MINOR, FUGITIVE, non-point source emission unit.

Miscellaneous Support Facilities

Abatement Technology NONE WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114(3)	TOTAL ALPHA TOTAL BETA	Air - every 2 weeks continuous/deposition - annually

Sampling Requirements Near FieldEnvironmental sampling

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit provides for solar evaporation of Hanford Site purgewater. Purgewater is excess groundwater and other liquids such as drilling fluids and groundwater slurries associated with groundwater activities. It includes liquids generated during groundwater related activities, including but not limited to the following: well drilling, well development, aquifer testing, groundwater sampling and monitoring, well maintenance and decommissioning, decontamination of well drilling and sampling equipment, and groundwater treatability studies. There are presently two 1,000,000 gallon purgewater containment units in the 600 PSTF. Up to four additional units of comparable size may be added to the 600 PSTF, although there are currently no plans for construction of the additional units. If the contained purgewater is allowed to undergo solar evaporation, up to 850,000 gallons of purgewater could evaporate annually from each storage unit.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Purgewater Modutanks	AIR 06-608	7/5/2006	636

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.50E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Solar evaporation of Hanford Site purgewater. Purgewater is excess groundwater and other liquids such as drilling fluids and groundwater slurries associated with groundwater activities. It includes liquids generated during groundwater related activities, including but not limited to the following: well drilling, well development, aquifer testing, groundwater sampling and monitoring, well maintenance and decommissioning, decontamination of well drilling and sampling equipment, and groundwater treatability studies.

   The RL will collect purgewater that contains radionuclides (and/or chemical constituents) in concentrations above established collection criteria and will discharge to the soil any purgewater containing constituents in concentrations lower than the collection criteria. At this time, collected purgewater is stored in the 600 Area Purgewater Storage and Treatment Facility (600 PSTF).

Waste Inventory

There are presently two 1,000,000-gallon purgewater containment units in the 600 PSTF. Up to four additional units of comparable size may be added to the 600 PSTF, although there are currently no plans for construction of the additional units. If the contained purgewater is allowed to undergo solar evaporation, up to 850,000 gallons of purgewater could evaporate annually from each storage unit.

Purgewater samples are analyzed on a regular basis for chemical and radionuclide contamination. Using a sample history since January 1, 1989 from wells, maximum values were assigned for radionuclide content and concentration in purgewater stored in the 600 PSTF. From these waste inventory values, a radionuclide source term was developed for purgewater that will be evaporated from the 600 PSTF.

Controls will be implemented to minimize wind suspension of any potentially radioactively contaminated solids that may settle to the bottom of the storage units, thus minimizing the dose potential of particulates. Several options include the use of aerodynamic covers and/or the maintenance of a minimum required liquid level in each unit that has stored purgewater.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.50E-04 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	2.83E-07	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
B/G - 0	7.39E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Be - 7	C - 14	Co - 58	Co - 60
Cs - 134	Cs - 137	Eu - 152	Eu - 154	Eu - 155
Fe - 59	H - 3	I - 129	K - 40	Ni - 63
Pu - 238	Pu - 239/240	Ra - 226	Ru - 106	Sb - 125
Sn - 125	Sr - 89/90	Sr - 90	Tc - 99	U - 234
U - 235	U - 238			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) Controls will be implemented to minimize wind suspension of any potentially radioactively contaminated solids that may settle to the bottom of the storage units.

5) Purgewater tank controls will be implemented to minimize wind suspension of radioactive solids that may settle to the bottom of the storage tank. They include the use of aerodynamic covers and/or maintenance of a minimum liquid level in each unit. Solids that have settled to the bottom will be wetted to minimize wind suspension. This meets the minimum liquid level requirement.

6) The maximum impact for the six evaporation units shall be 1.5E-04 millirem per year.

Emission Unit ID: 472

200W P-Trench31 001

Leachate Collection Tank for Trench 31

This is a MINOR, FUGITIVE, non-point source emission unit.

200 West Burial Grounds

Abatement Technology NONE WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)			Before and after emptying the tank. When the tank is not empty, take a monthly smear (after commencement of bulk waste disposal).

Sampling Requirements Smear sample of overflow pipe

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Trenches 31 and 34 are used for the disposal of low level waste, low level mixed waste, and radioactive waste containing Toxic Substances Control Act regulated polychlorinated biphenyls resulting from current operations across the Hanford Site, cleanup activities across the Hanford Site and from other offsite facilities. Each trench provides disposal capacity for approximately 22,000 m3 (28,000 yd3) of waste. Waste to be disposed of in the trenches can consist of contaminated soil and debris (bulk waste), sealed containers, vented containers, and any other type of waste meeting Low Level Burial Grounds (LLBG) waste acceptance criteria.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Trench 31 and 34: Leachate Collection and Storage Tank (LLBG Mixed Waste Disposal)	AIR 06-626	7/5/2006	662

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.03E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Trenches 31 and 34 shall be used for the disposal of low-level waste, low-level mixed waste, and radioactive waste containing Toxic Substances Control Act regulated polychlorinated biphenyls resulting from current operations across the Hanford Site, cleanup activities across the Hanford Site and from other offsite facilities. Each trench shall provide disposal capacity for approximately 22,000 m3 (28,000 yd3) of waste. Waste to be disposed of in the trenches can consist of contaminated soil and debris (bulk waste), sealed containers, vented containers, and any other type of waste meeting Low Level Burial Grounds (LLBG) waste acceptance criteria.

The leachate collection systems for Trenches 31 and 34 share a common design. That design encompasses primary and secondary leachate collection systems. The primary and secondary leachate collection systems are comprised of alternating layers of soils, geomembrane liners, collection pipes, collection sumps, sump pumps, and a single collection tank for each trench. Liquid accumulates under the disposed material in the bottom of

each trench in the primary liner of each trench (not exposed directly to atmosphere). When approximately one foot of precipitation of liquid is accumulated in the collection sumps, the pumps are activated to transfer the liquid to the tanks.

The leachate collection tanks at Trenches 31 and 34 are both above ground. Each tank has a capacity of approximately 10,000 gallons. Both tanks are cylindrical and approximately 8 feet (2.5 meters) in diameter and 24 feet (7.2 meters) long. Both tanks are passively vented via a liquid overflow pipe.

For disposal, the liquid will be transferred from the tanks to a tanker truck. Based on past operational experience, it is anticipated that up to approximately 415,000 gallons, per tank, per year could be transferred to the tanker trucks. More than one truck may be used at the same time. The tanker truck(s) shall be fitted with a three-quarter inch vent that will be opened during filling and emptying operations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 6.06E-03 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Pu - 239/240	9.74E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
U - 0 Isotopes of U-233/234/235/238	7.00E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(e)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	C - 14	Co - 60	Cs - 137	Eu - 152
Eu - 154	Eu - 155	Na - 22	Pu - 238	Pu - 239/240
Ra - 226	Sr - 90	Tc - 99	Th - 230	Th - 232
U - 0				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) Upon commencement of placing non-containerized radioactively contaminated waste in Trench 31 and/or Trench 34, a periodic confirmatory measurement (PCM) activity shall be implemented. This PCM activity shall consist of smearing the orifice(s) of the liquid overflow pipe(s) before and after emptying the tank(s). During those months when the tank(s) is/are not emptied, a smear shall be taken monthly. After the accumulation of one year's worth of smear data, the frequency of this PCM activity shall be reassessed based on the results of the smear data.

5) The radioactive isotopes identified for this emission unit represent all of the significant radionuclides historically present for the leachate collection tank 31, including some that are not significant. Any radionuclide on the chart of nuclides could be present or received at leachate collection tank 31 in the future.

Emission Unit ID: 473

200W P-Trench34 001

Leachate Collection Tank for Trench 34

This is a MINOR, FUGITIVE, non-point source emission unit.

200 West Burial Grounds

Abatement Technology NONE WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)			Before and after emptying the tank. When the tank is not empty, take a monthly smear (after commencement of bulk waste disposal).

Sampling Requirements Smear sample of overflow pipe

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Trenches 31 and 34 are used for the disposal of low level waste, low level mixed waste, and radioactive waste containing Toxic Substances Control Act regulated polychlorinated biphenyls resulting from current operations across the Hanford Site, cleanup activities across the Hanford Site and from other offsite facilities. Each trench provides disposal capacity for approximately 22,000 m3 (28,000 yd3) of waste. Waste to be disposed of in the trenches can consist of contaminated soil and debris (bulk waste), sealed containers, vented containers, and any other type of waste meeting Low Level Burial Grounds (LLBG) waste acceptance criteria.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Trench 31 and 34: Leachate Collection and Storage Tank (LLBG Mixed Waste Disposal)	AIR 06-626	7/5/2006	662

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.03E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Trenches 31 and 34 shall be used for the disposal of low-level waste, low-level mixed waste, and radioactive waste containing Toxic Substances Control Act regulated polychlorinated biphenyls resulting from current operations across the Hanford Site, cleanup activities across the Hanford Site and from other offsite facilities. Each trench shall provide disposal capacity for approximately 22,000 m3 (28,000 yd3) of waste. Waste to be disposed of in the trenches can consist of contaminated soil and debris (bulk waste), sealed containers, vented containers, and any other type of waste meeting Low Level Burial Grounds (LLBG) waste acceptance criteria.

The leachate collection systems for Trenches 31 and 34 share a common design. That design encompasses primary and secondary leachate collection systems. The primary and secondary leachate collection systems are comprised of alternating layers of soils, geomembrane liners, collection pipes, collection sumps, sump pumps, and a single collection tank for each trench. Liquid accumulates under the disposed material in the bottom of

each trench in the primary liner of each trench (not exposed directly to atmosphere). When approximately one foot of precipitation of liquid is accumulated in the collection sumps, the pumps are activated to transfer the liquid to the tanks.

The leachate collection tanks at Trenches 31 and 34 are both above ground. Each tank has a capacity of approximately 10,000 gallons. Both tanks are cylindrical and approximately 8 feet (2.5 meters) in diameter and 24 feet (7.2 meters) long. Both tanks are passively vented via a liquid overflow pipe.

For disposal, the liquid will be transferred from the tanks to a tanker truck. Based on past operational experience, it is anticipated that up to approximately 415,000 gallons, per tank, per year could be transferred to the tanker trucks. More than one truck may be used at the same time. The tanker truck(s) shall be fitted with a three-quarter inch vent that will be opened during filling and emptying operations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 6.06E-03 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Pu - 239/240	9.70E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
U - 0 Isotopes of U-233/234/235/238	7.00E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(e)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	C - 14	Co - 60	Cs - 137	Eu - 152
Eu - 154	Eu - 155	Na - 22	Pu - 238	Pu - 239/240
Ra - 226	Sr - 90	Tc - 99	Th - 230	Th - 232
U - 0				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) Upon commencement of placing non-containerized radioactively contaminated waste in Trench 31 and/or Trench 34, a periodic confirmatory measurement (PCM) activity shall be implemented. This PCM activity shall consist of smearing the orifice(s) of the liquid overflow pipe(s) before and after emptying the tank(s). During those months when the tank(s) is/are not emptied, a smear shall be taken monthly. After the accumulation of one year's worth of smear data, the frequency of this PCM activity shall be reassessed based on the results of the smear data.

5) leachate collection tank 34, including some that are not significant. Any radionuclide on the chart of nuclides could be present or received at leachate collection tank 34 in the future.

Emission Unit ID: 476

Hanford Sitewide Guzzler-001

Guzzler

This is a MINOR, ACTIVELY ventilated emission unit.

GUZZLER

Emission Unit Information

Stack Height: 12.00 ft. 3.66 m. Stack Diameter 0.75 ft. 0.23 m.

Average Stack Effluent Temperature: 54 degrees Fahrenheit. 12 degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Collection Tank and Plate Separator	1	
	Cyclone Separator	2	Baghouse system with a total of 72 bags.
	Micro-strainer Device	1	
	HEPA	3	Three in-place tested HEPA filters in parallel.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	Each radionuclide that could contribute greater than 10% of the potential-to-emit TEDE to the MEI, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, and greater than 25% of the TEDE to the MEI, after controls.	When the HEPA filters are replaced and annually screening the HEPA filtration system.

Sampling Requirements Radiation surveys and to include but not limited to NDA testing of the HEPA filters and screening the HEPA filtration system using gamma spectroscopy.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a mobile type portable exhauster used to support operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities. The emission unit is a portable exhauster that operates intermittently.

This Emission Unit has 8 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Guzzler Excavation and Backfilling Activities in Support of the 200 East Area A Farm Complex	AIR 06-616	7/5/2006	647

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.00E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 5.00E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16),

may be conducted.

The utilization of the Guzzler for excavation of soil and gravel within the A Farm Complex. Activities shall include potholing for utility locations and general soil removal and excavation.

The soil used for backfilling activities shall be completed manually using shovels, backhoes, loaders, and packers.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	1.49E-03	Sr - 90	2.24E-01

4) Aerosol testing and NDA of Guzzler HEPA filters shall be conducted annually.
5) HPT shall field surveys every vertical and linear foot of excavation.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.00E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The utilization of the Guzzler Vacuum Excavation System (Guzzler) for potholing to support utility locations, soil removal/general excavations, and radiologically limited activities (i.e., <50,000 dpm beta-gamma and <140 dpm alpha contamination) involving roof or pit cleaning. For purposes of this notice of construction, "soil" will be defined as sand, dirt, gravel, gravel and tar mixtures and rock, or any combination of these items.

In most cases, for excavations, the soil will be used for backfilling of the excavated areas. The backfilling activities will be completed manually, using shovels, or using backhoes, loaders, or packers. For cleaning activities and some excavations, the soil will either be containerized for disposal or transported to the burial grounds within the Guzzler collection tank for noncontainerized disposal.

Only radiologically contaminated or potentially contaminated soil will be removed or excavated using the regulated Guzzler system. All soil removed from the system will be handled as potentially contaminated, unless otherwise surveyed or analyzed.

The regulated Guzzler will not be used for the decontamination of valve pits within the tank farms. The regulated Guzzler is also excluded from areas containing regulated chemical contamination and/or radiological contamination above 50,000 dpm/probe size beta-gamma and/or 140 dpm/probe size alpha.

Soil can be slowly dumped from the collection tank by controlling the raising and lowering speed of the tank.

Soil from contaminated areas enters the unit through adjustable length, flexible hose connected to an eight inch porthole with an overhead boom located at the rear of the equipment. An air lance attachment may also be connected to the end of the flexible hose to aid in the loosening of soil.

The various cleaning and excavation activities will be completed using the Guzzler along with shovels, picks and/or the air lance attachment to loosen the soil, and backfilling activities will be completed using backhoes, loaders, compactors with plates, and picks and shovels, as appropriate. In some cases, however, an area may be physically inaccessible for the regulated Guzzler. In those instances, the cleaning or excavation, as well as any backfilling activities will be completed using backhoes, loaders, compactors with plates, and/or picks and shovels, as appropriate

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 5.00E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241	1.79E-03	Gas	WAC 246-247-030(21)(a)
200 Area *gaseous physical state assumed for purposes of conservatism relative to assigned release fraction			
Am - 241	1.79E-03	Gas	WAC 246-247-030(21)(a)
100 Area *gaseous physical state assumed for purposes of conservatism relative to assigned release fraction			
Pu - 239	7.26E-04	Gas	WAC 246-247-030(21)(a)
400 Area *gaseous physical state assumed for purposes of conservatism relative to assigned release fraction			
Sr - 90	4.48E-02	Gas	WAC 246-247-030(21)(a)
200 Area *gaseous physical state assumed for purposes of conservatism relative to assigned release fraction			
Sr - 90	4.48E-02	Gas	WAC 246-247-030(21)(a)
300 Area *gaseous physical state assumed for purposes of conservatism relative to assigned release fraction			

Sr - 90	1.46E-02	Gas	WAC 246-247-030(21)(a)
400 Area *gaseous physical state assumed for purposes of conservatism relative to assigned release fraction			
Sr - 90	4.48E-02	Gas	WAC 246-247-030(21)(a)
100 Area *gaseous physical state assumed for purposes of conservatism relative to assigned release fraction			
U - 234	1.30E-04	Gas	WAC 246-247-030(21)(a)
300 Area *gaseous physical state assumed for purposes of conservatism relative to assigned release fraction			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Co - 60	Cs - 134	Cs - 137	Eu - 152
Eu - 154	Eu - 155	Pu - 238	Pu - 239	Pu - 240
Pu - 241	Ru - 106	Sb - 125	Sn - 113	Sr - 90
Th - 232	U - 234	U - 235	U - 238	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) All soil excavation activities operating under this NOC must cease operations when sustained wind conditions reach or exceed 20 miles per hour
5) The facility must maintain a log in an approved format for this activity or emission unit (WAC 246-247-080(7)
6) The following are the allowable radionuclides: Co-60, Sr-90, Cs-137, Cs-134, Th-232, U-234, U-235, U-238, Eu-152, Eu-154, Eu-155, Ru-106, Sn-113, Sb-125, Am-241, Pu-238, Pu-239, Pu-240, and Pu-241. If any other radionuclides are suspected or verified through soil analysis the department must be notified
7) The following are the annual emission limits for the NOC:

   100 AREA:
   For Guzzler Cleaning/Excavation: 2.88E-3 mrem Sr-90, 3.4E-2 mrem Am-241
   For Backfilling: 2.88E-6 mrem Sr-90, 3.45E-5 mrem Am-241

   200 AREA :
   For Guzzler Cleaning/Excavation: 1.96E-3 mrem Sr-90, 2.34E-2 mrem Am-241
   For Backfilling: 1.96E-6 mrem Sr-90, 2.34E-5 mrem Am-241

   300 AREA:
   For Guzzler Cleaning/Excavation: 3.9E-2 mrem Sr-90 8.3E-3 mrem U-234
   For Backfilling: 3.9E-5 mrem Sr-90, 8.3E-6 mrem U-234

   400 AREA:
   For Guzzler Cleaning/Excavation: 8.5E-4 mrem Sr-90, 8.34E-3 mrem Pu-239
   For Backfilling: 8.5E-7 mrem Sr-90, 8..34E-6 mrem Pu-239
8) U.S. DOE shall monitor this project or emission unit as follows: In addition to the surveys described in this NOC periodic confirmatory measurements are required. This may include but is not limited to NDA testing of the HEPA filters when the HEPA filters are replaced and annually screening the HEPA filtration system using gamma spectroscopy (WAC 246-247-075(8)

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 9.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Management of radioactive contamination during roof replacement activities.

All work shall be performed in accordance with written contractor radiological control requirements (associated with posting and downposting requirements for doing work in outdoor contamination areas and fixed contamination areas) and the as low as reasonably achievable (ALARA) program requirements. These requirements are to be carried out through activity work packages/procedures and associated radiological work permits.

Types of facilities allowed to use this NOC are active and operational, currently in surveillance and maintenance (S&M) mode, or in transition to S&M mode.

Activities are non-routine activities that have a potential to create a new temporary emission source and/or a modification of a source(s) of diffuse and fugitive emissions at facilities on the Central Plateau.

Screening Surveys

Roof replacement activities include radiological surveys to determine if radioactive contamination is present and the extent of such contamination. Spot contamination (e.g., bird droppings) managed before commencement of roof replacement work is handled per existing methods and is considered a routine housekeeping activity (similar to spot contamination found at ground levels).

Managing Radioactive Contamination

Contaminated roofing materials may be removed by manual or powered methods, including saws or other cutting devices, shovels, wheelbarrows, conveyors, chutes, or other similar equipment (conveyors or chutes may be used only for packaged radioactive waste or for non-contaminated roofing material). Radioactive waste shall be managed in accordance with existing onsite requirements and waste acceptance criteria. Radioactive waste either shall be containerized in drums, skiffs, boxes, or other containers, or handled as bulk waste (e.g., dump truck) and transferred to the appropriate disposal facility. Management of radioactive contamination is allowed to include removal and subsequent size reduction of contaminated equipment from a roof as well as isolation and blanking of utilities, vents, and ductwork.

Accumulated rainwater that has contacted contamination areas shall be allowed to evaporate in place or is characterized, collected, and managed in accordance with stormwater discharge requirements or transferred to an appropriate disposal facility.

A graded approach is allowed to be used to match controls with expected contamination levels per radiological control manuals and methods. Radiological contamination that is encountered will either be managed as a fixed contamination area (i.e., less than 20 dpm/100 cm2 smearable alpha and less than 1,000 dpm/100 cm2 smearable beta) or will be managed as a contamination area (radiological contamination levels are between 20 and 2,000 dpm/100 cm2 alpha or between 1,000 and 100,000 dpm/100 cm2 beta) using appropriate controls to minimize worker exposure. These controls include water for dust suppression, fixatives, covers, windscreens, or greenhouses (with PTRAEU exhausters) that will be applied, if needed, as determined by the Health Physics organization, and consist of ALARA techniques.

Process descriptions and abatement controls, as described in the latest approved revisions of the Guzzler NOC (99-SID-021), the PTRAEU NOC (DOE/RL-96-75), or the HEPA Vacuum NOC (DOE/RL-97-50) shall be used; however, the activity-specific operational controls and tracking requirements shall follow these approval conditions. The Guzzler, PTRAEU, and HEPA vacuum units shall have a removal efficiency of 99.95% for radioactive airborne particles.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.80E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.00E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
License PTE limit bounds 1.0E-03 Ci/yr 241Am and release fraction of 1.0. Any radionuclide on the chart of the nuclides could be encountered during roof replacement activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 137Cs for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.			
B/G - 0	5.00E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
License PTE limit bounds 5.0E-02 Ci/yr 137Cs and release fraction of 1.0. Any radionuclide on the chart of the nuclides could be encountered during roof replacement activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 137Cs for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) For dose modeling, the radionuclides of concern shall use cesium-137 (representing beta/gamma emitters) and americium-241 (representing alpha emitters).

5) The total radionuclide content of the material removed shall be tracked on a WDOH approved log.

6) Total sum of the potential release rates of the Guzzler and HEPA Vacuums shall not exceed 1.0 E-3 Ci/Year Alpha and 5.0 E-2 Ci/Year Beta/Gamma.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.80E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.80E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The excavation activities associated with the building of temporary construction facilities and the main facilities for the River Protection Project-Waste Treatment Plant (RPP-WTP).

   Excavation and general grading will be performed for the WTP site, including excavation for the mat foundations, for the four main process facilities: Pretreatment (PT), high-level waste (HLW), low-activity waste (LAW), and LAW pretreatment plant (LPP) areas, including installation of sheet piles, where applicable.

   The excavation is limited to the removal of the dune sand, subsurface soil, and excavation to the desired elevation for the founding of structures and slope of the finished site layout. Over excavation is allowed to remove the dune sand if it is found at the exposed subgrade elevation. Excavated soil removed beyond the required footing elevation will be replaced with compacted structural fill, to the required footing elevation.

   Conventional methods such as the use of large excavators, scrapers, dozers, backhoes, front-end loaders, or manual digging with shovels or the "clean" guzzler will be used.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	1.24E-03	Beta - 0	5.32E-02

4) If the radiologically controlled guzzler is used to excavate soil, these activities shall meet the conditions, controls, monitoring requirements and limitations of the latest approved version of the guzzler NOC. All source term work performed under this activity shall be tracked against the Annual Possession Quantity for this NOC.

5) No more than 250 cubic yards of contaminated soils shall be excavated using the radiologically controlled guzzler.

6) Prior to hot start-up, restart or operation of a new or existing emission unit, the owner/operator must notify and provide the department the access to inspect and audit all construction activities, equipment, operations, documents, data, and other records related to compliance with the requirements of WAC 246-247 (WAC 246-247-080(1)).

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.10E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 5.82E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The activities performed at the 244-CR Vault Facility, ER-153 and/or 244-A Lift Station include:

Work Area Preparation:

- Miscellaneous work including equipment delivery, movement, set up and maintenance in the general work area around the 244-CR Vault Facility.

- Construction and take down of open top containment tents (bullpens) over the facility vault area.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs).

- Installation of portable 1,000 cubic feet per minute (cfm) exhauster.

- Removal and/or installation of vault foam covering.

- Application of fixative at pit interior.

- Temporary power installation.

Facility/Interim Stabilization Work:

- Operation of PTRAEU for bullpen ventilation.

- Removal and/or installation of pit covers.

- Inspection of pits, vaults, and tanks.

- Removal and disposition of excess equipment and waste in pits, risers, and tanks.

- Decontamination activities.

- Measurement of liquid level and sludge levels in tanks and sumps.

- Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance.

Facility Equipment Activities:

- Installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment).

- Modifications, maintenance, and/or isolation and sealing of existing risers, pits, vaults and incoming and/or outgoing piping (drain and transfer lines) from 244-CR Vault or connected facility.

Excavation:

- Installation of permanent power to 244-CR Vault Facility.

- Installation/Operation of Passive Breather Filter Assembly.

Waste Transfer and Support Activities:

- Operation of 1,000 cfm portable exhauster at 244-CR Vault.

- New waste transfer system, waste staging/consolidation.

Miscellaneous activities shall include:

- Construction and take down of open top contaminant tents over the facility vault area.

- Open top containment tents (bullpens) shall be constructed over the facility pit area to prevent potential airborne contamination from the effected work area to the environment. Two bullpens shall be erected around two instrumentation pits at the 244-CR Vault. Upon completion of the first pit's work, the bullpens shall be relocated to the other two pits and their work will be completed.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs)

- A Portable/Temporary Radioactive Air Emission Unit (2,000 cfm) or units (1,000 cfm each) shall be installed to ventilate the bullpens during activities that require work in the pits, cells and tank vault area prior to performing waste transfer activities. One thousand cfm PTRAEUs, if used, shall be directly connected to individual bullpens, while a 2,000 PTRAEU if used, shall be connected to two bullpens. Movement and installation of the PTRAEU can be performed to facilitate ventilation for the four vaults of the 244-CR Vault Facility. The PTRAEU shall operate intermittently (during work activities) and will be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

A portable 1,000 cfm exhauster shall be installed to ventilate the 244-CR Facility vaults and tanks during waste transfer activities. This exhauster shall operate intermittently to support waste transfer and support activities and shall monitor air emissions. The exhauster shall be piped into the existing 244-CR facility ventilation system upstream of the existing (non-operating) exhauster, 296-C-05 and HEPA filters. The existing 244-CR Facility exhaust system shall be isolated and not used. Tie in of the 1,000 cfm exhauster to the existing exhaust system shall be in accordance with ALARACT 16, Tank Farm ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components. After the waste transfer is completed, the exhauster shall be removed in accordance to the requirements of ALARACT 16.

A foam covering has been placed over the 244-CR Vault area to prevent intrusion of precipitation and snowmelt. In order to gain access to the pit cover (metal) plates or concrete cover blocks, sections of the foam shall be removed, packaged, transported and disposed of. ALARACT 4, Tank Farm ALARACT Demonstration for Packaging and Transportation of Waste shall be used to properly disposition the removed foamed covering. Radiation control technicians (RCT) shall monitor the affected work area while the foam covering is being removed. The foam covering shall be replaced after work is complete, as part of intrusion prevention measures completed by the project following waste transfer activities.

A fixative shall be applied either with the pit covers on. The fixatives shall be applied to pit surfaces through a port in the pit cover using a 'whirly' or by fogging. A hand held sprayer is used to apply fixatives to local areas within the pit when the pit cover is off.

Temporary power installation will be limited to meet the needs to support the work described in this NOC. Temporary installations can be removed when no longer needed.

Operation of PTRAEU for Bullpen Ventilation.

Ventilation of the bullpens during pre waste transfer tank activities and prior to the installation of the 1,000 cfm portable exhauster shall be accomplished with the use of PTRAEU(s). The PTRAEU(s) shall be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

Concrete cover key blocks are removed first, and only blocks necessary to perform intended work are removed. Consideration is given to sliding blocks to minimize the number of blocks to be removed. As discussed in the following, pit covers are decontaminated and/or covered with fixative before removal. Pit Covers are raised a minimum distance to safely allow a radiation protection technician to perform a dose rate and contamination survey. Pit covers are wrapped in plastic and set down in a specially prepared lay-down area. On completion of activities, the plastic wrap is removed from the pit covers and the pit covers are re-installed in their original position and orientation. Post-job surveys are performed.

Inspections, such as visual, video, or nondestructive inspections, shall be performed with pit covers in place (for pit with access ports) or removed. The pit cover design, historical inspection information, and ALARA information shall be used to determine whether the inspection shall be performed manually (with pit cover removed) or remotely with a camera and the pit covers in place.

Excess equipment and debris currently located in the 244-CR vault pits, and in-tank equipment shall be removed to accommodate new waste transfer equipment and piping. Excess equipment shall be replaced with replacement in kind equipment, as necessary.

To facilitate the removal and disposition of these items, size reduction and decontamination activities shall be utilized. Size reduction activities shall include cutting up unusable equipment (usually jumpers/blanks) remotely, using hydraulic shears or low revolutions per minute portable band saws. All size reduction activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal.

Disposition of excess equipment and waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Removable contamination in the accessible portions of the pit is reduced to less than 100,000 disintegrations per minute/100 square centimeters beta/gamma and 2,000 disintegrations per minute/100 square centimeters alpha by washing, or an approved fixative is applied to pit surfaces. Initial washing with a low pressure (125 pounds per square inch gauge), or high pressure (3,000 pounds per square inch gauge) 'whirly' is accomplished through a port in the pit cover blocks. Additional decontamination activities (with the cover block off) include the use of chemicals, peel and strip paints, water, or manual scrub brushes.

After a section of equipment has been washed it shall be pulled into plastic sleeving and sealed by horse tailing and taping.

Liquid and sludge levels are determined using zip cords or other appropriate means that shall not disturb the waste more than zip cords.

Sampling activities shall be performed in the tank and sump area of 244-CR Vault by way of risers in the riser pit in accordance with ALARACT 7, "Tank Farm ALARACT Demonstration For Tank Waste Grab Sampling." Radiological controls for riser preparation/opening listed in ALARACT 1, "Tank Farm ALARACT Demonstration for Riser Preparation/opening," shall be followed.

The waste transfer processes shall transfer waste from tanks CR-011, CR-001, CR-002 and CR-003 and sumps within 244-CR Vault Facility to a staging tank within the 244-CR Facility. The transfer system to consolidate the waste from individual tanks consists of above ground piping of a hose in hose with leak detection at each tank's pit being utilized to support the transfer line. Mixing and dilution of the waste may take place at the receiving tank or within the transfer lines directly. The transfer system may include equipment pump skids and

shall include appropriate connections to the transfer lines to accommodate chemical and water addition to the 244-CR Facility tanks and mixing prior to transfer to the designated Double Shell Tank (DST).

Before entry into a pit, an evaluation is made by engineering and/or operations personnel to determine the transfer routing configuration after pit work is complete. On removal of cover blocks, a visual inspection of pit contents is made to verify present configuration.

Tools such as impact wrenches, T-bars, and pike poles are used to repair or replace pit equipment. All equipment coming out of the pit is wrapped in plastic or otherwise contained or decontaminated for reuse or disposal. Removable contamination on the outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha before removal from the bullpen. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Jumper work shall be preceded by flushing the appropriate transfer lines with water. Jumper work is accomplished remotely, using a crane to maneuver heavy equipment and parts. Installation, disconnection, and/or changing jumpers/blanks are accomplished by slowly loosening the jumper/blank at the connector head. The required jumper/blank is positioned and tightened to the new connector heads. If the process line or equipment being worked on is connected physically to other unnecessary transfer lines, or if the line is to be left unused, a cap, blank, or equivalent is installed on all open nozzles not connected to jumpers.

Leak testing of newly installed jumpers/blanks shall be performed with pressurized water before initiating waste transfers. Occasionally, a jumper leak test is performed during the initial stages of the transfer. In either case, cover blocks shall be in place before leak testing is performed.

Cutting up unusable pit equipment (usually jumpers/blanks) is accomplished remotely using hydraulic shears or low revolutions per minute portable band saws. Cutting activities shall be performed in the bullpen or in glovebags. The goal shall be to maintain a contamination level equal to or less than 1,000 dpm/100 cm2 beta gamma and 20 dpm/100 cm2 alpha, during cutting activities, but may not always be attainable. RCT coverage shall be provided. Should contamination levels exceed 1,000-dpm/100 cm2 additional sleeving, or use of a glove bag shall be used and/or decontamination activities performed to lower the levels in accordance with ALARA. Welding (if required) shall commence once removable contamination levels in the cut and weld area are reduced to ALARA. Size reduction (cutting) activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal. To ensure that water intrusions or potential residual waste in piping are eliminated from the facility, existing piping and transfer lines to and from the 244-CR Vault facility shall be blanked, grouted, or sealed. The isolation includes activities such as installing plugs, caps, blind flanges, or grouting. Isolations may occur at the 244-CR riser pit area or at the other end of the pipe in a diversion or valve box, at the ER153 or the 244A Lift Station.

Modifications to existing in-route pits, vaults and piping shall be required to establish the waste transfer route or to ensure the integrity of the system prior to waste transfer. These modifications can include but are not limited to, removal of existing parts and replacement with like parts, installation of new jumpers, or blanking off of equipment. When possible existing blanks shall be utilized. Pipe cutting shall be minimized in compliance with ALARA. If it is determined that the installation of a new above ground transfer line would be the best engineering method to establish a waste transfer route, a temporary transfer route shall be established following existing design and installation procedures. This temporary route will be either above ground or in a shallow trench. If a trench is required excavation shall be performed as described under that activity in this NOC.

Pit drains are checked using water from a tanker truck or another source. Water at a flow rate of approximately 20 gallons per minute is added to a pit drain line and subsequently monitored to verify the pit drains are free of restrictions. At times it might be necessary to pump the DCRT that receives the water after the water passes through the pit drain if the volume of test water approaches the capacity of the DCRT.

Either flushing with water and/or using a retrieval tool to remove debris from the drain are used to clear plugged drains. Water supply valves are opened slowly to minimize splashing. Pressures above 50 pounds per square inch gauge require approval from the engineering organization. Cover blocks shall remain in place and work is accomplished through a penetration in the cover block.

The waste transfer operations involve the pumping of liquid waste that contains dissolved solids. These solids can precipitate out of solution anywhere in the transfer path and cause blockage. If blockage is detected in the system, flushing the lines with hot water is necessary. The hot water is introduced to the system to be flushed through a pressure manifold by piping connected directly to a jumper or nozzle. These operations shall be performed with the pit covers on.

To ensure that water intrusions are eliminated from the facility, a foam covering will be placed over the 244-CR Vault area after completion of isolation activities.

Other techniques to free blockages could include pressurization, temporary jumpers, and hydraulic scouring. All piping connections are designed to be leak tight and the pit cover block shall be installed before pressurization. If pressurization beyond that obtained from the tank farms water system or supply truck (i.e., approximately 150 pounds per square inch gauge) is necessary to remove blockage, an engineering evaluation shall be performed to determine the maximum allowable pressure for operation.

Excavation:

Excavation may be required to support installation of ventilation, electrical support and waste transfer equipment. Modifications to existing in route pits, vaults and piping and/or to support installation of new waste transfer lines from the 244-CR Facility to the identified DST may require excavation. Soil excavation activities will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), and will follow the radiological controls specified in that ALARACT.

Any Guzzler excavations in contamination areas will be performed in accordance with the December 18, 1998, WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use. Excavation of contaminated soils using heavy equipment shall follow the requirement of Site Wide Guzzler NOC.

Soil excavation outside the tank farm fence also may be performed with heavy equipment.

Soil will be excavated around the 244-CR vault facility to install new piping, equipment slabs, and new waste transfer system support equipment. It is expected that about 1,000 cubic yards may be excavated, with about 600 cubic yards from inside the tank farm. Backfill shall be from the original removed soil or non-contaminated controlled density fill (sand, water and a small amount of cement).

Current power within the 244-CR Vault Facility is limited. To provide power for new equipment installed under the project, the existing power distribution system shall be upgraded. Upgrades shall involve modification to the existing Motor Control Center (MCC), installation of equipment control panels, and installation of new conduits.

A compliant passive breather filter shall be installed to ventilate the 244-CR Facility vaults and tanks once waste transfer activities are completed. The passive breather filters shall be installed at two locations in the 244-CR facility. A 1,000 cfm HEPA filter shall be installed at the air inlet assembly (previously attached to the evaporative cooler) and a 200 cfm HEPA filter shall be installed upstream of the existing HEPA filter pit. Butterfly valves in the ventilation system just downstream of where the filters shall be installed can be shut to prevent any emission from the facility during filter installation. Installation of the filters shall be performed in accordance with ALARACT Demonstration 16, TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components.

During waste transfer and support activities the tank and vault air space shall be actively ventilated by a temporary ventilation system. The temporary ventilation system shall consist of a portable exhauster that shall

be equipped with compliant monitoring and sampling equipment. The purpose of the exhauster is to ensure potential airborne contamination from the pits, cells, or process tanks, is not being released to the environment. Operation of the 1,000 cfm portable exhauster is considered an emissions control.

New waste transfer system, waste staging/consolidation.

The planned transfer system can utilize some existing equipment along with installation of new piping and equipment at 244-CR, ER-153 and/or 244-A Lift Station. Maintenance of the transfer system may be required during the waste staging/consolidation. Equipment, which may require on going maintenance includes but is not limited to leak detection and pump system equipment. The waste can be staged/consolidated in one or two of the 244-CR Facility tanks (CR-001, CR-002, CR-003 and CR-011) prior to transfer to a DST.

The following controls are used for the pit activities:

General Controls:

1. Pre-job and post-job radiation surveys are performed by radiation protection technicians. Radiation work permits specify permissible occupational radiological limits during activities. Radiation control technicians' survey and release equipment, inspect and approve required containment, and provide radiological surveys to verify compliance to radiation work permit limits.

2. Pit work is shut down (or not initiated) when sustained wind speeds exceed 25 miles per hour as measured in the field and/or reported by the Hanford Meteorological Station.

3. Fixatives shall be applied inside the pit (with cover blocks on or off) or accessible portions of the pit decontaminated to less than 100,000 disintegrations per minute/100 square centimeters beta-gamma and 2,000 disintegrations per minute/100 square centimeters alpha.

4. When cover blocks are removed, a fall protection handrail is installed. This handrail is draped in plastic forming a contamination barrier. The plastic extends to the top of the pit and is taped or sealed at the top of the pit. Decontamination of the containment barrier is conducted as required by the job specific radiation work permit.

5. Radiation control technicians monitor the affected work area when the vault foam covering is removed, when jumpers and equipment are being removed from risers and nozzles, and when risers are entered for sampling of tanks and sumps. Jumpers removed from the pit are drained of free liquid and decontaminated or contained before removal. The outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha. If these limits are exceeded, surfaces shall be decontaminated. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

6. A bullpen designed to minimize the top opening shall be used. Pit covers or cover blocks will be removed as necessary. If the bullpen is to be left unattended at any time, a temporary cover is placed over the pit or the pit covers or cover blocks are reinstalled. Two tents shall be erected over two pits. Upon completion of the work in the first two 244-CR Facility instrumentation pits, the tents will be relocated to the other 244-CR facility instrumentation pits.

7. PTRAEU(s) shall actively ventilate the bullpens during activities that require work in the pits (after removal of the cover blocks) to control radiological releases. The PTRAEU(s) shall operate intermittently and shall be operated in accordance with the latest revision to the WDOH approved. Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

8. A compliant exhauster skid shall ventilate the process cells and tanks during waste transfer activities. The exhauster shall maintain a negative pressure under the cover blocks and prevent contaminants from reaching the environment. The exhauster skid shall be connected to the existing exhaust ductwork with rigid or flexible

ductwork.

9. The 1,000 cfm exhauster shall be equipped with a two-stage HEPA filter, which meets the requirements of ASME AG-1, Section FC and shall be tested annually to requirements of ASME N510. The HEPA filters shall have an efficiency of 99.95 percent for 0.3-micron median diameter. Each filter housing shall meet the applicable sections of ASME N509 and the test requirement of ASME N510. The exhaust stack houses a Generic Effluent Monitoring System (GEMS) that contains an air velocity probe and the air sampling probe.

10. The breather filter shall consist of a housing that contains a HEPA filter, an outlet screen, and a small seal loop. Air flowing to and from the 244-CR Facility shall pass horizontally through the filter and vertically through the downward-facing exit weather hood. Seal loops, installed in the exhaust lines, are designed as a safety feature to prevent unlikely accident in which an over pressurization occurs when the HEPA filter is isolated for occasional (infrequent) maintenance.

Specific Controls include:

-Installation of portable 1,000 cfm exhauster shall use ALARACT 16.

-Removal and/or installation of vault foam covering - ALARACT 4.

-Application of fixative at pit interior - see General Controls.

-Temporary power installation - ALARA.

-Operation of PTRAEU for bullpen ventilation - Latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

-Removal and/or installation of pit covers - General Controls.

-Inspection of pits, vaults, and tanks - General Controls.

-Removal and disposition of excess equipment and waste in pits, risers, and tanks - ALARACT 15, and ALARACT 4.

-Decontamination activities - General Controls.

-Measurement of liquid level and sludge levels in tanks and sumps - General Controls.

-Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance - ALARACT 7 and ALARACT 1.

-Facility Equipment Activities: installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment) - ALARACT 4, and ALARACT 15.

-Modifications, maintenance, and/or isolation and sealing of existing in route pits, vaults and piping (drain and transfer lines) to support and/or installation of new transfer lines - General Controls.

-Excavation - ALARACT 5, and/or WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use.

-Installation of permanent power to 244-CR Vault Facility - ALARA.

-Installation of passive breather filter assembly - ALARACT 16.

-Operation of a portable exhauster at 244-CR vault for ventilation - ALARA.

-New waste transfer system, waste staging/consolidation - General Controls.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	6.31E-03	Sr - 90	1.26E-02

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Work shall be performed outside of some tank farm fence boundaries such as the 241-AN, 241-AP, 241-AW, 241-AZ, and 241-SY tank farms; between the 241-AP tank farm and the 244-A double contained receiver tank as well as between the 244-S double-contained receiver tank and the 241-SY tank farm; the 219-S Waste Handling Facility located at the 222-S Laboratory; and near the 241-A-A valve pit (241-A Single-Shell Tank Farm).

EXCAVATION

Excavation within a tank farm, or in a known radioactive contamination area outside of a tank farm, shall be performed in accordance with As Low As Reasonably Achievable Control Technology (ALARACT) Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), or non-mechanical methods such as vacuum excavation (Guzzler) in accordance with the latest WDOH approved Notice of Construction. Outside of a tank farm, in non-contaminated areas, excavation (or berm construction) may be performed using mechanical methods such as: trenchers, backhoes, and scrapers, in addition to hand tools or non-mechanical methods. Areas may be encountered during excavation where components are covered by very hard soil or controlled density fill (low-strength concrete). Mechanical impact tools, such as jackhammer/rototool, would be used to break up such areas before excavation. Removal of excavated material is normally done by mechanical methods such as a crane with skip bucket, powered skip, or front-end loader. Excavated material is placed in spoil piles. (NOTE: Industrial safety requirements may require use of intermediate transfer piles.) Contaminated soil (>100,000 dpm/100 cm2 beta/gamma) is segregated from other soil. Excavated areas shall be backfilled with the excavated soil or soil containing less contamination than the soil that was excavated. Backfilling of excavated areas is accomplished by first placing controlled density fill material when used, then soil in layers, into the excavated area. The distance from the skip bucket, powered skip, and front-end loader to the top of the excavation area is minimized. Contaminated soil is the first soil placed in the excavated areas, then covered with other excavated soil. To meet density requirements, soil compaction is done using hand-guided mechanical compaction equipment. Outside of a tank farm, in a non-contamination area, vibratory roller compactors may be used.

Excavation shall also be conducted to allow for the pouring of concrete pads for future placement of equipment within the tank farms.

PIT WORK

Frequently performed activities shall be done in accordance with activity descriptions found in ALARACT Demonstrations (HNF-4327):

- ALARACT 4 "Packaging and Transportation of Waste"
- ALARACT 6 "Pit Access"
- ALARACT 12 "Packaging and Transportation of Equipment & Vehicles"
- ALARACT 13 "Installation, Operation, and Removal of Tank Equipment"
- ALARACT 14 "Pit Work" and, if required,
- ALARACT 15 "Size Reduction of Waste Equipment for Disposal."

The process is establishment of controls to prevent the spread of radioactive contamination, removal of pit cover

blocks by heavy rigging methods, decontamination of pit by water washing (pressure and non-pressure methods), application of fixative material on contamination, disconnection of equipment, equipment removal by manual or mechanical methods, package equipment for disposal (size reduction if necessary), pit surface preparation by manual abrasion (scrapping, sanding, chipping; on a surface that is damp or has fixative) of existing pit coating, application of pit coating material by manual methods or pressure spray methods, installation of new or replacement equipment, installation of pit cover blocks by heavy rigging, packaging of waste, and transportation of waste and removed equipment.

Project pit activities will include preparation of pit surfaces and coring of walls or cover blocks. Project pit surface preparation is accomplished by mechanical abrasion of the existing pit coating, concrete substrate, and steel surfaces as needed. Needle guns, sanders, wet blasting, and grinders are typical tools used. In addition, surface preparation also may include repair of cracked concrete/concrete coatings. Repair will require removal of cracked material to allow application of grouting material. Removal of cracked material may be performed using manual and power tools, and may also include using a HEPA vacuum to assist in the removal of loose debris. Coring of pit walls and/or cover blocks for new nozzles or equipment installation comprised of replacing wall nozzles, leak detectors, cover blocks, pipe snub-outs, and jumpers will also be performed. A new AZ valve pit will be constructed and connected to the AZ tanks.

PIPE CUTS

The cutting of waste transfer lines, tank risers, or contaminated piping shall be made using a low or high speed reciprocating or cut-off saw (sawzall, bandsaw) or other mechanical methods, such as a tri-tool. Surveys of the exterior and/or interior of the pipe/riser shall be used to determine containment selection in accordance with Radiological Containment Selection, Design, & Specification Guide RPP-7933. Continuous health physic technician coverage shall be present during all pipe work activities. Abrasive methods, such as grinders or sanders, may be used to prepare the cut area for connection to the new section of transfer line. Mating of the new piping to the existing transfer lines or tank riser, and other similar connections if necessary, will be performed using mechanical connection methods or welded flange connections.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	1.58E-01	Sr - 90	7.87E+00

4) All guzzler operations shall meet the requirements of latest approved Site-Wide Categorical Notice of Construction or Tank Farm A Complex Notice of Construction.

5) The Annual Possession Quantity and Potential-to-Emit to the MEI shall be tracked on a WDOH approved log. The total APQ and Potential to Emit to the MEI for the Guzzler and hand excavation of soil shall not exceed the total APQ and Potential-to-Emit values.

6) To determine the potential-to-emit and calculate the annual dose to the Maximally Exposed Individual all gross alpha contamination shall be assumed to be Am-241 and all gross beta contamination shall be assumed to be Sr-90.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.12E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.12E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Site preparation for the retrieval of the waste from single-shell tanks. This covers the following activities as described below.

Installation of the following in-tank equipment

- Waste distribution devices
- Transfer pumps
- Enraf-Nonius Series 854 (ENRAF) stilling wells
- Video cameras
- Instrument manifolds
- Central fury device
- Drain lines back to tank
- AMS (Articulated Mast System)
- Sluicing nozzles
- Ventilation inlet filter assemblies
- Connection of hose-in-hose transfer lines (HIHTL)
- New pit cover-plates
- Electrical poser and instrument cables and other utility tie-ins and/or upgrades
- New above ground pits
- Jumpers
- Off riser sampling system

Removal, Decontamination and Disposal of Existing Equipment

- Remove/Replacement of Breather filters
- Removal of Sludge weights
- Removal of Liquid observation wells (LOW)
- Removal of Standard Hydrogen Monitoring System (SHMS) probe
- Removal of Thermocouple probes
- Removal of Sluicing nozzles
- Removal of Video cameras
- Removal of Liquid level reel
- Removal of Jumpers from pits
- Removal of Saltwell pumps
- Removal of Sluice pumps
- Removal of Corrosion probes
- Removal of Shield plugs
- Removal of Slurry distributors
- Removal of Air lift circulators
- Removal of Riser adapter cover plates
- Removal of Saltwell screens
- Removal fo Dip tubes
- Removal of Protective foam coating on pits

Other similar equipment may be installed or removed provided all conditions and limitations outlined in this approval are met.

Pit Work

Pits will be accessed for installation of instrument manifolds, transfer pump installation, jumper removal, replacement of existing HIHTLs with new HIHTLs, connection of high efficiency particulate air (HEPA) filters, exhauster trunk for the portable exhausters, and removal of various jumpers, isolation of transfer lines, water lines, and drain lines.

Removal of In-Tank Equipment

Various in-tank equipment, such as those listed above, will be removed from the tanks to make room for the waste retrieval equipment, or to be replaced with equivalent equipment built to withstand the forces of waste retrieval.

In-Tank Equipment Installation

Motor controlled spray devices and sluicers will be inserted into risers on some tanks near the outside perimeter of the tank and an automatic indexing spray device also will be installed on a centrally located riser. In-tank closed circuit television cameras will be installed into risers and connected to a master camera control system skid. This equipment will be in the riser for the duration of the project and will not contact the waste. Each spray assembly is equipped with a spray washer to provide a decontamination rinse during removal. The spray devices and cameras will be sleeved out of the risers at completion of the project.

An AMS will be installed through risers of some tanks for use during retrieval. The AMS may be removed and reused. Pumps and In Tank Vehicles (ITVs) will be waste contacting and may be abandoned in place following the conclusion of retrieval operations.

Ventilation inlet filter assemblies (breather filters) will be installed on those tanks whose breather filters have been removed to accommodate portable exhausters and other retrieval equipment.

Installation of the Off-Riser Sample Collection System (ORSS). The ORSS consists of a sample collector sub-system and its deployment sub-system. The sample collector is capable of sampling the various types of waste expected in a post-retrieval single shell tank environment. The waste may be liquid in an extreme range of viscosities, or solids in various states of friability. The sample collector crawler will return the sample to sample containers staged below the riser, where it will be retrieved into the glove bag mounted on the sampling riser. Monitoring of the sample collector will be accomplished visually using the in-tank camera. All activities associated with the ORSS will be accomplished thru a sealed glove bag. The riser used for sampling will be open to the atmosphere for a very short period of time (typically less than one minute) while installing and removing the glove bag.

Installation of new risers ranging in diameter from four inches to 42 inches. Riser will be installed by first removing soil down to the concrete tank dome surface using hand digging and/or using the guzzler. A steel caisson will be inserted into the hole for wall support. A small layer of grout will be added to the bottom of the hole to provide a level surface. A hole will be partially drilled into the concrete. After a cable is attached to the core, the drilling will be completed through the dome into the tank headspace. The new prefabricated riser will be lowered into the caisson until support brackets on the side are seated on the grout top.

Tank Preparation for Closure

Tank preparation for closure will include installation of equipment for introducing fill material, fill placement monitoring, and ventilation. In general, equipment residing in risers (e.g., pump, thermocouple tree, vacuum retrieval mast, etc.) will not be removed from the tank unless it obstructs a riser that is required to gain access for placing the fill material. Equipment obstructing a riser needed for access will be either removed, or cut and

lowered into the tank. Equipment lowered into the tank during tank preparation will be completely covered when the fill material is added to the tank.

Soil Excavation

Soil will be excavated inside and outside the farms for various reasons such as tie in of instrumentation and power systems for monitoring transfer progress. Intermittent trenches will be excavated for this purpose.

The volume of soil removed during excavation activities are volumes of disturbed soil that will not leave the respective farms. Clean soil piles may be moved from one place to another within the tank farm with heavy equipment (i.e. backhoe, front loader). The soil will be used to fill the trenches after the hose and the conduits are installed.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	1.49E-03	Beta - 0	2.23E-01

4) The Annual Possession Quantity shall be tracked on a WDOH approved log.

5) The operation of the Guzzler shall meet all conditions and limitations of the latest Site Wide Guzzler NOC approval, with the exception of the annual emission limits which shall be tracked as part of this project. The total abated and unabated emission limit for the guzzler usage for this project shall not exceed 0.05 mrem/year.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.10E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.57E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The 241-AZ-101, 241-AZ-102, 241-AY-101, and 241-AY-102 and associated equipment shall be modified to allow for installation of waste retrieval systems and equipment, including the following major components.

New In Tank Equipment

• Two mixer pumps each in tanks 241-AZ-102, 241-AY-101, and 241-AY-102 for mobilizing the settled solids. Two mixer pumps were installed in tank 241-AZ-101 and permitted previously by WDOH through issuance of AIR-98-708. All of the pumps will be capable of pumping waste through each of two, horizontally opposed, discharge nozzles.

• A riser extension/spray wash system on top of each of the riser used for mixer pumps. The spray wash system will be used for future decontamination of the mixer pumps if they are removed from the tank.

• One transfer pump in each tank for the transfer of waste.

• New temperature probes for each tank.

• New decant pumps in the AY tanks, and associated transfer piping; to include a one time use hose-in-hose transfer line approximately 40 feet in length.

New Ancillary Equipment and Buildings

• Electrical power and instrument cables and other utility tie ins and/or upgrades (e.g., sanitary and raw water, and telecommunications).

• Tie-in to the existing dilution and caustic supply system, to bring waste properties into compliance with the feed specifications and to flush and preheat transfer lines. The dilution system will be capable of providing approximately 140 gallons per minute of pH adjusted water.

• New pit coverblocks.

• New water/diluent piping to and from the process pits.

• New process jumpers.

• Miscellaneous concrete pads for electrical and mechanical equipment.

• Chain link fencing and gates.

Removal, Repair, Decontamination and Demolition of Existing Equipment

• Removal/repair of transfer and/or mixer pumps, as necessary during the life of the facility.

• Removal and disposal of several thermocouple probes/instrument trees.

• Removal and disposal of several existing pumps and other miscellaneous equipment (e.g. slurry distributers and process jumpers).

If needed or chosen for use during these activities, the Regulated Guzzler, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of the NOC.

Soil Excavation

Soil will be excavated inside and outside the 241-AZ and 241-AY Tank Farms for the dilution piping that will tie-in to the existing AN Tank Farm caustic supply system and to remove soil in preparation for mixer pump foundations and miscellaneous equipment support structures, to remove soil around pits in preparation of core drilling, and for placement of control building foundations (as required). A total of approximately 6,000 cubic yards, per farm, could be excavated. Backfill will be made with the original removed soil or non-contaminated controlled density fill (sand, water and a small amount of cement).

Soil excavation activities inside the tank farm fence will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools). If contamination is discovered outside the tank farm fence, ALARACT 5 will be followed. Clean soil piles could be moved from one place to another within the tank farm with heavy equipment (backhoe, front-end loader, etc.). Soil excavation outside the tank farm fence in non-contaminated soil also could be performed with heavy equipment. The regulated guzzler also could be used as described in the NOC for use in the 241-A Tank Farm Complex.

Pipe Cutting and Welding

Any required cuts of contaminated piping will be made inside a glove bag using appropriate equipment such as a sawzall or tri tool. To perform a cut without a glove bag, the piping will be surveyed/smeared to verify removable contamination levels are equal to or less than 10,000 disintegrations per minute (dpm) per 100 square centimeters (cm2) beta gamma and 200 dpm/100cm2 alpha.

Welding might be necessary to join various pieces of equipment. If welding is necessary, welding will commence once removable contamination levels in the weld area are reduced to ALARA. The goal will be to achieve 1,000 dpm/100 cm2 beta gamma and 20 dpm/100 cm2 alpha or less.

If needed or chosen for use during these activities, a portable/temporary radioactive air emission unit and a HEPA filtered vacuum radioactive air emission unit could be used in accordance with the latest revisions of the NOCs.

Pit Work

Work to be performed in pits may include replacing existing sets of cover blocks with newly designed cover blocks, core drilling (equivalent of 100, 14-inch diameter holes for AZ Farm and 10, 14-inch diameter, holes for AY Farm), installing new nozzles and removing existing jumpers.

Pit access and work will be performed in accordance with ALARACT Demonstrations 6 and 14, TWRS ALARACT Demonstration for Pit Access, and TWRS ALARACT Demonstration for Pit Work. Activities not covered in these ALARACTs are described in the following.

If needed or chosen for use during these activities, a portable/temporary radioactive air emission unit and HEPA filtered vacuum radioactive air emission unit could be used in accordance with the latest revisions of their NOCs.

At the start of the pit work, the cover blocks will be lifted off and radiologically surveyed to determine an appropriate disposal method. New cover blocks will be installed when all work in the pits has been completed.

Core drilling could be performed and will occur below grade level, on the outside of the pit. The hole will be drilled from the outside to the inside, with the temporary pit cover in place. Nozzle installation generally will proceed immediately after the hole is completed. If immediate nozzle installation is not possible, the hole will be temporarily sealed with a plug, tape, or equivalent device, until the nozzle can be installed.

Installation of new nozzles in existing pits will take place in an open pit. All parts of the nozzle will be assembled ahead of time and will be lowered into position as a single unit. The piping in the back of the nozzle will be threaded through the hole (from the inside of the pit to the outside) and pulled tight into place from the outside of the pit. Grout will be used to secure and seal the nozzle into place. The front opening of the nozzle, inside the pit, will be fitted with a temporary cap/seal until a jumper is connected to the nozzle. Once the nozzle(s) is/are installed, the temporary pit cover will be replaced until other work inside the pit requires pit cover removal.

Removal of In Tank Equipment

Various in-tank equipment will be removed from the tanks to make room for the waste retrieval equipment, or to be replaced with equivalent equipment built to withstand the mixer pump jet forces. Removed long-length equipment will either be packaged in long-length contaminated equipment disposal containers or size reduced for disposal in accordance with ALARACT Demonstration 15, Tank Farm ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal. Equipment removal will be performed in accordance with ALARACT Demonstration 13, TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment. Activities not covered in this ALARACT are described in the following.

If needed or chosen for use during these activities, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs.

Decontamination of removed equipment is not anticipated. The fewer decontamination activities undertaken, the less exposure possibilities there are to the worker and the environment. Contingency decontamination plans, however, are in place if needed. The most likely equipment to be decontaminated would be sections of the flexible receiver. Equipment removal will be performed in accordance with TWRS ALARACT Demonstration 13, Installation, Operation, and Removal of Tank Equipment.

In Tank Equipment Installation

Equipment installation will be performed in accordance with TWRS ALARACT Demonstration 13, Installation, Operation, and Removal of Tank Equipment.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	4.42E-03	B/G - 0	1.10E-01

4) The total volume of soil excavated with the use of the Guzzler shall be limited to either 700 cubic feet, or the radionuclide content of the soil excavated shall not exceed the total Annual Possession Quantity, and shall be tracked on a WDOH approved log.

5) Use of the Guzzler shall comply with all Conditions and Limitations identified in approval AIR 02-1238, or latest revision, for Guzzler use in the 241-A Tank Farm Complex.

Emission Unit ID: 477

200E J-241ER152-001

241-ER-152

This is a MINOR, ACTIVELY ventilated emission unit.

241-ER

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency

Sampling Requirements None

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a diffuse source for radiological emissions in the form of dust, or emissions that are generated from point sources or areas/buildings where the emissions are not expected to be emitted through a stack. The emission unit is typically part of the surveillance program however there is a number of units that could be used during waste retrieval, decommissioning, and closure, such as but not limited to pits, pipelines, valves, pumps, and diversion boxes. The emission unit does not contain control equipment that is functional or maintained to specifications however, ALARACT methods are used to minimize releases. The area has contamination contained within the soil, a structure without ventilation systems, areas sources with multiple fugitive emission sources, such as but not limited to tanks farms, abandoned buildings/structures, pipelines, valves, pumps, pits, diversion boxes, etc. that may omit fugitive emissions while in operation. If the contamination is buried, or is fixed in such a manner that a release to the air is not expected, then the emission source is not contained within this category of emission units. The emission unit is a continuous source of emissions.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Tank Farm Waste Transfer Pits 241-ER-152 and 244-A Lift Station	AIR 06-625	7/5/2006	660

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.45E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.45E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Work in the Tank Farm Waste Transfer Pits 241-ER-152 and 244-A Lift Station Valve Pit.

   These activities include:
   a) Remove or install cover blocks;
   b) Perform inspections;
   c) Install, disconnect, change and cut up jumpers/blanks or other pit equipment;
   d) Repair/replace valves, jumpers, pumps, filters, leak detectors or other instrumentation/equipment;
   e) Perform decontamination activities;
   f) Apply fixative with cover blocks on or off;
   g) Clear drains, and check flow of drains.

Waste transfer pits are located at transfer piping network intersections and provide access from the surface to process piping and tank risers. Pits are the points where jumpers, pumps, and other equipment are installed to establish waste transfer routings. Leak detection is provided in pits used during transfers.

The 244-A Lift Station

A Double Contained Receiver Tank (DCRT) is a type of waste transfer pit which, together with its related equipment, constitutes a short term storage facility for liquid waste and a pump pit for waste transfer operations. This DCRT is passively ventilated and consists of an underground concrete structure that contains a filter pit, pump pit and a vault in which a receiver tank is installed. This station provides short term storage and waste routing for interstitial liquid wastes pumped from the 241-B, 241-BX, 241-BY Tank Farms and B plant in the 200 East Area, pumped cross-site, and as a pump pit by installing a jumper between connecting nozzles. Waste transferred out of the 244-A Lift Station can be routed to any of the 200 East Area double shell tanks (DSTs).

The receiver tank has a capacity of approximately 16,000 gallons and is constructed of carbon steel. It is surrounded by a tank vault that acts as a secondary containment vessel. The tank and vault are separated by an annular space. The floor is sloped to a sump for leak detection, collection and pump out.

The receiver tank and the tank vault annulus are vented through a single exhaust system. Remote instrument readout and alarm panels are located in the 242-A Evaporator control room and Computer Automated Surveillance System (CASS) room.

Outside air enters the double contained receiver tank (DCRT) annulus through an air intake equipped with an electric heater, prefilter, and a single stage high efficiency particulate air (HEPA) filter. The vault and receiver tank air streams flow through one of two parallel HEPA filter banks in the filter pit, and then join into a single line. The DCRT is currently passively ventilated through the atmosphere through stack 296-A-25. The only physical tie-in for ventilation to the pit is a small nozzle through which there is minimal flow. This stack also services the rest of 244-A Lift Station (this constitutes the majority of the flow).

This ventilation system is operating when pit activities are being conducted. However, emissions through the 296-A-25 stack are minimal during the performance of pit activities, since the unused nozzles are capped and there is one remaining nozzle that could allow ventilation in-flow to the stack.

241-ER-152 Pit is a diversion box which is covered, below grade, reinforced concrete structure that provides a flexible method of directing liquid waste from one point to another. Diversion boxes also provide confinement for leaks in waste transfer lines and leaks at jumper nozzle connections. Waste transfer lines are connected inside the diversion box.

Minimal controls are used for all activities. The following activities require only these minimal controls; (1) pre-job and post-job rad surveys are performed by HPTs. Radiation Work Permit (RWPs) specify permissible occupational radiological limits during activities. HPTs survey and release equipment, inspect and approve required containment and provide radiological surveys to verify compliance to RWP limits; (2) Pit work is shut down (or will not be initiated) when sustained wind speeds exceed 25 miles per hour (mph) or are predicted to do so by Hanford Meteorological Station during the period of planned pit work.

* Perform remote inspections with cover block on;
* Perform decontamination of pit surfaces or pit contents with cover bocks on;
* Apply fixative with cover blocks on;
* Flush drains and check flow of drains with cover blocks on.

In addition to the minimum controls a fall protection handrail draped in plastic forming a contamination barrier around the top of the pit is used for the following activities:

* Remove/replace cover blocks;

* Perform inspections with cover blocks off;
* Perform decontamination of pit surfaces or pit contents with cover blocks off;
* Apply fixative with a hand held (Hudson Type) sprayer with cover blocks off;
* Flush drains and check flow of drains with cover blocks off;
* Repair/replace/ move leak detectors or other pit instrumentation/equipment with cover blocks off.

In addition to the minimum controls a fall protection handrail draped in plastic forming a contamination barrier around the top of the open pit and a bull pen with an operating portable exhauster(s) are required for the following activities:

* Removal of cover blocks and performing the following operations: install, disconnect, change or cut up jumpers/blanks/valves or nozzles.

While cover blocks are on, low pressure fogging or a low volume whirly shall apply a fixative through an open valve handle hole or port which is closed during fixative application. The fogging or whirly operation is initiated gradually to coat the pit surfaces and cover blocks with fixative which reduces the potential for dislodging any contamination. Continuous surveys are performed during the fixative application. Additional fixative shall be applied, using a low pressure wand at any time there is an additional need for contamination control.

Anytime jumper work will be done a bull pen shall be in place. Jumper work in a pit cannot be performed without the use of a crane, therefore the bull pen top cannot be closed during jumper work.

The portable exhauster(s) shall be used anytime the pit is uncovered and the bull pen is in place.

Cutting up unusable pit equipment with hydraulic shears or a low revolutions per minute (RPM) portable band saw shall be done within the pit with the bull pen in place and the portable exhauster operating.

The cover blocks are replaced at the end of each work shift.

The bull pen is continuously occupied to assure that required pit controls remain in place any time the pit is uncovered. If a temporary pit cover is used, it will be put in place to fully cover the pit openings. If the temporary cover used is 3/4 inch plywood sheets, they are wrapped in plastic, placed over the pit, and weighted down by using lead filled blankets. If a tarp is used as a temporary cover, it is laid over the handrail surrounding the pit and extends to the ground on all four sides. This tarp is then secured around the outside perimeter near ground level using tape or an elastic strap. In this way, the tarp forms a cap over the pit and raised portion of the handrail structure.

During 244-A Lift Station Valve Pit and 241-ER-152 pit work operations, primary air inflow shall be through the open top of the bull pen and out the operating portable exhauster(s).

Additional special controls shall be added based upon the removable contamination level, contamination stability, and the operation to be performed as outlined in Attachment A of TFC-ESHQ-RP_RWP-C-02, Radiological Containment.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	8.48E+00	Cm - 244	4.83E+00	Co - 60	3.87E-01
Cs - 137	3.01E+03	Eu - 154	2.05E+00	Np - 237	1.35E-02
Pu - 238	2.70E-01	Pu - 239	4.40E+00	Pu - 241	1.05E+01
Sr - 90	3.61E+02	Y - 90	3.61E+02		

4) If flushing pressure is expected to exceed 50 psig, the department must be notified and assured that proper hoses, couplings and fittings are appropriate for the pressure used. Between 50 and 120 psig a notification is required. Anything above 120 psig requires approval from the department.

5) The annual possession quantity is limited to 3.92E+03 curies per pit.

Emission Unit ID: 486

200 200 Area Diffuse/Fugitive

200 Area Diffuse/Fugitive

This is a MAJOR, FUGITIVE, non-point source emission unit.

200 diffuse/fugitive emissions

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075[2]	Appendix B, Method 114	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Per the sitewide ambient monitoring program

Sampling Requirements Per the sitewide ambient monitoring program samples will be collected from the existing near-facility monitoring stations

Additional Requirements

See Section 5 of the general conditions in this license for additional information.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a diffuse source for radiological emissions in the form of dust, or emissions that are generated from point sources or areas/buildings where the emissions are not expected to be emitted through a stack. The emission unit is typically part of the surveillance program however there is a number of units that could be used during waste retrieval, decommissioning, and closure, such as but not limited to pits, pipelines, valves, pumps, and diversion boxes. The emission unit does not contain control equipment that is functional or maintained to specifications however, ALARACT methods are used to minimize releases. The area has contamination contained within the soil, a structure without ventilation systems, areas sources with multiple fugitive emission sources, such as but not limited to tanks farms, abandoned buildings/structures, pipelines, valves, pumps, pits, diversion boxes, etc. that may omit fugitive emissions while in operation. If the contamination is buried, or is fixed in such a manner that a release to the air is not expected, then the emission source is not contained within this category of emission units. The emission unit is a continuous source of emissions.

This Emission Unit has 27 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Tank Waste Remediation System Vadose Zone Characterization	AIR 06-670	7/5/2006	635

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 7.03E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.03E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The following methods of sampling and drilling techniques, including air rotary drilling, sonic drilling, closed-end probe, cable tool drilling, cone penetrometer, air rotary split spoon, and others. This approval applies only to the following tank farms: 241-A, 241-AX, 241-B, 241-BX, 241-BY, 241-C, 241-S, 241-SX, 241-T, 241-TX, 241-TY and 241-U.

   Up to ten equivalent boreholes may be drilled or re-entered per year (consecutive 12-month period) by the

methods described. An equivalent borehole shall have a nominal top diameter of no larger than ten inches for the first 50 feet, and a nominal bottom diameter of no larger than eight inches for the remaining 200 feet of pipe (average depth is 250 feet). Additionally, an equivalent borehole shall contain a contaminated layer no more than 20 feet long in the ten inch portion of the equivalent borehole. Individual methods shall be selected based on the likely level (concentration) of contaminants to be encountered. The most conservative drilling approach (lowest potential-to-emit) shall be applied first. Borehole logging shall be used to determine when it is appropriate to apply drilling techniques that may have a higher potential-to-emit. Zones not sampled during advancement of the borehole due to having a high potential to exceed exposure guidelines may be sampled by side-wall sampling techniques as the boreholes are decommissioned.

Samples from air rotary type drilling shall be obtained from the sampling sock located on the side of the cyclone and/or from the drums underneath the cyclone and torit. The material in the drums will be sampled by pulling a mini-core from the drum. Sampling and change-out of the drums shall be performed inside the containment structure with continuous health physics technician (HPT) coverage.

Borehole drilling techniques that may be used are limited to those described below:

Sonic drilling
Closed-end probe
Traditional cable tool drilling from top to bottom
Cone Penetrometer
Geo Probe
Auger drilling

Soil sampling techniques will include one or a combination of the following techniques:

Air Rotary Split Spoon
Cable Tool
Cable Tool and Auger with a Split Spoon Core Barrel
Sonic Core Barrel and Split Spoon
Rotary Coring
Sidewall Sampling
Drive Split-Spoon Sampler

Sidewall samples being brought to the surface will be bagged or sleeved into plastic or other suitable container (e.g. shielded container) after retrieval if decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 disintegrations per minute (dpm) per 100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha. The sampler will then be packaged in a container suitable for shipment to the laboratory for analysis. Other sidewall sampling techniques may involve a lever-action sampler (the sampler is driven into the formation through a cantilever action) or a rotating formation “shaving” device with the sample captured in an under-slung basket.

The brush, used to clean casings, shall be placed in plastic sleeving if decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha when it is removed from the borehole. Pull the casing into plastic sleeving during removal if decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha. Unthread the casing if possible, or cut using a wheel cutter, or disconnected from other segments into a nominal length of ten feet. A high-speed blade wheel cutter is not allowed. When necessary, either to accomplish casing removal for borehole decommissioning or to enable pull-back for sidewall sampling, the casing will be cut at depth using a Bowen casing cutter (or equivalent). If decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha and the casing is sleeved in plastic, no more than one feet of casing shall be exposed to air during the cutting process. Capture cuttings in draped plastic. If decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha, cap the pieces, cut with plastic or horsetail the sleeving and place sections in a burial box. The hole will be backfilled

with clean (nonradioactive) materials (e.g., granular bentonite and/or grout). Casing removal activities are allowed to be performed outside of the containment structure. The closure of the equivalent boreholes may also be performed by backfilling the borehole using a tremie without pulling the casing.

Collect any perched water in the drum at the bottom of the cyclone. Approximately 1,000 gallons of purgewater is allowed to be removed from each equivalent borehole prior to inserting a screen below the water table. After installation of the screen, groundwater samples will be taken. An average of 2,000 gallons of water (which includes perched water, purgewater and groundwater sampling) is allowed to be removed from each equivalent borehole. Perched water and purgewater will be collected in passively ventilated open-top containers. Water shall be transferred from the passively ventilated containers into a tanker truck for treatment at the 200 Area Effluent Treatment Facility or other permitted storage/treatment facility. Water may be transferred directly from the borehole to the tanker truck, bypassing the intermediate containers.

Approximately 3,500 ft^3 of soil may be excavated per year. Perform excavation using manual methods, backhoe, and/or the Guzzler.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	4.55E-04	Am - 241	3.48E+01	Am - 243	7.75E-04
C - 14	2.13E-01	Cm - 242	2.72E-01	Cm - 243	9.47E-03
Cm - 244	8.83E-02	Co - 60	9.66E-01	Cs - 134	1.48E-02
Cs - 137	1.85E+03	Eu - 152	4.13E-01	Eu - 154	8.67E+00
Eu - 155	2.61E+01	H - 3	7.68E-01	I - 129	1.72E-02
Ni - 59	5.13E-01	Ni - 63	4.99E+01	Np - 237	3.55E-03
Pa - 231	4.72E-04	Pu - 238	2.20E+00	Pu - 239	2.00E+02
Pu - 240	2.11E+01	Pu - 241	1.25E+02	Pu - 242	5.98E-04
Ra - 226	3.69E-05	Ra - 228	1.92E-03	Ru - 106	1.71E-03
Sb - 125	7.25E-01	Sm - 151	1.86E+02	Sn - 126	7.97E-02
Sr - 90	2.07E+04	Tc - 99	3.55E+00	Th - 229	7.76E-05
Th - 232	7.60E-05	U - 232	5.87E-03	U - 233	2.25E-02
U - 234	4.45E-01	U - 235	1.97E-02	U - 236	4.55E-03
U - 238	4.48E-01	Y - 90	2.07E+04	Zr - 93	2.41E-01

4) Approval is given as an alternative to transfer the perched water directly from borehole to the tanker.

5) Casing size reduction may also be by unthreading.

6) Drive Split Spoon Sampler will be included as a soil sampling technique.

7) Emission controls to be used during sonic drilling, cable tool drilling, during use of the cone penetrometer, use of the closed-end probe, and casing removal will be decontamination by nonaggressive manual methods such as wiping, sleeving into plastic or having fixatives applied to prevent the spread of contamination if the smearable contamination levels are greater than 100,000 dpm/100 cm2 for beta/gamma or 2,000 dpm/100 cm2 for alpha. As the core barrel is removed from the ground during cable tool drilling, a smear survey will be taken of the core barrel. Decontamination activities will be performed as needed to reduce smearable contamination.
a. At selected depths, samples will be taken and these samples will be removed from the core barrel prior to striking the exterior of the core barrel with a hammer or hard object to dislodge soil into a plastic lined drum. There will be minimal potential for emissions from striking the core barrel to dislodge the soil into the drum.
b. When the smearable contamination level is greater than 100,000 dpm/100 cm2 for beta/gamma or 2,000 dpm/100 cm2 for alpha, the core barrel will be sleeved in plastic. The core barrel will be removed from the drill string and placed in a suitable closed container for shipment to the laboratory or placed in a plastic-lined drum. Additionally, other sample containers may be wrapped in plastic after retrieval and the casing may be sleeved into plastic during the removal process to prevent the spread of contamination.

8) Emissions for these activities shall be tracked via a log approved by the department. This log shall track the hours of operation and location of use for each type of equipment, estimated and calculated curies encountered, and calculated emissions. Air samples used for periodic confirmatory measurement shall be collected no closer than

three feet above ground level. These samples shall be composited for each three individual sites (total of three samples) and analyzed at the completion of the borehole or re-entry activity and casing removal. All periodic confirmatory samples will be collected and analyzed following EPA Method 114.

9) Excavations using the Guzzler shall follow the Conditions and Limitations for approval for the Categorical NOC for use of the Guzzler on the Hanford Site. All source term work performed under this activity shall be tracked against this APQ.

10) For various characterization options covered under this NOC, the maximum TEDE to the hypothetical off site MEI shall not exceed 7.03 E-02 mrem/year. The maximum TEDE to the MEI shall not exceed 5.7 E-02 mrem/year at the Energy Northwest location as determined by CAP88PC, Version 2 supplied as supporting documentation.

11) No more than 3,500 cubic feet of soil may be excavated per year using manual methods, backhoe, and/or the guzzler. This shall be documented on an approved log.

12) No more than an average of 2,000 gallons of water (includes perched water, purge water and groundwater sampling) will be removed from each equivalent bore hole. Not to exceed 20,000 gal/year of water. Perched water and purge water will be collected in passively ventilated open top containers. When a sufficient volume of water has been collected or at the end of groundwater sampling activities, the water shall be transferred from the passively ventilated containers into a tanker truck for treatment at the 200 Area ETF or other permitted storage/treatment facility.

13) The APQ associated with perch water, purgewater and groundwater sampling shall not exceed 7.57 E-03 curies. The APQ associated with excavation shall not exceed 74.9 curies. These shall be tracked and documented on an approved log.

14) The facility must maintain a log in an approved format for this activity or emission unit (WAC 246-247-080(7)).

15) The following additional drilling techniques are approved for use: geoprobe and auger drilling. For casing removal or to enable pull back for sidewall sampling, the casing may be cut at depth using a Bowen Casing Cutter (or equivalent with prior DOH approval).

16) The following controls shall be mandatory when handling perched water, ground water and ground water sampling. All contaminated liquids shall be contained; all exterior surfaces of liquid holding devices shall be maintained at the current radiological free release limit; vented drums shall be maintained non-smearable; storage and handling of the vented drums shall be as described in the Site Wide Vented Drum Notice of Construction.

17) U.S. DOE shall monitor this project or emission unit as follows: fugitive emissions result from cable tool and sonic drilling, use of the closed end probe and the cone penetrometer, the plastic containment structure during air rotary drilling, and during dismantlement/assembly or relocating the ventilation equipment, plastic containment structure, or process equipment. To confirm low emissions, periodic confirmatory monitoring will be accomplished by operating three fixed head samplers around the location of where the drilling and sampling operations are occurring. The fixed head samplers will be located within 100 feet of where the drilling and sampling work activities are occurring and will be operated whenever the work activities have the potential-to-emit radionuclides. These samples shall be composited for each three individual sites (total of three samples) and analyzed at the end of each borehole. Packaging of equipment and samples for shipment, shall have surveys (swipes for removable contamination) performed in accordance with TWRS as low as reasonably achievable control technology (ALARACT) demonstration number 12 and subsequent revisions, TWRS ALARACT Demonstration for Packaging and Transportation of Equipment & Vehicles.

    Fugitive emissions may also result from removing casing from the ground. To confirm low emissions, periodic confirmatory monitoring will be accomplished by operating three fixed head samplers around the location of the work activities. The fixed head samplers shall also be located with 100 feet of where the casing removal activities are occurring and shall be operated when the work activities have the potential-to-emit radionuclides. These samples shall be composited for each three individual sites (total of three samples) and analyzed at the end of each casing removal (WAC 246-247-075(8)).

18) U.S. DOE shall provide additional monitoring as follows: Fugitive emissions result from excavations using hand tools shall be described as described in TWRS ALARCT 5. Fugitive emissions that result from excavations using backhoe shall consist of the following:
    a) HPT coverage will be performed as specified in the radiological permit.
    b) A beta-gamma survey of the ground surface is required prior to excavation in Contamination Areas (CA's), High Contamination Areas (HCA's), Soil Contamination Areas (SCA's), and Underground Radioactive Materials Areas (URMA's). An alpha survey may be required prior to excavation per the "Justification for Dual Survey Exemption

in Tank Farm Facilities" HNF-3391.
c) For excavations in CA's, HCA's, SCA's, and URMA's, if beta-gamma activity greater than 1000 dpm/probe area (5000 dpm/100 cm^2) is identified, alpha surveys will also be performed.
d) Suppressants such as water, fixatives, covers, or windscreens will be used as necessary, including at the end of each shift or when sustained or predicted winds are >20 mph. Excavations are not allowed when sustained or predicted winds will be >20mph.
e) If the net alpha for the general area is greater than 140 dpm/probe area, OR if the net beta-gamma activity for the general area is greater than 500,000 dpm/probe area, work will be suspended and worker safety evaluated by radiological control. Direct contact will also be made to WDOH. After it is determined that there is no threat to worker safety, WDOH has been contacted, and the proper controls (e.g., water fixatives, covers, windscreens) have been put in place, excavation may continue. A contact of WDOH will not be needed if the contamination consists of a hot speck. If hot specks are detected during the radiological surveys, the speck will be removed and contained before the activity is allowed to continue unless located in the bottom of the trench after excavation has been completed. Specks found in the bottom of the completed trench may be covered with clean fill. A hot speck will be defined as a very small amount (i.e., less than or equal to 100 cm^2) of contamination reading greater than or equal to 1,000,000 dpm/probe size beta-gamma and/or greater than or equal to 490 dpm/probe size alpha.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.63E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

At the WRAP FACILITY--
Examining, assaying, characterizing, treating, verifying, and repackaging solid radioactive material and mixed waste to enable treatment, storage, or disposal of low-level waste (LLW), transuranic (TRU) waste, TRU mixed waste, and low-level mixed waste (LLMW) in contact handled (CH) containers where the external surface dose rate does not exceed 200 millirem per hour.

At SHIPPING AND RECEIVING (200 Area Diffuse/Fugitive Emissions)--
Containers delivered to and transferred/shipped from the shipping and receiving shall be unloaded, visually inspected, bar code labeled, and radiologically surveyed with information pertaining to each container entered into the data management system.

Following visual inspection, transfer incoming drums to the NDE/NDA area for further characterization using the process described for the NDE/NDA below.

Once characterized, verified, and/or certified, the certified TRU waste must be loaded into a transuranic package transporter (TRUPACT-2) shipping cask for shipment to the Waste Isolation Pilot Plant (WIPP) in New Mexico. Verified LLW shall be transferred for disposal onsite. Mixed waste must be moved to an offsite treatment or permitted storage facility, or to an onsite treatment, disposal, and/or storage unit. Radioactive material that fails verification shall be returned to the generator, processed to correct the problem, or sent to another facility for further reprocessing.

During NONDESTRUCTIVE EXAMINATION/NONDESTRUCTIVE ASSAY SYSTEMS
(200 Area Diffuse/Fugitive Emissions)--
The NDE/NDA shall used to examine and to certify LLW, LLMW, TRU, and TRU mixed waste container contents without opening the containers.

In the PROCESS AREA (296-W-4 Emission Unit)--
The process area consists of four glovebox lines: a TRU waste process glovebox, a TRU waste restricted waste management (RWM) glovebox, a LLW process glovebox (with supercompaction capability that also can be used for TRU waste processing), and a LLW RWM glovebox. The following is allowed in the process gloveboxes: drums opened, contents sorted and sampled, if necessary, noncompliant items removed and transferred to the RWM gloveboxes, and remaining compliant waste repackaged into new drums.

Incoming drums generally shall be opened in gloveboxes. However, loosening of a lid or replace a damaged lid outside of a glovebox is allowed.

In the TRANSURANIC WASTE PROCESS LINE--
The TRU waste process glovebox line consists of stainless steel modular gloveboxes bolted together in a linear configuration. Windows shall be gasketed and bolted to the glovebox wall, and gloveports shall be fitted to the glovebox wall and windows to accept push-through type gloves. Glovebox ventilation shall be the once-through type. Air shall be drawn from the process room, through a nontestable high-efficiency process filter, and into the glovebox. The air shall be exhausted from the glovebox through another nontestable high-efficiency process filter to the combined glovebox exhaust system.

Process operations shall be performed inside of the gloveboxes by using the gloves and/or remote controlled

manipulators. Drums shall be loaded into the glovebox through airlock and sealed-type entry systems.

In the TRANSURANIC WASTE RESTRICTED WASTE MANAGEMENT LINE--
The TRU waste RWM glovebox line consists of stainless steel. Window, gloveport, ventilation, and manipulator features shall comply to those described for the TRU waste process line glovebox. Glovebox ventilation shall be the once-through type. Air shall be drawn from the process room, through a nontestable high-efficiency process filter, and into the glovebox. The air shall be exhausted from the glovebox through another nontestable high-efficiency process filter to the combined glovebox exhaust system.

The treatment and repackaging operations that occur in the TRU waste RWM glovebox is limited to the following.

Aerosol cans are depressurized and drained. The drained liquids are treated within the gloveboxes or retained in containers, which are sent to storage outside of the WRAP Facility. Vapors from the aerosol cans shall pass through a series of demisters for removal of entrained liquids, and shall be vented to the glovebox exhaust.

Miscellaneous inorganic liquids shall be sampled for characterization, neutralized if required, and solidified using stabilizing additives.

Miscellaneous organic liquids shall be sampled for characterization, treated within the gloveboxes or repackaged for transfer to storage facilities pending future treatment.

Corrosive materials shall be neutralized. After neutralization, the materials shall be solidified or loaded out for storage or treatment outside the WRAP Facility.

Other treatment such as mercury amalgamation, stabilization of heavy metals, and macroencapsulation are allowed to be performed.

Radioactive material shall be repackaged to meet acceptance criteria of the receiving facility.

Radioactive material is sampled.

The empty aerosol cans and other treated LLW packages will be loaded into new drums and routed to the LLW process glovebox for compaction or loaded out of the RWM glovebox for storage, disposal, or additional treatment.

In the LOW-LEVEL WASTE PROCESS LINE--
The LLW process glovebox line consists of stainless steel modular gloveboxes bolted together in a linear configuration. Glovebox ventilation shall be of the once-through type. Air shall be drawn from the process room, through a nontestable high-efficiency process filter, and into the glovebox. The air shall be exhausted from the glovebox through another nontestable high-efficiency process filter to the combined glovebox exhaust system.

Drums shall enter the glovebox through an airlock entry system. Noncompliant items shall be bar code labeled and transferred to the LLW RWM glovebox using a reusable transfer system. Compliant waste shall be compacted and repackaged into new drums.

The LLW process glovebox will be modified to support CH-TRU processing, and include the capability for supercompaction. A one-trip drum exit port will be installed on the LLW glovebox. An improved drum tipper will be used to enable sorting capability, and a commercial non-destructive assay system for glovebox material balance control will be installed.

In the LOW-LEVEL WASTE RESTRUCTED WASTE MANAGEMENT PROCESS LINE--
The operations in the LLW RWM process line is limited those as described for the operations in the TRU waste RWM line.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.13E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	3.41E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(e)

License PTE limit bounds 3.41E-05 Ci/yr 241Am and release fraction of 2E-09 (AIR 99-1006). Any radionuclide on the chart of the nuclides could be encountered during WRAP fugitive emissions activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

B/G - 0	5.11E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(e)

License PTE limit bounds 5.11E-04 90Sr and release fraction of 2E-09 (AIR 99-1006). Any radionuclide on the chart of the nuclides could be encountered during WRAP fugitive emissions activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 9.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Management of radioactive contamination during roof replacement activities.

All work shall be performed in accordance with written contractor radiological control requirements (associated with posting and downposting requirements for doing work in outdoor contamination areas and fixed contamination areas) and the as low as reasonably achievable (ALARA) program requirements. These requirements are to be carried out through activity work packages/procedures and associated radiological work permits.

Types of facilities allowed to use this NOC are active and operational, currently in surveillance and maintenance (S&M) mode, or in transition to S&M mode.

Activities are non-routine activities that have a potential to create a new temporary emission source and/or a modification of a source(s) of diffuse and fugitive emissions at facilities on the Central Plateau.

Screening Surveys

Roof replacement activities include radiological surveys to determine if radioactive contamination is present and the extent of such contamination. Spot contamination (e.g., bird droppings) managed before commencement of roof replacement work is handled per existing methods and is considered a routine housekeeping activity (similar to spot contamination found at ground levels).

Managing Radioactive Contamination

Contaminated roofing materials may be removed by manual or powered methods, including saws or other cutting devices, shovels, wheelbarrows, conveyors, chutes, or other similar equipment (conveyors or chutes may be used only for packaged radioactive waste or for non-contaminated roofing material). Radioactive waste shall be managed in accordance with existing onsite requirements and waste acceptance criteria. Radioactive waste either shall be containerized in drums, skiffs, boxes, or other containers, or handled as bulk waste (e.g., dump truck) and transferred to the appropriate disposal facility. Management of radioactive contamination is allowed to include removal and subsequent size reduction of contaminated equipment from a roof as well as isolation and blanking of utilities, vents, and ductwork.

Accumulated rainwater that has contacted contamination areas shall be allowed to evaporate in place or is characterized, collected, and managed in accordance with stormwater discharge requirements or transferred to an appropriate disposal facility.

A graded approach is allowed to be used to match controls with expected contamination levels per radiological control manuals and methods. Radiological contamination that is encountered will either be managed as a fixed contamination area (i.e., less than 20 dpm/100 cm2 smearable alpha and less than 1,000 dpm/100 cm2 smearable beta) or will be managed as a contamination area (radiological contamination levels are between 20 and 2,000 dpm/100 cm2 alpha or between 1,000 and 100,000 dpm/100 cm2 beta) using appropriate controls to minimize worker exposure. These controls include water for dust suppression, fixatives, covers, windscreens, or greenhouses (with PTRAEU exhausters) that will be applied, if needed, as determined by the Health Physics organization, and consist of ALARA techniques.

Process descriptions and abatement controls, as described in the latest approved revisions of the Guzzler NOC (99-SID-021), the PTRAEU NOC (DOE/RL-96-75), or the HEPA Vacuum NOC (DOE/RL-97-50) shall be used; however, the activity-specific operational controls and tracking requirements shall follow these approval conditions. The Guzzler, PTRAEU, and HEPA vacuum units shall have a removal efficiency of 99.95% for radioactive airborne particles.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 4.80E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	3.00E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
License PTE limit bounds 3.0E-04 Ci/yr 241Am and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during roof replacement activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 137Cs for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.			
B/G - 0	1.50E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
License PTE limit bounds 1.5E-02 Ci/yr 137Cs and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during roof replacement activities. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 241Am and all beta/gamma is assumed to be 137Cs for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) For dose modeling, the radionuclides of concern shall use cesium-137 (representing beta/gamma emitters) and americium-241 (representing alpha emitters).

5) The total radionuclide content of the material removed shall be tracked on a WDOH approved log.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.80E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.80E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The excavation activities associated with the building of temporary construction facilities and the main facilities for the River Protection Project-Waste Treatment Plant (RPP-WTP).

   Excavation and general grading will be performed for the WTP site, including excavation for the mat foundations, for the four main process facilities: Pretreatment (PT), high-level waste (HLW), low-activity waste (LAW), and LAW pretreatment plant (LPP) areas, including installation of sheet piles, where applicable.

   The excavation is limited to the removal of the dune sand, subsurface soil, and excavation to the desired elevation for the founding of structures and slope of the finished site layout. Over excavation is allowed to remove the dune sand if it is found at the exposed subgrade elevation. Excavated soil removed beyond the required footing elevation will be replaced with compacted structural fill, to the required footing elevation.

   Conventional methods such as the use of large excavators, scrapers, dozers, backhoes, front-end loaders, or manual digging with shovels or the "clean" guzzler will be used.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	2.19E+00	Beta - 0	9.44E+01

4) After the excavation, containerizing, and removal, of any contaminated soil, the area will be backfilled with clean soil. After backfilling, the area shall be surveyed to verify that radiological contamination levels on the soil surface are less than 5,000 dpm/100 cm2 beta-gamma and less than 100 dpm/100 cm2 alpha. If contamination is present on the surface above these levels, it will be removed and containerized for disposal or covered or fixed to provide containment of the contamination.

   Dust shall be controlled by water spraying or other approved methods. The active excavation faces that are exposed for periods of less than 24 hours shall receive dust control measures during excavation operations such as spray applications of water. Excavated areas, and/or stockpiles that will be inactive for periods of greater than 24 hours shall receive dust control measures other than water alone, such as surficial suppressants, or penetrating crusting agents.

5) Excavation activities are allowed to continue if hot specks or "specky" contamination is encountered as long as:

   a. The specky contamination estimate is included in the approved emissions log; and
   b. The emissions contribution from the specky contamination does not put the total logged emissions estimate over the allowed Annual Possession Quantity. It shall be assumed that hot specks are very small volumes of contamination. The specks shall be removed as they are encountered and containerized for disposal.

6) Excavation activities will be stopped if evenly distributed contamination with detection readings greater than 500,000 dpm/100 cm2 beta-gamma, or greater than 200 dpm/100 cm2 above background alpha is encountered. Excavation will not continue until:

   a. A review of the work and encountered conditions has been performed and a plan for managing equipment and personnel in these "contaminated areas" has been addressed.

b. It has been determined that no threat to worker safety or the environment exists.
c. Proper controls (i.e., removal and disposal, water, fixatives, covers, and so on) have been put in place to mitigate any further threat.
d. The sustained wind speed is predicted to be less than 20 miles per hour.
e. The extent of soil contaminated has been fully identified by stakes or other markings and the estimated soil volume contaminated has been logged into the field log book.
f. And the WDOH has been contacted and briefed of the situation.

7) Excavation activities will cease and WDOH shall be contacted if the total soil volume estimated to be contaminated from the field log reaches 4,000 cubic yards. A modification will then be made to the NOC to account for the increased contamination prior to restarting the excavation activities. WDOH shall be notified if more than 443,700 cubic yards of surface dune sand and soil need to be excavated for the WTP facilities using conventional excavation equipment.

8) For the reporting requirements of (WAC 246-247-080(3)), all results of the contamination surveys, emissions estimate logs, and the near field monitoring results must be kept on file as confirmation of low emissions and shall be reported annually in the Hanford Site Air Emissions Report. All periodic confirmatory air samples (PCM) will be collected and analyzed following EPA Method 114.

9) If contaminated soil is detected during routine surveys, controls such as water, fixatives, covers, or windscreens will then be applied, as determined by the Health Physics organization. Spoil piles containing contaminated soil will be segregated from the clean soil. Containerizing spoils for disposal may also be performed. A general radiological work permit shall implement these controls.

10) Periodic Confirmatory Measurements. As the potential unabated offsite dose associated with this activity is calculated to be less than 0.1 mrem/year, in accordance with 40 CFR 61, Subpart H, periodic confirmatory measurements (PCM) shall be made to verify emissions. For this activity the estimated emission levels are too low to measure using conventional stack sampling methods so the PCM shall consist of the following measurement methods:

* Radiological soil contamination surveys shall be used to verify compliance administratively, as the performed surveys shall limit activities to those with a potential-to-emit below the maximum threshold contamination work levels. As the emission estimates are based and calculated from the maximum threshold contamination levels and the maximum volume of contaminated soil, the true emissions shall inherently be below the estimated emissions.

* In the event that soil contamination is discovered during radiological soil surveys, the use of the near field monitoring grid shall consist of the existing 200 East Area near field monitors; an existing PNNL 200 East Area ambient monitor (east of WTP construction area); and the new ambient monitor (near an existing power pole north of WTP construction area).

* Any change to the location of the ambient air monitors must be approved by WDOH.

* In the event that soil contamination is discovered during radiological soil surveys, operation of the two ambient air monitors shall be required during excavation activities. Both WTP ambient air monitors shall run on a 24-hour basis if soil contamination is discovered. WDOH shall be notified within 24 hours if contamination is encountered prior to the WTP ambient air monitors running on the 24-hour basis. WDOH shall be notified when the WTP ambient air monitors are running on the 24-hour basis.

11) The facility must maintain a log in an approved format for this activity to track the total volume of contaminated soil (to ensure that the contaminated soil volumes in conjunction with their respective contamination levels do not exceed the approved estimated potential-to-emit). This log shall track the hours of operation and location of use for each type of equipment, estimated and calculated curies encountered, and calculated emissions. The emissions log format approval is required prior to startup.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.90E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 4.90E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Categorical approval for facility entry and surveillance. The facilities covered under this NOC will be entered through a door or other existing access location to perform the activities as described below:

Accessing Facilities:
Accessing facilities shall be performed in accordance using the controls determined by the containment matrix from RPP Administration, HNF-IP-0842, Volume VII, Section 3.1, "Radiological Control".

Inspection/Surveillance:

-Visual inspections will be conducted to evaluate facilities integrity for future decommissioning work, to assure that utilities have been shut off, and/or identification of any environmental, radiological, or safety concerns.

Photographing/Videotaping:

-Photographing and videotaping are performed to assist personnel in recording a facility contents and to obtain knowledge of a facility and its contents. Photography/videotaping also assists personnel in planning future decommissioning work.

Sampling/Surveys:

-Swipes, smears, air sampling, and other surveys may be performed to characterize contamination levels present in a facility. These activities may be performed on containers, other equipment and interior surfaces associated with a facility.

-Removal of access port shield plugs may be performed to allow installation of video equipment and/or to perform radiological surveys.

-Electrical equipment inspections may be performed to assure that power has been shut off from facilities or to assure that equipment is in safe operation.

Housekeeping:

-Housekeeping will be performed to assure that a facility is in a safe condition that would not threaten workers safety or the environment. Housekeeping may include collecting containers, or miscellaneous debris for proper disposal.

Fixative Application

-Application of fixative materials serves to reduce the spread of contamination. The process of applying fixative materials varies depending on the type of material being applied. Fixative application may include using a glycerin-based substance followed by a permanent polymer urea based material or the glycerin-based substance alone, or other such process, which do not cause resuspension of smearable contamination.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	2.80E-04	Beta - 0	4.00E-01	Gamma - 0	4.50E-02

4) Activities to this NOC are limited to no more than 2,160 hours/calendar year. This shall be documented on an approved log.
5) During facility entries when diffuse/fugitive emissions may occur, surveys/smears and air samples must be conducted and recorded on log sheets or survey reports. These reports and/or survey records must be readily retrievable.
6) Facility personnel will determine APQ tracking methodology as required to comply with the approval conditions. APQ will be tracked on the same log sheet used to comply with (WAC 246-247-080(7)).
7) If sample results after entry show that the APQ have been exceeded, WDOH is to be notified within 24 hours of receipt of the sample results.
8) The annual possession quantity must be tracked for each entry.
9) The facility will maintain a log of all work packages which are used for building access under this NOC (AIR 00-604).
10) The following radionuclides are allowed under this NOC: 3H, 14C, 59Ni, 60Co, 63Ni, 79Sc, 90Sr, 90Y, 93Zr, 93mNb, 99Tc, 106Ru, 113mCd, 125Sb, 126Sn, 129I, 134Cs, 137Cs, 137mBa, 151Sm, 152Eu, 154Eu, 155Eu, 227Ac, 228Ra, 229Th, 231Pa, 232Th, 232U, 233U, 234U, 235U, 236U, 237Np, 238Pu, 238U, 239Pu, 240Pu, 241Am, 241Pu, 242Cm, 243Cm, and 244Cm.
11) The radiological control technology for all entries conducted under this NOC must follow the containment matrix HNF-IP-0842, Volume VII, Radiological Control.
12) This NOC does not allow any decontaminating and decommissioning work to commence.
13) This NOC is only applicable to tank farm facilities.
14) Whenever active ventilation is in operation, a PTRAEU emission unit must be used as approved by the current PTRAEU NOC. All of the applicable Conditions and Limitations stated for the PTRAEU NOC approval must be adhered to and clearly documented. This includes the emission limits and controls. Emissions from these activities shall be subtracted from the overall handling limit of the PTRAEU NOC and reported under the Categorical Tank Farm Facility Entry and Surveillance NOC.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.10E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 5.10E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Performing vapor sampling of miscellaneous underground units with no known path of ventilation. Miscellaneous underground units may include active and inactive underground tanks, wells, and other units with no known path of ventilation.

In addition to vapor sampling activities, this approval allows the possibility of installing temporary or permanent passive HEPA type filtration on any unit if vapor sampling results show combustible gas levels exceeding 25 percent of the lower Flammability Limit (LFL).

Active and Inactive Tanks

Tanks were designed to collect leaks, spills, condensation, and drainage that occurred during operation of tank farm diversion boxes, valve pits, and pipeline encasements. Tanks were also used for settling solids before disposal, neutralizing process wastes, receiving and processing of tank waste, and waste handling and process experimentation. Volumes of waste and constituent concentrations in each tank vary depending on the location in respect to surrounding single and double shell tank farm operations. Most of the tanks are expected to contain low levels of radioactivity.

The tanks are constructed of various materials, which include stainless steel, carbon steel, concrete, and concrete vaults with carbon steel liners. The tank volumes vary in maximum capacity between 50 gallons to 50,000 gallons.

Wells

Wells include structures that were used for the subsurface disposal of waste fluids. Wells that are connected to valve pits or floor drains in contaminated facilities may have received contaminated liquids. Volumes of liquid discharged to these structures and constituent concentrations are unknown.

Combustible gas concentrations in the headspace of miscellaneous units will be field-measured to determine if there are safety concerns associated with combustible gas concentrations. The radiological controls, monitoring, and documentation identified in Sections 2, 3, and 4 of ALARACT 1shall be implemented for access to each unit. Vapor sampling shall be performed in accordance with ALARACT 8, with the exception of bulleted item 5 in Section 2 of the ALARACT. Bulleted item 5 will not be performed because the units are assumed to not be ventilated.

If vapor-sampling results show a combustible gas level measurement exceeding 25 percent of the LFL, a temporary passive HEPA type breather filter may be installed. One of two types of temporary HEPA type filters shall be used. This first type of filter would be mounted onto a plastic bag that could be secured to an access port or riser using tape or some other technique such as banding. The second type of filter would be connected directly to an access port or, in cases where access is through a riser, mounted on a flange that could be bolted onto the riser. These methods allow flammable gases to escape to the atmosphere only through the filter.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.06E-02	Am - 241	6.92E+02	Am - 243	3.46E-02

Ba - 137 m	1.61E+05	C - 14	1.04E+01	Cd - 113 m	1.55E+02
Cm - 242	6.08E-01	Cm - 243	5.28E-02	Cm - 244	1.98E+00
Co - 60	8.66E+02	Cs - 134	3.08E+01	Cs - 137	1.70E+05
Eu - 152	1.69E+01	Eu - 154	7.23E+03	Eu - 155	1.04E+03
H - 3	6.46E+01	I - 129	5.16E-01	Nb - 93 m	6.32E+01
Ni - 59	3.06E+01	Ni - 63	3.01E+03	Np - 237	1.62E+00
Pa - 231	1.61E-02	Pu - 238	2.43E+01	Pu - 239	1.29E+03
Pu - 240	2.04E+02	Pu - 241	1.78E+03	Pu - 242	9.94E-03
Ra - 226	2.04E-03	Ra - 228	9.82E-02	Ru - 106	1.17E-01
Sb - 125	8.63E+02	Se - 79	1.70E+01	Sm - 151	6.36E+04
Sn - 126	2.73E+01	Sr - 90	5.23E+06	Tc - 99	5.20E+01
Th - 229	2.27E-03	Th - 232	1.11E-02	U - 232	4.38E+00
U - 233	1.68E+01	U - 234	2.67E+00	U - 235	1.06E-01
U - 236	8.66E-02	U - 238	2.38E+00	Y - 90	5.23E+06
Zr - 93	7.36E+01				

4) Approved activities included in the process are the following: Sampling of miscellaneous underground units with no known path of ventilation. Miscellaneous underground units may include active and inactive underground tanks, wells, and other units with no known path of ventilation. Installation of temporary or permanent passive HEPA type filtration on any unit if vapor sampling results show combustible gas levels exceeding 25 percent of the lower flammability limit is approved.

5) The following controls must be adhered to:
   * ALARACT 8 with the exception of bulleted Items 5 of Section 2

6) The total unabated dose TEDE to the hypothetical MEI cannot exceed 1.04 E-05 mrem/year per tank.

7) The total unabated emissions are limited to 2.02E-02 mrem/year per tank.

8) Vapor space sampling will follow the controls identified in ALARACT 8, with the exception of bulleted items 4 and 5 in Section 2 of the ALARACT. Bulleted item 4 will not be performed unless field evaluation determines that a riser adapter is necessary to minimize potential exposure to the environment. Installation of an adapter is normally not necessary due to the riser configuration and the short duration required for vapor sampling miscellaneous units. Bulleted item 5 will not be performed because the miscellaneous units are not ventilated.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.55E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 4.67E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The following actions:

Step 1:

- Fix and/or remove contamination and blown in soil/debris in the 241-C-06B heel pit in accordance with ALARACT 4, ALARACT 6, ALARACT 14, and ALARACT 15.
- If necessary, a HEPA vacuum will be used in accordance with the sitewide NOC.
- Remove a heel pit pump out of riser R-13 in the 241-C-06B heel pit in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15, and ALARACT 16.
- Place conduit in a trench in accordance with ALARACT 5.
- Remove a thermoucouple out of riser R-14 in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15, and ALARACT 16.
- Install slurry pump for the sluicing operation in riser R-9, R-13 or R-14 in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.

Step 2:

- Fix and/or remove any contamination and blown in soil/debris in the 241-C-06C sluice pit in accordance with ALARACT 4, ALARACT 6, ALARACT 14 and ALARACT 15.
- If necessary, a HEPA vacuum will be used per the sitewide NOC.
- Remove the old sluicer and install new sluicer equipment in the R-3 riser, if needed, in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.

Step 3:

- Fix and/or remove any contamination and blown in soil/debris in the 241-C-06A pump pit in accordance with ALARACT 4, ALRACT 6, ALARACT 14 and ALARACT 15.
- If necessary, a HEPA vacuum will be used per the sitewide NOC.
- Remove the failed pump equipment out of R-9 and R-6 riser used for prior sluicing operation. in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.
- Install new sluicer equipment in the R-6, R-7, R-5 or R-9 riser, if needed, with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16, or use the existing project W-320 sluicing nozzle.
- Place an in-tank closed circuit television camera or television monitoring system in riser R-1, R-7, R-8 and R-14 in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.
- Install a new sluicer nozzle in R-7 or R-8 and remove an additional thermocouple in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.

Step 4:

- Pump out remaining free liquid in the tank to the DST system through a pump installed in either riser R-9, R-13 or R-14 under passive ventilation in accordance with ALARACT 11.

Step 5: (applies only to the 296-P-47 emission unit)

- Sluice and pump the solids that become a slurry into the DST system using raw water (or recirculated 241-C-106 water) as the sluicing agent. This activity shall only be performed during operation of the 296-P-47 portable exhauster. The emission unit shall be sampled continuously with a shrouded probe. The sample location, shrouded probe assembly, transport line and sample collection shall be qualified in accordance with the requirements of ANSI N13.1-1999.

Step 6:

- After sluicing an "in tank vehicle" (ITV) could be used, if necessary, to collect the remaining tank contents to be slurried through the sluicing pump to bring the tank contents down to <360 cubic feet in volume. This activity shall only be performed during operation of the 296-P-45 portable exhauster. The ITV shall be installed through a riser in accordance with ALARACT 1 and ALARACT 13. The ITV will be used to push the remaining tank material into the center of the tank to be pumped. The ITV shall not move faster than 2 mph. If big chunks of sludge need to be broken, the tracks or plow blade could be used to break up the material so it can be pumped. The "water cannon" on the ITV shall not be used in tank 241-C-106. Upon removal of the tank the ITV shall be decontaminated with in the tank using ultrasonic decontamination and then go through a spray ring.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	2.31E-03	Am - 241	2.25E+02	Am - 243	2.20E-03
Ba - 137 m	1.66E+04	C - 14	5.73E-02	Cd - 113 m	1.00E+00
Cm - 242	3.56E-01	Cm - 243	2.81E-02	Cm - 244	6.03E-01
Co - 60	1.40E+00	Cs - 134	7.07E-02	Cs - 137	1.75E+04
Eu - 152	3.28E+00	Eu - 154	2.67E+02	Eu - 155	1.89E+02
H - 3	1.55E+00	I - 129	1.70E-02	Nb - 93 m	1.28E+01
Ni - 59	6.53E+00	Ni - 63	6.08E+02	Np - 237	2.62E-01
Pa - 231	3.37E-03	Pu - 238	3.50E+00	Pu - 239	7.56E+01
Pu - 240	1.54E+01	Pu - 241	1.85E+02	Pu - 242	1.65E-03
Ra - 226	4.10E-04	Ra - 228	3.15E-05	Ru - 106	1.69E-05
Sb - 125	2.83E+00	Se - 79	2.88E-01	Sm - 151	1.19E+04
Sn - 126	2.14E+00	Sr - 90	2.82E+05	Tc - 99	3.14E+00
Th - 229	2.43E-05	Th - 232	2.54E-03	U - 232	5.30E-04
U - 233	2.18E-03	U - 234	4.31E-02	U - 235	1.84E-03
U - 236	7.66E-04	U - 238	4.40E-02	Y - 90	2.82E+05
Zr - 93	1.44E+01				

4) A WDOH approved log shall be used to track total days of liquid pumping under passive ventilation, and shall not exceed 60 days.
5) Periodic confirmatory measurements of the breather filter shall be a monthly smear taken on the downstream side of the breather filter, during sluicing operations. Any positive results above background shall be reported to the WDOH.
6) Prior to pump of liquid from 241-C-106 the breather filter shall be verified to be valved open.
7) The Breather Filter shall be tested annually in-place with a minimum efficiency of 99.95% in accordance with

requirements ASME N510 Section 10.

8) Total soil excavated shall not exceed 5000 cubic feet.

9) WDOH approved logs shall be used to track the Annual Possession Quantities for Equipment Removal and the abated offsite dose shall not exceed 6.3E-03 mrem/year.

10) WDOH approved logs shall be used to track the Annual Possession Quantities for Pit Cover Removal and the abated offsite dose shall not exceed 5.96E-06 mrem/year.

11) WDOH approved logs shall be used to track the Annual Possession Quantities for Soil Excavation and the abated offsite dose shall not exceed 1.69E-03 mrem/year.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.10E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 5.82E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The activities performed at the 244-CR Vault Facility, ER-153 and/or 244-A Lift Station include:

Work Area Preparation:

- Miscellaneous work including equipment delivery, movement, set up and maintenance in the general work area around the 244-CR Vault Facility.

- Construction and take down of open top containment tents (bullpens) over the facility vault area.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs).

- Installation of portable 1,000 cubic feet per minute (cfm) exhauster.

- Removal and/or installation of vault foam covering.

- Application of fixative at pit interior.

- Temporary power installation.

Facility/Interim Stabilization Work:

- Operation of PTRAEU for bullpen ventilation.

- Removal and/or installation of pit covers.

- Inspection of pits, vaults, and tanks.

- Removal and disposition of excess equipment and waste in pits, risers, and tanks.

- Decontamination activities.

- Measurement of liquid level and sludge levels in tanks and sumps.

- Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance.

Facility Equipment Activities:

- Installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment).

- Modifications, maintenance, and/or isolation and sealing of existing risers, pits, vaults and incoming and/or outgoing piping (drain and transfer lines) from 244-CR Vault or connected facility.

Excavation:

- Installation of permanent power to 244-CR Vault Facility.

- Installation/Operation of Passive Breather Filter Assembly.

Waste Transfer and Support Activities:

- Operation of 1,000 cfm portable exhauster at 244-CR Vault.

- New waste transfer system, waste staging/consolidation.

Miscellaneous activities shall include:

- Construction and take down of open top contaminant tents over the facility vault area.

- Open top containment tents (bullpens) shall be constructed over the facility pit area to prevent potential airborne contamination from the effected work area to the environment. Two bullpens shall be erected around two instrumentation pits at the 244-CR Vault. Upon completion of the first pit's work, the bullpens shall be relocated to the other two pits and their work will be completed.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs)

- A Portable/Temporary Radioactive Air Emission Unit (2,000 cfm) or units (1,000 cfm each) shall be installed to ventilate the bullpens during activities that require work in the pits, cells and tank vault area prior to performing waste transfer activities. One thousand cfm PTRAEUs, if used, shall be directly connected to individual bullpens, while a 2,000 PTRAEU if used, shall be connected to two bullpens. Movement and installation of the PTRAEU can be performed to facilitate ventilation for the four vaults of the 244-CR Vault Facility. The PTRAEU shall operate intermittently (during work activities) and will be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

A portable 1,000 cfm exhauster shall be installed to ventilate the 244-CR Facility vaults and tanks during waste transfer activities. This exhauster shall operate intermittently to support waste transfer and support activities and shall monitor air emissions. The exhauster shall be piped into the existing 244-CR facility ventilation system upstream of the existing (non-operating) exhauster, 296-C-05 and HEPA filters. The existing 244-CR Facility exhaust system shall be isolated and not used. Tie in of the 1,000 cfm exhauster to the existing exhaust system shall be in accordance with ALARACT 16, Tank Farm ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components. After the waste transfer is completed, the exhauster shall be removed in accordance to the requirements of ALARACT 16.

A foam covering has been placed over the 244-CR Vault area to prevent intrusion of precipitation and snowmelt. In order to gain access to the pit cover (metal) plates or concrete cover blocks, sections of the foam shall be removed, packaged, transported and disposed of. ALARACT 4, Tank Farm ALARACT Demonstration for Packaging and Transportation of Waste shall be used to properly disposition the removed foamed covering. Radiation control technicians (RCT) shall monitor the affected work area while the foam covering is being removed. The foam covering shall be replaced after work is complete, as part of intrusion prevention measures completed by the project following waste transfer activities.

A fixative shall be applied either with the pit covers on. The fixatives shall be applied to pit surfaces through a port in the pit cover using a 'whirly' or by fogging. A hand held sprayer is used to apply fixatives to local areas within the pit when the pit cover is off.

Temporary power installation will be limited to meet the needs to support the work described in this NOC. Temporary installations can be removed when no longer needed.

Operation of PTRAEU for Bullpen Ventilation.

Ventilation of the bullpens during pre waste transfer tank activities and prior to the installation of the 1,000 cfm portable exhauster shall be accomplished with the use of PTRAEU(s). The PTRAEU(s) shall be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

Concrete cover key blocks are removed first, and only blocks necessary to perform intended work are removed. Consideration is given to sliding blocks to minimize the number of blocks to be removed. As discussed in the following, pit covers are decontaminated and/or covered with fixative before removal. Pit Covers are raised a minimum distance to safely allow a radiation protection technician to perform a dose rate and contamination survey. Pit covers are wrapped in plastic and set down in a specially prepared lay-down area. On completion of activities, the plastic wrap is removed from the pit covers and the pit covers are re-installed in their original position and orientation. Post-job surveys are performed.

Inspections, such as visual, video, or nondestructive inspections, shall be performed with pit covers in place (for pit with access ports) or removed. The pit cover design, historical inspection information, and ALARA information shall be used to determine whether the inspection shall be performed manually (with pit cover removed) or remotely with a camera and the pit covers in place.

Excess equipment and debris currently located in the 244-CR vault pits, and in-tank equipment shall be removed to accommodate new waste transfer equipment and piping. Excess equipment shall be replaced with replacement in kind equipment, as necessary.

To facilitate the removal and disposition of these items, size reduction and decontamination activities shall be utilized. Size reduction activities shall include cutting up unusable equipment (usually jumpers/blanks) remotely, using hydraulic shears or low revolutions per minute portable band saws. All size reduction activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal.

Disposition of excess equipment and waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Removable contamination in the accessible portions of the pit is reduced to less than 100,000 disintegrations per minute/100 square centimeters beta/gamma and 2,000 disintegrations per minute/100 square centimeters alpha by washing, or an approved fixative is applied to pit surfaces. Initial washing with a low pressure (125 pounds per square inch gauge), or high pressure (3,000 pounds per square inch gauge) 'whirly' is accomplished through a port in the pit cover blocks. Additional decontamination activities (with the cover block off) include the use of chemicals, peel and strip paints, water, or manual scrub brushes.

After a section of equipment has been washed it shall be pulled into plastic sleeving and sealed by horse tailing and taping.

Liquid and sludge levels are determined using zip cords or other appropriate means that shall not disturb the waste more than zip cords.

Sampling activities shall be performed in the tank and sump area of 244-CR Vault by way of risers in the riser pit in accordance with ALARACT 7, "Tank Farm ALARACT Demonstration For Tank Waste Grab Sampling." Radiological controls for riser preparation/opening listed in ALARACT 1, "Tank Farm ALARACT Demonstration for Riser Preparation/opening," shall be followed.

The waste transfer processes shall transfer waste from tanks CR-011, CR-001, CR-002 and CR-003 and sumps within 244-CR Vault Facility to a staging tank within the 244-CR Facility. The transfer system to consolidate the waste from individual tanks consists of above ground piping of a hose in hose with leak detection at each tank's pit being utilized to support the transfer line. Mixing and dilution of the waste may take place at the receiving tank or within the transfer lines directly. The transfer system may include equipment pump skids and

shall include appropriate connections to the transfer lines to accommodate chemical and water addition to the 244-CR Facility tanks and mixing prior to transfer to the designated Double Shell Tank (DST).

Before entry into a pit, an evaluation is made by engineering and/or operations personnel to determine the transfer routing configuration after pit work is complete. On removal of cover blocks, a visual inspection of pit contents is made to verify present configuration.

Tools such as impact wrenches, T-bars, and pike poles are used to repair or replace pit equipment. All equipment coming out of the pit is wrapped in plastic or otherwise contained or decontaminated for reuse or disposal. Removable contamination on the outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha before removal from the bullpen. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Jumper work shall be preceded by flushing the appropriate transfer lines with water. Jumper work is accomplished remotely, using a crane to maneuver heavy equipment and parts. Installation, disconnection, and/or changing jumpers/blanks are accomplished by slowly loosening the jumper/blank at the connector head. The required jumper/blank is positioned and tightened to the new connector heads. If the process line or equipment being worked on is connected physically to other unnecessary transfer lines, or if the line is to be left unused, a cap, blank, or equivalent is installed on all open nozzles not connected to jumpers.

Leak testing of newly installed jumpers/blanks shall be performed with pressurized water before initiating waste transfers. Occasionally, a jumper leak test is performed during the initial stages of the transfer. In either case, cover blocks shall be in place before leak testing is performed.

Cutting up unusable pit equipment (usually jumpers/blanks) is accomplished remotely using hydraulic shears or low revolutions per minute portable band saws. Cutting activities shall be performed in the bullpen or in glovebags. The goal shall be to maintain a contamination level equal to or less than 1,000 dpm/100 cm2 beta gamma and 20 dpm/100 cm2 alpha, during cutting activities, but may not always be attainable. RCT coverage shall be provided. Should contamination levels exceed 1,000-dpm/100 cm2 additional sleeving, or use of a glove bag shall be used and/or decontamination activities performed to lower the levels in accordance with ALARA. Welding (if required) shall commence once removable contamination levels in the cut and weld area are reduced to ALARA. Size reduction (cutting) activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal. To ensure that water intrusions or potential residual waste in piping are eliminated from the facility, existing piping and transfer lines to and from the 244-CR Vault facility shall be blanked, grouted, or sealed. The isolation includes activities such as installing plugs, caps, blind flanges, or grouting. Isolations may occur at the 244-CR riser pit area or at the other end of the pipe in a diversion or valve box, at the ER153 or the 244A Lift Station.

Modifications to existing in-route pits, vaults and piping shall be required to establish the waste transfer route or to ensure the integrity of the system prior to waste transfer. These modifications can include but are not limited to, removal of existing parts and replacement with like parts, installation of new jumpers, or blanking off of equipment. When possible existing blanks shall be utilized. Pipe cutting shall be minimized in compliance with ALARA. If it is determined that the installation of a new above ground transfer line would be the best engineering method to establish a waste transfer route, a temporary transfer route shall be established following existing design and installation procedures. This temporary route will be either above ground or in a shallow trench. If a trench is required excavation shall be performed as described under that activity in this NOC.

Pit drains are checked using water from a tanker truck or another source. Water at a flow rate of approximately 20 gallons per minute is added to a pit drain line and subsequently monitored to verify the pit drains are free of restrictions. At times it might be necessary to pump the DCRT that receives the water after the water passes through the pit drain if the volume of test water approaches the capacity of the DCRT.

Either flushing with water and/or using a retrieval tool to remove debris from the drain are used to clear plugged drains. Water supply valves are opened slowly to minimize splashing. Pressures above 50 pounds per square inch gauge require approval from the engineering organization. Cover blocks shall remain in place and work is accomplished through a penetration in the cover block.

The waste transfer operations involve the pumping of liquid waste that contains dissolved solids. These solids can precipitate out of solution anywhere in the transfer path and cause blockage. If blockage is detected in the system, flushing the lines with hot water is necessary. The hot water is introduced to the system to be flushed through a pressure manifold by piping connected directly to a jumper or nozzle. These operations shall be performed with the pit covers on.

To ensure that water intrusions are eliminated from the facility, a foam covering will be placed over the 244-CR Vault area after completion of isolation activities.

Other techniques to free blockages could include pressurization, temporary jumpers, and hydraulic scouring. All piping connections are designed to be leak tight and the pit cover block shall be installed before pressurization. If pressurization beyond that obtained from the tank farms water system or supply truck (i.e., approximately 150 pounds per square inch gauge) is necessary to remove blockage, an engineering evaluation shall be performed to determine the maximum allowable pressure for operation.

Excavation:

Excavation may be required to support installation of ventilation, electrical support and waste transfer equipment. Modifications to existing in route pits, vaults and piping and/or to support installation of new waste transfer lines from the 244-CR Facility to the identified DST may require excavation. Soil excavation activities will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), and will follow the radiological controls specified in that ALARACT.

Any Guzzler excavations in contamination areas will be performed in accordance with the December 18, 1998, WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use. Excavation of contaminated soils using heavy equipment shall follow the requirement of Site Wide Guzzler NOC.

Soil excavation outside the tank farm fence also may be performed with heavy equipment.

Soil will be excavated around the 244-CR vault facility to install new piping, equipment slabs, and new waste transfer system support equipment. It is expected that about 1,000 cubic yards may be excavated, with about 600 cubic yards from inside the tank farm. Backfill shall be from the original removed soil or non-contaminated controlled density fill (sand, water and a small amount of cement).

Current power within the 244-CR Vault Facility is limited. To provide power for new equipment installed under the project, the existing power distribution system shall be upgraded. Upgrades shall involve modification to the existing Motor Control Center (MCC), installation of equipment control panels, and installation of new conduits.

A compliant passive breather filter shall be installed to ventilate the 244-CR Facility vaults and tanks once waste transfer activities are completed. The passive breather filters shall be installed at two locations in the 244-CR facility. A 1,000 cfm HEPA filter shall be installed at the air inlet assembly (previously attached to the evaporative cooler) and a 200 cfm HEPA filter shall be installed upstream of the existing HEPA filter pit. Butterfly valves in the ventilation system just downstream of where the filters shall be installed can be shut to prevent any emission from the facility during filter installation. Installation of the filters shall be performed in accordance with ALARACT Demonstration 16, TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components.

During waste transfer and support activities the tank and vault air space shall be actively ventilated by a temporary ventilation system. The temporary ventilation system shall consist of a portable exhauster that shall

be equipped with compliant monitoring and sampling equipment. The purpose of the exhauster is to ensure potential airborne contamination from the pits, cells, or process tanks, is not being released to the environment. Operation of the 1,000 cfm portable exhauster is considered an emissions control.

New waste transfer system, waste staging/consolidation.

The planned transfer system can utilize some existing equipment along with installation of new piping and equipment at 244-CR, ER-153 and/or 244-A Lift Station. Maintenance of the transfer system may be required during the waste staging/consolidation. Equipment, which may require on going maintenance includes but is not limited to leak detection and pump system equipment. The waste can be staged/consolidated in one or two of the 244-CR Facility tanks (CR-001, CR-002, CR-003 and CR-011) prior to transfer to a DST.

The following controls are used for the pit activities:

General Controls:

1. Pre-job and post-job radiation surveys are performed by radiation protection technicians. Radiation work permits specify permissible occupational radiological limits during activities. Radiation control technicians' survey and release equipment, inspect and approve required containment, and provide radiological surveys to verify compliance to radiation work permit limits.

2. Pit work is shut down (or not initiated) when sustained wind speeds exceed 25 miles per hour as measured in the field and/or reported by the Hanford Meteorological Station.

3. Fixatives shall be applied inside the pit (with cover blocks on or off) or accessible portions of the pit decontaminated to less than 100,000 disintegrations per minute/100 square centimeters beta-gamma and 2,000 disintegrations per minute/100 square centimeters alpha.

4. When cover blocks are removed, a fall protection handrail is installed. This handrail is draped in plastic forming a contamination barrier. The plastic extends to the top of the pit and is taped or sealed at the top of the pit. Decontamination of the containment barrier is conducted as required by the job specific radiation work permit.

5. Radiation control technicians monitor the affected work area when the vault foam covering is removed, when jumpers and equipment are being removed from risers and nozzles, and when risers are entered for sampling of tanks and sumps. Jumpers removed from the pit are drained of free liquid and decontaminated or contained before removal. The outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha. If these limits are exceeded, surfaces shall be decontaminated. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

6. A bullpen designed to minimize the top opening shall be used. Pit covers or cover blocks will be removed as necessary. If the bullpen is to be left unattended at any time, a temporary cover is placed over the pit or the pit covers or cover blocks are reinstalled. Two tents shall be erected over two pits. Upon completion of the work in the first two 244-CR Facility instrumentation pits, the tents will be relocated to the other 244-CR facility instrumentation pits.

7. PTRAEU(s) shall actively ventilate the bullpens during activities that require work in the pits (after removal of the cover blocks) to control radiological releases. The PTRAEU(s) shall operate intermittently and shall be operated in accordance with the latest revision to the WDOH approved. Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

8. A compliant exhauster skid shall ventilate the process cells and tanks during waste transfer activities. The exhauster shall maintain a negative pressure under the cover blocks and prevent contaminants from reaching the environment. The exhauster skid shall be connected to the existing exhaust ductwork with rigid or flexible

ductwork.

9. The 1,000 cfm exhauster shall be equipped with a two-stage HEPA filter, which meets the requirements of ASME AG-1, Section FC and shall be tested annually to requirements of ASME N510. The HEPA filters shall have an efficiency of 99.95 percent for 0.3-micron median diameter. Each filter housing shall meet the applicable sections of ASME N509 and the test requirement of ASME N510. The exhaust stack houses a Generic Effluent Monitoring System (GEMS) that contains an air velocity probe and the air sampling probe.

10. The breather filter shall consist of a housing that contains a HEPA filter, an outlet screen, and a small seal loop. Air flowing to and from the 244-CR Facility shall pass horizontally through the filter and vertically through the downward-facing exit weather hood. Seal loops, installed in the exhaust lines, are designed as a safety feature to prevent unlikely accident in which an over pressurization occurs when the HEPA filter is isolated for occasional (infrequent) maintenance.

Specific Controls include:

-Installation of portable 1,000 cfm exhauster shall use ALARACT 16.

-Removal and/or installation of vault foam covering - ALARACT 4.

-Application of fixative at pit interior - see General Controls.

-Temporary power installation - ALARA.

-Operation of PTRAEU for bullpen ventilation - Latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

-Removal and/or installation of pit covers - General Controls.

-Inspection of pits, vaults, and tanks - General Controls.

-Removal and disposition of excess equipment and waste in pits, risers, and tanks - ALARACT 15, and ALARACT 4.

-Decontamination activities - General Controls.

-Measurement of liquid level and sludge levels in tanks and sumps - General Controls.

-Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance - ALARACT 7 and ALARACT 1.

-Facility Equipment Activities: installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment) - ALARACT 4, and ALARACT 15.

-Modifications, maintenance, and/or isolation and sealing of existing in route pits, vaults and piping (drain and transfer lines) to support and/or installation of new transfer lines - General Controls.

-Excavation - ALARACT 5, and/or WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use.

-Installation of permanent power to 244-CR Vault Facility - ALARA.

-Installation of passive breather filter assembly - ALARACT 16.

-Operation of a portable exhauster at 244-CR vault for ventilation - ALARA.

-New waste transfer system, waste staging/consolidation - General Controls.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.60E-05	Am - 241	8.39E-04	Am - 243	1.26E-07
Ba - 137 m	4.81E-01	C - 14	2.76E-05	Cd - 113 m	1.90E-04
Cm - 242	1.56E-05	Cm - 243	1.85E-06	Cm - 244	4.24E-05
Co - 60	1.33E-03	Cs - 134	1.71E-06	Cs - 137	5.08E+01
Eu - 152	4.40E-05	Eu - 154	5.74E-03	Eu - 155	5.19E-03
H - 3	3.54E-05	I - 129	7.59E-08	Nb - 93 m	1.11E-04
Ni - 59	7.11E-05	Ni - 63	6.99E-03	Np - 237	1.82E-04
Pa - 231	1.24E-05	Pu - 238	8.11E-05	Pu - 239	7.99E-03
Pu - 240	1.44E-03	Pu - 241	1.01E-02	Pu - 242	1.26E-02
Ra - 226	5.50E-09	Ra - 228	2.99E-05	Ru - 106	2.54E-07
Sb - 125	7.12E-04	Se - 79	2.65E-05	Sm - 151	9.77E-02
Sn - 126	4.18E-05	Sr - 90	4.93E+00	Tc - 99	3.25E-04
Th - 229	2.63E-07	Th - 232	4.99E-05	U - 232	6.40E-06
U - 233	2.45E-05	U - 234	1.61E-05	U - 235	6.78E-07
U - 236	4.08E-07	U - 238	5.77E-06	Y - 90	4.91E+00
Zr - 93	9.68E-05				

4) All above ground transfer lines shall be double contained and leak tested.
5) All above ground transfers shall be double contained and the hose in hose connections leak tested.
6) Excavation of contaminated soils using heavy equipment shall follow the requirements of the Site Wide Guzzler NOC.
7) If pressures above 50 psi are used. WDOH shall be notified with the controls to be used.
8) WDOH requires that log sheets used are in accordance to PTRAEU NOC (DOE/RL -96-75).
9) When a Portable/Temporary Radioactive Air Emission Unit (PTRAEU) is used to ventilate the bullpens, the conditions, controls, monitoring requirements and limitations of the PTRAEU NOC, latest approved version, shall be required.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.90E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.51E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The Salt Cake Dissolution Retrieval Demonstration Project in SST 241-S-112 uses water that is introduced in a controlled fashion to dissolve and mobilize solids in the tank. The resulting solution is then pumped and transferred to the Double-Shell Tank (DST) system. A portable exhauster will provide active ventilation for some dissolution activities and all waste transfer activities until structural safety considerations force shutdown, at which time passive ventilation shall be used.

The following activities will be performed :

Pit

a. Opening the 241-S-112 Condenser Pit to remove the old cover plate and install a new cover plate to allow for the connection of a HEPA filter to the exhauster trunk for a portable exhauster.
b. Enter 241-S-C Valve Pit to disconnect the existing 241-S-112 HIHTL.
c. Enter the 241-S-109 Valve Pit to remove the existing HIHTL that is no longer needed.
d. Accessing the 241-S-112A Central Pump Pit to:
   - Install an instrument manifold,
   - Install a transfer pump, and
   - Replacement of the existing HIHTL that is not needed for this project with a new HIHTL.
e. Enter the 241-S-A Valve Pit to:
   - Connect the hose-in-hose transfer line (HIHTL) from the 241-S-112 Tank to the DST receiver tank, and
   - Install the leak detection hardware.

Pit work shall be performed in accordance with ALARACT 6 "TWRS ALARACT Demonstration for Pit Access" and ALARACT 14 "TWRS ALARACT Demonstration for Pit Work".

Soil Excavation

a. Excavation of soil inside the tank farm for the installation of an electrical and instrumentation conduit to monitor transfer progress.
b. Excavation of soil outside the tank farm for conduit and transformer installation.
c. Excavation of soil inside the tank farm for installation of a new raw water header installed between the 241-SY Tank Farm and the 241-S Tank Farm to the 241-S-112 Tank.
d. Installation of a HIHTL to convey waste from Tank 241-S-112 to the DST transfer system.

Soil excavation shall be performed in accordance with ALARACT 5 "TWRS ALARACT Demonstration for Soil Excavation (using hand tools)".

In-Tank Equipment

a: Installation of various motor controlled spray devices into (3) risers near the outside

perimeter of the tank and an automatic indexing spray device will be installed on a centrally located riser.

b. Remove Liquid Observation Well (LOW).
c. Installation of Stilwell (Level Monitoring Device protection).

Work shall be performed in accordance with ALARACT 1 "TWRS ALARACT Demonstration for Riser Preparation/Opening" and ALARACT 13 "TWRS ALARACT Demonstration for Installation, Operation and Removal of Tank Equipment".

Water Addition/ Dilution

- Installation of a new heat traced and insulated raw water line installed between the 241-S Tank Farm and the 241-SY Tank Farm to the water distribution skid on top of Tank 241-S-112.

Water addition and dilution for salt-cake dissolution shall use portable exhausters for active ventilation when water addition flow rate is above 80 gallons per minute, at less than 80 gallons per minute salt cake dissolution shall use either a breather HEPA filter for passive ventilation, or active ventilation.

Waste Transfer

- Installation of a progressive cavity pump and supporting equipment to recover and transport waste from Tank 241-S-112 to the DST System.

Waste transfer activities shall use portable exhausters for active ventilation until structural safety considerations force shutdown, at which time passive ventilation shall be used.
The major components of the exhauster are; stack, glycol heaters, 1 pre-filter, 2 HEPA filters, 1 exhaust fan, sampling system and a demister which is determined to be optional.

Other

- Removal of the Standard Hydrogen Monitoring Probe.

The completion of tank retrieval may also be aided by a Remote Water Lance (RWL) that is a high pressure water device, or hydrolaser. The system will consist of both ex-tank and in-tank components. The ex-tank components will be comprised of; high pressure water skid, operating controls, cables and hoses. The in-tank components will be comprised of; umbilical, in-tank vehicle, high pressure nozzle(s).

The high pressure water skid will provide the water at the desired pressure, not to exceed 37,000 psig. A conditioning system will be used to filter the raw water entering the skid to ensure that no abrasive materials are entrained in the water. The water volumetric flow rate will be on the order of 6 to 15 gpm. The operating controls will be located in a control trailer outside of the farm fence. The cables and hoses will connect the hydraulically powered in-tank vehicle with the ex-tank controls and water skid via the umbilical. The in-tank vehicle will house one to four high pressure water nozzles. The RWL will be operated with the nozzle end submerged to avoid aerosols in the tank. A rupture disc will be used to prevent reaching pressures above 37,000 psig.

The in-tank vehicle, with umbilical, will be deployed through a 12 inch riser in tank 241-S-112 and will weigh on the order of 1,000 pounds plus the weight of the umbilical. A crane will be used to lower the vehicle and the full length of umbilical down into the tank. After the in-tank vehicle and umbilical are in the tank, a cover, with gasket, will be bolted to the riser flange to seal the riser opening. The equipment will be operated outside the tank farm fence.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	2.68E-02	Beta - 0	2.60E-01	Cs - 139	1.45E-05

4) Equipment removal and monitoring (pre and post-job surveys) shall be performed in accordance with ALARACT 13; equipment disposition shall be performed in accordance with ALARACT 4 and 15.
5) Pit work and monitoring (pre and post-job surveys) shall be performed in accordance with ALARACT 6 and 14; packaging and transportation of waste shall be performed in accordance with ALARACT 14.
6) Soil excavation activities and monitoring (pre and post-job surveys) shall be performed in accordance with ALARACT 5. Not more than 2000 cubic feet of soil shall be removed. The disturbed soil shall not leave the 241-S Tank Farm area.
7) The Annual Possession Quantity and potential-to-emit to the MEI shall be tracked on a WDOH approved log.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.90E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 5.90E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Performing the following modifications to bring select portions of the DST system into conformance with regulatory, safety, and contractual requirements.

The modifications shall be accomplished by performing the following activities:

241-AZ-151 CATCH TANK BYPASS

A new RCRA-compliant condensate distribution system for condensate generated from the existing 241-AZ-702 ventilation system. This new system will consist of a 1200 gallon capacity catch tank (241-AZ-301), secondary containment, piping, pumps, and controls. The system is designed to collect condensate at a rate of 0.29 gallons per minute (154,424 gallons per year). The tank will be emptied every 2 to 3 days. At that time, condensate will be pumped back to one of the 241-AY or 241-AZ tanks at a rate of 4 to 5 gallons per minute.

The new 241-AZ-301 tank and system will be located outside the northeast corner of building 241-AZ-702. Most of the secondary containment structure will be located below grade (except for the cover that will be located above grade) to provide operator access. A HEPA filter will also be installed above grade. This filter will be connected to the 241-AZ-301 tank and will be used as the vent for the 241-AZ-301 tank.

The lower level of the fabricated tank system shall contain the receiver tank for the condensate coming from the AZ-PC-SP-1 seal pot via line AZ-503. Other components housed in the lower level shall include the sump, sump suction line, tank suction piping, tank return piping, tank vent lines, instrument access risers, leak detection, and freeze protection, as required.

The upper level of the fabricated tank system will contain the distribution piping, pumps, valves, instrumentation, and controls. Operator access shall be provided as required (e.g., access ladder, hatch or door in system cover, mid-level grating to support operator). Distribution valves shall be located to provide the ability to use remote valve actuators if required. Freeze protection for the piping, pumps, and valves shall be used as required.

The AZ-PC-SP-1 seal pot is located in the 241-AZ-702 Building and this seal pot serves as a collection point for condensate originating from the 241-AZ-702 ventilation system. The 241-AZ-702 ventilation system provides primary tank ventilation for the 241-AY and 241-AZ DSTs. The existing 241-AZ-151 catch tank would be isolated in a separate effort to support other commitments.

Currently there are two drain paths into the 241-AZ-151 catch tank that will remain active after June 30, 2005. Those two drain paths are the condensate from the 241-AZ-702 Facility and the 241-AZ-801A floor drain. The 241-AZ-702 condensate drain line shall be rerouted to the 241-AY tanks and also to the 241-AZ tanks. In addition, the 241-AZ-801A floor drain shall be isolated.

241-AN AND 241-AW CLEAN OUT BOX TRANSFER LINE MODIFICATIONS

Sixteen Clean Out Boxes (COBs) have been identified on transfer lines. These COBs shall have access ports cut into the non-contaminated 12 inch vertical stand pipe, the primary pipes and encasements shall be cut and caps welded in place; and the upper portion of the structure cut off, isolated, and disposed in accordance with

ALARACT 15, "Demonstration for Size Reduction of Waste Equipment for Disposal" and ALARACT 4, "Demonstration for Packaging and Transportation of Waste". This modification will entail approximately 100 one-inch pipe cuts, 20 two-inch pipe cuts, and 10 three-inch pipe cuts. The primary transfer lines and encasement pipes shall be capped on the branch section and welded to the COB structure.

The COBs must either be modified to be regulatory compliant or deactivated/isolated and removed.

The AN and AW Farms COB design consists of a 24-inch diameter steel cylinder formed from a 1/4 inch thick rolled steel plate and mounted on a 12-inch vertical stand pipe. The vertical stand pipe extends about four feet below grade to the slurry transfer line. A concrete anchor block supports the COB, encasement, and transfer pipe.

The sixteen COBs to be deactivated and/or isolated by the E-525 Project are:

AN Farm:
COB-AN-7, COB-AN-8, COB-AN-9

AW Farm:
COB-AW-1, COB-AW-2, COB-AW-3, COB-AW-4, COB-AW-5, COB-AW-6, COB-AW-7, COB-AW-8, COB-AW-9, COB-AW-10, COB-AW-11, COB-AW-12

242-A Evaporator
COB-A-30

SY TRANSFER LINE MODIFICATIONS

The following transfer lines, SL-177, SN-277, SN-285, SL-180, SN-280, and SN-286 shall be removed, cut into sections, and disposed of in accordance with ALARACT 15 "TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal", and ALARACT 4, "TWRS ALARACT Demonstration For Packaging and Transportation of Waste". Pit walls shall be core drilled as needed to accommodate the new pipe-in-pipe RCRA compliant configuration.

Pipe trenches shall be excavated to remove and install the new transfer lines. Excavation shall be accomplished with the guzzler and hand digging.

204-AR TRANSFER LINE MODIFICATION

Waste transfer line LIQW-702 shall be modified to extend the transfer line encasement through the pit wall. This pipe is buried approximately three and a half feet below grade, so the excavated area shall be approximately 10' x 10' x 6'. Demolition of a portion of the slab under an old laundry facility and a section of the asphalt surface adjacent to the doorstep of the facility will be required for access.

The new encasement section shall be open-ended, upstream of the exterior wall seal plate. The obsolete air purge connection to the existing encasement shall be removed.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.41E-07	Am - 241	1.82E-01	Am - 243	1.72E-06
Ba - 137 m	4.27E+01	C - 14	1.64E-04	Cd - 113 m	5.09E-03
Cm - 242	3.50E-03	Cm - 243	6.62E-06	Cm - 244	1.11E-04
Co - 60	2.52E-03	Cs - 134	1.30E-04	Cs - 137	4.53E+01
Eu - 152	2.36E-04	Eu - 154	1.02E-02	Eu - 155	1.20E-02
H - 3	1.07E-02	I - 129	3.05E-05	Nb - 93 m	9.15E-04
Ni - 59	5.45E-05	Ni - 63	5.30E-03	Np - 237	1.03E-03
Pa - 231	3.45E-07	Pu - 238	2.98E-04	Pu - 239	4.23E-03

Pu - 240	9.67E-04	Pu - 241	1.93E-02	Pu - 242	1.13E-07
Ra - 226	1.27E-08	Ra - 228	6.84E-06	Ru - 106	4.32E-09
Sb - 125	2.36E-03	Se - 79	1.23E-04	Sm - 151	9.39E-01
Sn - 126	1.70E-04	Sr - 90	1.43E+01	Tc - 99	3.49E-02
Th - 229	2.02E-07	Th - 232	9.02E-07	U - 232	2.18E-05
U - 233	8.95E-05	U - 234	8.06E-05	U - 235	3.11E-06
U - 236	5.81E-06	U - 238	5.92E-05	Y - 90	6.33E+00
Zr - 93	9.61E-04				

4) All pit work shall be performed in accordance with ALARACT 6 "TWRS ALARACT Demonstration for Pit Access", ALARACT 13 "TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment", and ALARACT 14 "TWRS ALARACT Demonstration for Pit Work".
5) All soil excavation, not using the Guzzler, shall be conducted in accordance with ALARACT 5 "TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools)".
6) Guzzler excavation shall be performed in accordance with the latest approved revision of the WDOH approved Guzzler NOC).
7) Required cuts of contaminated piping shall be made inside a glove bag. To perform pipe cuts of contaminated piping without a glove bag piping shall be surveyed/smeared to verify removable contamination levels are equal to or less than 10,000 dpm/100 square centimeters beta/gamma and 200 dpm/100 square centimeters alpha.
8) The Annual Possession Quantity shall be tracked on a WDOH approved log.
9) When performing work inside a glove bag and using a PTRAEU or HEPA filtered vacuum all conditions and limitations of site wide approvals for operation of the PTRAEU and HEPA filtered vacuums shall be followed.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.38E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Work shall be performed outside of some tank farm fence boundaries such as the 241-AN, 241-AP, 241-AW, 241-AZ, and 241-SY tank farms; between the 241-AP tank farm and the 244-A double contained receiver tank as well as between the 244-S double-contained receiver tank and the 241-SY tank farm; the 219-S Waste Handling Facility located at the 222-S Laboratory; and near the 241-A-A valve pit (241-A Single-Shell Tank Farm).

EXCAVATION

Excavation within a tank farm, or in a known radioactive contamination area outside of a tank farm, shall be performed in accordance with As Low As Reasonably Achievable Control Technology (ALARACT) Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), or non-mechanical methods such as vacuum excavation (Guzzler) in accordance with the latest WDOH approved Notice of Construction. Outside of a tank farm, in non-contaminated areas, excavation (or berm construction) may be performed using mechanical methods such as: trenchers, backhoes, and scrapers, in addition to hand tools or non-mechanical methods. Areas may be encountered during excavation where components are covered by very hard soil or controlled density fill (low-strength concrete). Mechanical impact tools, such as jackhammer/rototool, would be used to break up such areas before excavation. Removal of excavated material is normally done by mechanical methods such as a crane with skip bucket, powered skip, or front-end loader. Excavated material is placed in spoil piles. (NOTE: Industrial safety requirements may require use of intermediate transfer piles.) Contaminated soil (>100,000 dpm/100 cm2 beta/gamma) is segregated from other soil. Excavated areas shall be backfilled with the excavated soil or soil containing less contamination than the soil that was excavated. Backfilling of excavated areas is accomplished by first placing controlled density fill material when used, then soil in layers, into the excavated area. The distance from the skip bucket, powered skip, and front-end loader to the top of the excavation area is minimized. Contaminated soil is the first soil placed in the excavated areas, then covered with other excavated soil. To meet density requirements, soil compaction is done using hand-guided mechanical compaction equipment. Outside of a tank farm, in a non-contamination area, vibratory roller compactors may be used.

Excavation shall also be conducted to allow for the pouring of concrete pads for future placement of equipment within the tank farms.

PIT WORK

Frequently performed activities shall be done in accordance with activity descriptions found in ALARACT Demonstrations (HNF-4327):

- ALARACT 4 "Packaging and Transportation of Waste"
- ALARACT 6 "Pit Access"
- ALARACT 12 "Packaging and Transportation of Equipment & Vehicles"
- ALARACT 13 "Installation, Operation, and Removal of Tank Equipment"
- ALARACT 14 "Pit Work" and, if required,
- ALARACT 15 "Size Reduction of Waste Equipment for Disposal."

The process is establishment of controls to prevent the spread of radioactive contamination, removal of pit cover

blocks by heavy rigging methods, decontamination of pit by water washing (pressure and non-pressure methods), application of fixative material on contamination, disconnection of equipment, equipment removal by manual or mechanical methods, package equipment for disposal (size reduction if necessary), pit surface preparation by manual abrasion (scrapping, sanding, chipping; on a surface that is damp or has fixative) of existing pit coating, application of pit coating material by manual methods or pressure spray methods, installation of new or replacement equipment, installation of pit cover blocks by heavy rigging, packaging of waste, and transportation of waste and removed equipment.

Project pit activities will include preparation of pit surfaces and coring of walls or cover blocks. Project pit surface preparation is accomplished by mechanical abrasion of the existing pit coating, concrete substrate, and steel surfaces as needed. Needle guns, sanders, wet blasting, and grinders are typical tools used. In addition, surface preparation also may include repair of cracked concrete/concrete coatings. Repair will require removal of cracked material to allow application of grouting material. Removal of cracked material may be performed using manual and power tools, and may also include using a HEPA vacuum to assist in the removal of loose debris. Coring of pit walls and/or cover blocks for new nozzles or equipment installation comprised of replacing wall nozzles, leak detectors, cover blocks, pipe snub-outs, and jumpers will also be performed. A new AZ valve pit will be constructed and connected to the AZ tanks.

PIPE CUTS

The cutting of waste transfer lines, tank risers, or contaminated piping shall be made using a low or high speed reciprocating or cut-off saw (sawzall, bandsaw) or other mechanical methods, such as a tri-tool. Surveys of the exterior and/or interior of the pipe/riser shall be used to determine containment selection in accordance with Radiological Containment Selection, Design, & Specification Guide RPP-7933. Continuous health physic technician coverage shall be present during all pipe work activities. Abrasive methods, such as grinders or sanders, may be used to prepare the cut area for connection to the new section of transfer line. Mating of the new piping to the existing transfer lines or tank riser, and other similar connections if necessary, will be performed using mechanical connection methods or welded flange connections.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	1.59E-01	Co - 60	1.06E-03	Cs - 137	7.11E+00
Eu - 152	1.95E-02	Eu - 154	3.32E-02	Pu - 238	6.98E-04
Pu - 239	6.39E-03	Pu - 240	2.31E-03	Pu - 241	5.08E-02
Pu - 242	6.90E-08	Sr - 90	4.75E+01	U - 233	1.46E+00
Y - 90	3.96E+01				

4) The Annual Possession Quantity and the Potential-to-Emit to the MEI shall be tracked on a WDOH approved log.
5) The Radiological Containment Selection, Design & Specifications Guide, RPP-7933, Revision 0 shall be used. Changes made to RPP-7933, Revision 0 shall be provided to WDOH. The Department retains the right to change or add approval conditions and limitations based on the changes to RPP-7933.
6) To determine the Potential-to-Emit and calculate the annual dose to the Maximally Exposed Individual all gross alpha contamination shall be assumed to be Am-241 and all gross beta contamination shall be assumed to be Sr-90.
7) When HEPA vacuums are used they shall follow all the requirements of the latest revision of the Radioactive Air Emissions Notice of Construction for HEPA Vacuums.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.59E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The operation of the Liquid Effluent Retention Facility/200 Area Effluent Treatment Facility (LERF/ETF), which includes the load-in station and load-in station filter skid.

   Incoming wastewater can be added directly to the ETF process or received at the LERF or the load-in station. The LERF is allowed to receive wastewaters via underground pipelines from generator facilities, via pipeline from the load-in station, or directly through a series of access ports located at each basin. The load-in station accommodates wastewater receipt via container (e.g., drums, carboys, tankers, etc.).

   The ETF wastewater treatment process shall be comprised of a main treatment train and a secondary treatment train. The main treatment train shall provide for the removal or destruction of dangerous and radioactive contaminants from incoming wastewater. After treatment, the effluent shall be transferred to the verification tanks where it is sampled then discharged. Treated effluent is comparable to deionized water and contains tritium, which cannot be economically removed. Contaminants removed in the main treatment train are concentrated in the secondary treatment train. The contaminants shall be heated and dried to a powder form or removed as sludge and dried by the addition of absorbents. These residues shall be containerized and disposed onsite as radioactive waste.

   Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 8.48E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate is assumed to be Pu-239/240. The release rate is based on the maximum PTE for the load-in station. (diffuse/fugitive) is based on ETF operating capacity (54.3 million gallons/yr). In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
Am - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Beta - 0	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta release rate is assumed to be Sr-90/Cs-137. The release rate is based on the maximum PTE for the load-in station. (diffuse/fugitive) is based on ETF operating capacity (54.3 million gallons/yr). In addition to the isotopes specifically listed as approved under this NOC, other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.		
C - 14	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cm - 244	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Co - 60	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Cs - 134	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Eu - 154	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Eu - 155	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
H - 3	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
I - 129	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
K - 40	Liquid/Particulate Solid	WAC 246-247-030(21)(b)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Mn - 54	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Na - 22	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Nb - 94	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Np - 237	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pu - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Pu - 241	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ra - 226	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Ru - 106	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Sb - 125	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Se - 79	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Tc - 99	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 233	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 234	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 235	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 236	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
U - 238	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

Zn - 65	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		
Zr - 95	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Contributes less than 0.1 mrem/yr to the MEI, and represents less than 10% of the unabated PTE and represents less than 25% of the abated dose.		

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	C - 14	Ce - 144	Cm - 244	Co - 60
Cs - 134	Cs - 137	Eu - 154	Eu - 155	H - 3
I - 129	K - 40	Mn - 54	Na - 22	Nb - 94
Np - 237	Pu - 238	Pu - 239/240	Pu - 241	Ra - 226
Ru - 106	Sb - 125	Se - 79	Sr - 90	Tc - 99
U - 233	U - 234	U - 235	U - 236	U - 238
Zn - 65	Zr - 95			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The 200 Area Diffuse/Fugitive Emission Unit at LERF/ETF is limited to the following:

-- LERF wastewater receipt via pipeline and LERF access ports.
-- Minor leaks during transfers when using vented pipelines.
-- LERF operations and maintenance.
-- LERF leachate collection system sampling and sump pumping.
-- Load-in station wastewater receipts via container.
-- Load-in station filter skid operation and maintenance.
-- Load-in station tank operation, maintenance, and repair.
-- Wastewater tanker inspection, pressure testing, and repair.
-- Minor leaks and spills to secondary containment systems.
- Storage and transfer of treated effluent containing tritium.
-- Effluent sampling.
- Purgewater open-top settling tank operation.

5) The emissions for this activity from the all LERF basins and diffuse/fugitive emissions are limited to 4.59E-02 mrem/year unabated and abated.

6) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The load-in station consists of two load-in tanks, a sump, transfer pumps, a skid-mounted filtration system, level instrumentation for tanker trucks, underground transfer lines that allow transfers to either the LERF or the ETF, and leak detection capabilities for the containment basin and transfer lines. Containerized wastewaters received at the load-in station are typically routed through the filter skid. When solids buildup causes differential pressure across a filter housing to become excessive, the filter elements are replaced. The filtration system is shut down, the system is vented to atmosphere by opening a quick release vent cap on top of each filter housing, and solution in the housing is drained to the load-in station sump. The housing is then opened and the spent filter elements are placed in a disposal container. After filter change-out, the sump is emptied to the load-in station, the LERF, or the ETF. The capability to filter sump discharges is also provided at the load-in station. Small shipments that cannot be pumped directly into the filter skid are first drained into the sump, then pumped through the filter skid using the sump pump.

Wastewater tanker inspection, pressure testing, and repair are also conducted at the load-in station as needed to meet annual U.S. Department of Transportation certification requirements. Tankers, which may contain a wastewater heel, are pressurized with compressed air, leak checked at 80 percent of service pressure, and integrity tested at 150 percent of service pressure. After the test is complete, the compressed air is gradually vented from the tanker to the atmosphere. Minor repairs (e.g., seal replacement) are performed as needed to successfully complete the certification test.

Hydrostatic testing is inherently safer and is preferred over pneumatic testing because it minimizes the volume of pressurized vapor space. When hydrostatic testing is performed, the tanker is filled with verification water or other clean water before pressurizing the tanker. At the conclusion of the test, the used water is treated as a new wastewater.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 7.00E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.00E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Phase One activities described below.

At applicant request per WAC 246-247060 (1d), a phased approval process is implemented for this NOC, and this NOC is treated in review as a limited application. There are two phases. Phase One is installation of the new ventilation system. Conditional approval to construct is granted for the Phase One activities:

1. Placement of the new exhauster (previously granted by email permission)
2. Connection of the new exhauster, to include ductwork, electrical, and instrumentation connections necessary to place the new exhauster in an operable state
3. Cold testing of the new exhauster
4. Hot testing of the new exhauster and associated ductwork and systems.

These activities shall not preclude modification, construction or installation of any control or monitoring equipment required after review of the completed application. By accepting the conditional approval of the Phase One activities, the applicant agrees to make in a timely manner such modification, construction, or installation as is deemed necessary during review of Phase Two activities to ensure compliance with 40 CFR 61 Subpart H and WAC 246-247.

Phase Two is removal of the old ventilation system and operation of the new ventilation system.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.85E-02	Am - 241	4.79E+03	Am - 243	1.95E-01
Ba - 137 m	8.01E+06	C - 14	1.96E+02	Cd - 113 m	8.93E+02
Cm - 242	1.22E+01	Cm - 243	1.04E+00	Cm - 244	7.92E+00
Co - 60	9.88E+02	Cs - 134	7.27E+00	Cs - 137	8.48E+06
Eu - 152	4.64E+01	Eu - 154	6.96E+03	Eu - 155	4.39E+03
H - 3	1.38E+02	I - 129	4.15E+00	Nb - 93 m	1.80E+02
Ni - 59	2.00E+01	Ni - 63	1.90E+03	Np - 237	6.74E+00
Pa - 231	5.05E-02	Pu - 238	2.36E+01	Pu - 239	4.10E+02
Pu - 240	7.20E+01	Pu - 241	6.91E+02	Pu - 242	5.25E-03
Ra - 226	1.83E-03	Ra - 228	2.10E+00	Ru - 106	9.78E-04
Sb - 125	4.95E+02	Se - 79	1.11E+01	Sm - 151	1.52E+05
Sn - 126	7.54E+01	Sr - 90	1.05E+06	Tc - 99	3.70E+03
Th - 229	9.24E-02	Th - 232	3.41E-01	U - 232	1.32E+00
U - 233	5.42E+00	U - 234	1.64E+00	U - 235	6.64E-02
U - 236	5.32E-02	U - 238	1.50E+00	Y - 90	1.05E+06
Zr - 93	2.25E+02				

4) ALARACTs 4, 12, and 16 shall be applied as appropriate during the course of the installation (WAC 246-247-

040(5)).

5) Before the new ventilation system is connected to the existing farm ductwork, a cold test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH (WAC 246-247-040(5)).

6) Once the new ventilation system is connected to the existing farm ductwork, an operability/acceptance test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH (WAC 246-247-040(5)).

7) The blind portable exhauster connection flange shall be removed in accord with ALARA principles (WAC 246-247-040(1)).

8) The existing AN farm exhauster will continue in operation until the approval of Phase Two, except for a passive ventilation period not to exceed 24 hours during which the existing AN farm exhauster shall remain in an operable state. During this passive ventilation period, there shall be no AN farm transfers, mixing operations, or other AN farm in-tank or in-piping activities that might elevate tank vapor space radionuclide concentrations. Until approval of Phase Two, the new ventilation system shall not be relied upon for active ventilation of the AN farm (WAC 246-247-040(5)).

9) The new ventilation system shall tie into the existing ductwork at the portable exhauster connection flange, where a valve and blind flange are located above ground (WAC 246-247-040(5)).

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 7.00E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.00E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Phase One activities described below.

At applicant request per WAC 246-247-060(1d), a phased approval process is implemented for this NOC, and this NOC is treated in review as a limited application. There are two phases. Phase One is installation of the new ventilation system. Conditional approval to construct is granted for the Phase One activities:

* Placement of the new exhauster;
* Connection of the new exhauster, to include ductwork, electrical, and instrumentation connections necessary to place the new exhauster in an operable state;
* Cold testing of the new exhauster;
* Hot testing of the new exhauster and associated ductwork and systems.

These activities shall not preclude modification, construction or installation of any control or monitoring equipment required after review of the completed application. By accepting the conditional approval of the Phase One activities, the applicant agrees to make in a timely manner such modification, construction, or installation as is deemed necessary during review of Phase Two activities to ensure compliance with 40 CFR 61 Subpart H and WAC 246-247.

Phase Two is removal of the old ventilation system and operation of the new ventilation system.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.09E+02	Am - 241	2.55E+04	Am - 243	5.61E+00
Ba - 137 m	5.67E+06	C - 14	8.34E+01	Cd - 113 m	2.26E+03
Cm - 242	2.30E+01	Cm - 243	3.36E+00	Cm - 244	7.53E+01
Co - 60	1.15E+03	Cs - 134	1.48E+04	Cs - 137	5.99E+06
Eu - 152	3.96E+02	Eu - 154	1.37E+04	Eu - 155	1.77E+04
H - 3	8.14E+02	I - 129	1.78E+00	Nb - 93 m	6.98E+02
Ni - 59	3.22E+02	Ni - 63	3.01E+04	Np - 237	1.81E+01
Pa - 231	2.39E+02	Pu - 238	1.81E+03	Pu - 239	9.36E+03
Pu - 240	1.52E+03	Pu - 241	1.48E+04	Pu - 242	2.05E-01
Ra - 226	2.16E-02	Ra - 228	2.26E+01	Ru - 106	6.21E+02
Sb - 125	1.02E+04	Se - 79	1.79E+01	Sm - 151	6.36E+05
Sn - 126	6.37E+01	Sr - 90	5.01E+06	Tc - 99	1.25E+03
Th - 229	9.41E-01	Th - 232	5.58E+00	U - 232	1.93E+01
U - 233	4.13E+02	U - 234	2.08E+01	U - 235	6.03E-01
U - 236	6.84E-01	U - 238	1.25E+01	Y - 90	5.01E+06
Zr - 93	7.75E+02				

4) ALARACTs 4, 12, and 16 shall be applied as appropriate during the course of the installation (WAC 246-247-

040(5)).

5) Before the new ventilation system is connected to the existing farm ductwork, a cold test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH (WAC 246-247-040(5)).

6) Once the new ventilation system is connected to the existing farm ductwork, an operability/acceptance test shall be performed on the system. A test plan shall be provided to WDOH. Test results shall be reported to WDOH (WAC 246-247-040(5)).

7) The blind portable exhauster connection flange shall be removed in accord with ALARA principles (WAC 246-247-040(1)).

8) The existing AW farm exhauster will continue in operation until the approval of Phase Two, except for a passive ventilation period not to exceed 24 hours during which the existing AW farm exhauster shall remain in an operable state. During this passive ventilation period, there shall be no AW farm transfers, mixing operations, or other AW farm in-tank or in-piping activities that might elevate tank vapor space radionuclide concentrations. Until approval of Phase Two, the new ventilation system shall not be relied upon for active ventilation of the AW farm (WAC 246-247-040(5)).

9) The new ventilation system shall tie into the existing ductwork at the portable exhauster connection flange, where a valve and blind flange are located above ground (WAC 246-247-040(5)).

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.80E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 8.40E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The salt cake dissolution activity associated with 241-S-102 shall include the following: pit work, soil excavation, in-tank equipment installation/removal, water dilution, and waste transfers.

Pit Work (Diffuse and Fugitive):

- Open the 241-S-102B Distributor pit and cut flange in riser with hold saw or plasma cutter, to install instrumentation manifold and new progressive cavity transfer pump (ALARACT 1, 6, 12, 13, 14);
- Open the two 241-S-102 Condenser pits to replace two existing cover plates with new cover plates. Connect the passive breather filter assembly and connect the trunk of the portable exhauster (ALARACT 4, 6, 14);
- Open the 241-S-A Valve pit, and connect the HIHTL from the 241-S-102 tank to the DST system (ALARACT 6, 14).

Soil Excavation (Diffuse and Fugitive):

- Excavate trenches for tie-in of instrumentation and power systems (ALARACT 5);
- Excavate for HIHTL placement from 241-S-102 to 241-S-A Valve pit (ALARACT 5).

Other Equipment Installation/Removal (Diffuse and Fugitive):

- Install motor controlled spray devices in three risers near the outside perimeter of tank 241-S-102 (ALARACT 1, 13);
- Install automatic spray indexing device in a central riser (ALARACT 1, 13);
- Remove motor controlled and automatic spray indexing devices if necessary (ALARACT 1, 13);
- Place water distribution skid and connect to the raw water header between 241-SY and 241-S tank farms. Connect water distribution skid to spray devices.
- Remove standard hydrogen monitoring system vapor probe (ALARACT 4, 15, 13);
- Place and hook up exhauster and exhauster system;
- Remove unused flammable gas cabinet (per Tank Farm Radcon Control Manual, HNF 5183);
- Place Field Instrument Electrical Skid and connect associated cabling;
- Install stilling well for Enraf Liquid Indicating Transmitter (ALARACT 1, 13);
- Install camera monitoring system (ALARACT 1,13);
- Remove Liquid Observation Well if necessary (ALARACT 1, 13).

Water Dilution and Waste Transfer:

- Water shall be sprayed onto the surface of the in-tank salt cake to dissolve the cake;
- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11);
- Operation and maintenance of the portable exhauster(s).

Waste Transfer (S102):

- The new progressive cavity pump and HIHTL shall be used to transfer waste from tank 241-S-102 to the DST (ALARACT 11).

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	2.53E-02	Sr - 90	2.51E-01

4) ALARACTs 1, 4, 5, 6, 11, 12, 13, 14, 15, and 16 shall be used.[WAC 246-247-040(5)].

5) Containments shall be used in removing the hydrogen probe, the motor controlled spray devices, and the automatic spray indexing devices from the tank [WAC 246-247-040(5)].

6) Radiological monitoring of all pit openings and pit work shall be performed and documented to ensure that maximum pit surface/pit contents contamination levels remain on average below those assumed in NOC release estimates for these activities:

   1.0 E+05 dpm/100 sq. cm. Beta/Gamma
   20 dpm/100 sq. cm. Alpha

   No more than 10 pit openings shall occur. These shall be tracked and documented. The total surface area of pits opened plus the surface area of pit contents shall not exceed 5,000 square feet [WAC 246-247-040(5)].

7) Radiological monitoring of all soil excavation work shall be performed and documented to ensure releases remain within releases estimated in the NOC. Soil volume excavated shall be tracked and documented and shall not exceed 1,000 cubic feet. Soil shall be monitored per ALARACT 5. Contamination levels for excavation shall remain on average equal to or less than:

   8.0 E -04 dpm/100 sq. cm. Beta
   2.0 E+02 dpm/100 sq. cm. Alpha

   [WAC 246-247-040(5)].

8) The total diffuse and fugitive abated emission limit for this Notice of Construction is limited to 4.32E-04 mrem/year to the Maximally Exposed Individual. The total unabated diffuse and fugitive emission limit for this Notice of Construction is limited to 4.32E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.66E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.66E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   1. Upon identification of the need of additional decontamination activities in the individuals would be escorted to the nearest decontamination trailer.

   2. As appropriate, contaminated clothing, coverings, and/or articles would be removed and packaged for laboratory analysis and/or disposition, in accordance with As Low As Reasonably Achievable Control Technology (ALARACT) 4 and 12, Tank Farm ALARACT Demonstration for Packaging and Transportation of Waste and Tank Farm ALARACT Demonstration for Packaging and Transportation of Equipment and Vehicles, RPP HNF-4327.

   3. Personnel decontamination processes might include various methods or a combination of cleaning agents and /or chemicals. For example: soap and water, pre-moistened towelettes, removal of hair, abrasive soaps for toughened skin surfaces (e.g., hands and feet), and chelating agents.

   4. Spent decontamination solutions would be transferred from the holding tanks and/or bladder and containerized (e.g., packaged in absorbents in drums or placed in drums or carboys) and transported to existing facilities on the Hanford Site for disposal.

   5. Periodic maintenance inspection of the decontamination trailers will be performed without the use of containment or portable exhausters.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Pu - 239	1.40E-01	Sr - 90	1.40E-01

4) The proposed PCM for the diffuse and fugitive emissions shall consist of the radiological surveys during and at the completion of personnel decontamination operations (e.g., smears and direct readings on the interior of the decontamination trailers). The methods of PCM are not a direct measurement of effluent emissions. The methods are intended to demonstrate compliance by showing that the levels on the interior of the trailers, during a personnel decontamination operation, are controlled; and the levels on the interior of the trailers after a decontamination operation shall keep the trailers from being posted a radiological buffer area (RBA) for contamination control and/or a contamination area (CA). This shall make the actual emissions below the estimated emissions, which shall be based and calculated from the same contamination levels.

5) When Portable Temporary Radioactive Air Emission Units are used they shall follow all the requirements of the latest revision of the Radioactive Air Emissions Notice of Construction for Portable Temporary Radioactive Air Emission Units (DOE/RL-96-75).

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

244-S DCRT (296-S-22 STACK)

Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

244-TX DCRT (296-T-18 STACK)

Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	1.80E-06	Beta - 0	8.80E-02

4) The Annual Possession Quantity shall be tracked on a WDOH approved log.

5) The emission limit for all diffuse and fugitive emissions shall not exceed 1.0E-06 mrem/year.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.72E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.18E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The activities listed below are approved for the C-200 Series Waste Retrieval effort:

Retrieval Activities (Stack):

i. Operation of the new portable exhauster and ventilation system.
ii. Retrieve wastes from C-201, C-202, C-203, and C-204 using the AMS to vacuum wastes to the central vessel skid.
iii. Pump waste from central vessel skid to the double shell tank system using OGT lines

Diffuse and Fugitive:

a. Proposed Actions for Tanks C-201 through C-204:

i. Removal of weather covers and debris from jet pump pits and ventilation hatchways (ALARACTs 1, 4, 6, 12, 13, 14, and 15)
ii. Remove condenser pit filter assembly and replace tank breather filter with a Y-duct assembly (ALARACTs 1, 4, 12, 15, and 16)
iii. Remove liquid level reels and thermocouple trees, 1 each per tank (ALARACTs 1, 4, 6, 12, 13, 14, and 15)
iv. Remove sluice eductor pump from Tank C-204, if necessary (ALARACTs 1, 4, 6, 12, 13, 14, and 15)

b. Tank Equipment Installations:

i. AMS with connected hydraulic power pack, one per tank (ALARACTs 1, 4, 6, 12, 13, and 14)
ii. Ventiliation inlet filter assembly, one per tank (ALARACTs 1, 4, 12, 13 and 16)
iii. Ventilation exhaust ducting, one per tank (ALARACTs 1, 4, 12, and 16)
iv. Closed circuit TV s, one per tank (ALARACT 1, 4, 12, 13, and 16)
v. Master camera control system skid, and connects to in-tank cameras (ALARACT 6, 13, and 16)
vi. Central vessel skid, connect to individual AMS units, connect to the double shell tank via OGT lines (using hand digging or Guzzler, latest approved revision) (ALARACT 1, 4, 5, 6, 13, and 14)
vii. Pump skid with connected hydraulic power pack, and OGT lines (ALARACT 1, 4, 6, 12, 13, and 14)
viii. Vacuum skid with connected hydraulic power pack (ALARACT 1, 4, 6, 12, 13, and 14)
ix. Portable exhauster skid, connect via HVAC ducting to individual tank ventilation exhaust ducts (ALARACTs 1, 4, 6, 12, 13, and 14)
x. Electrical cable and electric supply to hydraulic power packs, vessel skid, pump skid, vacuum skid, portable exhauster skid, inlet filter, in-tank cameras, and generator, control instrumentation (ALARACT 5)
xi. Air compressor and associated air supply lines to AMS, vessel skid, vacuum skid (ALARACT 5)

xii. Instrumentation control room, water distribution sled, instrument electrical skid, diesel generator

c. Remove tank equipment installed under this NOC for maintenance, repair, disposal, or re-use for future tank retrievals. (ALARACTs 1, 4, 6, 12, 13, 14, 15 and 16)

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	4.84E-06	Am - 241	4.17E-01	Am - 243	4.67E-06
Ba - 137 m	1.41E+00	C - 14	3.80E-05	Cd - 113 m	1.36E-03
Cm - 242	3.03E-04	Cm - 243	1.45E-05	Cm - 244	6.39E-06
Co - 60	1.59E-05	Cs - 134	1.41E-08	Cs - 137	1.49E+00
Eu - 152	7.67E-03	Eu - 154	3.62E-03	Eu - 155	2.69E-01
H - 3	1.86E-05	I - 129	5.19E-07	Nb - 93 m	6.53E-04
Ni - 59	1.42E-02	Ni - 63	1.33E+00	Np - 237	8.11E-07
Pa - 231	1.64E-07	Pu - 238	1.29E-02	Pu - 239	5.76E-01
Pu - 240	9.49E-02	Pu - 241	7.03E-01	Pu - 242	4.85E-06
Ra - 226	1.23E-06	Ra - 228	3.37E-12	Ru - 106	2.58E-09
Sb - 125	2.67E-05	Se - 79	1.67E-05	Sm - 151	5.91E-01
Sn - 126	1.06E-04	Sr - 90	3.50E+01	Tc - 99	2.67E-04
Th - 229	1.26E-09	Th - 232	9.06E-15	U - 232	1.98E-10
U - 233	7.54E-12	U - 234	7.15E-06	U - 235	3.15E-07
U - 236	8.27E-08	U - 238	7.20E-06	Y - 90	7.83E+00
Zr - 93	7.35E-04				

4) A health physics technician shall be present during all condenser pit filter removal activities. Any contamination levels or dose rate readings exceeding the radiation work permit limits shall be notified to WDOH.

5) A work place air sampler shall be in operation during all condenser pit filter removal activities. The air sampler shall be placed in the downwind direction.

6) ALARACTs 1, 4, 5, 6, 12, 13, 14, 15, and 16 shall be used.[WAC 246-247-040(5)].

7) One liquid level reel per tank, one thermocouple assembly per tank, one condenser pit filter per tank, and a sluice pump in 241-C-204, may be removed. If the total adherent waste volume basis used in the supporting calculations for equipment removal is not exceeded, other equipment removals may be performed as noted in Condition 3, Item c. [WAC 246-247-040(5)].

8) Prior to moving the HIHTL the lines shall be flushed and checked by a health physics technician to ensure minimal contamination. The valve on the tank manifold box shall be closed and the end of the line shall be wrapped in plastic, then removed from the manifold. The HIHTL will then be hooked up to the next tank.

9) Radiological monitoring of all pit openings and pit work shall be performed and documented to ensure that maximum pit surface/pit contents contamination levels remain on average below those assumed in NOC release estimates for these activities:

(a) 241-C-200 Series Tanks: 1 E+06 dpm Beta/Gamma, 1400 dpm alpha
(b) Tank 241-AY-101: 8.5 E+05 dpm Beta/Gamma, 20 dpm alpha

No more than 16 C-200 series pit openings shall occur, and no more than four AY-101 pit openings shall occur. These shall be tracked and documented. The total surface area of C-200 Series pits opened plus the surface area of pit contents shall not exceed that used in the NOC support calculations. The total surface area of double-shell tank pits opened plus the surface area of pit contents shall not exceed that used in the NOC support calculations [WAC 246-247-040(5)].

10) Radiological monitoring of all soil excavation work shall be performed and documented to ensure releases remain within releases estimated in the NOC. Soil volume excavated shall be tracked and documented and shall not exceed 8,500 cubic feet. Soil shall be monitored per ALARACT 5. Contamination levels for excavation shall remain on

average equal to or less than 1 E+06 dpm beta and 20 dpm alpha [WAC 246-247-040(5)].

11) Soil excavation performed using the Guzzler shall conform to approval conditions and limitations of the latest approved revision to the Guzzler NOC [WAC 246-247-040(5)].

12) The Annual Possession Quantity shall be tracked on a WDOH approved log.

13) The condenser pit filter shall be withdrawn into a fully enclosed plastic sleeving. Once removed, the sleeve enclosing the filter shall be pigtailed, sealed, and disposed of within a mixed waste disposal box. The filter shall not be exposed to the environment. The condenser pit filter removal activities shall use ALARACTS 1, 4, 6, 13, 14, and 15 as guidance for contamination levels and controls.

14) The total diffuse and fugitive abated emission limit for this Notice of Construction is limited to 1.61E-02 mrem/year to the Maximally Exposed Individual, comprised of 6.76E-03 mrem/year offsite and 9.37E-03 mrem/year onsite. The total unabated diffuse and fugitive emission limit for this Notice of Construction is limited to 1.61E-02 mrem/yr to the Maximally Exposed Individual, comprised of 6.76E-03 mrem/year offsite and 9.37E-03 mrem/year onsite (WAC 246-247-040(5)).

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.30E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Approved is the retrieval (unearth) and inspection of containers of suspect-transuranic (TRU) and TRU waste from trenches in the Low Level Burial Grounds (LLBG) and install NucFil filters or equivalent (as approved by the department) in the unvented (or inadequately vented) TRU containers. Venting and headspace gas sampling (HSGS) may be performed at the LLBG (in place with engineering controls or within venting enclosure) or at the following facilities licensed for such work (CWC, WRAP, or T Plant Complex). In addition, LLW containers posing a safety hazard (e.g., potential for pressurization, bulging, or similar abnormal condition) may also be vented.

   Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 5.40E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.40E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Alpha release rate based on Am-241. Release rate for installation of Nucfil filters using the Dart System. See Condition 4.			
Alpha - 0	3.30E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on Am-241. Release rate for excavation of soil (contamination detected). See condition 19.			
Alpha - 0	6.70E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on Am-241. Release rate for excavation of soil (Higher contamination level, controls required). See condition 19.			
Alpha - 0	9.40E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on Am-241. Release rate for excavation of soil (notification level). See condition 19.			
Alpha - 0	2.80E-05	Solid	WAC 246-247-030(21)(e)
Release rate based on Am-241. Release rate for staging/handling vented containers. See Condition 5.			
B/G - 0	2.20E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate based on Cs-137. Release rate for excavation of soil (contamination detected). See condition 19.			
B/G - 0	4.40E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate based on Cs-137. Release rate for excavation of soil (Higher contamination level, controls required). See condition 19.			
B/G - 0	6.20E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release rate based on Cs-137. Release rate for excavation of soil (notification level). See condition 19.			
B/G - 0	2.10E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Beta/Gamma release rate based on Cs-137. Release rate for installation of Nucfil filters using the Dart System. See condition 4.			
Beta - 0	4.10E-04	Solid	WAC 246-247-030(21)(e)
Release rate based on Cs-137. Release rate for staging/handling vented containers. See Condition 5.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Cf - 252	Cm - 244	Cs - 134
Cs - 137	Eu - 152	Eu - 154	Pu - 238	Pu - 239/240
Pu - 241	Sr - 90	U - 234	U - 235	U - 236
U - 238				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) A maximum of 1,000 containers/yr are approved to have installation of NucFil filters using the Dart System. The potential unabated release rate from using the Dart System for installation of NucFil filters is 1.4 E-4 Ci/yr americium-241 and 2.1 E-3 Ci/yr cesium-137 and is based on a release fraction of 1.0E-3 and a pressure release time of 1 hour. All of the emissions from a pressurized container are routed through the HEPA-type NucFil filter (certified 99.97% removal efficiency); therefore, the abated release rate is 4.8 E-8 Ci/yr americium-241 and 7.1 E-7 Ci/yr cesium-137. This alternative release fraction is approved for this emission unit.

5) A maximum of 11,000 vented containers of waste (including 1,000 containers that are not designated as TRU waste, which could be retrieved with vents in place) are approved to be retrieved per year. Once vented, the containers are allowed to be staged with the other retrieved containers for further handling, resulting in the staging/storage of a maximum of 11,000 vented containers per year at the LLBG. Using an average release fraction of 2.00 E-09 for fugitive emissions from vented containers (as used in the WRAP NOC, DOE/RL-2000-34), the potential unabated release rate from the staging of vented containers is 2.8 E-05 Ci/yr americium-241 and 4.1 E-04 Ci/yr cesium-137. This alternative release fraction is approved for this emission unit.

6) Additional monitoring for the diffuse and fugitive emissions will consist of radiological surveys from the soil excavation activities.

7) Both alpha and beta/gamma surveys shall be performed for all removable contamination surveys and for soil surveys (direct reading). Alpha surveys alone shall be performed for direct readings of container surfaces. Beta/gamma direct readings are influenced by container contents, so are not as useful and are not required.

8) Deteriorated containers involving a loss of containment from handling/retrieval of such containers (dropping, spilling, puncturing or crushing a container, where containment is lost, or otherwise encountering loss of containment) have a probability of greater then 1% while excavating the V-Notch Trench. Planning for such incidents shall be addressed prior to performing retrieval work in the horizontal V-notched trench configuration. A new application shall be submitted to the department for approval prior doing any work on the horizontal V-notched trench configuration.

9) Dust controls such as water, fixatives, covers, or windscreens will be applied, as determined by the Radiological Control organization.

10) Excavation activities will be stopped if contamination (other than spot contamination) with detection readings greater than 500,000 dpm/100 cm2 beta/gamma or greater than 28,000 dpm/100 cm2 alpha is encountered.

    Excavation will not continue at that site (but may proceed at other sites) until an internal review of the work and encountered conditions has been performed and an internal determination has been made that no threat to personnel safety or the environment exists, or until proper controls (i.e., removal and disposal, water, fixatives, or covers) have been put in place to mitigate any further potential for emissions; and the WDOH has been contacted and briefed of the situation.

11) For bulk transfer of contaminated soils, a backhoe or front-end loader may only be used when the material is wetted during the transfer process.

12) Health physics technician (HPT) coverage will be provided during the excavation activities, continuously when in close proximity to containers.

13) It is recognized that other radionuclides may be present in very limited quantities.

14) Manual methods will be used to excavate soil in close proximity to containers (after overburden is removed).

15) Operational limits for TRU retrieval (contamination levels) will be established in the activity work packages and associated RWPs. Fixatives or other controls will be employed if contamination levels (other than spot contamination) exceed 100,000 disintegrations per minute per 100 square centimeters (dpm/100 cm2) beta/gamma or exceed 2,000 dpm/100 cm2 alpha.

16) Spoil piles containing contaminated soil will be segregated from the clean soil and dust controls such as water, fixatives, or covers will be applied at the end of each shift or when sustained or predicted windspeeds are >20 mph. Containerizing spoils for disposal may be performed.

17) The department shall be notified within 24 hours of all drum vents that fail to be installed properly when using the dart system (an example of a "failure" would be where the Dart is used in a thin or corroded spot where the dart punches a hole through the lid).

18) The potential unabated release rate from manual excavation is based on a release fraction of 1.0E-3.

19) The process description for management of abnormal containers will be maintained in written procedures. Operating procedures will be established to safely deal with these containers. These procedures will be provided to the department for review prior to operations under this license.

20) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

TRU Waste Retrieval

The area to be excavated is managed as a 'clean' area, free of surface contamination measurable with field survey instruments. Because of the possibility of encountering previously undetected subsurface contamination, or future contamination from windblown sources, all work will be performed in accordance with as low as reasonably achievable (ALARA) requirements as determined by the Radiological Control organization. These requirements shall be carried out through the activity work packages and associated radiological work permits (RWP) which will be managed as required retrievable records for this activity.
The overburden soil will be removed to expose the waste containers. Excavation equipment will be chosen to effectively remove soil and retrieve the waste containers while minimizing damage to the containers. Excavation activities will be monitored to identify contamination that might be present and to minimize emissions. Any contaminated soils will be managed in accordance with applicable requirements and regulations.

The most efficient methodology for removing the uncontaminated overburden from the containers will include the maximum use of conventional methods such as backhoes, frontend loaders, mechanical brooms (boom mounted), or manual digging with shovels and similar hand tools. Only manual methods (hand tools) shall be used to excavate contaminated soil. All facilities must be able to demonstrate the reliability and accuracy of emissions monitoring data (WAC 246-247-075(13)).

The specific steps or approach to uncovering the containers will vary according to the configuration of the trench to be uncovered, the nearby trenches or fences, the designated location of the spoils pile, the planned extent of the soil removal, etc. Therefore, excavation activities will be planned before arriving at the job site. Excavation activities will be controlled closely. When the quantity of soil removed with heavy equipment has reached the logical end, hand tools or HVUs could be used to complete the uncontaminated soil removal operations to access and remove the plastic and plywood materials (to be set aside for reuse or disposal) covering the containers.

The exposed containers will be visually inspected and surveyed for contamination. Abnormal drum conditions will be managed as follow: Contaminated containers will be decontaminated or overpacked. Bulging or potentially pressurized containers will be vented as described in the Venting Containers Section. Retrieval activities will include appropriate disposition of small amounts of incidental contaminated soil (e.g., containerized or fixed in place). Larger areas of contamination shall be fixed and the area posted as required by the Radiological Control organization for later disposition. Bulk transfer of contaminated soils for disposal in another trench also could occur.

All containers will be inspected to verify integrity. The container inspection will consist of a visual examination to determine if there are significant corrosion, holes, dents or other visual deformities. All containers may be moved, turned, or otherwise relocated (manually or with powered equipment, slings, clamps, or appropriate rigging) to facilitate an adequate visual inspection.
Overpacking containers with minor defects (pinholes, corrosion) is routinely performed at the LLBG and CWC and is expected for up to 10 to 50 percent of the retrieved containers. Precautions will be provided to safely retrieve containers of questionable integrity. The process description for management of abnormal containers will be maintained in written procedures. Operating procedures will be established to safely deal with these containers.

Containers that obviously are breached or deformed also will be safely removed. Removal methods will be determined on a case-by-case basis. A breached container that can provide secure confinement will be relocated to an area for repackaging or overpacking. If the container cannot provide adequate confinement for the contents, the container and contents will be overpacked before being relocated. The overpacked containers will be managed according to the LLW (including mixed waste) or TRU waste designation (TRU containers are those with TRU content greater than 100 nCi/g), established by records or assay.

After a container is inspected visually and the structural integrity established, the container (if shown by assay or records to be designated as TRU) will be staged for venting, if necessary, or moved to another TSD unit for venting. Retrieved TRU waste containers in their staged configuration at the LLBG will be inspected for outwardly visible signs of corrosion or degradation (overpacking as needed).

21) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Venting of Containers

All work shall be performed in accordance with the LLBG radiological control procedures and ALARA requirements. These requirements are carried out through the procedures, activity work packages, and associated RWPs.

The vent filters will be installed in designated containers by using the Drum Venting System (DVS) and/or Dart System. The methodology will require penetrating the container and inserting a vent. Penetration of the lid will be accomplished by either drilling through the lid with a filter assembly fitted with a short hollow drill bit (using DVS) or puncturing the lid with a filter dart (using Dart system). Either method will result in emissions being routed through a filter during the venting process.

Most drums slated for venting will be vented with the DVS, consisting of a trailer with a chamber allowing an operator to sample the drum (screening HSGS for hydrogen content) and install a NucFil filter. Potential emissions from these operations are point source emissions.

Bulging or potentially pressurized drums will be evaluated to determine best method and location to vent (Dart-in place, Dart-relocate, or move to the DVS). The Dart System is a portable unit that straps directly onto a drum, using a pneumatic driver remotely activated by wire or radio transmitter. This system penetrates the drum lid without risk of contamination release to install a NucFil filter with an aluminum bronze housing to prevent the possibility of sparking. Potential emissions from these operations will be considered diffuse and fugitive. The same Dart System will be used to install sample ports, consisting of a closure set screw covering a septum for withdrawing a sample for HSGS, in containers with existing vents at the LLBG, CWC, WRAP, or T Plant Complex, without creating a new pathway for potential emissions.

22) WDOH will be notified per WAC 246-247-080(5) if a loss of containment occurs (dropping, spilling, puncturing a container, or otherwise encountering loss of integrity where contamination escapes containment), which exceeds 100,000 dpm/100 cm2 beta/gamma or 2,000 dpm/100 cm2 alpha removable contamination.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.12E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.12E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Site preparation for the retrieval of the waste from single-shell tanks. This covers the following activities as described below.

Installation of the following in-tank equipment

- Waste distribution devices
- Transfer pumps
- Enraf-Nonius Series 854 (ENRAF) stilling wells
- Video cameras
- Instrument manifolds
- Central fury device
- Drain lines back to tank
- AMS (Articulated Mast System)
- Sluicing nozzles
- Ventilation inlet filter assemblies
- Connection of hose-in-hose transfer lines (HIHTL)
- New pit cover-plates
- Electrical poser and instrument cables and other utility tie-ins and/or upgrades
- New above ground pits
- Jumpers
- Off riser sampling system

Removal, Decontamination and Disposal of Existing Equipment

- Remove/Replacement of Breather filters
- Removal of Sludge weights
- Removal of Liquid observation wells (LOW)
- Removal of Standard Hydrogen Monitoring System (SHMS) probe
- Removal of Thermocouple probes
- Removal of Sluicing nozzles
- Removal of Video cameras
- Removal of Liquid level reel
- Removal of Jumpers from pits
- Removal of Saltwell pumps
- Removal of Sluice pumps
- Removal of Corrosion probes
- Removal of Shield plugs
- Removal of Slurry distributors
- Removal of Air lift circulators
- Removal of Riser adapter cover plates
- Removal of Saltwell screens
- Removal fo Dip tubes
- Removal of Protective foam coating on pits

Other similar equipment may be installed or removed provided all conditions and limitations outlined in this approval are met.

Pit Work

Pits will be accessed for installation of instrument manifolds, transfer pump installation, jumper removal, replacement of existing HIHTLs with new HIHTLs, connection of high efficiency particulate air (HEPA) filters, exhauster trunk for the portable exhausters, and removal of various jumpers, isolation of transfer lines, water lines, and drain lines.

Removal of In-Tank Equipment

Various in-tank equipment, such as those listed above, will be removed from the tanks to make room for the waste retrieval equipment, or to be replaced with equivalent equipment built to withstand the forces of waste retrieval.

In-Tank Equipment Installation

Motor controlled spray devices and sluicers will be inserted into risers on some tanks near the outside perimeter of the tank and an automatic indexing spray device also will be installed on a centrally located riser. In-tank closed circuit television cameras will be installed into risers and connected to a master camera control system skid. This equipment will be in the riser for the duration of the project and will not contact the waste. Each spray assembly is equipped with a spray washer to provide a decontamination rinse during removal. The spray devices and cameras will be sleeved out of the risers at completion of the project.

An AMS will be installed through risers of some tanks for use during retrieval. The AMS may be removed and reused. Pumps and In Tank Vehicles (ITVs) will be waste contacting and may be abandoned in place following the conclusion of retrieval operations.

Ventilation inlet filter assemblies (breather filters) will be installed on those tanks whose breather filters have been removed to accommodate portable exhausters and other retrieval equipment.

Installation of the Off-Riser Sample Collection System (ORSS). The ORSS consists of a sample collector sub-system and its deployment sub-system. The sample collector is capable of sampling the various types of waste expected in a post-retrieval single shell tank environment. The waste may be liquid in an extreme range of viscosities, or solids in various states of friability. The sample collector crawler will return the sample to sample containers staged below the riser, where it will be retrieved into the glove bag mounted on the sampling riser. Monitoring of the sample collector will be accomplished visually using the in-tank camera. All activities associated with the ORSS will be accomplished thru a sealed glove bag. The riser used for sampling will be open to the atmosphere for a very short period of time (typically less than one minute) while installing and removing the glove bag.

Installation of new risers ranging in diameter from four inches to 42 inches. Riser will be installed by first removing soil down to the concrete tank dome surface using hand digging and/or using the guzzler. A steel caisson will be inserted into the hole for wall support. A small layer of grout will be added to the bottom of the hole to provide a level surface. A hole will be partially drilled into the concrete. After a cable is attached to the core, the drilling will be completed through the dome into the tank headspace. The new prefabricated riser will be lowered into the caisson until support brackets on the side are seated on the grout top.

Tank Preparation for Closure

Tank preparation for closure will include installation of equipment for introducing fill material, fill placement monitoring, and ventilation. In general, equipment residing in risers (e.g., pump, thermocouple tree, vacuum retrieval mast, etc.) will not be removed from the tank unless it obstructs a riser that is required to gain access for placing the fill material. Equipment obstructing a riser needed for access will be either removed, or cut and

lowered into the tank. Equipment lowered into the tank during tank preparation will be completely covered when the fill material is added to the tank.

Soil Excavation

Soil will be excavated inside and outside the farms for various reasons such as tie in of instrumentation and power systems for monitoring transfer progress. Intermittent trenches will be excavated for this purpose.

The volume of soil removed during excavation activities are volumes of disturbed soil that will not leave the respective farms. Clean soil piles may be moved from one place to another within the tank farm with heavy equipment (i.e. backhoe, front loader). The soil will be used to fill the trenches after the hose and the conduits are installed.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	2.15E-02	Am - 241	6.96E+00	Am - 243	2.13E-04
Ba - 137 m	3.69E+02	C - 14	1.55E-02	Cd - 113 m	1.03E+00
Cm - 242	6.88E-03	Cm - 243	4.11E-04	Cm - 244	1.15E-02
Co - 60	9.80E-01	Cs - 134	5.25E-02	Cs - 137	3.90E+02
Eu - 152	8.00E-02	Eu - 154	8.19E+00	Eu - 155	5.80E+00
H - 3	5.63E-02	I - 129	3.40E-04	Nb - 93 m	2.76E-01
Ni - 59	7.68E-02	Ni - 63	7.31E+00	Np - 237	8.68E-04
Pa - 231	4.72E-02	Pu - 238	3.62E-01	Pu - 239	7.53E+00
Pu - 240	1.15E+00	Pu - 241	6.14E+00	Pu - 242	3.28E-05
Ra - 226	7.62E-01	Ra - 228	4.47E-03	Ru - 106	2.59E-05
Sb - 125	1.40E+00	Se - 79	3.70E-03	Sm - 151	2.57E+02
Sn - 126	4.55E-02	Sr - 90	1.62E+04	Tc - 99	6.85E-01
Th - 229	7.52E-02	Th - 232	1.10E-03	U - 232	3.81E-03
U - 233	8.16E-02	U - 234	1.17E-02	U - 235	5.01E-04
U - 236	2.03E-04	U - 238	1.20E-02	Y - 90	1.62E+04
Zr - 93	3.34E-01				

4) During penetration of the tank dome, core drilling activities will take place within plastic sleeving. When the cylinder core is removed it shall remain contained within the plastic sleeving, and plastic sleeving shall remain over the existing hole in the tank dome until the new riser is installed.

5) Riser installation activities shall cease when sustained winds exceed 25 miles per hour. A local wind speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind speed reading taken from it must be documented in the JCS Work Records.

6) Soil excavation activities shall be performed in accordance with the requirements of TWRS ALARACT Demonstration 5 "Demonstration for soil excavation (using hand tools)".

7) The Annual Possession Quantity for pit entries, equipment removal activities, soil excavation, and Guzzler operation shall be tracked on a WDOH approved log.

8) Work involved with pits and in-tank equipment installation and removal shall follow the requirements of TWRS ALARACT Demonstrations 1, 3, 4, 6, 7, 10, 11, 12, 13, 14, 15, and 16.

9) The Department shall be notified, within 7 days, of when an existing breather filter is replaced by a Flanders 40 cfm radial filter.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.31E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.61E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The operation of the waste retrieval system(s) for the removal of radioactive wastes from all 149 Single Shell Tanks (SST) at the Hanford Site.

SALTCAKE DISSOLUTION WASTE RETRIEVAL SYSTEM

The saltcake dissolution waste retrieval system may be used to retrieve soluble saltcake waste. This method retrieves the soluble portion of the waste only, resulting in very few of the solids being pumped from the tank. The saltcake dissolution waste retrieval system deployed in the SSTs is for water, chemical agent, or catalyst liquid to be added to the tank using a variety of spray nozzles or "sprinklers". The approach is to sprinkle the waste surface with water, chemical agent, or catalyst liquid. The added water, chemical agent, or catalyst liquid must stay in contact with the saltcake for a long enough period of time for the brine to become saturated. Once the brine is saturated, it is pumped from the SST to a receiver tank, staging tank, storage DST or other staging/storage vessel associated with the supplemental treatment, packaging or disposal. Salt solution will be removed using the existing saltwell pump or other pump placed into the tank.

A tank not equipped with a saltwell pump, a transfer pump (progressive cavity, vertical turbine) can be installed and operated.

Remotely directable water distribution devices will be located in risers spaced as far apart as practical. A combination of spraying waster, chemical agent, or catalyst liquid to dissolve the saltcake can be used in conjunction with directing a flow of water or recirculating water at the waste to move it to the pump suction to allow the pumping of waste from the tank. Recirculated waste from the pump may be sent back to the tank as an alternative to using water to direct dissolution waste to the pump suction.

MODIFIED SLUCING WASTE RETRIEVAL SYSTEM

Modified sluicing can be used for some SST waste retrieval. Modified sluicing is the introduction of liquid at low to moderate pressures, not to exceed 1200 psi, and volumes into the waste. The liquid dissolves and breaks apart solid materials and suspends them in the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a receiver tank.

Modified sluicing introduces sluice liquid in a controlled fashion using multiple sluicing nozzles at varying pressures and flows, then pumps out the resultant waste slurry. This maintains minimal liquid inventories within the tank at all times. The liquids that could be used in modified sluicing include water, recirculated supernatant/water from the receiving Double Shell Tank, recirculated supernatant/water, chemical agent or catalyst liquid.

VACUUM WASTE RETRIEVAL SYSTEM

A vacuum waste retrieval system can be used for waste retrieval activities in the (SSTs). The vacuum waste retrieval system is introduced into the SSTs by means of an articulating mast system (AMS). The AMS has a horizontal reach and rotational capabilities of 360 degrees. The AMS has a retracted position and can be extended vertically. Air is mixed at the suction end of the AMS enabling the required vertical lift for the waste

to a topside receiver tank, batch vessel or a staging SST, storage DST, or other staging/storage vessels associated with supplemental treatment, packaging or disposal.

The AMS will be deployed through and attached to standard riser flanges that are available on the SSTs. Cameras can also be installed in other risers for in-tank viewing and control of the AMS.

For the 200-series tanks in the 241-C, 241-U, 241-B and 241-T Tank Farms a vacuum retrieval process tank, staging tank, staging SST, storage DST or other staging/storage vessel will be deployed. The receiver tank will receive waste in batches from whichever tank is connected into the vacuum retrieval system. The vacuum pressure used to draw up the waste from the tank to the receiver tank is relieved back into the SST being retrieved.

MOBILE RETRIEVAL SYSTEM

A Mobile Retrieval System (MRS) can be used to retrieve waste from some SSTs. The MRS consists of two in-tank systems. The first is a robotic crawler inserted through one riser the second is an AMS inserted through a second riser. The AMS retrieves the sludge from the tank using a vacuum with assisting pneumatic conveyance. The AMS vacuum tube has a horizontal reach and can be extended to the bottom of the tank. The arm rotates 360 degrees. The vacuum will be directed through the AMS in the tank to the end effector, which is in contact with the waste. The pneumatic conveyance-assisted vacuum retrieval system will draw the waste up through the vacuum to the waste vessel in the vessel skid in batches. The AMS is then valved out while the waste vessel is emptied and pumped out through the over ground transfer lines to a DST, a staging SST or other treatment/disposal options. When the waste vessel is nearly empty, the transfer line will be valved out and the AMS will be valved back in and another batch of waste will be removed from the tank. This process will be repeated until waste near the center of the tank is removed. The robotic crawler will be remotely controlled to move and/or wash waste toward the center of the tank.

The robotic crawler is equipped with a plow blade at the front for pushing/pulling wastes, a screw pump to jet wastes through a small nozzle towards the center of the tank, the ability to direct hot or cold water through the same nozzle to wash wastes off of in-tank equipment, dissolve waste agglomerations in the tank, and wash waste toward the center of the tank for removal.

Any new retrieval methods or changes to processes will need to be provided to WDOH in a revised NOC prior to implementation.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.99E+00	Am - 241	8.68E+03	Am - 243	3.39E-01
Ba - 137 m	4.62E+07	C - 14	6.25E+02	Cd - 113 m	4.95E+03
Cm - 242	1.97E+01	Cm - 243	1.80E+00	Cm - 244	1.90E+01
Co - 60	2.52E+03	Cs - 134	3.44E+04	Cs - 137	4.89E+07
Eu - 152	8.49E+02	Eu - 154	1.45E+04	Eu - 155	9.54E+03
H - 3	5.95E+03	I - 129	2.95E+01	Nb - 93 m	1.01E+03
Ni - 59	1.05E+02	Ni - 63	9.30E+03	Np - 237	9.50E+01
Pa - 231	1.25E+01	Pu - 238	1.65E+02	Pu - 239	3.17E+03
Pu - 240	5.36E+02	Pu - 241	4.80E+03	Pu - 242	3.34E-02
Ra - 226	1.27E-02	Ra - 228	1.15E+01	Ru - 106	1.22E-02
Sb - 125	1.73E+04	Se - 79	6.36E+01	Sm - 151	8.93E+05
Sn - 126	2.59E+02	Sr - 90	2.91E+06	Tc - 99	2.24E+04
Th - 229	4.20E-01	Th - 232	1.26E+00	U - 232	3.66E+00
U - 233	3.02E+01	U - 234	1.07E+01	U - 235	4.44E-01
U - 236	2.73E-01	U - 238	9.86E+00	Y - 90	2.91E+06
Zr - 93	1.25E+03				

4) Controls for retrieval activities in the 241-A, AX, B, BX, BY, C, S, SX, T, TX, TY, U single shell tank farms shall consist of at least a single breather filter. The breather filter shall be of an "Open Face" style housing or a "G-1" style housing. The filter shall be tested in place at least annually following the guidance of ASME AG-1 Section TA, and shall have a minimum efficiency of 99.95%.
5) During waste retrieval operations liquid shall be introduced through sluicing and saltcake dissolution nozzles at a pressure not to exceed 1200 psig, and the nozzle shall be at least five inches from the waste surface.
6) Monitoring of breather filters during retrieval activities shall consist of weekly smear surveys on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent.

   Levels above 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha shall be reported to WDOH.
7) Retrieval activities shall occur under passive ventilation only when an exhauster can not longer be operated on a single shell tank due to structural concerns. The justification for structural concerns with the single shell tank shall be documented and provided to WDOH upon request.
8) The following ALARACTs shall be followed during retrieval activities, ALARACT 1 "Demonstration for riser preparation/opening", ALARACT 4 "Demonstration for packaging and transportation of waste", ALARACT 6 "Demonstration for Pit Access", ALARACT 11 "Demonstration for Waste Transfers", ALARACT 12 "Demonstration for Packaging and Transportation of Equipment and Vehicles", ALARACT 13 "Demonstration for installation, operation, and removal of tank equipment", ALARACT 14 "Tank Farm ALARACT Demonstration for Pit Work", ALARACT 15 "Demonstration for size reduction of waste equipment for disposal", ALARACT 16 "Demonstration for work on potentially contaminated ventilation system components", ALARACT 5 "Demonstration for Soil Excavation", ALARACT 7 "Demonstration for Tank Waste Grab Sampling", and ALARACT 10 "Demonstration for Water Lancing".

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.50E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.35E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Liquid salt-solution received at the Demonstration Bulk Vitrification System (DBVS) from the 241-S-109 Single Shell Tank will be mixed with appropriate glass formers and excess water will be removed from the mixture. The mixture will be transported and distributed into a refractory-lined waste container, where electrodes, penetrating the waste mixture, will vitrify the waste via resistive heating. Preparation of the DBVS site could require excavation of up to 5,445 cubic feet of radioactively contaminated soil.

After completion of the vitrification process, soil and sand will be added to sufficiently fill the void container volume. The waste and waste container will undergo cooling, sampling, and external decontamination. The waste container with final vitrified waste will be allowed to cool, and will be stored at the Test and Demonstration Facility awaiting transfer to an approved storage facility or transferred to an approved onsite low-level burial ground.

The DBVS RD&D program will be operated in two phases. The Phase 1 DBVS will consist of treatment of up to three container loads, each incorporating up to 1135 L (300 gallons) of tank waste. Simulants (i.e., materials similar in chemical composition to tank waste) will be added to the waste load along with the glass formers to create a container load (including insulation materials) up to 54.4 m3 (1920 ft3). The containers will be stored at the Test and Demonstration Facility and ultimately be transferred to the IDF or another permitted disposal facility.

The goal of Phase 2 is to optimize the DBVS performance and operation for full-scale use. Phase 2 will consist of treatment of up to 50 (including containers from Phase I) container loads of waste totaling up to 1,355,500 L (300,000 gallons) of tank waste. Tank waste, process additives, and process control parameters will be varied to establish optimum operating process parameters or envelopes. It is anticipated that one container load of material will be vitrified weekly over one operating year.

The DBVS will receive Low Activity Waste (LAW) from Tank 241-S-109 into tanks for process feed, storage, and sampling. The tank capacities for the DBVS waste receipt are 18,000 gallons, and will be used in the production of up to 50 containers. The waste receipt tanks will be vented through the Off Gas Treatment System (OGTS). The 1,000 gallon staging tank used for receipt of waste for up to 3 batches will be passively ventilated through a HEPA filter.

Process Additives

The DBVS will receive soil, glass additives, container refractory sand, and other material necessary to the vitrification process. Soil will be used to form the matrix for the vitrification process. Vitrification aids such as graphite, boron, and zirconium can be used to initiate melting and increase glass performance (waste retention).

Waste Feed Preparation

Prior to starting the vitrification process, the waste feed material will be mixed with soil and additives and dried to approximately two percent moisture content. The mixer/dryer will be heated by steam from an onsite boiler. The dry material transfer system will be equipped with weigh stations to control the amount of material being added to the mixer/dryer. The design capacity of the mixer/dryer is 2,640 gallons (10,000 L) and the nominal cycle time is between six and eight hours. During the mixing/drying cycle the unit will be operated under a

vacuum.

Vitrification Container Preparation

The waste containers will be a steel box approximately 10 feet high by 8 feet wide and 24 feet long. Prior to waste being added to the container the box will be lined with insulating board, sand, and a layer of castable refractory which will face the waste material. A layer of melt-initiating graphite and soil will be placed over the castable refractory in the bottom of the container. A steel lid with attached electrodes will be sealed to the box, using bolted flanges and a refractory gasket, prior to waste being added. The lid contains several ports for waste material addition, electrode connections, venting, sampling, and introduction of post-vitrification materials. All connections to the lid will be mechanically sealed. In addition the waste transfer connections will be equipped with shutoff valves to prevent spillage of material as the chute is attached to and removed from the port. Each connection port will be equipped with secondary containment and spilled material recovery provisions during material transfer, melting and cool down. The container-filling operation is performed under negative pressure and exhausted out the vent port to the OGTS.

In-Container Vitrification

The waste mixture from the mixer/dryer will be placed into the vitrification container through ports in the sealed box lid. Electrical power will be applied to the electrodes, vitrifying the container contents via resistive heating. Ambient air, filtered through a HEPA filter, is injected to cool the vitrification offgases and provide thermal protection for the sintered metal filters. Both "bottom-up" and "top-down" melting can be conducted during testing. Top-down melting is conducted by applying power to the electrodes only after all waste materials and process additives have been placed in the container. Bottom-up melting begins melting with a shallow layer of material in the container and continues as more material is added until the desired depth of melt is obtained.

Post-Vitrification Container Handling

After vitrification has been completed the container connection to the OGTS will be maintained, and clean fill materials will be added to fill cavities around the electrodes and cover the top of the vitrified waste to minimize headspace in the container. Sampling of the vitrified waste, radiation surveying, and external decontamination can be conducted after initial cooling has been completed. Sampling of the melt will be conducted as required by a coring process through a port in the side of the container. Temporary storage of up to 50 treated waste containers will be located at the Test and Demonstration Facility.

Offgas Treatment System

The offgas treatment for the DBVS operations will include the following:
Particulate and gaseous emissions from waste receipt;
Particulate emissions from process additive receipt, storage, and transfer;
Particulate and gaseous emissions from mixer/dryer;
Particulate and gaseous emissions from waste container filling and vitrification;
Particulate emissions from waste container topoff after vitrification.

Mixer/Dryer Offgass emissions will be partially treated for moisture removal using a glycol-cooled condenser and mist eliminator prior to being routed to the OGTS downstream of the venturi scrubber.

The Offgas Treatment System shall consist of two sintered metal filters in series, a quencher, venturi scrubber, and mist eliminator system. Dilute sodium hydroxide will be injected in both the quencher and venturi scrubber to reduce hydrogen chloride and other acid gas emissions. Scrubber offgases will pass through an additional condenser and mist eliminator, with drainage from those units routed to the scrubber recycle tanks. An offgas heater, two banks of HEPA filters (in series), and a carbon filter will follow the mist eliminator. A polishing filter will be installed downstream of the carbon filter. Based on results from Phase l a larger selective catalytic reduction unit can be added or an additional SCR unit added in series. An optional packed tower scrubber may be used.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.40E-03	Alpha - 0	6.87E-02	Am - 241	4.82E+00
Am - 243	1.37E-04	B/G - 0	4.24E+00	Ba - 137 m	2.23E+04
C - 14	3.76E+01	Cd - 113 m	8.88E+01	Cm - 242	9.18E-03
Cm - 243	7.16E-04	Cm - 244	7.16E-03	Co - 60	2.10E+01
Cs - 134	2.09E-01	Cs - 137	2.36E+04	Eu - 152	3.96E+00
Eu - 154	9.65E+01	Eu - 155	7.95E+01	H - 3	1.09E+02
I - 129	3.47E-01	Nb - 93 m	1.80E+01	Ni - 59	4.20E+00
Ni - 63	3.89E+02	Np - 237	6.69E-01	Pa - 231	6.25E-03
Pu - 238	1.48E-01	Pu - 239	7.26E+00	Pu - 240	1.11E+00
Pu - 241	6.91E+00	Pu - 242	4.90E-05	Ra - 226	2.25E-04
Ra - 228	6.78E-02	Ru - 106	7.24E-05	Sb - 125	3.98E+01
Se - 79	5.02E-01	Sm - 151	1.68E+04	Sn - 126	3.04E+00
Sr - 90	8.70E+03	Tc - 99	1.80E+02	Th - 229	1.77E-03
Th - 232	6.60E-03	U - 232	1.03E-02	U - 233	4.21E-02
U - 234	3.73E-02	U - 235	1.56E-03	U - 236	9.91E-04
U - 238	3.54E-02	Y - 90	8.70E+03	Zr - 93	2.46E+01

4) All filled waste containers maintained in waste container storage area shall have an installed NucFil HEPA filter (or equivalent), with a manufacturer certified removal efficiency of 99.97%.

5) Excavation of contaminated soil shall follow the requirements of ALARACT Demonstration 5, "Demonstration for Soil Excavation (Using Hand Tools)". Mechanical excavation using earth moving equipment is allowable and will follow controls equivalent to ALARACT 5. If underground equipment requires removal, the requirements of ALARACT 15 "Demonstration for Size Reduction of Waste Equipment for Disposal", shall be followed. WDOH shall be notified when equipment requiring removal is encountered.

6) The annual possession quantity for contaminated soil shall be tracked on a WDOH approved excavation log.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 6.70E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed activities involve transitioning the PFP Complex to a state of low-risk, low-cost, long-term surveillance and maintenance pending final disposition. All work would be performed in accordance with the approved radiological control procedures and as low as reasonably achievable (ALARA) program requirements as implemented by the project radiological control manual, as amended. These requirements would be carried out through the activity work packages and associated radiological work permits.

This activity includes deactivation of buildings and also includes deactivation of systems no longer necessary once stabilization and storage activities and planned legacy hold-up removal have been concluded; removal/disposition of equipment/components; contamination characterization and reduction/mitigation; packaging plutonium holdup material meeting waste acceptance criteria; maintaining and operating muffle furnaces, as needed, for removed plutonium holdup material; and demolition of radiologically contaminated, non-process ancillary buildings.

This activity also includes deactivation activities or activities to prepare and place a facility in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program while being protective of personnel, the public, and the environment until demolition of former processing and material storage buildings occurs. Deactivation activities would include those actions foreseeably necessary for implementation of the proposed action, such as associated transportation activities, waste removal and disposal, and award of grants and contracts. Specific actions could include the following work involving the potential for radioactive contamination:
- Draining and/or de-energizing systems as appropriate.
- Stabilizing contaminated areas (e.g., with fixatives, sealants, paint).
- Stabilizing or removing gloveboxes, process equipment, tanks, piping, fume hoods, and support equipment.
- Removing fencing and paved parking areas adjacent to facilities.
- Installing alternate environmental monitoring, surveillance, and safety components (e.g., lighting, fencing) if required.
- Removing/packaging radioactive (including equipment calibration sources and laboratory standards) and hazardous materials and waste, including stabilization and/or removal of asbestos, and removal, cleanup, and disposition of polychlorinated biphenyls and other regulated materials and transportation to existing waste management facilities.
- Removing equipment and system components.
- Size-reducing process equipment for disposal as waste.
- Performing physical or chemical treatment processes (e.g., neutralization, solidification, filtering) to render a material less hazardous or to reduce the volume (such processes will not increase the potential release rates)..
- Decontamination to support the excess of surplus equipment.
- Removing excess combustible material.
- Disconnecting utilities, piping, and communication service systems (if the systems are not necessary to maintain required environmental monitoring or building safety systems), including associated excavation.
- Ensuring adequate freeze and heat protection.
- Stabilizing, reducing, combining, or removing waste materials at outdoor locations within the PFP Complex (such processes will not increase the potential release rates provided in this NOC).
- Sealing cracks, gratings, and openings to the building exterior, and repairing roofs.
- Conducting general housekeeping activities (e.g., vacuuming, sweeping, dusting) in areas where radiological contamination is not anticipated (e.g., radiological buffer area) but could be encountered.
- Removing or reducing radioactive or hazardous contamination from facilities and equipment by washing,

heating, chemical or electrochemical action, mechanical cleaning, or other similar techniques.
- Removing residual plutonium holdup material, which might remain throughout the PFP Complex after stabilization activities described in the PFP EIS have been completed; packaging residual plutonium holdup meeting waste acceptance criteria for shipment to an onsite waste management facility, or thermally stabilizing material in muffle furnace operations and packaging for storage in existing PFP Complex vaults.
- Designing and executing changes to utility service systems and/or utility structures necessary to place a facility in surveillance and maintenance, pending demolition.
- Conducting final process operations to stabilize or eliminate residual operational materials or effluents, such as final process runs; cleaning of vessels, valve pits and pipe trenches; installation and operation of small evaporators; flushing piping systems; removal or replacement of filters; and other similar closeout actions.
- Demolishing non-process ancillary buildings.
- Deactivation activities will require actions to provide for continued routine maintenance, repair, and replacement-in-kind of operating portions of PFP.

Other actions include:
- Remove residual plutonium from gloveboxes, filterboxes, equipment, piping, ductwork, and the building surfaces and package for disposition to onsite or offsite disposal facilities.
- Remove internal equipment from gloveboxes and building equipment/system components and package for disposition to onsite or offsite disposal facilities.
- Decontaminate gloveboxes, filterboxes, ductwork, and equipment to less than transuranic levels if possible.
- Remove gloveboxes, filterboxes, ductwork, and equipment and package for disposition to onsite or offsite disposal facilities.
- Decontaminate or fix contamination on building interior and exterior.
- Disconnect utilities and services not necessary for monitoring.
- Perform radiological and chemical characterization in preparation for dismantlement.

In preparation for the proposed transition activities, housekeeping, assays, preventive maintenance, minor decontamination, and reactivation of glovebox access ports would occur.

See additional process description in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 9.00E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241	1.50E-01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 238	5.10E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239	7.80E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 240	5.20E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 241	1.50E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Co - 60	Cs - 137	Np - 237
Pu - 238	Pu - 239	Pu - 240	Pu - 241	Pu - 242
Sr - 90	U - 233	U - 234	U - 235	U - 236
U - 237	U - 238			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The proposed methods for removing residual contamination from equipment/systems and for removing equipment would be similar to methods in use today throughout the industry and the DOE Complex. Both direct contact and remote technologies/techniques could be used. General technologies/techniques include heating, crushing, size reducing, and cutting. These could involve laboratory analyses and nondestructive assay; chemical cleaning, brushing, washing, scrubbing, vacuum cleaning, and abrasive jetting; using nibblers, shears, circular saws; potentially a remote-operated laser; and other similar methods. It is expected that should new technology become available, such technology would be evaluated for application in the PFP deactivation activities, and could be used if no increase in the potential-to-emit described in this NOC would result.

5) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The PFP deactivation activities include the following:
   - Size reduction of equipment will be by mechanical means and may be accomplished by compaction, disassembling by use of wrenches, nibblers, shears, cutters, grinders, saws, or other similar methods. This equipment may be manually, hydraulically, pneumatically or electrically powered.
   - Decontamination methods include: Scraping, sweeping, chemical cleaning, brushing, washing, scrubbing, scabbling, grinding, vacuum cleaning, strippable coatings, washing using wet rags, spraying, abrasive jetting, low pressure and high pressure wash using water and/or chemicals cleaners, use of fixatives and/or physical removal of contamination by use of mechanical means such as chipping or cutting. The application of fixatives for contamination control would be accomplished via aerosol fogging, paint brush/roller, hand-held spray bottle, or an electric or pneumatic powered sprayer.
   - Containment of waste may be accomplished by coating the material with a fixative or placing the material in containers, bags and/or wrapping in plastic sheeting, utilizing adhesive tape, heat sealing or mechanical closure to prevent release of radiological contamination.
   - Miscellaneous mechanical processes that could be used to support the proposed activity could include threading of piping, use of hot taps on piping, capping and plugging piping using threaded pipe components and expanding/compressive plugs or caps, drilling of holes in metal and concrete, core drilling concrete surfaces, installation of anchor bolts, installation and removal of bolts, installation of hose and tubing connectors, compression fittings, installation and removal of pumps, agitators and process control filters.

6) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Excavation will take place in the PFP Complex to support site stabilization, isolating/blanking utilities, fence removal/installation/relocation, and soil sampling/cleanup. Access to underground piping and cable would be gained by use of a bucket-type excavator. Manual digging methods with shovels, picks, and rakes also could be used. Contaminated soil removed and covered during excavation activities would remain covered until replaced into the excavation or otherwise dispositioned (backfill would consist of the original material removed or ‘clean’ soil).

   If needed or chosen for use during these activities, the categorical NOCs for sitewide use of the guzzler, a portable

temporary radioactive air emissions unit (PTRAEU) exhauster, or HEPA filtered vacuum radioactive air emission unit could be used.
Wastes generated during deactivation would be packaged appropriately. Waste would be generated/packaged throughout the PFP Complex (i.e., in structures with registered stacks, in non-HEPA filtered structures, or outdoors), resulting in filtered releases and/or diffuse and fugitive emissions. Wastes could be placed in various containers such as plastic bags, metal drums, and standard waste boxes. These wastes could be transferred to other locations within the PFP Complex for interim storage and/or repackaging before subsequent transport to approved locations/facilities pending final disposition.

If necessary, personnel decontamination activities would be conducted in the decontamination trailer (DOE/RL-2003-42).

7) The total abated emission limit for the Diffuse/Fugitive due to general activities is limited to 4.8E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the potential-to-emit for this emission unit is limited to 4.8E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
8) The total abated emission limit for the Diffuse/Fugitive due to the decontamination trailer is limited to 4.5E-06 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this emission unit is limited to 4.5E-06 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
9) The total abated emission limit for the Diffuse/Fugitive due to excavation is limited to 5.5E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the potential-to-emit for this emission unit is limited to 5.5E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
10) The total abated emission limit for the Diffuse/Fugitive due to Fuel De-inventory is limited to 7.0E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the potential-to-emit for this emission unit is limited to 7.0E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).
11) Decontamination Trailers

This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

This activity is approved to provide decontamination of personnel who have been contaminated with radioactive material. Initial decontamination activities would take place at the location of discovery. If additional decontamination is warranted, personnel would be transferred to the decontamination trailer.

Decontamination activities allowed to be performed at the decontamination trailer include the removal and packaging of contaminated clothing and isolation/removal of skin contamination.

- Before transport of personnel to the decontamination trailer, appropriate measures shall be taken to contain potentially dispersible contamination. To the extent practicable, contaminated clothing would be removed and disposed. Any remaining contamination would be isolated by bagging, taping, or other appropriate means.

- Inside the trailer, any additional contaminated coverings (e.g., coveralls, modesty clothing) would be removed, as appropriate, and packaged (e.g., plastic bags) for disposition. Various means to reduce/remove skin contamination would be used as appropriate. For small areas of contamination, scrubbing with soap and water or chemical cleaner would be used. For gross contamination, shower(s) would be used, followed by scrubbing(s).

All potentially radiological contaminated liquid shall be collected and contained in a catch tank located beneath the decontamination trailer.

The general chemical and physical processes associated with decontamination activities in the decontamination trailer consist of the following:

- On the identification of the need for additional decontamination of personnel, affected individuals would be escorted to the decontamination trailer.

- As appropriate, contaminated clothing, coverings, and/or articles would be removed, packaged, and dispositioned in accordance with the applicable facility waste handling procedures.

- Personnel decontamination processes might include various methods or combinations of cleaning agents and/or chemicals. For example: soap and water; premoistened toweletts, shaving cream-type foam decontamination agents for facial areas; removal of hair; and abrasive soaps for toughened skin surfaces (e.g., hands and feet).

- Spent decontamination solutions would be transferred from the decontaminated liquid holding tanks and containerized (e.g., packaged in absorbents in drums or placed in drums and carboys) and transported to existing facilities on the Hanford Site for disposal.

- Periodic maintenance inspections of the decontamination trailer are allowed to be performed without containment or portable exhausters.

The decontamination trailers vent directly to the atmosphere. As many as two additional decontamination trailers may be installed to support PFP deactivation.

12) Fuel De-Inventory

This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

PFP will repackage fuel assemblies and/or fuel pins into storage and/or transport containers for staging at PFP. These containers would be loaded via crane operations onto trucks for transport either to storage onsite or to appropriate offsite facilities pending final disposition. Fuel assemblies and/or fuel pins could be mechanically handled by transferring directly to containers (emissions would be considered as diffuse and fugitive if work conducted in locale providing potential for unfiltered emissions). Fuel pins could be transferred to glovebox(es) (emissions discharging through the 291-Z-1 or 296-Z-7 stacks) where they would be size reduced (using bolt cutters or equivalent means) and placed into a container. The pins/containers could be subjected to NDA at any point(s) during repackaging activities.

Minor alterations (e.g., removing interior walls, installation of temporary scaffolding) to the 234-5Z Building would be necessary to support fuel de-inventory operations.

13) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Stabilization/deactivation/demolition activities of the following ancillary buildings and structures:

234-ZB, Construction Forces Quonset Hut: Miscellaneous storage for construction forces; no apparent radiological concerns.

Construction forces shed: Miscellaneous storage for construction forces; no apparent radiological concerns.

234-ZC, Waste Drum Storage Facility: Loading dock for waste drums and special nuclear material containers; contains a Radioactive Material Area and a Fixed Contamination Area and is labeled "Contact Radcon".

2715-Z, Oil/Solvent Storage Building: Paint shop (paint, oil, solvent, and drum storage); no apparent radiological concerns.

2731-Z, PR Can Storage Building: Storage of empty flushed plutonium drums; there is a Fixed Contamination Area adjacent to the building.

2734-Z, Gas Cylinder Storage Shed: Gas bottle storage; no apparent radiological concerns.

2734-ZA, Gas Cylinder Storage Shed: Empty gas cylinder storage; there is a Fixed Contamination Area adjacent to

the building.

2734-ZB, Gas Cylinder Storage Shed: Breathing air cylinder storage; no apparent radiological concerns.

2734-ZC, Gas Cylinder Storage Shed: P-10 gas supply and P-10 and oxygen cylinder storage; no apparent radiological concerns.

2734-ZD, Gas Cylinder Storage Shed: Empty non-flammable cylinder storage; no apparent radiological concerns.

2734-ZF, Gas Cylinder Storage Shed: Standby gas bottle storage (not in use); there is a Fixed Contamination Area and a Radioactive Material Area adjacent to the building.

2734-ZG, Gas Cylinder Storage Shed: Nitrogen gas supply; no apparent radiological concerns.

2734-ZH, Gas Cylinder Storage Shed: Argon bottle supply (not in use); no apparent radiological concerns.

2734-ZJ, Liquid Nitrogen Storage Pad and Tank: Liquid nitrogen storage tank; no apparent radiological concerns.

2734-ZK, Gas Cylinder Storage Shed: Gas bottle storage for acetylene, argon, and propane.

2734-ZL, Hydrogen Fluoride Facility: Hydrogen fluoride gas bottles and supply piping (not in use); potentially internally contaminated systems within the facility; up to 500 dpm/100 cm2 has been detected in the supply lines in the past.

PPSL Office Annex: There is a potential for contamination in areas that will be uncovered.

MO-834, -839: Mobile office buildings with lunchrooms and offices; no apparent radiological concerns.

Connex Boxes: Miscellaneous storage of maintenance supplies, filters, hardware and components, and oils; unless used for radioactive material storage, there are no apparent radiological concerns.

Construction Forces Laydown Yard: Miscellaneous hardware and components; no apparent radiological concerns.

2735-Z, Bulk Chemical Storage Tanks; the overflow tank is posted as "internally contaminated Systems within".

241-ZB, Bulk Chemical Storage Tank: This tank was used for supplying NaOH to 241-Z. The entire tank is painted as having fixed contamination.

2902-Z, Elevated Water Storage Tank and Tower: No apparent radiological concerns.

2904-ZA, Liquid Effluent Monitoring Station.

2904-ZB, Liquid Effluent Monitoring Station.

Abandoned Steam Line in North Corner (in Isolation Zone): No apparent radiological concerns.

STABILIZATION/DEACTIVATION/DEMOLITION ACTIVITIES

All work will be performed in accordance with the approved radiological control methods and as low as reasonably achievable (ALARA) program requirements. These requirements shall be carried out through the activity work packages and associated radiological work permits.

Roofs and walls of the permanent buildings and structures will be removed to slab with the foundation remaining. Utilities will be isolated where required and will involve a minimal amount of excavation. As appropriate, connex boxes and existing materials in laydown areas will be recycled, reused, or disposed.

Demolition methods will be selected based on the structural elements to be demolished, remaining radionuclide contamination, location, and integrity of the structures. Demolition methods could include use of an excavator with a hoe-ram, a hydraulic shear with steel shear jaws, concrete pulverizer/breaker jaws, cutters, or mechanical/power saws. Heavy equipment could be used to demolish permanent structures. Heavy equipment such as a track-mounted excavator with bucket and thumb attachment could be used to demolish the walls and roofs of the structures. As appropriate, dust suppressants shall be used.

Once the structure is brought completely to the ground, heavy equipment such as a front-end loader and the excavator can be used to load the debris into disposal transport trucks (e.g., roll on/roll off boxes or dump trucks). Potentially, disturbed areas would be leveled and stabilized.

If used during these activities, the sitewide Guzzler(tm), a portable temporary radioactive air emissions unit (PTRAEU) exhauster, or high-efficiency particulate air (HEPA) filtered vacuum radioactive air emission unit would be used in accordance with the latest revisions of the NOCs ["Categorical Notice of Construction for use of the Guzzler Vacuum Excavation System for Radiologically Limited Activities on the Hanford Site" or 'Guzzler NOC', DOE/RL-96-75 and DOE/RL-97-50 respectively].

Minor amounts of excavation might take place in the vicinity of the permanent structures to support site stabilization and isolating/blanking utilities. Access to underground piping and cable would be gained by use of an excavator. Manual digging methods with shovels, picks, and rakes also could be used. Contaminated soil removed during excavation activities will be covered until replaced into the hole or otherwise dispositioned.

Excavation activities will be monitored and evaluated. The sitewide Guzzler could be used when evidence of low levels of soil contamination is provided. Backfill will be made with the original material removed or brought in 'clean' soil.

14) The following controls shall be used during the stabilization/deactivation/demolition activities.

1. Health physics technician (HPT) coverage would be provided, as necessary, during all deactivation and excavation activities.

2. Ventilation systems, for the structures that exhaust through registered stacks with HEPA filtration, would be operational during transition activities as practicable. An exception includes shutting down a ventilation system for a short period of time to allow fogging operations or sampling.

3. The existing monitoring systems for the registered stacks would be operational during transition activities.

4. Appropriate controls such as water, fixatives, covers, containment tents, or windscreens would be applied, if needed, as determined by the Radiological Control organization. Soil removed and covered during excavation activities would remain covered until replaced into the excavation or otherwise dispositioned.

5. After leveling, the soil surface radiological contamination levels would be verified to be acceptable per Radiological Control organization guidelines. If contamination is present above identified levels, the soil would be removed and containerized for disposal or covered or fixed to provide containment of the contamination, consistent with radiological work procedures in effect at the time.

6. As appropriate, before starting deactivation activities (such as isolating utilities and piping or dismantling the exhaust system), removable contamination in the affected area(s) would be reduced to ALARA. Measures such as decontamination solutions, expandable foam, fixatives, or glovebags also could be used to help reduce the spread of contamination.

7. If a guzzler, PTRAEU, or HEPA filtered vacuum radioactive air emission unit is used, controls as described in the sitewide guzzler NOC, DOE/RL-96-75 or DOE/RL-97-50, as amended and licensed, would be followed.

8. Field surveys during excavation would identify localized areas of contamination. If contamination levels over 2,000 dpm alpha/100 cm2 [i.e., a ‘hot spot’ (of a few square meters or less) of high alpha surface contamination area] are exceeded, additional surveys would be conducted on the perimeter of the ‘hot spot’ to verify the localized

nature. A separate evaluation of the activity against the assumptions of this NOC would be documented to file prior to the activity being performed to ensure overall approved contamination levels are not exceeded.

9. The controls specified in the applicable RWP for the decontamination operations will be considered ALARACT for the decontamination trailer activities.

15) The expected frequency of personnel contamination requiring the use of the decontamination trailer is estimated to be less than 10 times per year. DOH shall be notified if that number is exceeded in any calendar year.

16) All personnel decontamination operations activities shall be conducted under the auspices of radiological control technicians.

17) Radiological surveys during personnel decontamination operations (e.g., smears and hand-held radiation monitoring measurements on the interior/exterior of the decontamination trailer) are also approved as periodic confirmatory measurement (PCM) for this activity. Survey data shall be maintained as part of the air emissions record and will be available for inspection upon request.

18) Air movers fitted with HEPA-like filters or HEPA Vacs that are used in a manner where the effluent is exhausted to an approved filtered and monitored air space (existing stack or PTRAEU) are not considered as separate emissions units nor as contributing separate release factors so far as estimating PTE for the existing stack or PTRAEU .

19) Air movers fitted with HEPA filters (testable) or HEPA Vacs that are used in a manner where the effluent is exhausted to an occupied air space (1) within the same structure comprising a fugitive emission unit, (2) confined by an effectively closed structure, and (3) has air monitored for personnel protection to assure radioactive airborne contamination within the air space is maintained within standard air purifying respirator (APR) mask protection limits (per 8-hour shift), are not considered separate emission units. Work space air monitoring will withdraw samples as near to the workers as possible without interference with workforce.

20) The assumed PTE is based on a relatively large source term (i.e., assumes one percent of inventory available for diffuse and fugitive emissions). The factor of 100 is addressed for each category of abatement practices or devices as described below.

- Radiological control practices for highly contaminated items or equipment (e.g. glovebox) would involve either wrapping and/or the application of a fixative (e.g., spraying the internals of the glovebox).
- In the case of wrapped items, operational experience with bag-out of highly-contaminated equipment at PFP has demonstrated an abatement factor of well above 100.
- In the case of application of fixatives, particulate material at PFP has been demonstrated to become agglomerated; thus reducing the potential to be released. Operational experience at has shown that applying fixatives provides an abatement factor of well above 100.
- The application of air movers or vacuum devices not under existing NOCs (i.e., guzzler, PTRAEU, or HEPA filtered vacuum radioactive air emission units) would involve use of high-efficiency or HEPA-type filtration as a minimum. This assures the abatement factor of 100 is conservative for these devices.

21) For purging activities, use of a stand alone vacuum pump fitted with a Nuc-Fil metal HEPA filter is allowed, with the control that the filter flow through the system is limited not to exceed the filter rating. Confirmatory measurement of low emissions will be based on radiological technician field survey of either the down stream side of the HEPA filter or at the outlet of the vacuum pump.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.60E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

This consolidated T-Plant license supersedes all radioactive air licenses for 291-T-1.

a. This approval subsumes those activities approved in three previous license approvals, retains/revises the specific conditions and limitations of those approvals, and replaces them as the radioactive air license for T-Plant:

i. AIR 03-1208 (NOC ID # 445, "Storage in T-Plant Complex of Sludge from K-Basins")
ii. AIR 01-1010 (NOC ID # 499, "T-Plant Complex Fuel Removal Project")
iii. AIR 02-704 (NOC ID # 500, "Entering and Characterizing of the 224-T Facility Process Cells")

b. With additional conditions and limitations provided herein, this approval also extends to new activities discussed in the NOC application "Radioactive Air Emissions Notice of Construction for Consolidated T Plant Operations", DOE/RL-2004-50, Rev. 0, September, 2004, described briefly:

i. Receipt, Storage, Treatment, and Load out of Contact-Handled and Remote-Handled Transuranic (TRU) and Transuranic Mixed Waste (M-91Initiative)
ii. Treatment (in addition to storage) of K-Basin Sludge from the North Load out Pit (NLOP)
iii. Such activities considered routine at T Plant as are described in succeeding conditions.

Activities a)i through a)iii may emit radioactive air through 291-T-1. Additionally, activity a)iii may emit to the 200 Areas Diffuse & Fugitive emission unit and to Portable Temporary Radioactive Air Emission Units.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.20E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.78E-04
Beta - 0	5.49E-05

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) A. Entry/Characterization of 224-T Process Cells:

A1) (Deleted)
A2) All work covered by this NOC must be completed by December 31, 2005.
A3) (Deleted)
A4) (Deleted)
A5) HPT coverage shall be provided during all cell entries and excavation activities.
A6) (Deleted)
A7) When a HEPA Filtered Vacuum Radioactive Air Emission Unit (HEPA VAC) is used, the conditions, controls, monitoring requirements and limitations of the latest approved revision of the HEPA VAC Notice of Construction shall be required.
A8) (Deleted)
A9) Approved activities for the Entry/Characterization of 224-T Process Cells are:
A9a) Approval extends to entry of the 224-T Facility to determine the condition and contents of the facility's cells, tanks, and vessels, as described below: A containment tent shall be erected outside each access door. The containment tent shall consist of two or more chambers, where the inner chamber shall surround the cell door and the outer chamber shall function as an airlock. Alpha and beta continuous air monitors (CAM) shall monitor each chamber and shall run continuously whenever the cell door is open. The inner chamber shall be fitted with a Type I portable temporary radioactive air emissions unit (PTRAEU) exhauster to provide air flow and contamination control in the containment tent. The exhauster shall be run intermittently to control radiological conditions, at the direction of the field work supervisor in collaboration with the health physics technician (HPT). The containment tent shall be isolated from the cell (door closed or otherwise blocked) before operating the exhauster. The Type I PTRAEU shall be used in accordance with the conditions, controls, monitoring requirements and limitations of the latest approved revision of the PTRAEU NOC (DOE/RL-96-75).
A9b) The following characterization activities are allowed in the cells and/or containment tent:
A9b1) Establishing radiological conditions/map (i.e., dose rates, smearable and fixed contamination, and airborne concentrations).
A9b2) Nondestructive data analyses (NDA) measurements of equipment.
A9b3) Collection of liquid and solid samples from open vessels, trenches, or sumps.
A9b4) Collection of ultrasonic data on vessels and piping.
A9b5) Taking photographs.
A9b6) Performing visual inspections.
A9b7) Removing flanges to collect samples from inside equipment or piping.
A9b8) Cutting or drilling into piping to collect samples with appropriate equipment such as a reciprocating saw, a circular saw, a hacksaw, a tri-tool, or an abrasive wheel.
A9b9) Minor decontamination activities such as wiping down, applying fixatives or sealants, etc., performed in the cell or in the containment tent.
A9b10) Decontamination to reduce dose rates or remove contamination for personnel safety, to remove characterization equipment brought in, or to remove incidental loose equipment or waste found in the cell.
A9b11) Size reduction and packaging and containerizing of incidental, loose equipment or waste found in the cell for removal and/or disposal.
A9b12) Removal of infiltrated water from the pit and the submerged tanks in C-Cell by pumping into tanker trucks for subsequent disposal.
A9b13) Characterization of the removed water prior to disposal.
A9b14) Investigation of the source of water infiltrated into C-Cell.
A9b15) Sealing and grouting of leaks causing water infiltration.
A9b16) A small amount of excavation is allowed to take place around the cell access doors to support installation of the containment tents. Manual digging methods with shovels, picks and rakes shall be used. Up to two cubic meters of contaminated soil may be disturbed.
A9b17) Within the containment tent, the weather barrier cover over the cell access door shall be removed. The integrity and functionality of the cell door shall be determined and as a result the door may be removed and replaced with another door. Any other physical barrier that limits access to the cell also shall be removed.
A9b18) (Deleted) (WAC 246-247-040(5))

5) Actions to assure quality of periodic confirmatory measurement shall be as follows:
(1) Implementation of quality checks supporting the periodic confirmatory measurements. These checks shall assure that the emissions measurements are sufficient to verify low emissions.
(2) (Deleted)
(3) An annual calibration will be performed on the existing sample flow meter or

an annual function check will be performed if the flow meter is replaced by either a rotameter or a magnahelic gauge.

(4) The effluent samples will be collected on standard (very high efficiency particulate air) sample filters.

(5) The laboratory sample analysis will meet the requirements of Appendix B, Method 114(3); and

(6) The following items shall be documented in a NESHAP Quality Assurance Project Plan or other documents.

(i) The sample collection and analysis procedures used.

(ii) The quality control program for evaluating and tracking the quality of the periodic confirmatory measurement data against preset criteria. The quality control program should include, where applicable, a system of replicates, spiked samples, split samples, blanks and control charts. The number and frequency of such quality control checks shall be identified; and

(iii) The sample tracking system to provide positive identification of samples and data through all phases of the sample collection, analysis, and reporting system. Sample handling and preservation procedures to maintain the integrity of the samples during collection, storage, and analysis. (WAC 246-247-040(5))(WAC 246-247-075(3))(WAC 246-247-075(6))(WAC 246-247-075(13)).

6) After backfilling, the soil surface radiological contamination levels shall be verified to be less than 5,000 dpm/100 cm^2 beta/gamma and less than 100 dpm/100 cm^2 alpha. If contamination is present above these levels, the contaminated soil shall be removed and containerized for disposal or covered or fixed to provide containment of the contamination. (WAC 246-247-040(5))

7) All activities involving radioactive materials shall be conducted in accordance with radiation control procedures approved in accord with applicable QA program. (WAC 246-247-040(5))

8) Appropriate excavation controls such as water, fixatives, covers, or windscreens shall be applied, if needed, as determined by the contractor's Health Physics organization. Spoil piles containing contaminated soil shall be segregated from the clean soil. Containerizing soil for disposal may also be performed. (WAC 246-247-040(5)) (WAC 246-247-060(5))

9) If a Portable/Temporary Radioactive Air Emission Unit (PTRAEU) is used, the conditions, controls, monitoring requirements and limitations of the latest approved version of the PTRAEU Notice of Construction shall be required. (WAC 246-247-060(5)) (WAC 246-247-080(7))

10) Periodic confirmatory measurements (PCM) for the diffuse and fugitive emissions shall be performed and shall consist of the radiological surveys from the soil excavation activities. Compliance shall be demonstrated by showing that actual emissions are inherently less than the estimated emissions, which are based and calculated from the same contamination levels.

    If a PTRAEU or a HEPA filtered vacuum radioactive air emission unit is used, PCM for emissions from those units shall be performed as required by the respective NOCs. (WAC 246-247-040(5)) (WAC 246-247-080(7))

11) The dose to the maximally exposed member of the public from unabated diffuse and fugitive emissions associated with excavation activities under this NOC shall not exceed 3.05E-03 mrem/year. For the purposes of dose estimation, gross beta air concentrations shall be conservatively assumed to consist entirely of Sr-90. Also for the purposes of dose estimation, gross alpha air concentrations associated with excavation under this NOC shall be conservatively assumed to consist entirely of Am-241. (WAC 246-247-040(5))

12) Total volume of contaminated soil disturbed in excavation for installation of containment tents shall not exceed two cubic meters. (WAC 246-247-040(5))

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.85E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 4.85E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The IDF will provide for disposal of two types of waste: LLW and MLLW. MLLW includes ILAW (WTP ILAW and Demonstration Bulk Vitrification System ILAW) and newly generated IDF operations waste.

MLLW and LLW cells in the IDF have equally sized ultimate capacities of 450,000 m3 (1.50x10+7 ft3) each, for the full IDF build out capacity of 900,000 m3 (3.18x10+7 ft3) (RPP 21633, “Preliminary Closure Plan for the Integrated Disposal Facility”). The IDF is expandable up to the full build out capacity. Expansion is dependant upon waste generation and waste generation forecasts. Leachate generation and associated management of the leachate are minimized by the expansion approach.

The forecasted volumes of MLLW from WTP ILAW and Demonstration Bulk Vitrification System vitrified ILAW waste processes were derived from ORP 11242, “River Protection Project System Plan” as follows:

•352,000 m3 (1.24x10+6 ft3) of ILAW packages

The remaining capacity will be used for the newly generated IDF operations waste and will act as a buffer for the two cells’ overall capacity, should it be required. The estimate for the MLLW generated from operation of the IDF is unknown; however, based on engineering judgment, the yearly amount would not be significant. The 450,000 m3 (1.59x10+7 ft3) capacity of Cell 1 and associated ILAW volumes are listed as information only. This value is used as a bounding volume for calculating the ILAW radiological air emissions.

Low-level radioactive waste is not spent nuclear fuel, transuranic (TRU) waste, high-level radioactive waste, byproduct material (as defined in Section 11e (2) of the Atomic Energy Act of 1954), or naturally occurring radioactive material (DOE 435.1, Radioactive Waste Management). Both contact handle and remote-handle LLW will be disposed at the IDF.

LLW Category I: This waste contains radioactivity not classified as spent nuclear fuel, TRU waste, or high-level waste. LLW Category I waste also meets the radionuclide limits for Category I waste defined in HNF-EP-0063 Hanford Site Solid Waste Acceptance Criteria. This waste may be comprised of either contact-handle or remote-handle waste considered low-activity waste with very low concentrations of long-lived radionuclides.

LLW Category III: This waste also contains radioactivity not classified as spent nuclear fuel, TRU waste, or high-level waste. In addition, it exceeds the radionuclide limits for Category I waste and meets the Category III limits defined in HNF-EP-0063. This waste may be comprised of either contact-handle or remote-handle waste considered moderate-activity to high-activity waste with low to moderate concentrations of long-lived radionuclides, in stabilized form that minimizes subsistence for a period of 1,000 yrs.

MLLW is a dangerous, extremely hazardous, or acutely hazardous waste that contains LLW. Contact-handle MLLW has a dose rate equal to or less than 200 mrem/h and contains radioactivity not classified as spent nuclear fuel or TRU waste. Remote-handle MLLW has a dose rate greater than 200 mrem/h and contains radioactivity not classified as spent nuclear fuel, TRU waste, or high-level waste.

Newly generated IDF operations waste is potentially dangerous, mixed, or LLW generated from the operations

of the IDF that could include, personal protective equipment, rags, waste material from the maintenance of equipment or vehicles, and waste generated at the leachate waste treatment facility that is returned to the IDF for disposal.

The packages for waste shall meet applicable federal transportation regulations under Title 49, Code of Federal Regulations (49 CFR) container requirements for the hazard class/division of the waste, except that packaging for onsite transfers under an approved package-specific safety document might be allowed where cost or technical constraints make the use of a U.S. Department of Transportation (DOT) compliant package unfeasible. Outer containers shall be in good condition, with no visible cracks, holes, dents, bulges, pit or scale corrosion, or other damage that could compromise container integrity, in compliance with WAC 173-303, "Dangerous Waste Regulations." Minor external surface rust that can be sanded or brushed off will be acceptable. Containers having some pit or scale corrosion could be acceptable for storage provided the integrity of the container is confirmed.

MLLW generated from IDF operations will consist of 208 liter drums, medium boxes, small boxes, long equipment containers, and other containers. MLLW is defined as dangerous or hazardous waste in WAC 173-303, and therefore should be disposed in Cell 1.

LLW will be shipped primarily in 208 liter drums, 322 liter drums, other drums, MB-V boxes, medium boxes, small boxes, and other containers. LLW is not a dangerous or hazardous waste as defined in WAC 173-303, and therefore should be disposed in Cell 2. However, because the volume of remote-handle LLW is expected to be small, remote-handle LLW may be disposed in Cell 1 along with remote-handle MLLW. This would avoid the need to set up remote handling operations in both Cell 1 and Cell 2, and will provide greater flexibility for LLW disposal operations in Cell 2.

WTP – ILAW: MLLW includes the low-activity waste fraction of the Hanford Site tank waste that is immobilized in a glass matrix at the WTP.

Other ILAW Streams – Demonstration Bulk Vitrification System: MLLW that contains the low-activity fraction of the Hanford Site tank waste immobilized in a glass matrix is produced by the Demonstration Bulk Vitrification System.

ILAW Containers and Packaging: The ILAW package shall be compatible with crane lifting and movement. The package shall be equipped with lifting and other handling apparatus designed to allow safe lifting, movement, and stacking of the packages when fully loaded. The package shall maintain its integrity during handling, transportation, and lifting during disposal at the IDF.

The WTP ILAW packages are stainless steel cylinders that have been filled with vitrified low-activity waste, which is physically similar to molten glass, then sealed and cooled. These packages will be remote-handled. The Demonstration Bulk Vitrification System containers, also known as vitrification boxes, are filled with material similar to the material in the ILAW packages. The ILAW and Demonstration Bulk Vitrification System packages will be disposed in Cell 1.

The IDF consists of an expandable, lined landfill in a series of near-surface disposal cells that will be developed in phases located in the 200 East Area on the Hanford Site. The landfill will be divided lengthwise into two distinct cells, Cell 1 for disposal of MLLW and Cell 2 for disposal of LLW. The IDF is designed to provide an approved disposal facility for the permanent, environmentally safe disposition of ILAW, newly generated IDF operations waste and LLW that meets the environmental requirements and is approved by the DOE and the State of Washington, Department of Ecology (Ecology).

The IDF is designed for ILAW package transportation, receipt, unloading, emplacement in a disposal cell, and periodic backfill of the disposal cell. Also included are receipt, unloading, emplacement, and periodic backfill of Demonstration Bulk Vitrification System containers, newly generated IDF operations waste, and LLW from Hanford Site sources. In the initial phase of the IDF, the volume of remote-handle LLW is projected to be very small. Rather than set up a separate remote-handle operation for this small volume of LLW, remote-handle LLW may be placed in the cell with remote-handle MLLW.

Disposal cells are installed in a sequential manner and are aligned within the disposal site in a north-south orientation to minimize impact to the aquifer beneath the site. The cells have separate leachate collection, handling, and storage systems to maintain waste separation.

Two cells will be constructed in the first phase of the IDF, Cell 1 (west half) and Cell 2 (east half). Each cell is approximately 3.2 hectares (8 ac) in size, and when fully developed, the completed IDF will occupy approximately 25 hectares (62 ac) Subsequent phase development of the IDF will connect to the southern edge of Cells 1 and 2 such that the bottom grades are continuous between cells.

Support facilities, such as changing rooms, a lunchroom, and offices, will be provided for IDF personnel. Changing facilities for male and female personnel will be furnished with lockers, showers, restroom facilities, benches, and both clean and dirty laundry storage. The building also will contain office space and a control room, and is planned to be a radiologically clean facility.

ILAW: The ILAW packages will be transported from the WTP and Demonstration Bulk Vitrification System to the IDF by the onsite, DOT compliant transportation system. The recommended mode of transport is a commercially available tractor/trailer combination capable of hauling ILAW packages in a DOT compliant, shielded overpack. The configuration required will depend on the total weight and weight distribution relative to the axles to insure the axle load limitations for roadway use are not exceeded.

LLW and MLLW: Various transport vehicles will be used to transport other wastes to the IDF. Commercially available tractor/trailer combinations typically will be used for LLW. LLW will be transported from various locations within the Hanford Site. Container sizes and shapes will vary but are expected to be mostly rectangular or drums of standard sizes. The timing and frequency of delivery to the IDF will vary, depending on operations and waste generation rates from the facilities where these wastes are generated. Transport to the IDF site for disposal will be coordinated with IDF transport operations to avoid conflicts or disruptions to IDF transport schedules, which will take precedence.

Upon arrival at the IDF, the loaded transporter will proceed through the disposal site gate and stop at the receiving station. The receiving station will be provided by the operations contractor.

At the receiving station, the shipping documents will be verified and the packages will be inspected. The operation concepts for the arrival activity will include:

The truck driver will present shipping documents to facility operations personnel at the receiving station. A shift supervisor or quality control inspector will verify that the shipping documents are acceptable.

After shipping documents are verified and the transporter passes inspection, the loaded transporter will be released to travel to the full trailer staging area for cooling, as needed.

Cool-Down Staging Area – ILAW: When the ILAW packages are received for transportation, they may still be at elevated temperatures. Because of possible elevated temperature, operations restrictions will be in place during transportation and prior to disposal in the IDF. Once the ILAW package is received at the IDF, the full trailer will be staged in a designated area within Cell 1 over the bottom liner in a place where trailer storage will not interfere with other IDF operations. This area will be moved from time to time, to avoid interference with the waste disposal operations.

ILAW: After the ILAW package has cooled sufficiently, the trailer will be moved to an appropriate unloading position in Cell 1. Once in position, a crawler crane will be used to move the ILAW package from the transportation container into the designated disposal location within the disposal cell.

Periodically, after emplacement of approximately 81 ILAW package, the crawler crane must move to a new unloading station. Void-fill operations will be performed by a mobile crane after the crawler crane moves to a new unloading position.

LLW and MLLW: Unloading and placement of remote-handle MLLW and LLW will be done using a crane. Unloading and placement of contact-handle MLLW and LLW will be done using a crane or other appropriate equipment.

General Waste Placement and Layer Construction Procedures: The IDF configuration is based on four layers with a uniform height of 3.3 m (10.8 ft) (2.3 m [7.5 ft] ILAW package plus 1 m [3.3 ft] operations layer). Waste containers other than the ILAW packages will be variable height and will be placed in the 3.3 m (10.8 ft) high layers to achieve best use of space. Containers may be stacked on top on each other within each layer if adequate soil cover is provided over the containers. Additional waste container stability analyses will have to be done by the operations contractor to verify waste placement and backfill stability for stacked containers. Containers that have a height greater than the 3.3 m (10.8 ft) layer height will be allowed to project out of the top of the layer. In such cases, it may be necessary to mound cover soil around the individual projecting containers to provide sufficient cover for shielding until they are completely covered by subsequent layers.

Because of the large area available for waste disposal in each cell, flexibility to relocate filling operations to another area within each cell will exist if an event occurs that causes operations to temporarily halt placement of ILAW packages or other waste containers at the current working position. This will allow waste container placement to continue while the situation that caused the operations to cease is resolved.

ILAW: Two basic configurations were developed. Both make use of ecology block shield walls to shield the crane operator from exposure to the ILAW packages, with one using a temporary shield wall and the other using a permanent shield wall. Both of the basic ILAW package configurations include two variations. One variation is a grid pack arrangement of the ILAW packages and the other variation is a tight pack arrangement.

Temporary Shield Wall Configuration: The ILAW package configurations that use a temporary shield wall will require that cover soil be placed over and around the ILAW packages prior to removing the shield wall. This soil cover will have to include the side of the ILAW packages facing the temporary shield wall so that after the wall is removed, the soil will provide the shielding for equipment operators and other operations personnel.

Permanent Shield Wall Configuration: By leaving the ecology block shield wall in place, the wide area between the ILAW packages and the shield wall for the cover soil to slope to the ground can be eliminated. The ILAW package configurations that use a permanent shield wall will allow ILAW packages to be placed up close to the wall, thereby making better use of the available space in the landfill.

Grid Pack and Tight Pack Arrangements: With the grid pack array, the ILAW packages will be placed in a close packed square arrangement. The grid pack array consists of four packages in the array, which is square in shape with a base dimension of slightly over 0.6 m (2 ft). With the tight pack array, the ILAW packages will be placed in a close packed triangular arrangement. The tight pack array consists of three packages in the array, which is triangular in shape with an altitude dimension of approximately 0.5 m (1.5 ft).

LLW and MLLW: Packaging emplacement configurations will depend on opening size and volume of interstitial spaces between LLW and any MLLW containers from IDF operations, and on configuration of the containers and the placement of the containers relative to one another. The placement of the containers will be carefully planned to efficiently pack the containers into the smallest volume possible, and to avoid large interstitial spaces.

The general approach to calculating backfill quantities uses a volume of fill to waste ratio of 1.5 to 1.

Radiation exposure assessment evaluations have determined that 0.5 m (1.5 ft) of soil cover placed over the ILAW packages with a crane prior to operation of equipment on the cover soil will provide adequate radiation shielding to equipment operators. The surface of the initial 0.5 m (1.5 ft) layer will be smoothed and leveled

with a bulldozer to facilitate subsequent compaction and placement of the final lift.

After completion of the partial placement of the operations layer with the mobile crane, placement of the operations layer to the full 1 m (3.3 ft) depth will be completed using a loader, dump truck, bulldozer, and compactor. The specific movements and activities of earthmoving equipment will be based on disposal cell configuration plans and elevation monuments established prior to initiating a new layer.

Compaction of the initial 0.5 m (1.5 ft) of the operations layer and placement of the remainder of the operations layer will not take place in the active array in which packages are being placed. Rather, the remainder of operations layer placement will take place in the previous array of ILAW packages so that there will be a placed and partially covered array of ILAW packages in place to stabilize and support the bulldozer. In addition, compaction of the initial 0.5 m (1.5 ft) of operations layer should not take place until all the voids between the permanent shield wall and the ILAW packages have been filled, and the initial 0.5 m (1.5 ft) of the operations layer has been placed in the active array of ILAW packages to provide shielding from the ILAW packages for the bulldozer operator. Compaction of the first 0.5 m (1.5 ft) layer of cover soil placed by the mobile crane and smoothed by the dozer should be accomplished with a vibratory roller. The vibrations of the compactor will help to fill voids that may have occurred during interstitial space filling by promoting cover soil to flow into the voids. As cover soil is moved into the voids below, additional soil placement will be required to replace the migrating material. This material should be the same low moisture content, low fines content sand from the onsite soil source as that used for interstitial fill. The remaining thickness of cover fill, up to the full 1 m (3.3 ft) thickness, will be placed by a bulldozer operating on top of the layer and compacted with a vibratory roller. The soil for this upper layer should include a higher fines content of up to 25 percent, and should be placed and compacted at or slightly below optimum moisture content.

In general, the loader, which will be stationed at the soil stockpile, will fill a dump truck. The dump truck will deliver cover soil to a location near the package array to be covered. The bulldozer then will spread the soil over the package array to the full 1 m (3.3 ft) depth.

A water truck will be provided for compaction and dust control. The truck will be operated as needed to spray water for compaction and to suppress dust by driving to a location safe for the operator to spray water over the cover material being compacted. In addition to dust control and compaction within the trench, an operations dust control plan will be developed to cover other areas within the boundary of the IDF.

A temporary rain curtain may be used to control the amount of clean stormwater run-off that enters the leachate collection system. The rain curtain can be used in areas where no ILAW packages have been placed or in the areas where ILAW packages and the full 1 m (3.3 ft) operations layer have been placed. The rain curtain would be removed prior to placing additional waste in the area that it covered.

The Leachate Handling Systems shall be designed to segregate MLLW leachate generated in Cell 1 from the LLW leachate generated in Cell 2. The Leachate Handling System shall be designed to manage the leachate generated from a 25 year, 24 hour storm event collected over the entire footprint of the landfill.

The leachate handling system design shall also comply with the following technical requirements:

The landfill shall control water that contacts waste through physical barriers and collection through the leachate collection system. This system shall collect, pump, and store any water that migrated through the landfill and shall provide systems for loading leachate into transport trucks. Leachate meeting the treatment facility waste acceptance criteria shall be transported by truck for storage at the treatment facility. The leachate will then be transferred for treatment. Any leachate not meeting treatment facility waste acceptance criteria will be handled on a case-by-case basis and will be handled, stored, and disposed in accordance with federal and state regulations.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.50E+00	Am - 241	7.61E+05	Am - 243	1.39E+02
C - 14	2.08E+02	Cd - 113 m	9.64E+04	Cm - 242	5.22E+03

Cm - 243	2.33E+02	Cm - 244	3.05E+03	Co - 60	4.20E+05
Cs - 134	6.08E+06	Cs - 137	4.07E+06	Eu - 152	1.90E+04
Eu - 154	2.76E+06	Eu - 155	3.31E+06	H - 3	6.03E+05
I - 129	8.23E+02	Nb - 93 m	2.01E+04	Ni - 59	1.81E+03
Ni - 63	1.77E+05	Np - 237	8.16E+02	Pa - 231	5.98E+00
Pu - 238	1.23E+03	Pu - 239	4.34E+04	Pu - 240	6.12E+03
Pu - 241	2.40E+05	Pu - 242	7.69E-01	Ra - 226	1.52E+01
Ra - 228	4.77E+02	Ru - 106	1.18E+05	Sb - 125	2.93E+06
Se - 79	2.46E+03	Sm - 151	1.09E+07	Sn - 126	1.88E+03
Sr - 90	2.49E+07	Tc - 99	2.27E+05	Th - 229	5.14E+00
Th - 232	2.69E+01	U - 232	7.39E+02	U - 233	2.80E+03
U - 234	1.58E+03	U - 235	6.84E+01	U - 236	1.67E+01
U - 238	1.60E+03	Zr - 93	1.52E+04		

4) The following isotopes could be found in the Integrated Disposal Facility but will contribute less than 0.1 mrem/yr to the MEI, and represent less than 10% of the unabated PTE and less than 25% of the abated dose:

   Ag-108m, Ag-110m, Am-242m, Ar-37, Ar-39, Ar-42
   Au-195, Ba-133, Ba-140, Be-10, Be-7, Bi-207
   Bk-247, Ca-41, Ca-45, Cd-109, Ce-141, Ce-144
   Cf-249, Cf-250, Cf-251, Cf-252, Cl-36, Cm-245
   Cm-246, Cm-247, Cm-248, Cm-250, Co-56, Co-57
   Co-58, Cr-51, Cs-135, Cs-136, Es-254, Eu-150
   Fe-55, Fe-59, Fe-60, Gd-152, Gd-153, Ge-68
   Hf-175, Hf-181, Hg-203, I-125, K-40, Kr-85
   Mn-54, Mo-93, Na-22, Nb-91, Nb-94, Nb-95
   Nd-147, P-32, P-33, Pb-210, Pd-107, Pm-147
   Po-210, Pu-236, Pu-244, Rb-83, Rb-84, Rb-86
   Re-187, Ru-103, S-35, Sb-124, Sb-126, Sc-46
   Se-75, Si-32, Sm-147, Sn-113, Sn-119m, Sn-121m
   Sr-82, Sr-85, Sr-89, Ta-182, Te-121, Te-123
   Te-125m, Te-127m, Te-129m, Th-228, Th-230, Th-234
   Ti-44, Tl-204, Tm-170, V-49, W-185, Xe-131m
   Y-88, Zn-65, Zr-95

5) Twelve months of baseline data shall be collected from the near-field monitors prior to receipt of radioactive material at the IDF.
6) All waste shall be containerized and disposed of in closed containers, if a vent is required it shall contain a filter with a minimum efficiency of 99.97% when tested with 0.3 micron particles.
7) The Annual Possession Quantity shall be tracked on a WDOH approved log.
8) Monthly radiological contamination surveys shall be conducted of the soil cover and perimeter of the pit to detect any spread of contamination. Any soil contamination detected shall be reported to WDOH.
9) Water shall be used for dust suppression during the use of mobile cranes, dozers, and vibratory rollers, during placement and compaction of the cover soil.
10) Fixatives shall be supplied to contaminated soils and debris that will be left inactive less than 24 hours at the end of the work operations if the sustained wind speed is predicted during the next work shift is predicted to be equal to or greater than 20 mph.
11) Fixatives shall be applied to any contaiminated soil and debris that will be inactive for more than 24 hours.
12) Prior to receipt of radioactive material in the IDF facility a list and location of the near-facility monitors shall be provided to WDOH for review and approval. Power for a co-located ambient air sampler shall be provided for WDOH use at a monitoring station of WDOH choice.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.10E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 3.57E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The 241-AZ-101, 241-AZ-102, 241-AY-101, and 241-AY-102 and associated equipment shall be modified to allow for installation of waste retrieval systems and equipment, including the following major components.

New In Tank Equipment

• Two mixer pumps each in tanks 241-AZ-102, 241-AY-101, and 241-AY-102 for mobilizing the settled solids. Two mixer pumps were installed in tank 241-AZ-101 and permitted previously by WDOH through issuance of AIR-98-708. All of the pumps will be capable of pumping waste through each of two, horizontally opposed, discharge nozzles.

• A riser extension/spray wash system on top of each of the riser used for mixer pumps. The spray wash system will be used for future decontamination of the mixer pumps if they are removed from the tank.

• One transfer pump in each tank for the transfer of waste.

• New temperature probes for each tank.

• New decant pumps in the AY tanks, and associated transfer piping; to include a one time use hose-in-hose transfer line approximately 40 feet in length.

New Ancillary Equipment and Buildings

• Electrical power and instrument cables and other utility tie ins and/or upgrades (e.g., sanitary and raw water, and telecommunications).

• Tie-in to the existing dilution and caustic supply system, to bring waste properties into compliance with the feed specifications and to flush and preheat transfer lines. The dilution system will be capable of providing approximately 140 gallons per minute of pH adjusted water.

• New pit coverblocks.

• New water/diluent piping to and from the process pits.

• New process jumpers.

• Miscellaneous concrete pads for electrical and mechanical equipment.

• Chain link fencing and gates.

Removal, Repair, Decontamination and Demolition of Existing Equipment

• Removal/repair of transfer and/or mixer pumps, as necessary during the life of the facility.

• Removal and disposal of several thermocouple probes/instrument trees.

• Removal and disposal of several existing pumps and other miscellaneous equipment (e.g. slurry distributers and process jumpers).

If needed or chosen for use during these activities, the Regulated Guzzler, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of the NOC.

Soil Excavation

Soil will be excavated inside and outside the 241-AZ and 241-AY Tank Farms for the dilution piping that will tie-in to the existing AN Tank Farm caustic supply system and to remove soil in preparation for mixer pump foundations and miscellaneous equipment support structures, to remove soil around pits in preparation of core drilling, and for placement of control building foundations (as required). A total of approximately 6,000 cubic yards, per farm, could be excavated. Backfill will be made with the original removed soil or non-contaminated controlled density fill (sand, water and a small amount of cement).

Soil excavation activities inside the tank farm fence will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools). If contamination is discovered outside the tank farm fence, ALARACT 5 will be followed. Clean soil piles could be moved from one place to another within the tank farm with heavy equipment (backhoe, front-end loader, etc.). Soil excavation outside the tank farm fence in non-contaminated soil also could be performed with heavy equipment. The regulated guzzler also could be used as described in the NOC for use in the 241-A Tank Farm Complex.

Pipe Cutting and Welding

Any required cuts of contaminated piping will be made inside a glove bag using appropriate equipment such as a sawzall or tri tool. To perform a cut without a glove bag, the piping will be surveyed/smeared to verify removable contamination levels are equal to or less than 10,000 disintegrations per minute (dpm) per 100 square centimeters (cm2) beta gamma and 200 dpm/100cm2 alpha.

Welding might be necessary to join various pieces of equipment. If welding is necessary, welding will commence once removable contamination levels in the weld area are reduced to ALARA. The goal will be to achieve 1,000 dpm/100 cm2 beta gamma and 20 dpm/100 cm2 alpha or less.

If needed or chosen for use during these activities, a portable/temporary radioactive air emission unit and a HEPA filtered vacuum radioactive air emission unit could be used in accordance with the latest revisions of the NOCs.

Pit Work

Work to be performed in pits may include replacing existing sets of cover blocks with newly designed cover blocks, core drilling (equivalent of 100, 14-inch diameter holes for AZ Farm and 10, 14-inch diameter, holes for AY Farm), installing new nozzles and removing existing jumpers.

Pit access and work will be performed in accordance with ALARACT Demonstrations 6 and 14, TWRS ALARACT Demonstration for Pit Access, and TWRS ALARACT Demonstration for Pit Work. Activities not covered in these ALARACTs are described in the following.

If needed or chosen for use during these activities, a portable/temporary radioactive air emission unit and HEPA filtered vacuum radioactive air emission unit could be used in accordance with the latest revisions of their NOCs.

At the start of the pit work, the cover blocks will be lifted off and radiologically surveyed to determine an appropriate disposal method. New cover blocks will be installed when all work in the pits has been completed.

Core drilling could be performed and will occur below grade level, on the outside of the pit. The hole will be drilled from the outside to the inside, with the temporary pit cover in place. Nozzle installation generally will proceed immediately after the hole is completed. If immediate nozzle installation is not possible, the hole will be temporarily sealed with a plug, tape, or equivalent device, until the nozzle can be installed.

Installation of new nozzles in existing pits will take place in an open pit. All parts of the nozzle will be assembled ahead of time and will be lowered into position as a single unit. The piping in the back of the nozzle will be threaded through the hole (from the inside of the pit to the outside) and pulled tight into place from the outside of the pit. Grout will be used to secure and seal the nozzle into place. The front opening of the nozzle, inside the pit, will be fitted with a temporary cap/seal until a jumper is connected to the nozzle. Once the nozzle(s) is/are installed, the temporary pit cover will be replaced until other work inside the pit requires pit cover removal.

Removal of In Tank Equipment

Various in-tank equipment will be removed from the tanks to make room for the waste retrieval equipment, or to be replaced with equivalent equipment built to withstand the mixer pump jet forces. Removed long-length equipment will either be packaged in long-length contaminated equipment disposal containers or size reduced for disposal in accordance with ALARACT Demonstration 15, Tank Farm ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal. Equipment removal will be performed in accordance with ALARACT Demonstration 13, TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment. Activities not covered in this ALARACT are described in the following.

If needed or chosen for use during these activities, a Portable/Temporary Radioactive Air Emission Unit, and a HEPA Filtered Vacuum Radioactive Air Emission Unit may be used in accordance with the latest revisions of their NOCs.

Decontamination of removed equipment is not anticipated. The fewer decontamination activities undertaken, the less exposure possibilities there are to the worker and the environment. Contingency decontamination plans, however, are in place if needed. The most likely equipment to be decontaminated would be sections of the flexible receiver. Equipment removal will be performed in accordance with TWRS ALARACT Demonstration 13, Installation, Operation, and Removal of Tank Equipment.

In Tank Equipment Installation

Equipment installation will be performed in accordance with TWRS ALARACT Demonstration 13, Installation, Operation, and Removal of Tank Equipment.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	2.54E-07	Am - 241	2.56E+00	Am - 243	1.17E-03
Ba - 137 m	6.41E+00	C - 14	1.59E-04	Cd - 113 m	1.84E-03
Cm - 242	1.65E-02	Cm - 243	1.56E-04	Cm - 244	3.41E-02
Co - 60	4.32E-02	Cs - 134	1.02E-03	Cs - 137	3.07E+01
Eu - 152	3.44E-02	Eu - 154	8.30E-01	Eu - 155	3.96E-01
H - 3	1.52E-03	I - 129	1.56E-05	Nb - 93 m	9.23E-03
Ni - 59	4.46E-03	Ni - 63	4.11E-01	Np - 237	5.99E-04
Pa - 231	4.12E-06	Pu - 238	9.93E-03	Pu - 239	1.88E-01
Pu - 240	4.78E-02	Pu - 241	4.57E-01	Pu - 242	4.52E-06
Ra - 226	1.15E-04	Ra - 228	7.87E-06	Ru - 106	5.59E-05
Sb - 125	2.11E-02	Se - 79	3.33E-05	Sm - 151	2.65E+01
Sn - 126	2.65E-03	Sr - 90	6.54E+02	Tc - 99	5.64E-03
Th - 229	1.04E-05				

		Th - 232	4.76E-06	U - 232	3.16E-07
U - 233	9.99E-06	U - 234	2.21E-04	U - 235	2.66E-06
U - 236	6.92E-07	U - 238	1.52E-05	Y - 90	6.28E+02
Zr - 93	1.70E-02				

4) All pit access work shall be performed in accordance with TWRS ALARACT Demonstration 6, ALARACT Demonstration for Pit Access and TWRS ALARACT Demonstration 14, TWRS ALARACT Demonstration for Pit Work.
5) In-tank equipment removal and installation shall be performed in accordance with TWRS ALARACT Demonstration 13, TWRS ALARACT Demonstration for Installation, Operation, and Removal of Tank Equipment.
6) Pipe cuts shall be performed in glove bag when levels of removable contamination in the cut area are greater than 10,000 disintegrations per minute per 100 square centimeters beta/gamma and 200 disintegrations per minute per 100 square centimeters alpha.
7) Pipe cuts shall be performed using a sawzall or tri-tool or equivalent.
8) Soil shall be excavated in accordance with the requirements of ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools).
9) The number of pit entries will either be limited to 10 or the total radionuclide content of all pit entries shall be less than the Annual Possession Quantity, and shall be tracked on a WDOH approved log.
10) The Annual Possession Quantity shall be tracked on a WDOH approved log.
11) The average surface contamination within the 241-AZ-101 and 241-AZ-102 pump pits shall be limited to less than 1,000,000 dpm/100 square centimeters beta/gamma and 700,000 dpm/100 square centimeters alpha. This shall be tracked on a WDOH approved log.
12) When welding is performed removable contamination levels in the weld area shall be reduced to less than 1,000 disintegrations per minute per 100 centimeters squared beta/gamma and 20 disintegrations per minute per 100 centimeters squared alpha. The number of welds and associated contaminations levels shall be tracked on a WDOH approved log.
13) Work within glove bags shall stop if sustained wind speeds exceed 30 miles per hour.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 3.40E-05 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

cleaning Radiologically Contaminated Vehicles (RCVs) and/or radiologically contaminated components (e.g., radiator) of an RCV. A portable, commercially available, high-pressure, water/steam cleaning unit could be deployed to the location of the RCV/component, or the RCV/component (after appropriate precautions to isolate and contain smearable contamination) could be moved to some other location in the 200 Areas plateau before cleaning. Cleaning may also involve brushing, scrubbing, or other manual methods conducted in a manner to minimize airborne dust.

A RCV/component could be isolated with an engineered shelter over a basin. The basin could be a collapsible liner for collection of waste water. The shelter could be a galvanized steel tube framework with arched trusses and covered with polyester sheeting. Alternatively, the activity could be conducted without a shelter over the basin (i.e., open air) with reasonable operational controls (e.g., directing water/steam cleaning stream downward, concentrating stream on RCVs or components, using lowest possible pressure settings) being implemented.

A portable high-pressure, commercially available, water/steam washing unit could be used to clean the RCV/component. Personnel would direct the cleaning stream to areas of localized areas of contamination on the RCV/component. The RCV/component would be surveyed intermittently (e.g., hand-held field instruments, swipes, or dried sample analysis [for alpha] as necessary) to determine level of remaining contamination. This process would be repeated until sufficient decontamination is achieved, as determined by Radiation Protection personnel, to allow the RCV/component to be returned to service (i.e., no smearable contamination remains, and a fixed contamination level of no greater than 0.5 millirem/hour dose rate).

After decontamination to appropriate levels, the RCV/component would be removed from the shelter, if used, and basin. The RCV/component could be returned to service, or if necessary, appropriately packaged and disposed. Contaminated waste materials resulting from the cleaning processes, including waste water, will be packaged appropriately using standard procedures and dispositioned to approved storage or disposal. Activities could include solidification of liquid waste (such as absorbing liquids in tanks, containers; low-temperature [i.e., less than 100 degrees Celsius] evaporation) and subsequent transfer to appropriate on- or off site treatment/disposal facilities.

The shelter (if used) and basin would be surveyed at the end of the cleaning process to ensure appropriate radiological controls are in place. The shelter/basin would be decontaminated appropriately and maintained for future cleaning activities. If necessary, the shelter/basin could be packaged and disposed.

High-efficiency particulate air (HEPA) -filtered vacuums or portable/temporary radionuclide air emission units (PTRAEUs) may be used to support the cleaning activities.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 3.40E-05 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.50E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Alpha release rate based on Am-241. Any radionuclide might be present in the RCV cleaning activities. Am-241 is representative of the alpha-emitting radionuclides present in/on the RCV/component and would be typical in the wastestream created.			
B/G - 0	2.90E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Beta/Gamma release based on Cs-137. Any radionuclide might be present in the RCV cleaning activities. Cs-137 is representative of the beta-gamma radionuclides present in/on the RCV/component and would be typical in the wastestream created.			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) If a portable/temporary radioactive air emission unit (PTRAEU) or HEPA filtered vacuum is used, controls as described in the sitewide NOC, i.e., DOE/RL-96-75 or DOE/RL-97-50, and in the associated license would be followed.
5) The cleaning operations shall be performed in accordance with the controls specified in a radiation work permit (RWP) and/or operating procedures.
6) All activities shall be conducted under the auspices of radiological control technicians. Routine field surveys, including swipes/smears, shall be conducted. Fixatives, covers, or other standard measures shall be used to contain contamination.
7) Appropriate spill prevention procedures shall be in place to minimize the probability of a release of radioactive liquid waste to the environment, and to provide immediate cleanup of any liquid spills.
8) Low risk radiological activities (i.e., less than or equal to 100,000 dpm/100 cm^2 beta-gamma and less than or equal to 2,000 dpm/100 cm^2 alpha) will be completed under this NOC implementing the following controls:

   -- Pre and post-job surveys will be performed and maintained as records of low emissions.
   -- A basin will be erected to contain radioactive contamination.
   -- Splashguards will be installed to contain spray water, and ensure waste water is directed toward and collected in the basin.
   -- All radioactive contamination removed during the decontamination process shall be contained, packaged, or disposed of within the same day.
   -- The basin surfaces shall be maintained to less than 1,000 dpm/100 cm^2 beta-gamma and 20 dpm/100cm^2 alpha when not in use.

   For those activities considered medium risk radiological activities (i.e., greater than 100,000 dpm/100 cm2 to less than or equal to 1,000,000 dpm/cm2 beta-gamma and greater than 2,000 dpm/100 cm2 to less than or equal to 20,000 dpm/cm2 alpha), DOE will contact WDOH to discuss the additional controls that will be implemented for limiting radiological air emissions.

   This NOC will not be used for high risk radiological activities.

Emission Unit ID: 498

200 W-296P047-001

296-P-47

This is a MAJOR, ACTIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 21.00 ft. 6.40 m. Stack Diameter 0.50 ft. 0.15 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 80.68 ft/second. 24.59 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Heater	1	
	Demister	1	
	Prefilter	1	
	HEPA	2	2 HEPA filters in series
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114.	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a skid/mobile type portable exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities. The emission unit is a portable exhauster that operates intermittently.

This Emission Unit has 3 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Liquid Pumping and Enhanced Sluicing on Tank 241-C-106	AIR 06-642	7/5/2006	683

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.55E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 4.67E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The following actions:

Step 1:

- Fix and/or remove contamination and blown in soil/debris in the 241-C-06B heel pit in

accordance with ALARACT 4, ALARACT 6, ALARACT 14, and ALARACT 15.
- If necessary, a HEPA vacuum will be used in accordance with the sitewide NOC.
- Remove a heel pit pump out of riser R-13 in the 241-C-06B heel pit in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15, and ALARACT 16.
- Place conduit in a trench in accordance with ALARACT 5.
- Remove a thermoucouple out of riser R-14 in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15, and ALARACT 16.
- Install slurry pump for the sluicing operation in riser R-9, R-13 or R-14 in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.

Step 2:

- Fix and/or remove any contamination and blown in soil/debris in the 241-C-06C sluice pit in accordance with ALARACT 4, ALARACT 6, ALARACT 14 and ALARACT 15.
- If necessary, a HEPA vacuum will be used per the sitewide NOC.
- Remove the old sluicer and install new sluicer equipment in the R-3 riser, if needed, in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.

Step 3:

- Fix and/or remove any contamination and blown in soil/debris in the 241-C-06A pump pit in accordance with ALARACT 4, ALRACT 6, ALARACT 14 and ALARACT 15.
- If necessary, a HEPA vacuum will be used per the sitewide NOC.
- Remove the failed pump equipment out of R-9 and R-6 riser used for prior sluicing operation. in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.
- Install new sluicer equipment in the R-6, R-7, R-5 or R-9 riser, if needed, with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16, or use the existing project W-320 sluicing nozzle.
- Place an in-tank closed circuit television camera or television monitoring system in riser R-1, R-7, R-8 and R-14 in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.
- Install a new sluicer nozzle in R-7 or R-8 and remove an additional thermocouple in accordance with ALARACT 1, ALARACT 4, ALARACT 6, ALARACT 13, ALARACT 14, ALARACT 15 and ALARACT 16.

Step 4:

- Pump out remaining free liquid in the tank to the DST system through a pump installed in either riser R-9, R-13 or R-14 under passive ventilation in accordance with ALARACT 11.

Step 5: (applies only to the 296-P-47 emission unit)

- Sluice and pump the solids that become a slurry into the DST system using raw water (or recirculated 241-C-106 water) as the sluicing agent. This activity shall only be performed during operation of the 296-P-47 portable exhauster. The emission unit shall be sampled continuously with a shrouded probe. The sample location, shrouded probe assembly, transport line and sample collection shall be qualified in accordance with the requirements of ANSI N13.1-1999.

Step 6:

- After sluicing an "in tank vehicle" (ITV) could be used, if necessary, to collect the remaining tank contents to

be slurried through the sluicing pump to bring the tank contents down to <360 cubic feet in volume. This activity shall only be performed during operation of the 296-P-45 portable exhauster. The ITV shall be installed through a riser in accordance with ALARACT 1 and ALARACT 13. The ITV will be used to push the remaining tank material into the center of the tank to be pumped. The ITV shall not move faster than 2 mph. If big chunks of sludge need to be broken, the tracks or plow blade could be used to break up the material so it can be pumped. The "water cannon" on the ITV shall not be used in tank 241-C-106. Upon removal of the tank the ITV shall be decontaminated with in the tank using ultrasonic decontamination and then go through a spray ring.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	2.31E-03	Am - 241	2.25E+02	Am - 243	2.20E-03
Ba - 137 m	1.66E+04	C - 14	5.73E-02	Cd - 113 m	1.77E+01
Cm - 242	3.56E-01	Cm - 243	2.81E-02	Cm - 244	6.03E-01
Co - 60	1.40E+00	Cs - 134	7.07E-02	Cs - 137	1.75E+04
Eu - 152	3.28E+00	Eu - 154	2.67E+02	Eu - 155	1.89E+02
H - 3	1.55E+00	I - 129	1.70E-02	Nb - 93 m	1.28E+01
Ni - 59	6.53E+00	Ni - 63	6.08E+02	Np - 237	2.62E-01
Pa - 231	3.37E-03	Pu - 238	3.50E+00	Pu - 239	9.10E+01
Pu - 241	1.85E+02	Pu - 242	1.65E-03	Ra - 226	4.10E-04
Ra - 228	3.15E-05	Ru - 106	1.69E-05	Sb - 125	2.83E+00
Se - 79	2.88E-01	Sm - 151	1.19E+04	Sn - 126	2.14E+00
Sr - 90	2.82E+05	Tc - 99	3.14E+00	Th - 229	2.43E-05
Th - 232	2.54E-03	U - 232	5.40E-04	U - 233	2.18E-03
U - 234	4.31E-02	U - 235	1.84E-03	U - 236	7.66E-04
U - 238	4.40E-02	Y - 90	2.82E+05	Zr - 93	1.44E+01

4) All ductwork connecting the tank to the exhauster shall be pressure tested in accordance with the requirements of AG-1 Section SA.

5) HEPA filters shall be individually tested in-place at least annually to the requirements ASME N510 Section 10, with a minimum efficiency of 99.95%.

6) Monthly checks shall be performed on the exhaust duct to ensure there is no deterioration of the ductwork or leakage at the connections points.

7) The curie value for Pu-239 identified in the Annual Possession Quantity also includes contributions from Pu-240.

8) The emission unit hours of operation shall be tracked on a WDOH approved log and shall not exceed 2880 hours of operation.

9) The emission unit shall be operational during all sluicing activities.

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.10E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 5.82E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The activities performed at the 244-CR Vault Facility, ER-153 and/or 244-A Lift Station include:

Work Area Preparation:

- Miscellaneous work including equipment delivery, movement, set up and maintenance in the general work area around the 244-CR Vault Facility.

- Construction and take down of open top containment tents (bullpens) over the facility vault area.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs).

- Installation of portable 1,000 cubic feet per minute (cfm) exhauster.

- Removal and/or installation of vault foam covering.

- Application of fixative at pit interior.

- Temporary power installation.

Facility/Interim Stabilization Work:

- Operation of PTRAEU for bullpen ventilation.

- Removal and/or installation of pit covers.

- Inspection of pits, vaults, and tanks.

- Removal and disposition of excess equipment and waste in pits, risers, and tanks.

- Decontamination activities.

- Measurement of liquid level and sludge levels in tanks and sumps.

- Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance.

Facility Equipment Activities:

- Installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment).

- Modifications, maintenance, and/or isolation and sealing of existing risers, pits, vaults and incoming and/or outgoing piping (drain and transfer lines) from 244-CR Vault or connected facility.

Excavation:

- Installation of permanent power to 244-CR Vault Facility.

- Installation/Operation of Passive Breather Filter Assembly.

Waste Transfer and Support Activities:

- Operation of 1,000 cfm portable exhauster at 244-CR Vault.

- New waste transfer system, waste staging/consolidation.

Miscellaneous activities shall include:

- Construction and take down of open top contaminant tents over the facility vault area.

- Open top containment tents (bullpens) shall be constructed over the facility pit area to prevent potential airborne contamination from the effected work area to the environment. Two bullpens shall be erected around two instrumentation pits at the 244-CR Vault. Upon completion of the first pit's work, the bullpens shall be relocated to the other two pits and their work will be completed.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs)

- A Portable/Temporary Radioactive Air Emission Unit (2,000 cfm) or units (1,000 cfm each) shall be installed to ventilate the bullpens during activities that require work in the pits, cells and tank vault area prior to performing waste transfer activities. One thousand cfm PTRAEUs, if used, shall be directly connected to individual bullpens, while a 2,000 PTRAEU if used, shall be connected to two bullpens. Movement and installation of the PTRAEU can be performed to facilitate ventilation for the four vaults of the 244-CR Vault Facility. The PTRAEU shall operate intermittently (during work activities) and will be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

A portable 1,000 cfm exhauster shall be installed to ventilate the 244-CR Facility vaults and tanks during waste transfer activities. This exhauster shall operate intermittently to support waste transfer and support activities and shall monitor air emissions. The exhauster shall be piped into the existing 244-CR facility ventilation system upstream of the existing (non-operating) exhauster, 296-C-05 and HEPA filters. The existing 244-CR Facility exhaust system shall be isolated and not used. Tie in of the 1,000 cfm exhauster to the existing exhaust system shall be in accordance with ALARACT 16, Tank Farm ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components. After the waste transfer is completed, the exhauster shall be removed in accordance to the requirements of ALARACT 16.

A foam covering has been placed over the 244-CR Vault area to prevent intrusion of precipitation and snowmelt. In order to gain access to the pit cover (metal) plates or concrete cover blocks, sections of the foam shall be removed, packaged, transported and disposed of. ALARACT 4, Tank Farm ALARACT Demonstration for Packaging and Transportation of Waste shall be used to properly disposition the removed foamed covering. Radiation control technicians (RCT) shall monitor the affected work area while the foam covering is being removed. The foam covering shall be replaced after work is complete, as part of intrusion prevention measures completed by the project following waste transfer activities.

A fixative shall be applied either with the pit covers on. The fixatives shall be applied to pit surfaces through a port in the pit cover using a 'whirly' or by fogging. A hand held sprayer is used to apply fixatives to local areas within the pit when the pit cover is off.

Temporary power installation will be limited to meet the needs to support the work described in this NOC. Temporary installations can be removed when no longer needed.

Operation of PTRAEU for Bullpen Ventilation.

Ventilation of the bullpens during pre waste transfer tank activities and prior to the installation of the 1,000 cfm portable exhauster shall be accomplished with the use of PTRAEU(s). The PTRAEU(s) shall be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

Concrete cover key blocks are removed first, and only blocks necessary to perform intended work are removed. Consideration is given to sliding blocks to minimize the number of blocks to be removed. As discussed in the following, pit covers are decontaminated and/or covered with fixative before removal. Pit Covers are raised a minimum distance to safely allow a radiation protection technician to perform a dose rate and contamination survey. Pit covers are wrapped in plastic and set down in a specially prepared lay-down area. On completion of activities, the plastic wrap is removed from the pit covers and the pit covers are re-installed in their original position and orientation. Post-job surveys are performed.

Inspections, such as visual, video, or nondestructive inspections, shall be performed with pit covers in place (for pit with access ports) or removed. The pit cover design, historical inspection information, and ALARA information shall be used to determine whether the inspection shall be performed manually (with pit cover removed) or remotely with a camera and the pit covers in place.

Excess equipment and debris currently located in the 244-CR vault pits, and in-tank equipment shall be removed to accommodate new waste transfer equipment and piping. Excess equipment shall be replaced with replacement in kind equipment, as necessary.

To facilitate the removal and disposition of these items, size reduction and decontamination activities shall be utilized. Size reduction activities shall include cutting up unusable equipment (usually jumpers/blanks) remotely, using hydraulic shears or low revolutions per minute portable band saws. All size reduction activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal.

Disposition of excess equipment and waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Removable contamination in the accessible portions of the pit is reduced to less than 100,000 disintegrations per minute/100 square centimeters beta/gamma and 2,000 disintegrations per minute/100 square centimeters alpha by washing, or an approved fixative is applied to pit surfaces. Initial washing with a low pressure (125 pounds per square inch gauge), or high pressure (3,000 pounds per square inch gauge) 'whirly' is accomplished through a port in the pit cover blocks. Additional decontamination activities (with the cover block off) include the use of chemicals, peel and strip paints, water, or manual scrub brushes.

After a section of equipment has been washed it shall be pulled into plastic sleeving and sealed by horse tailing and taping.

Liquid and sludge levels are determined using zip cords or other appropriate means that shall not disturb the waste more than zip cords.

Sampling activities shall be performed in the tank and sump area of 244-CR Vault by way of risers in the riser pit in accordance with ALARACT 7, "Tank Farm ALARACT Demonstration For Tank Waste Grab Sampling." Radiological controls for riser preparation/opening listed in ALARACT 1, "Tank Farm ALARACT Demonstration for Riser Preparation/opening," shall be followed.

The waste transfer processes shall transfer waste from tanks CR-011, CR-001, CR-002 and CR-003 and sumps within 244-CR Vault Facility to a staging tank within the 244-CR Facility. The transfer system to consolidate the waste from individual tanks consists of above ground piping of a hose in hose with leak detection at each tank's pit being utilized to support the transfer line. Mixing and dilution of the waste may take place at the receiving tank or within the transfer lines directly. The transfer system may include equipment pump skids and

shall include appropriate connections to the transfer lines to accommodate chemical and water addition to the 244-CR Facility tanks and mixing prior to transfer to the designated Double Shell Tank (DST).

Before entry into a pit, an evaluation is made by engineering and/or operations personnel to determine the transfer routing configuration after pit work is complete. On removal of cover blocks, a visual inspection of pit contents is made to verify present configuration.

Tools such as impact wrenches, T-bars, and pike poles are used to repair or replace pit equipment. All equipment coming out of the pit is wrapped in plastic or otherwise contained or decontaminated for reuse or disposal. Removable contamination on the outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha before removal from the bullpen. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Jumper work shall be preceded by flushing the appropriate transfer lines with water. Jumper work is accomplished remotely, using a crane to maneuver heavy equipment and parts. Installation, disconnection, and/or changing jumpers/blanks are accomplished by slowly loosening the jumper/blank at the connector head. The required jumper/blank is positioned and tightened to the new connector heads. If the process line or equipment being worked on is connected physically to other unnecessary transfer lines, or if the line is to be left unused, a cap, blank, or equivalent is installed on all open nozzles not connected to jumpers.

Leak testing of newly installed jumpers/blanks shall be performed with pressurized water before initiating waste transfers. Occasionally, a jumper leak test is performed during the initial stages of the transfer. In either case, cover blocks shall be in place before leak testing is performed.

Cutting up unusable pit equipment (usually jumpers/blanks) is accomplished remotely using hydraulic shears or low revolutions per minute portable band saws. Cutting activities shall be performed in the bullpen or in glovebags. The goal shall be to maintain a contamination level equal to or less than 1,000 dpm/100 cm2 beta gamma and 20 dpm/100 cm2 alpha, during cutting activities, but may not always be attainable. RCT coverage shall be provided. Should contamination levels exceed 1,000-dpm/100 cm2 additional sleeving, or use of a glove bag shall be used and/or decontamination activities performed to lower the levels in accordance with ALARA. Welding (if required) shall commence once removable contamination levels in the cut and weld area are reduced to ALARA. Size reduction (cutting) activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal. To ensure that water intrusions or potential residual waste in piping are eliminated from the facility, existing piping and transfer lines to and from the 244-CR Vault facility shall be blanked, grouted, or sealed. The isolation includes activities such as installing plugs, caps, blind flanges, or grouting. Isolations may occur at the 244-CR riser pit area or at the other end of the pipe in a diversion or valve box, at the ER153 or the 244A Lift Station.

Modifications to existing in-route pits, vaults and piping shall be required to establish the waste transfer route or to ensure the integrity of the system prior to waste transfer. These modifications can include but are not limited to, removal of existing parts and replacement with like parts, installation of new jumpers, or blanking off of equipment. When possible existing blanks shall be utilized. Pipe cutting shall be minimized in compliance with ALARA. If it is determined that the installation of a new above ground transfer line would be the best engineering method to establish a waste transfer route, a temporary transfer route shall be established following existing design and installation procedures. This temporary route will be either above ground or in a shallow trench. If a trench is required excavation shall be performed as described under that activity in this NOC.

Pit drains are checked using water from a tanker truck or another source. Water at a flow rate of approximately 20 gallons per minute is added to a pit drain line and subsequently monitored to verify the pit drains are free of restrictions. At times it might be necessary to pump the DCRT that receives the water after the water passes through the pit drain if the volume of test water approaches the capacity of the DCRT.

Either flushing with water and/or using a retrieval tool to remove debris from the drain are used to clear plugged drains. Water supply valves are opened slowly to minimize splashing. Pressures above 50 pounds per square inch gauge require approval from the engineering organization. Cover blocks shall remain in place and work is accomplished through a penetration in the cover block.

The waste transfer operations involve the pumping of liquid waste that contains dissolved solids. These solids can precipitate out of solution anywhere in the transfer path and cause blockage. If blockage is detected in the system, flushing the lines with hot water is necessary. The hot water is introduced to the system to be flushed through a pressure manifold by piping connected directly to a jumper or nozzle. These operations shall be performed with the pit covers on.

To ensure that water intrusions are eliminated from the facility, a foam covering will be placed over the 244-CR Vault area after completion of isolation activities.

Other techniques to free blockages could include pressurization, temporary jumpers, and hydraulic scouring. All piping connections are designed to be leak tight and the pit cover block shall be installed before pressurization. If pressurization beyond that obtained from the tank farms water system or supply truck (i.e., approximately 150 pounds per square inch gauge) is necessary to remove blockage, an engineering evaluation shall be performed to determine the maximum allowable pressure for operation.

Excavation:

Excavation may be required to support installation of ventilation, electrical support and waste transfer equipment. Modifications to existing in route pits, vaults and piping and/or to support installation of new waste transfer lines from the 244-CR Facility to the identified DST may require excavation. Soil excavation activities will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), and will follow the radiological controls specified in that ALARACT.

Any Guzzler excavations in contamination areas will be performed in accordance with the December 18, 1998, WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use. Excavation of contaminated soils using heavy equipment shall follow the requirement of Site Wide Guzzler NOC.

Soil excavation outside the tank farm fence also may be performed with heavy equipment.

Soil will be excavated around the 244-CR vault facility to install new piping, equipment slabs, and new waste transfer system support equipment. It is expected that about 1,000 cubic yards may be excavated, with about 600 cubic yards from inside the tank farm. Backfill shall be from the original removed soil or non-contaminated controlled density fill (sand, water and a small amount of cement).

Current power within the 244-CR Vault Facility is limited. To provide power for new equipment installed under the project, the existing power distribution system shall be upgraded. Upgrades shall involve modification to the existing Motor Control Center (MCC), installation of equipment control panels, and installation of new conduits.

A compliant passive breather filter shall be installed to ventilate the 244-CR Facility vaults and tanks once waste transfer activities are completed. The passive breather filters shall be installed at two locations in the 244-CR facility. A 1,000 cfm HEPA filter shall be installed at the air inlet assembly (previously attached to the evaporative cooler) and a 200 cfm HEPA filter shall be installed upstream of the existing HEPA filter pit. Butterfly valves in the ventilation system just downstream of where the filters shall be installed can be shut to prevent any emission from the facility during filter installation. Installation of the filters shall be performed in accordance with ALARACT Demonstration 16, TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components.

During waste transfer and support activities the tank and vault air space shall be actively ventilated by a temporary ventilation system. The temporary ventilation system shall consist of a portable exhauster that shall

be equipped with compliant monitoring and sampling equipment. The purpose of the exhauster is to ensure potential airborne contamination from the pits, cells, or process tanks, is not being released to the environment. Operation of the 1,000 cfm portable exhauster is considered an emissions control.

New waste transfer system, waste staging/consolidation.

The planned transfer system can utilize some existing equipment along with installation of new piping and equipment at 244-CR, ER-153 and/or 244-A Lift Station. Maintenance of the transfer system may be required during the waste staging/consolidation. Equipment, which may require on going maintenance includes but is not limited to leak detection and pump system equipment. The waste can be staged/consolidated in one or two of the 244-CR Facility tanks (CR-001, CR-002, CR-003 and CR-011) prior to transfer to a DST.

The following controls are used for the pit activities:

General Controls:

1. Pre-job and post-job radiation surveys are performed by radiation protection technicians. Radiation work permits specify permissible occupational radiological limits during activities. Radiation control technicians' survey and release equipment, inspect and approve required containment, and provide radiological surveys to verify compliance to radiation work permit limits.

2. Pit work is shut down (or not initiated) when sustained wind speeds exceed 25 miles per hour as measured in the field and/or reported by the Hanford Meteorological Station.

3. Fixatives shall be applied inside the pit (with cover blocks on or off) or accessible portions of the pit decontaminated to less than 100,000 disintegrations per minute/100 square centimeters beta-gamma and 2,000 disintegrations per minute/100 square centimeters alpha.

4. When cover blocks are removed, a fall protection handrail is installed. This handrail is draped in plastic forming a contamination barrier. The plastic extends to the top of the pit and is taped or sealed at the top of the pit. Decontamination of the containment barrier is conducted as required by the job specific radiation work permit.

5. Radiation control technicians monitor the affected work area when the vault foam covering is removed, when jumpers and equipment are being removed from risers and nozzles, and when risers are entered for sampling of tanks and sumps. Jumpers removed from the pit are drained of free liquid and decontaminated or contained before removal. The outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha. If these limits are exceeded, surfaces shall be decontaminated. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

6. A bullpen designed to minimize the top opening shall be used. Pit covers or cover blocks will be removed as necessary. If the bullpen is to be left unattended at any time, a temporary cover is placed over the pit or the pit covers or cover blocks are reinstalled. Two tents shall be erected over two pits. Upon completion of the work in the first two 244-CR Facility instrumentation pits, the tents will be relocated to the other 244-CR facility instrumentation pits.

7. PTRAEU(s) shall actively ventilate the bullpens during activities that require work in the pits (after removal of the cover blocks) to control radiological releases. The PTRAEU(s) shall operate intermittently and shall be operated in accordance with the latest revision to the WDOH approved. Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

8. A compliant exhauster skid shall ventilate the process cells and tanks during waste transfer activities. The exhauster shall maintain a negative pressure under the cover blocks and prevent contaminants from reaching the environment. The exhauster skid shall be connected to the existing exhaust ductwork with rigid or flexible

ductwork.

9. The 1,000 cfm exhauster shall be equipped with a two-stage HEPA filter, which meets the requirements of ASME AG-1, Section FC and shall be tested annually to requirements of ASME N510. The HEPA filters shall have an efficiency of 99.95 percent for 0.3-micron median diameter. Each filter housing shall meet the applicable sections of ASME N509 and the test requirement of ASME N510. The exhaust stack houses a Generic Effluent Monitoring System (GEMS) that contains an air velocity probe and the air sampling probe.

10. The breather filter shall consist of a housing that contains a HEPA filter, an outlet screen, and a small seal loop. Air flowing to and from the 244-CR Facility shall pass horizontally through the filter and vertically through the downward-facing exit weather hood. Seal loops, installed in the exhaust lines, are designed as a safety feature to prevent unlikely accident in which an over pressurization occurs when the HEPA filter is isolated for occasional (infrequent) maintenance.

Specific Controls include:

-Installation of portable 1,000 cfm exhauster shall use ALARACT 16.

-Removal and/or installation of vault foam covering - ALARACT 4.

-Application of fixative at pit interior - see General Controls.

-Temporary power installation - ALARA.

-Operation of PTRAEU for bullpen ventilation - Latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

-Removal and/or installation of pit covers - General Controls.

-Inspection of pits, vaults, and tanks - General Controls.

-Removal and disposition of excess equipment and waste in pits, risers, and tanks - ALARACT 15, and ALARACT 4.

-Decontamination activities - General Controls.

-Measurement of liquid level and sludge levels in tanks and sumps - General Controls.

-Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance - ALARACT 7 and ALARACT 1.

-Facility Equipment Activities: installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment) - ALARACT 4, and ALARACT 15.

-Modifications, maintenance, and/or isolation and sealing of existing in route pits, vaults and piping (drain and transfer lines) to support and/or installation of new transfer lines - General Controls.

-Excavation - ALARACT 5, and/or WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use.

-Installation of permanent power to 244-CR Vault Facility - ALARA.

-Installation of passive breather filter assembly - ALARACT 16.

-Operation of a portable exhauster at 244-CR vault for ventilation - ALARA.

-New waste transfer system, waste staging/consolidation - General Controls.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	9.90E-01	Am - 241	5.00E+01	Am - 243	7.83E-03
Ba - 137 m	2.98E+04	C - 14	1.71E-01	Cd - 113 m	1.18E+01
Cm - 242	9.68E-01	Cm - 243	1.15E-01	Cm - 244	2.63E+00
Co - 60	8.23E+01	Cs - 134	1.06E-01	Cs - 137	3.15E+04
Eu - 152	2.73E+00	Eu - 154	3.56E+02	Eu - 155	3.22E+02
H - 3	2.20E+00	I - 129	4.71E-03	Nb - 93 m	6.88E+00
Ni - 59	4.41E+00	Ni - 63	4.33E+02	Np - 237	1.13E+01
Pa - 231	7.67E-04	Pu - 238	5.03E+00	Pu - 239	4.97E+02
Pu - 240	8.95E+01	Pu - 241	6.26E+02	Pu - 242	7.82E+02
Ra - 226	3.41E-04	Ra - 228	1.85E+00	Ru - 106	1.57E-02
Sb - 125	4.41E+01	Se - 79	1.64E+00	Sm - 151	6.06E+03
Sn - 126	2.59E+00	Sr - 90	3.04E+05	Tc - 99	2.02E+01
Th - 229	1.63E-02	Th - 232	3.10E+00	U - 232	3.97E-01
U - 233	1.52E+00	U - 234	9.99E-01	U - 235	4.20E-02
U - 236	2.53E-02	U - 238	3.58E-01	Y - 90	3.04E+05
Zr - 93	6.00E+00				

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.31E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.61E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The operation of the waste retrieval system(s) for the removal of radioactive wastes from all 149 Single Shell Tanks (SST) at the Hanford Site.

SALTCAKE DISSOLUTION WASTE RETRIEVAL SYSTEM

The saltcake dissolution waste retrieval system may be used to retrieve soluble saltcake waste. This method retrieves the soluble portion of the waste only, resulting in very few of the solids being pumped from the tank. The saltcake dissolution waste retrieval system deployed in the SSTs is for water, chemical agent, or catalyst liquid to be added to the tank using a variety of spray nozzles or "sprinklers". The approach is to sprinkle the waste surface with water, chemical agent, or catalyst liquid. The added water, chemical agent, or catalyst liquid must stay in contact with the saltcake for a long enough period of time for the brine to become saturated. Once the brine is saturated, it is pumped from the SST to a receiver tank, staging tank, storage DST or other staging/storage vessel associated with the supplemental treatment, packaging or disposal. Salt solution will be removed using the existing saltwell pump or other pump placed into the tank.

A tank not equipped with a saltwell pump, a transfer pump (progressive cavity, vertical turbine) can be installed and operated.

Remotely directable water distribution devices will be located in risers spaced as far apart as practical. A combination of spraying waster, chemical agent, or catalyst liquid to dissolve the saltcake can be used in conjunction with directing a flow of water or recirculating water at the waste to move it to the pump suction to allow the pumping of waste from the tank. Recirculated waste from the pump may be sent back to the tank as an alternative to using water to direct dissolution waste to the pump suction.

MODIFIED SLUCING WASTE RETRIEVAL SYSTEM

Modified sluicing can be used for some SST waste retrieval. Modified sluicing is the introduction of liquid at low to moderate pressures, not to exceed 1200 psi, and volumes into the waste. The liquid dissolves and breaks apart solid materials and suspends them in the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a receiver tank.

Modified sluicing introduces sluice liquid in a controlled fashion using multiple sluicing nozzles at varying pressures and flows, then pumps out the resultant waste slurry. This maintains minimal liquid inventories within the tank at all times. The liquids that could be used in modified sluicing include water, recirculated supernatant/water from the receiving Double Shell Tank, recirculated supernatant/water, chemical agent or catalyst liquid.

VACUUM WASTE RETRIEVAL SYSTEM

A vacuum waste retrieval system can be used for waste retrieval activities in the (SSTs). The vacuum waste retrieval system is introduced into the SSTs by means of an articulating mast system (AMS). The AMS has a horizontal reach and rotational capabilities of 360 degrees. The AMS has a retracted position and can be extended vertically. Air is mixed at the suction end of the AMS enabling the required vertical lift for the waste

to a topside receiver tank, batch vessel or a staging SST, storage DST, or other staging/storage vessels associated with supplemental treatment, packaging or disposal.

The AMS will be deployed through and attached to standard riser flanges that are available on the SSTs. Cameras can also be installed in other risers for in-tank viewing and control of the AMS.

For the 200-series tanks in the 241-C, 241-U, 241-B and 241-T Tank Farms a vacuum retrieval process tank, staging tank, staging SST, storage DST or other staging/storage vessel will be deployed. The receiver tank will receive waste in batches from whichever tank is connected into the vacuum retrieval system. The vacuum pressure used to draw up the waste from the tank to the receiver tank is relieved back into the SST being retrieved.

MOBILE RETRIEVAL SYSTEM

A Mobile Retrieval System (MRS) can be used to retrieve waste from some SSTs. The MRS consists of two in-tank systems. The first is a robotic crawler inserted through one riser the second is an AMS inserted through a second riser. The AMS retrieves the sludge from the tank using a vacuum with assisting pneumatic conveyance. The AMS vacuum tube has a horizontal reach and can be extended to the bottom of the tank. The arm rotates 360 degrees. The vacuum will be directed through the AMS in the tank to the end effector, which is in contact with the waste. The pneumatic conveyance-assisted vacuum retrieval system will draw the waste up through the vacuum to the waste vessel in the vessel skid in batches. The AMS is then valved out while the waste vessel is emptied and pumped out through the over ground transfer lines to a DST, a staging SST or other treatment/disposal options. When the waste vessel is nearly empty, the transfer line will be valved out and the AMS will be valved back in and another batch of waste will be removed from the tank. This process will be repeated until waste near the center of the tank is removed. The robotic crawler will be remotely controlled to move and/or wash waste toward the center of the tank.

The robotic crawler is equipped with a plow blade at the front for pushing/pulling wastes, a screw pump to jet wastes through a small nozzle towards the center of the tank, the ability to direct hot or cold water through the same nozzle to wash wastes off of in-tank equipment, dissolve waste agglomerations in the tank, and wash waste toward the center of the tank for removal.

Any new retrieval methods or changes to processes will need to be provided to WDOH in a revised NOC prior to implementation.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.99E+00	Am - 241	8.68E+03	Am - 243	3.39E-01
Ba - 137 m	4.26E+07	C - 14	6.25E+02	Cd - 113 m	4.95E+03
Cm - 242	1.97E+01	Cm - 243	1.80E+00	Cm - 244	1.90E+01
Co - 60	2.52E+03	Cs - 134	3.44E+04	Cs - 137	4.89E+07
Eu - 152	8.49E+02	Eu - 154	1.45E+04	Eu - 155	9.54E+03
H - 3	5.95E+03	I - 129	2.95E+01	Nb - 93 m	1.01E+03
Ni - 59	1.05E+02	Ni - 63	9.30E+03	Np - 237	9.50E+01
Pa - 231	1.25E+01	Pu - 238	1.65E+02	Pu - 239	3.17E+03
Pu - 240	5.36E+02	Pu - 241	4.80E+03	Pu - 242	3.34E-02
Ra - 226	1.27E-02	Ra - 228	1.15E+01	Ru - 106	1.22E-02
Sb - 125	1.73E+04	Se - 79	6.36E+01	Sm - 151	8.93E+05
Sn - 126	2.59E+02	Sr - 90	2.91E+06	Tc - 99	2.24E+04
Th - 229	4.20E-01	Th - 232	1.26E+00	U - 232	3.66E+00
U - 233	3.02E+01	U - 234	1.07E+01	U - 235	4.44E-01
U - 236	2.73E-01	U - 238	9.86E+00	Y - 90	2.91E+06
Zr - 93	1.25E+03				

4) A pre-operational NDA of the exhauster(s) HEPA filters and a post-operational NDA will be performed the first time each of the four waste retrieval methods (mobile retrieval system, vacuum retrieval, supernatant sluicing, and saltcake dissolution with supernatant) when placed into service. The post-operational NDA should occur after one cycle or phase of waste retrieval operation is completed, a method replaces another method during a cycle/phase or six months from the inservice date, whichever occurs first. The facility may opt to replace the exhauster's HEPA filters prior to placing a new waste retrieval method in service and eliminate the pre-operational NDA.
5) All ductwork connections shall have a radiological survey performed monthly to ensure ductwork connections are not degrading.
6) All ductwork shall be pressure tested in accordance with the requirements of ASME AG-1 Section SA.
7) All receiver tanks (including waste retrieval process tanks for tank TRU retrieval (stagging) SSTs, storage DSTs, or other staging/storage vessels, but not including batch vessel supporting vacuum retrieval) shall have active ventilation during waste receipt, unless alternative controls are documented and approved by WDOH.
8) All ventilation ductwork from the exit of the tank to the inlet of the exhauster filter housing shall be insulated.
9) During waste retrieval operations liquid shall be introduced through sluicing and saltcake dissolution nozzles at a pressure not to exceed 1200 psig, and the nozzle shall be at least five inches from the waste surface.
10) Each HEPA filter shall be in-place tested annually in accordance with the requirements of ASME AG-1 Section TA. HEPA filters shall have a minimum efficiency of 99.95%.
11) General WAC 246-247 technology standard exemptions justified and documented in RPP-19233, WAC 246-247 technology standard exemption justification for waste tank ventilation systems, may be applied to Phase II NOC retrieval exhauster operations.
12) Relative humidity shall be monitored, at least once a month, downstream of the heater and prior to the HEPA filters to ensure the air stream does not exceed 70% relative humidity.
13) The annual possession quantity shall be tracked on a WDOH approved log.
14) The differential pressure readings for the pre-filters and both stages of HEPA filters shall be monitored, recorded and trended daily. Action levels shall be developed and provided to WDOH for when actions will be taken to assure the pre-filters and HEPA filters will be operated within their design parameters.
15) The emission unit stack monitoring system shall meet the requirements of ANSI/HPS N13.1-1999 including the stack monitoring system inspection requirements. The technical justification document required by ANSI/HPS N13.1-1999 shall be provided to WDOH for review and approval.

Emission Unit ID: 503

200W 200W P-296Z007 001

296-Z-7

This is a MAJOR, ACTIVELY ventilated emission unit.

PLUTONIUM FINISHING PLANT(Z PLANT)

Emission Unit Information

Stack Height: 50.00 ft. 15.24 m. Stack Diameter 1.27 ft. 0.39 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: 17.90 ft/second. 5.46 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	2	2 parallel banks with each bank containing a 2-stage HEPA filter; one bank operational. Abatement credit given for one 2-stage HEPA filter in the operating bank.
	Fan	1	2 fans in parallel. Only one fan required to be operating.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Appendix B, Method 114	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Continuous

Sampling Requirements Record Sample

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This 50 foot tall stack exhausts filtered air from the 2736 ZB Building, at the PFP Complex. Activities at the 2736-ZB building include stabilization, packaging and storage operations in support of the PFP operations mission at the Hanford Site.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Deactivation of the Plutonium Finishing Plant Complex	AIR 06-664	7/5/2006	709

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 6.70E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed activities involve transitioning the PFP Complex to a state of low-risk, low-cost, long-term surveillance and maintenance pending final disposition. All work would be performed in accordance with the approved radiological control procedures and as low as reasonably achievable (ALARA) program requirements as implemented by the project radiological control manual, as amended. These requirements would be carried out through the activity work packages and associated radiological work permits.

This activity includes deactivation of buildings and also includes deactivation of systems no longer necessary once stabilization and storage activities and planned legacy hold-up removal have been concluded; removal/disposition of equipment/components; contamination characterization and reduction/mitigation; packaging plutonium holdup material meeting waste acceptance criteria; maintaining and operating muffle furnaces, as needed, for removed plutonium holdup material; and demolition of radiologically contaminated, non-process ancillary buildings.

This activity also includes deactivation activities or activities to prepare and place a facility in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program while being protective of personnel, the public, and the environment until demolition of former processing and material storage buildings occurs. Deactivation activities would include those actions foreseeably necessary for implementation of the proposed action, such as associated transportation activities, waste removal and disposal, and award of grants and contracts. Specific actions could include the following work involving the potential for radioactive contamination:
- Draining and/or de-energizing systems as appropriate.
- Stabilizing contaminated areas (e.g., with fixatives, sealants, paint).
- Stabilizing or removing gloveboxes, process equipment, tanks, piping, fume hoods, and support equipment.
- Removing fencing and paved parking areas adjacent to facilities.
- Installing alternate environmental monitoring, surveillance, and safety components (e.g., lighting, fencing) if required.
- Removing/packaging radioactive (including equipment calibration sources and laboratory standards) and hazardous materials and waste, including stabilization and/or removal of asbestos, and removal, cleanup, and disposition of polychlorinated biphenyls and other regulated materials and transportation to existing waste management facilities.
- Removing equipment and system components.
- Size-reducing process equipment for disposal as waste.
- Performing physical or chemical treatment processes (e.g., neutralization, solidification, filtering) to render a material less hazardous or to reduce the volume (such processes will not increase the potential release rates)..
- Decontamination to support the excess of surplus equipment.
- Removing excess combustible material.
- Disconnecting utilities, piping, and communication service systems (if the systems are not necessary to maintain required environmental monitoring or building safety systems), including associated excavation.
- Ensuring adequate freeze and heat protection.
- Stabilizing, reducing, combining, or removing waste materials at outdoor locations within the PFP Complex (such processes will not increase the potential release rates provided in this NOC).
- Sealing cracks, gratings, and openings to the building exterior, and repairing roofs.
- Conducting general housekeeping activities (e.g., vacuuming, sweeping, dusting) in areas where radiological contamination is not anticipated (e.g., radiological buffer area) but could be encountered.
- Removing or reducing radioactive or hazardous contamination from facilities and equipment by washing, heating, chemical or electrochemical action, mechanical cleaning, or other similar techniques.
- Removing residual plutonium holdup material, which might remain throughout the PFP Complex after stabilization activities described in the PFP EIS have been completed; packaging residual plutonium holdup meeting waste acceptance criteria for shipment to an onsite waste management facility, or thermally stabilizing material in muffle furnace operations and packaging for storage in existing PFP Complex vaults.
- Designing and executing changes to utility service systems and/or utility structures necessary to place a facility in surveillance and maintenance, pending demolition.
- Conducting final process operations to stabilize or eliminate residual operational materials or effluents, such as final process runs; cleaning of vessels, valve pits and pipe trenches; installation and operation of small evaporators; flushing piping systems; removal or replacement of filters; and other similar closeout actions.
- Demolishing non-process ancillary buildings.
- Deactivation activities will require actions to provide for continued routine maintenance, repair, and replacement-in-kind of operating portions of PFP.

Other actions include:
- Remove residual plutonium from gloveboxes, filterboxes, equipment, piping, ductwork, and the building surfaces and package for disposition to onsite or offsite disposal facilities.
- Remove internal equipment from gloveboxes and building equipment/system components and package for

disposition to onsite or offsite disposal facilities.
- Decontaminate gloveboxes, filterboxes, ductwork, and equipment to less than transuranic levels if possible.
- Remove gloveboxes, filterboxes, ductwork, and equipment and package for disposition to onsite or offsite disposal facilities.
- Decontaminate or fix contamination on building interior and exterior.
- Disconnect utilities and services not necessary for monitoring.
- Perform radiological and chemical characterization in preparation for dismantlement.

In preparation for the proposed transition activities, housekeeping, assays, preventive maintenance, minor decontamination, and reactivation of glovebox access ports would occur.

See additional process description in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 9.00E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Am - 241	1.70E+01	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 238	6.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 239	9.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 240	6.00E+00	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Pu - 241	1.70E+02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Np - 237	Pu - 238	Pu - 239
Pu - 240	Pu - 241	Pu - 242	U - 233	U - 234
U - 235	U - 236	U - 237	U - 238	

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed methods for removing residual contamination from equipment/systems and for removing equipment would be similar to methods in use today throughout the industry and the DOE Complex. Both direct contact and remote technologies/techniques could be used. General technologies/techniques include heating, crushing, size reducing, and cutting. These could involve laboratory analyses and nondestructive assay; chemical cleaning, brushing, washing, scrubbing, vacuum cleaning, and abrasive jetting; using nibblers, shears, circular saws; potentially a remote-operated laser; and other similar methods. It is expected that should new technology become available, such technology would be evaluated for application in the PFP deactivation activities, and could be used if no increase in the potential-to-emit described in this NOC would result.

5) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The PFP deactivation activities include the following:
- Size reduction of equipment will be by mechanical means and may be accomplished by compaction, disassembling by use of wrenches, nibblers, shears, cutters, grinders, saws, or other similar methods. This equipment may be manually, hydraulically, pneumatically or electrically powered.
- Decontamination methods include: Scraping, sweeping, chemical cleaning, brushing, washing, scrubbing, scabbling, grinding, vacuum cleaning, strippable coatings, washing using wet rags, spraying, abrasive jetting, low pressure and high pressure wash using water and/or chemicals cleaners, use of fixatives and/or physical removal of contamination by use of mechanical means such as chipping or cutting. The application of fixatives for contamination control would be accomplished via aerosol fogging, paint brush/roller, hand-held spray bottle, or an electric or pneumatic powered sprayer.
- Containment of waste may be accomplished by coating the material with a fixative or placing the material in containers, bags and/or wrapping in plastic sheeting, utilizing adhesive tape, heat sealing or mechanical closure to prevent release of radiological contamination.
- Miscellaneous mechanical processes that could be used to support the proposed activity could include threading of piping, use of hot taps on piping, capping and plugging piping using threaded pipe components and expanding/compressive plugs or caps, drilling of holes in metal and concrete, core drilling concrete surfaces, installation of anchor bolts, installation and removal of bolts, installation of hose and tubing connectors, compression fittings, installation and removal of pumps, agitators and process control filters.

6) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Excavation will take place in the PFP Complex to support site stabilization, isolating/blanking utilities, fence removal/installation/relocation, and soil sampling/cleanup. Access to underground piping and cable would be gained by use of a bucket-type excavator. Manual digging methods with shovels, picks, and rakes also could be used. Contaminated soil removed and covered during excavation activities would remain covered until replaced into the excavation or otherwise dispositioned (backfill would consist of the original material removed or ‘clean’ soil).

If needed or chosen for use during these activities, the categorical NOCs for sitewide use of the guzzler, a portable temporary radioactive air emissions unit (PTRAEU) exhauster, or HEPA filtered vacuum radioactive air emission unit could be used.
Wastes generated during deactivation would be packaged appropriately. Waste would be generated/packaged throughout the PFP Complex (i.e., in structures with registered stacks, in non-HEPA filtered structures, or outdoors), resulting in filtered releases and/or diffuse and fugitive emissions. Wastes could be placed in various containers such as plastic bags, metal drums, and standard waste boxes. These wastes could be transferred to other locations within the PFP Complex for interim storage and/or repackaging before subsequent transport to approved locations/facilities pending final disposition.

If necessary, personnel decontamination activities would be conducted in the decontamination trailer (DOE/RL-2003-42).

7) The total abated emission limit for the 296-Z-7 emission unit is limited to 1.5E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the potential-to-emit for this emission unit is limited to 5.42E+02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

8) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Plutonium and uranium processed in the stabilization and repackaging process under Stabilization and Repackaging Equipment (SPE) will be in the form of oxides (including hold-up material) and metal. Americium, plutonium, and uranium oxides shall be stabilized by heating the material in an oven to meet the DOE Standard 3013. Plutonium oxides with metal chunks might be encountered. The material shall be sieved and the oxides thermally stabilized. The metal chunks shall be brushed and packaged, or thermally stabilized. Hold-up plutonium-bearing material removed from equipment and systems within PFP Complex might be in the form of powder, sweep (such as residue), and/or dried sludge (with small quantities of volatile organics). This material could be mechanically handled (e.g., sieved, brushed) before being thermally stabilized.

In-line monitoring equipment shall be provided for determining the moisture/volatile content of the material processed. The material shall be considered thermally stabilized when there is less than 0.5 percent loss on ignition (LOI). Gaseous effluents from moisture determination operations are discharged directly into the glovebox, passed through glovebox HEPA-type filters, and then pass through two stages of HEPA filtration before discharge to the environment via the 296-Z-7 stack.

-Stabilization Module. The Stabilization Module consists of the material preparation area, furnace area, and the product fill area. In the material preparation area, canned items containing plutonium-bearing materials shall be received, measured for accountability, and placed into a furnace tray (or boat) for insertion into a furnace in the furnace area. The module may also provide a waste pathway to dispose of the waste cans and plastic. In the furnaces, the material in the boats shall be heated to greater than 950 degrees Centigrade (C) for at least two hours, as specified in U.S. Department of Energy Standard 3013 (DOE-STD-3013, Criteria for Safe Storage of Plutonium Metals and Oxides). The material shall be cooled, placed in a convenience can, sampled to verify dryness, and inserted into the Bagless Transfer System (BTS) Module.

-BTS Module. In the BTS Module, the filled convenience cans shall be received from the Stabilization Module and placed into an inner can. The inner can head space will then be backfilled with helium. A plug shall be welded to the inner wall of the container, and the middle of the weld shall be cut (maintaining glove box confinement at all times).

-Inner Can Leak Test Module. The Inner Can Leak Test Module will receive an inner welded container [bagless transfer container (BTC)]. Operations in this module will verify the BTC meets or exceeds the leak tightness requirements of DOE Standard 3013.

9) The stack monitoring system shall consist of two shrouded probes located in the exhaust stream within the stack at an elevation of approximately 25 feet above grade. Each probe will have a sample line to deliver the sample stream to the stack monitoring equipment located at the base of the stack. One sample line will be connected to a continuous alpha monitor and the other line dedicated to the record air filter. The sample flow will be proportional to the stack flow. A stack mass flow sensor will be located near the shrouded probes. Inspection and test ports shall be provided. The design must include the ability for the department to split stack samples.

10) The alpha stack monitor shall have fail and high radiation alarms. These alarms are tied into an annunciator panel that will be used to notify operations of off normal conditions requiring immediate corrective actions. Sample pumps located downstream from the alpha monitor and the record sampler in the pump skid will draw representative samples from the stack stream. Exhausts from the pumps will return to the stack above the sample location.

11) Procedures must be developed to leak test and to check for contamination on the outside of the welded containers prior to transporting them to various designated areas of the project. Appropriate staff must be trained on these procedures prior to the start of the project. These procedures will be available for Department of Health review upon request.

12) The product fill glove box located in Room 642 must be exhausted through a HEPA type filter before connecting to the Room 642 exhaust HEPA filter.

13) The emergency exhaust line does not have any fire screens or filters. The normal and emergency lines are combined and routed to the process exhaust HEPA filter system. Prior to passing through dual stage testable HEPA filters, the off gas temperature must be below 80 C.

14) All filters designated as HEPA filters must be annually tested to a minimum of 99.95% efficiency.

15) As the required indication device for the Z-7 emission unit, the differential pressure magnehelic gauges associated with the final stage of HEPA filters will have a functional test conducted annually.

16) Fuel De-Inventory

This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

PFP will repackage fuel assemblies and/or fuel pins into storage and/or transport containers for staging at PFP. These containers would be loaded via crane operations onto trucks for transport either to storage onsite or to appropriate offsite facilities pending final disposition. Fuel assemblies and/or fuel pins could be mechanically handled by transferring directly to containers (emissions would be considered as diffuse and fugitive if work

conducted in locale providing potential for unfiltered emissions). Fuel pins could be transferred to glovebox(es) (emissions discharging through the 291-Z-1 or 296-Z-7 stacks) where they would be size reduced (using bolt cutters or equivalent means) and placed into a container. The pins/containers could be subjected to NDA at any point(s) during repackaging activities.

Minor alterations (e.g., removing interior walls, installation of temporary scaffolding) to the 234-5Z Building would be necessary to support fuel de-inventory operations.

17) Contaminated clothing, coverings, and/or materials shall be packaged and dispositioned in accordance with applicable facility waste handling procedures.

Emission Unit ID: 504

600 J NONPOINT SOURCE

600 Area Diffuse/Fugitive

This is a MINOR, FUGITIVE, non-point source emission unit.

600 Area Diffuse Emissions

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Per the sitewide ambient monitoring program

Sampling Requirements Per the sitewide ambient monitoring program samples will be collected from the existing near-facility monitoring stations

Additional Requirements

See Section 5 of the general conditions in this license for additional information.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a diffuse source for radiological emissions in the form of dust, or emissions that are generated from point sources or areas/buildings where the emissions are not expected to be emitted through a stack. The emission unit is typically part of the surveillance program however there is a number of units that could be used during waste retrieval, decommissioning, and closure, such as but not limited to pits, pipelines, valves, pumps, and diversion boxes. The emission unit does not contain control equipment that is functional or maintained to specifications however, ALARACT methods are used to minimize releases. The area has contamination contained within the soil, a structure without ventilation systems, areas sources with multiple fugitive emission sources, such as but not limited to abandoned buildings/structures, pipelines, valves, pumps, pits, diversion boxes, etc. that may omit fugitive emissions while in operation. If the contamination is buried, or is fixed in such a manner that a release to the air is not expected, then the emission source is not contained within this category of emission units. The emission unit is a continuous source of emissions.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Use of Portable Tanks and Revised Source Term Description at Waste Sampling and Characterization Facility (WSCF)	AIR 06-633	7/5/2006	669

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.80E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

* Analytical Laboratory Building (696-W-1) - Solid, liquid, and vapor samples contaminated with low levels of radioactive material are processed, on a bench-scale basis, in fume hoods or other controlled air spaces in the building. Evaporation and wet chemistry also are used to prepare samples for analysis. Low-level waste drums are filled inside the laboratory building and transferred either to the Solid Waste Storage Building (described as follows) or other approved facilities on the Hanford Site, or the low-level waste drums are moved to various locations with WSCF.

* Radiochemistry Laboratory (696-W-2) - This is a below grade counting room in the Analytical Laboratory Building with a separately controlled airspace within the building.

* Environmental Data/Computer Center (6270) - This is a non-radiological building and will not be addressed further.

* Environmental Sample Archive Building (6267) - This building provides for controlled storage, indexing, categorizing and retrieval of low-level contaminated samples. Storage is provided for up to 2,500 samples requiring refrigerated storage and up to 11,500 samples requiring ambient storage. This building also provides for temporary storage of unvented drums or other low-level waste, packaged in accordance with applicable laboratory procedures. Less than 100 low-level waste packages are stored at any one time.

* Mobile Laboratory Storage Facility (6269) - This structure houses up to five mobile laboratories and provides protection from adverse weather conditions for the instrumentation and computers inside the mobile laboratories. This area contains calibration laboratory instrumentation used in the mobile laboratories, and a sample preparation area for adding chemical buffers and preservatives to sample containers. This building provides temporary storage of drums, or other waste packages contained with low-levels of radioactive material. Less than 100 low-level waste packages are stored at any one time.

* Solid Waste Storage Building (6265A) - This open-sided building shall provide for temporary storage of drums or other low-level waste packages. Less than 100 low-level waste packages are stored at any one time and will not be addressed further in this license, as these are unvented drums.

* Contaminated Liquid Waste Retention Vault (6266A) - Consists of two 3,785 liter polyethylene tanks contained in a common concrete vault. The tanks are designed to receive low-level inorganic and radiologically contaminated liquid waste or sample excess from the analytical laboratory. The liquid routinely is transferred to an approved disposal facility on the Hanford Site using the portable tanker described as follows. This building also provides temporary storage of drums, or other waste packages contaminated with low-levels of radioactive material. Less than 100 low-level waste packages are stored at any one time.

* Sample Equipment Cleaning Facility - This is a non-radiological building and will not be addressed further.

* Portable Tanker(s) used for Wastewater Transport - Wastewater drums containing liquid waste contaminated with low-levels of radioactive material are stored temporarily at various locations within WSCF. In some cases, the contents of these drums are pumped into a portable tanker at the various locations for transport to other facilities. To accomplish the pumping, a small pump has its drop leg inserted into each drum through the bunghole or other opening, and flexible hose transfers the liquid to the tanker.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 1.40E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	1.02E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

License PTE limit bounds 1.02E-03 Ci/yr 239Pu and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during operation of the WSCF. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 239Pu and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

B/G - 0	2.11E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)

License PTE limit bounds 2.11E-02 Ci/yr 90Sr and release fraction of 0.001. Any radionuclide on the chart of the nuclides could be encountered during operation of the WSCF. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all alpha is assumed to be 239Pu and all beta/gamma is assumed to be 90Sr for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta/gamma constituents.

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) The potential release rates shall not exceed the following limits for the associated buildings:

   * Environmental sample archive building (6267) release rate is limited to 3.3E-04 Ci/yr total Alpha and 6.8E-03 Ci/yr total Beta/Gamma.

   * Mobile Laboratory Storage Facility (6269) release rate is limited to 3.3E-05 Ci/yr total Alpha and 6.8E-04 Ci/yr total Beta/Gamma.

   * Contaminated liquid waste retention vault (6266A) release rate is limited to 3.3E-04 Ci/yr total Alpha and 6.8E-03 Ci/yr total Beta/Gamma.

   * Portable tanker used for wastewater transport release rate is limited to 3.3E-04 Ci/yr total Alpha and 6.8E-3 Ci/yr total Beta/Gamma.

5) The WSCF must maintain a log in an approved format for this activity or emission unit.

6) The radiological control technology requirements are as follows:

   * 6267 will control emissions by the structure itself, with no containment efficiency provided by the ventilation system. Packaging of the archived samples and monitored storage of closed (unvented) drums and approved low-level waste packages, combined with minimization of any indoor contamination in accordance with established radiation control procedures, provides for effective control of potential fugitive emissions.

   * 6269 will control emissions based on the design of the mobile laboratories, combined with minimization of any indoor contamination, in accordance with established radiation control procedures.

   * 6265A will control emissions by controlling the waste packages. Minimize the external contamination in accordance with established radiation control procedures.

   * 6266A will control emissions by having a passive vent HEPA type high efficiency filter on each tank.

   * Portable tanker used for wastewater transport will control emissions by passively venting.

7) The U.S. DOE shall monitor this emission units as follows:

   Periodic radiological surveys of swipes or surfaces associated with 6265A, 6269, 6267, and 6266A must be conducted to verify compliance.

Emission Unit ID: 539

200 P-Vadose-002

Air Rotary Drilling

This is a MINOR, ACTIVELY ventilated emission unit.

Tank Farms

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	On the containment structure or the Air Rotary Exhaust and to be used as a record filter when used on Air Rotary Exhaust.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	Each radionuclide that could contribute greater than 10 percent of the potential TEDE	The record filter is to be counted annually

Sampling Requirements Perform either a destructive or non-destructive analysis of the record filter using gamma spectrometer calibrated to Cs-137 and radiological field surveys.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit supports Vadose Zone characterization activities that include drilling and sampling of soil from the surface to the depth of groundwater. The emission unit operates on an intermittent basis.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Tank Waste Remediation System Vadose Zone Characterization	AIR 06-670	7/5/2006	635

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 7.03E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.03E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The following methods of sampling and drilling techniques, including air rotary drilling, sonic drilling, closed-end probe, cable tool drilling, cone penetrometer, air rotary split spoon, and others. This approval applies only to the following tank farms: 241-A, 241-AX, 241-B, 241-BX, 241-BY, 241-C, 241-S, 241-SX, 241-T, 241-TX, 241-TY and 241-U.

   Up to ten equivalent boreholes may be drilled or re-entered per year (consecutive 12-month period) by the methods described. An equivalent borehole shall have a nominal top diameter of no larger than ten inches for the first 50 feet, and a nominal bottom diameter of no larger than eight inches for the remaining 200 feet of pipe (average depth is 250 feet). Additionally, an equivalent borehole shall contain a contaminated layer no more than 20 feet long in the ten inch portion of the equivalent borehole. Individual methods shall be selected based on the likely level (concentration) of contaminants to be encountered. The most conservative drilling approach (lowest potential-to-emit) shall be applied first. Borehole logging shall be used to determine when it is

appropriate to apply drilling techniques that may have a higher potential-to-emit. Zones not sampled during advancement of the borehole due to having a high potential to exceed exposure guidelines may be sampled by side-wall sampling techniques as the boreholes are decommissioned.

Samples from air rotary type drilling shall be obtained from the sampling sock located on the side of the cyclone and/or from the drums underneath the cyclone and torit. The material in the drums will be sampled by pulling a mini-core from the drum. Sampling and change-out of the drums shall be performed inside the containment structure with continuous health physics technician (HPT) coverage.

Borehole drilling techniques that may be used are limited to those described below:

Sonic drilling
Closed-end probe
Traditional cable tool drilling from top to bottom
Cone Penetrometer
Geo Probe
Auger drilling

Soil sampling techniques will include one or a combination of the following techniques:

Air Rotary Split Spoon
Cable Tool
Cable Tool and Auger with a Split Spoon Core Barrel
Sonic Core Barrel and Split Spoon
Rotary Coring
Sidewall Sampling
Drive Split-Spoon Sampler

Sidewall samples being brought to the surface will be bagged or sleeved into plastic or other suitable container (e.g. shielded container) after retrieval if decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 disintegrations per minute (dpm) per 100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha. The sampler will then be packaged in a container suitable for shipment to the laboratory for analysis. Other sidewall sampling techniques may involve a lever-action sampler (the sampler is driven into the formation through a cantilever action) or a rotating formation “shaving” device with the sample captured in an under-slung basket.

The brush, used to clean casings, shall be placed in plastic sleeving if decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha when it is removed from the borehole. Pull the casing into plastic sleeving during removal if decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha. Unthread the casing if possible, or cut using a wheel cutter, or disconnected from other segments into a nominal length of ten feet. A high-speed blade wheel cutter is not allowed. When necessary, either to accomplish casing removal for borehole decommissioning or to enable pull-back for sidewall sampling, the casing will be cut at depth using a Bowen casing cutter (or equivalent). If decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha and the casing is sleeved in plastic, no more than one feet of casing shall be exposed to air during the cutting process. Capture cuttings in draped plastic. If decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha, cap the pieces, cut with plastic or horsetail the sleeving and place sections in a burial box. The hole will be backfilled with clean (nonradioactive) materials (e.g., granular bentonite and/or grout). Casing removal activities are allowed to be performed outside of the containment structure. The closure of the equivalent boreholes may also be performed by backfilling the borehole using a tremie without pulling the casing.

Collect any perched water in the drum at the bottom of the cyclone. Approximately 1,000 gallons of purgewater is allowed to be removed from each equivalent borehole prior to inserting a screen below the water

table. After installation of the screen, groundwater samples will be taken. An average of 2,000 gallons of water (which includes perched water, purgewater and groundwater sampling) is allowed to be removed from each equivalent borehole. Perched water and purgewater will be collected in passively ventilated open-top containers. Water shall be transferred from the passively ventilated containers into a tanker truck for treatment at the 200 Area Effluent Treatment Facility or other permitted storage/treatment facility. Water may be transferred directly from the borehole to the tanker truck, bypassing the intermediate containers.

Approximately 3,500 ft^3 of soil may be excavated per year. Perform excavation using manual methods, backhoe, and/or the Guzzler.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	6.82E-09	Am - 241	5.22E-04	Am - 243	1.16E-08
C - 14	3.19E-06	Cm - 242	4.08E-06	Cm - 243	1.42E-07
Cm - 244	1.32E-06	Co - 60	1.45E-05	Cs - 134	2.22E-07
Cs - 137	2.77E-02	Eu - 152	6.19E-06	Eu - 154	1.30E-04
Eu - 155	3.91E-04	H - 3	1.15E-05	I - 129	2.58E-07
Ni - 59	7.69E-06	Ni - 63	7.48E-04	Np - 237	5.32E-08
Pa - 231	7.08E-09	Pu - 238	3.29E-05	Pu - 239	3.00E-03
Pu - 240	3.17E-04	Pu - 241	1.87E-03	Pu - 242	8.97E-09
Ra - 226	5.53E-10	Ra - 228	2.87E-08	Ru - 106	2.56E-08
Sb - 125	1.09E-05	Sm - 151	2.79E-03	Sn - 126	1.19E-06
Sr - 90	3.10E-01	Tc - 99	5.33E-05	Th - 229	1.16E-09
Th - 232	1.14E-09	U - 232	8.79E-08	U - 233	3.38E-07
U - 234	6.67E-06	U - 235	2.95E-07	U - 236	6.82E-08
U - 238	6.72E-06	Y - 90	3.10E-01	Zr - 93	3.61E-06

4) APQ associated with the air rotary drilling shall be tracked and documented on an approved log and subtracted from the APQ listed for the emissions associated with diffuse and fugitive emissions.

5) Emissions for these activities shall be tracked via a log approved by the department. This log shall track the hours of operation and location of use for each type of equipment, estimated and calculated curies encountered, and calculated emissions. Air samples used for periodic confirmatory measurement shall be collected no closer than three feet above ground level. These samples shall be composited for each three individual sites (total of three samples) and analyzed at the completion of the borehole activity and casing removal. All periodic confirmatory samples will be collected and analyzed following EPA Method 114.

6) Emissions from air rotary drilling activities shall be contained using an active ventilation system attached to the process equipment and a passive vent system attached to the process equipment containment structure. The active ventilation system shall have radioactive air emissions abated by one stage of high efficiency particulate air (HEPA) filter. The HEPA filter shall be leak tested using a DOP aerosol as defined in ASME N510 or approved equivalent . The containment structure shall have a passive HEPA type filter that will provide high efficiency collection. The exhaust fan shall have a maximum average velocity of 0.85 cubic meters per second (1,800 cubic feet per minute) with a range of 0.6 to 1.2 cubic meters per second (1,200 to 2,400 cubic feet per minute) to maintain the ducting between the cyclone and the HEPA filter at atmospheric or less than atmospheric pressure. The drill rig shall be sealed to the casing so that particulates will be contained and routed to the process equipment (e.g., cyclone and torit) located inside the plastic containment structure. The flange on the well discharge head and on the inlet of the cyclone shall be double flanged to reduce the potential for an unabated release to the atmosphere. Additionally, the flexible line connecting the well discharge head and the cyclone shall be encased by another flexible line. The flexible encasement line and flanges shall also be vented to the cyclone. The plastic containment structure surrounding the process control equipment shall be fitted with one stage of HEPA type filtration. When the borehole or re-entry has been completed and the process equipment is ready to be removed, equipment shall be broken down at the disconnect points and contaminated equipment openings shall be sealed or plugged to minimize the spread of contamination. All work related to disconnecting and moving the equipment shall be performed in accordance with TWRS as low as reasonably achievable control technology (ALARACT) demonstration number 12 or subsequent

revision ALARACT "Demonstration for Packaging and Transportation of Equipment and Vehicles".

7) For various characterization options covered under this NOC, the maximum TEDE to the hypothetical off site MEI shall not exceed 7.03 E-02 mrem/year. The maximum TEDE to the MEI shall not exceed 5.7 E-02 mrem/year at the Energy Northwest location as determined by CAP88PC, Version 2 supplied as supporting documentation.

8) Periodic confirmatory sampling is required. For the air rotary type drilling this shall consist of a destructive or non-destructive analysis of the record filter combined with radiological field surveys during the work. The record HEPA type filter located downstream shall have a minimum efficiency of 90 percent for particulates with a median diameter of 0.3 microns as specified by the manufacturer. The radiological analyses from the soil samples will be averaged to determine the isotopic distribution of Strontium-90 (Sr-90), Cesium-137 (Cs-137), Plutonium-239 (Pu-239) and Americium (Am-241). The record filter will be counted using a gamma spectrometer calibrated to Cs-137. Counting will be done annually using either a destructive or non-destructive technique.

   The soil sample isotope ratios will be applied to Cs-137 on the record filter to confirm low emissions. In addition, the HEPA filter housing shall be field surveyed after the completion of each borehole or re-entry to verify low emissions. Periodic confirmatory monitoring of the passive HEPA type filter will be accomplished by performing a field survey of the filter housing to confirm low emissions. The field survey of the passive HEPA type filter will be performed after the completion of each borehole or re-entry. These methods of performing these "field surveys" shall be submitted to the department for approval (WAC 246-247-075(3)).

Emission Unit ID: 541

200 P-Vadose-003

Air Hammer Drilling

This is a MINOR, ACTIVELY ventilated emission unit.

Tank Farms

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	The HEPA filter may or may not have an exhaust fan associated with it.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114(3)	Each radionuclide that could contribute greater than 10 percent of the potential TEDE	After each borehole

Sampling Requirements For passive HEPA filter, perform field survey of the filter housing after each borehole.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit supports Vadose Zone characterization activities that include drilling and sampling of soil from the surface to the depth of groundwater. The emission unit operates on an intermittent basis.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Tank Waste Remediation System Vadose Zone Characterization	AIR 06-670	7/5/2006	635

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 7.03E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.03E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   The following methods of sampling and drilling techniques, including air rotary drilling, sonic drilling, closed-end probe, cable tool drilling, cone penetrometer, air rotary split spoon, and others. This approval applies only to the following tank farms: 241-A, 241-AX, 241-B, 241-BX, 241-BY, 241-C, 241-S, 241-SX, 241-T, 241-TX, 241-TY and 241-U.

   Up to ten equivalent boreholes may be drilled or re-entered per year (consecutive 12-month period) by the methods described. An equivalent borehole shall have a nominal top diameter of no larger than ten inches for the first 50 feet, and a nominal bottom diameter of no larger than eight inches for the remaining 200 feet of pipe (average depth is 250 feet). Additionally, an equivalent borehole shall contain a contaminated layer no more than 20 feet long in the ten inch portion of the equivalent borehole. Individual methods shall be selected based on the likely level (concentration) of contaminants to be encountered. The most conservative drilling approach (lowest potential-to-emit) shall be applied first. Borehole logging shall be used to determine when it is appropriate to apply drilling techniques that may have a higher potential-to-emit. Zones not sampled during advancement of the borehole due to having a high potential to exceed exposure guidelines may be sampled by side-wall sampling techniques as the boreholes are decommissioned.

Samples from air rotary type drilling shall be obtained from the sampling sock located on the side of the cyclone and/or from the drums underneath the cyclone and torit. The material in the drums will be sampled by pulling a mini-core from the drum. Sampling and change-out of the drums shall be performed inside the containment structure with continuous health physics technician (HPT) coverage.

Borehole drilling techniques that may be used are limited to those described below:

Sonic drilling
Closed-end probe
Traditional cable tool drilling from top to bottom
Cone Penetrometer
Geo Probe
Auger drilling

Soil sampling techniques will include one or a combination of the following techniques:

Air Rotary Split Spoon
Cable Tool
Cable Tool and Auger with a Split Spoon Core Barrel
Sonic Core Barrel and Split Spoon
Rotary Coring
Sidewall Sampling
Drive Split-Spoon Sampler

Sidewall samples being brought to the surface will be bagged or sleeved into plastic or other suitable container (e.g. shielded container) after retrieval if decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 disintegrations per minute (dpm) per 100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha. The sampler will then be packaged in a container suitable for shipment to the laboratory for analysis. Other sidewall sampling techniques may involve a lever-action sampler (the sampler is driven into the formation through a cantilever action) or a rotating formation “shaving” device with the sample captured in an under-slung basket.

The brush, used to clean casings, shall be placed in plastic sleeving if decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha when it is removed from the borehole. Pull the casing into plastic sleeving during removal if decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha. Unthread the casing if possible, or cut using a wheel cutter, or disconnected from other segments into a nominal length of ten feet. A high-speed blade wheel cutter is not allowed. When necessary, either to accomplish casing removal for borehole decommissioning or to enable pull-back for sidewall sampling, the casing will be cut at depth using a Bowen casing cutter (or equivalent). If decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha and the casing is sleeved in plastic, no more than one feet of casing shall be exposed to air during the cutting process. Capture cuttings in draped plastic. If decontamination or application of fixatives cannot reduce smearable contamination to less than 100,000 dpm/100 cm^2 for beta/gamma or 2,000 dpm/100 cm^2 for alpha, cap the pieces, cut with plastic or horsetail the sleeving and place sections in a burial box. The hole will be backfilled with clean (nonradioactive) materials (e.g., granular bentonite and/or grout). Casing removal activities are allowed to be performed outside of the containment structure. The closure of the equivalent boreholes may also be performed by backfilling the borehole using a tremie without pulling the casing.

Collect any perched water in the drum at the bottom of the cyclone. Approximately 1,000 gallons of purgewater is allowed to be removed from each equivalent borehole prior to inserting a screen below the water table. After installation of the screen, groundwater samples will be taken. An average of 2,000 gallons of water (which includes perched water, purgewater and groundwater sampling) is allowed to be removed from each equivalent borehole. Perched water and purgewater will be collected in passively ventilated open-top

containers. Water shall be transferred from the passively ventilated containers into a tanker truck for treatment at the 200 Area Effluent Treatment Facility or other permitted storage/treatment facility. Water may be transferred directly from the borehole to the tanker truck, bypassing the intermediate containers.

Approximately 3,500 ft^3 of soil may be excavated per year. Perform excavation using manual methods, backhoe, and/or the Guzzler.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	2.02E-06	Am - 241	1.55E-01	Am - 243	3.45E-06
C - 14	9.47E-04	Cm - 242	1.21E-03	Cm - 243	4.22E-05
Cm - 244	3.93E-04	Co - 60	4.30E-03	Cs - 134	6.58E-05
Cs - 137	8.23E+00	Eu - 152	1.84E-03	Eu - 154	3.86E-02
Eu - 155	1.16E-01	H - 3	3.42E-03	I - 129	7.64E-05
Ni - 59	2.28E-03	Ni - 63	2.22E-01	Np - 237	1.58E-05
Pa - 231	2.10E-06	Pu - 238	9.77E-03	Pu - 239	8.91E-01
Pu - 240	9.40E-02	Pu - 241	5.56E-01	Pu - 242	2.66E-06
Ra - 226	1.64E-07	Ra - 228	8.52E-06	Ru - 106	7.60E-06
Sb - 125	3.23E-03	Sm - 151	8.29E-01	Sn - 126	3.54E-04
Sr - 90	9.19E+01	Tc - 99	1.58E-02	Th - 229	3.45E-07
Th - 232	3.38E-07	U - 232	2.61E-05	U - 233	1.00E-04
U - 234	1.98E-03	U - 235	8.76E-05	U - 236	2.02E-05
U - 238	2.00E-03	Y - 90	9.19E+01	Zr - 93	1.07E-03

4) Approval is given to use a downhole air hammer to drive a sampler while using a closed end probe.

5) APQ associated with the air hammer operation shall not exceed 195 curies. This shall be tracked and documented on an approved log and subtracted from the APQ listed for the emissions associated with diffuse and fugitive emissions.

6) Emissions associated with the downhole air hammer will be routed to a passive or active ventilated HEPA filter. Pressure gauges will be installed on the emissions unit and will be monitored and recorded daily during operation of the downhole air hammer. Operation in the passive mode will not be allowed if the HEPA inlet pressure exceeds 20 inches water gauge and differential pressure exceeds 5.9 inches water gauge. Operation in the active ventilation mode will not be allowed if the HEPA inlet pressure exceeds 20 inches water gauge and differential pressure exceeds 5.9 inches water gauge. The flow shall not exceed the HEPA filter manufactures recommendation. Emissions from the drill rig shall be minimized using a double gasket seal and a chromed casing. This area shall be smear surveyed at the beginning and end of the work cycle and documented to determine adequacy of seal.

7) Emissions for these activities shall be tracked via a log approved by the department. This log shall track the hours of operation and location of use for each type of equipment, estimated and calculated curies encountered, and calculated emissions. Air samples used for periodic confirmatory measurement shall be collected no closer than 3 ft above ground level. These samples shall be composited for each three individual sites (total of three samples) and analyzed at the completion of the borehole activity and casing removal. All periodic confirmatory samples will be collected and analyzed following EPA Method 114.

8) For various characterization options covered under this NOC, the maximum TEDE to the hypothetical off site MEI shall not exceed 7.03 E-02 mrem/year. The maximum TEDE to the MEI shall not exceed 5.7 E-02 mrem/year at the Energy Northwest location as determined by CAP88PC, Version 2 supplied as supporting documentation.

9) Operation of the passive or active ventilation unit during the operation of the air hammer shall be documented on an approved log.

10) Periodic confirmatory sampling is required. For the air hammer method, instead of air sampling near the HEPA as described in the NOC, this shall consist of a destructive or non-destructive analysis of the HEPA filter combined with radiological field surveys during the work. The HEPA type filter located downstream of the process equipment shall be leak tested using a DOP aerosol as defined in ASME N510 or approved equivalent The radiological analyses from the soil samples will be averaged to determine the isotopic distribution of Strontium-90 (Sr-90), Cs-

137, Plutonium-239 (Pu-239), and Americium (Am-241). The record filter will be counted using a gamma spectrometer calibrated to Cs-137. Counting will be done annually using either a destructive or non-destructive technique.

11) The emission unit shall be inspected daily during operation and after any relocations. Line pressure tests will be performed on the line between the well head and the filter and/or fan prior to deploying the air hammer. Line pressure tests will be performed in accordance with ASME/ANSI N510.

Emission Unit ID: 689

100K 100 Area Diffuse/Fugitive

100 Area Diffuse/Fugitive Emissions

This is a MINOR, FUGITIVE, non-point source emission unit.

100 K diffuse/fugitive emissions

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
			Abatement controls as required in the following Conditions and Limitations.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075[3]	Appendix B, Method 114	Each radionuclide that could contribute greater than 10 percent of the potential TEDE	Per the sitewide ambient monitoring program

Sampling Requirements Per the sitewide ambient monitoring program samples will be collected from the existing near-facility monitoring stations

Additional Requirements

See Section 5 of the general conditions in this license for additional information.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a diffuse source for radiological emissions in the form of dust, or emissions that are generated from point sources or areas/buildings where the emissions are not expected to be emitted through a stack. The emission unit is typically part of the surveillance program however there is a number of units that could be used during waste retrieval, decommissioning, and closure, such as but not limited to pits, pipelines, valves, pumps, and diversion boxes. The emission unit does not contain control equipment that is functional or maintained to specifications however, ALARACT methods are used to minimize releases. The area has contamination contained within the soil, a structure without ventilation systems, areas sources with multiple fugitive emission sources, such as but not limited to tanks farms, abandoned buildings/structures, pipelines, valves, pumps, pits, diversion boxes, etc. that may omit fugitive emissions while in operation. If the contamination is buried, or is fixed in such a manner that a release to the air is not expected, then the emission source is not contained within this category of emission units. The emission unit is a continuous source of emissions.

Emission Unit ID: 712

200E P-241C-004

241-C-106

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows the SST to vent to the atmosphere under tank farm storage, maintenance, and operations. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The tanks are scheduled for waste retrieval, decommissioning, and eventual closure under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

Emission Unit ID: 713

200E P-244CR-002

244-CR Vault Passive Filter A

This is a MINOR, PASSIVELY ventilated emission unit.

244-CR VAULT

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a building/facility passive breather filter that is used to ventilate building and facility operations such as but not limited to process vessels, contaminated rooms, cells, glove boxes, hoods, abandoned facilities awaiting decommissioning, and vaults that support tank farm operations, maintenance, and surveillance activities for tank farms. Entry into the building/facility consists of activities to support current surveillance, maintenance, operations, decommissioning, decontamination, and cleanup activities. Many of the activities other than normal surveillance, maintenance, and operation support will be or are regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
244-CR Vault Isolation and Interim Stabilization	AIR 06-644	7/5/2006	685

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.10E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 5.82E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The activities performed at the 244-CR Vault Facility, ER-153 and/or 244-A Lift Station include:

Work Area Preparation:

- Miscellaneous work including equipment delivery, movement, set up and maintenance in the general work area

around the 244-CR Vault Facility.

- Construction and take down of open top containment tents (bullpens) over the facility vault area.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs).

- Installation of portable 1,000 cubic feet per minute (cfm) exhauster.

- Removal and/or installation of vault foam covering.

- Application of fixative at pit interior.

- Temporary power installation.

Facility/Interim Stabilization Work:

- Operation of PTRAEU for bullpen ventilation.

- Removal and/or installation of pit covers.

- Inspection of pits, vaults, and tanks.

- Removal and disposition of excess equipment and waste in pits, risers, and tanks.

- Decontamination activities.

- Measurement of liquid level and sludge levels in tanks and sumps.

- Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance.

Facility Equipment Activities:

- Installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment).

- Modifications, maintenance, and/or isolation and sealing of existing risers, pits, vaults and incoming and/or outgoing piping (drain and transfer lines) from 244-CR Vault or connected facility.

Excavation:

- Installation of permanent power to 244-CR Vault Facility.

- Installation/Operation of Passive Breather Filter Assembly.

Waste Transfer and Support Activities:

- Operation of 1,000 cfm portable exhauster at 244-CR Vault.

- New waste transfer system, waste staging/consolidation.

Miscellaneous activities shall include:

- Construction and take down of open top contaminant tents over the facility vault area.

- Open top containment tents (bullpens) shall be constructed over the facility pit area to prevent potential

airborne contamination from the effected work area to the environment. Two bullpens shall be erected around two instrumentation pits at the 244-CR Vault. Upon completion of the first pit's work, the bullpens shall be relocated to the other two pits and their work will be completed.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs)

- A Portable/Temporary Radioactive Air Emission Unit (2,000 cfm) or units (1,000 cfm each) shall be installed to ventilate the bullpens during activities that require work in the pits, cells and tank vault area prior to performing waste transfer activities. One thousand cfm PTRAEUs, if used, shall be directly connected to individual bullpens, while a 2,000 PTRAEU if used, shall be connected to two bullpens. Movement and installation of the PTRAEU can be performed to facilitate ventilation for the four vaults of the 244-CR Vault Facility. The PTRAEU shall operate intermittently (during work activities) and will be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

A portable 1,000 cfm exhauster shall be installed to ventilate the 244-CR Facility vaults and tanks during waste transfer activities. This exhauster shall operate intermittently to support waste transfer and support activities and shall monitor air emissions. The exhauster shall be piped into the existing 244-CR facility ventilation system upstream of the existing (non-operating) exhauster, 296-C-05 and HEPA filters. The existing 244-CR Facility exhaust system shall be isolated and not used. Tie in of the 1,000 cfm exhauster to the existing exhaust system shall be in accordance with ALARACT 16, Tank Farm ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components. After the waste transfer is completed, the exhauster shall be removed in accordance to the requirements of ALARACT 16.

A foam covering has been placed over the 244-CR Vault area to prevent intrusion of precipitation and snowmelt. In order to gain access to the pit cover (metal) plates or concrete cover blocks, sections of the foam shall be removed, packaged, transported and disposed of. ALARACT 4, Tank Farm ALARACT Demonstration for Packaging and Transportation of Waste shall be used to properly disposition the removed foamed covering. Radiation control technicians (RCT) shall monitor the affected work area while the foam covering is being removed. The foam covering shall be replaced after work is complete, as part of intrusion prevention measures completed by the project following waste transfer activities.

A fixative shall be applied either with the pit covers on. The fixatives shall be applied to pit surfaces through a port in the pit cover using a 'whirly' or by fogging. A hand held sprayer is used to apply fixatives to local areas within the pit when the pit cover is off.

Temporary power installation will be limited to meet the needs to support the work described in this NOC. Temporary installations can be removed when no longer needed.

Operation of PTRAEU for Bullpen Ventilation.

Ventilation of the bullpens during pre waste transfer tank activities and prior to the installation of the 1,000 cfm portable exhauster shall be accomplished with the use of PTRAEU(s). The PTRAEU(s) shall be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

Concrete cover key blocks are removed first, and only blocks necessary to perform intended work are removed. Consideration is given to sliding blocks to minimize the number of blocks to be removed. As discussed in the following, pit covers are decontaminated and/or covered with fixative before removal. Pit Covers are raised a minimum distance to safely allow a radiation protection technician to perform a dose rate and contamination survey. Pit covers are wrapped in plastic and set down in a specially prepared lay-down area. On completion of activities, the plastic wrap is removed from the pit covers and the pit covers are re-installed in their original position and orientation. Post-job surveys are performed.

Inspections, such as visual, video, or nondestructive inspections, shall be performed with pit covers in place (for pit with access ports) or removed. The pit cover design, historical inspection information, and ALARA

information shall be used to determine whether the inspection shall be performed manually (with pit cover removed) or remotely with a camera and the pit covers in place.

Excess equipment and debris currently located in the 244-CR vault pits, and in-tank equipment shall be removed to accommodate new waste transfer equipment and piping. Excess equipment shall be replaced with replacement in kind equipment, as necessary.

To facilitate the removal and disposition of these items, size reduction and decontamination activities shall be utilized. Size reduction activities shall include cutting up unusable equipment (usually jumpers/blanks) remotely, using hydraulic shears or low revolutions per minute portable band saws. All size reduction activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal.

Disposition of excess equipment and waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Removable contamination in the accessible portions of the pit is reduced to less than 100,000 disintegrations per minute/100 square centimeters beta/gamma and 2,000 disintegrations per minute/100 square centimeters alpha by washing, or an approved fixative is applied to pit surfaces. Initial washing with a low pressure (125 pounds per square inch gauge), or high pressure (3,000 pounds per square inch gauge) 'whirly' is accomplished through a port in the pit cover blocks. Additional decontamination activities (with the cover block off) include the use of chemicals, peel and strip paints, water, or manual scrub brushes.

After a section of equipment has been washed it shall be pulled into plastic sleeving and sealed by horse tailing and taping.

Liquid and sludge levels are determined using zip cords or other appropriate means that shall not disturb the waste more than zip cords.

Sampling activities shall be performed in the tank and sump area of 244-CR Vault by way of risers in the riser pit in accordance with ALARACT 7, "Tank Farm ALARACT Demonstration For Tank Waste Grab Sampling." Radiological controls for riser preparation/opening listed in ALARACT 1, "Tank Farm ALARACT Demonstration for Riser Preparation/opening," shall be followed.

The waste transfer processes shall transfer waste from tanks CR-011, CR-001, CR-002 and CR-003 and sumps within 244-CR Vault Facility to a staging tank within the 244-CR Facility. The transfer system to consolidate the waste from individual tanks consists of above ground piping of a hose in hose with leak detection at each tank's pit being utilized to support the transfer line. Mixing and dilution of the waste may take place at the receiving tank or within the transfer lines directly. The transfer system may include equipment pump skids and shall include appropriate connections to the transfer lines to accommodate chemical and water addition to the 244-CR Facility tanks and mixing prior to transfer to the designated Double Shell Tank (DST).

Before entry into a pit, an evaluation is made by engineering and/or operations personnel to determine the transfer routing configuration after pit work is complete. On removal of cover blocks, a visual inspection of pit contents is made to verify present configuration.

Tools such as impact wrenches, T-bars, and pike poles are used to repair or replace pit equipment. All equipment coming out of the pit is wrapped in plastic or otherwise contained or decontaminated for reuse or disposal. Removable contamination on the outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha before removal from the bullpen. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Jumper work shall be preceded by flushing the appropriate transfer lines with water. Jumper work is accomplished remotely, using a crane to maneuver heavy equipment and parts. Installation, disconnection,

and/or changing jumpers/blanks are accomplished by slowly loosening the jumper/blank at the connector head. The required jumper/blank is positioned and tightened to the new connector heads. If the process line or equipment being worked on is connected physically to other unnecessary transfer lines, or if the line is to be left unused, a cap, blank, or equivalent is installed on all open nozzles not connected to jumpers.

Leak testing of newly installed jumpers/blanks shall be performed with pressurized water before initiating waste transfers. Occasionally, a jumper leak test is performed during the initial stages of the transfer. In either case, cover blocks shall be in place before leak testing is performed.

Cutting up unusable pit equipment (usually jumpers/blanks) is accomplished remotely using hydraulic shears or low revolutions per minute portable band saws. Cutting activities shall be performed in the bullpen or in glovebags. The goal shall be to maintain a contamination level equal to or less than 1,000 dpm/100 cm2 beta gamma and 20 dpm/100 cm2 alpha, during cutting activities, but may not always be attainable. RCT coverage shall be provided. Should contamination levels exceed 1,000-dpm/100 cm2 additional sleeving, or use of a glove bag shall be used and/or decontamination activities performed to lower the levels in accordance with ALARA. Welding (if required) shall commence once removable contamination levels in the cut and weld area are reduced to ALARA. Size reduction (cutting) activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal. To ensure that water intrusions or potential residual waste in piping are eliminated from the facility, existing piping and transfer lines to and from the 244-CR Vault facility shall be blanked, grouted, or sealed. The isolation includes activities such as installing plugs, caps, blind flanges, or grouting. Isolations may occur at the 244-CR riser pit area or at the other end of the pipe in a diversion or valve box, at the ER153 or the 244A Lift Station.

Modifications to existing in-route pits, vaults and piping shall be required to establish the waste transfer route or to ensure the integrity of the system prior to waste transfer. These modifications can include but are not limited to, removal of existing parts and replacement with like parts, installation of new jumpers, or blanking off of equipment. When possible existing blanks shall be utilized. Pipe cutting shall be minimized in compliance with ALARA. If it is determined that the installation of a new above ground transfer line would be the best engineering method to establish a waste transfer route, a temporary transfer route shall be established following existing design and installation procedures. This temporary route will be either above ground or in a shallow trench. If a trench is required excavation shall be performed as described under that activity in this NOC.

Pit drains are checked using water from a tanker truck or another source. Water at a flow rate of approximately 20 gallons per minute is added to a pit drain line and subsequently monitored to verify the pit drains are free of restrictions. At times it might be necessary to pump the DCRT that receives the water after the water passes through the pit drain if the volume of test water approaches the capacity of the DCRT.

Either flushing with water and/or using a retrieval tool to remove debris from the drain are used to clear plugged drains. Water supply valves are opened slowly to minimize splashing. Pressures above 50 pounds per square inch gauge require approval from the engineering organization. Cover blocks shall remain in place and work is accomplished through a penetration in the cover block.

The waste transfer operations involve the pumping of liquid waste that contains dissolved solids. These solids can precipitate out of solution anywhere in the transfer path and cause blockage. If blockage is detected in the system, flushing the lines with hot water is necessary. The hot water is introduced to the system to be flushed through a pressure manifold by piping connected directly to a jumper or nozzle. These operations shall be performed with the pit covers on.

To ensure that water intrusions are eliminated from the facility, a foam covering will be placed over the 244-CR Vault area after completion of isolation activities.

Other techniques to free blockages could include pressurization, temporary jumpers, and hydraulic scouring. All piping connections are designed to be leak tight and the pit cover block shall be installed before pressurization. If pressurization beyond that obtained from the tank farms water system or supply truck (i.e.,

approximately 150 pounds per square inch gauge) is necessary to remove blockage, an engineering evaluation shall be performed to determine the maximum allowable pressure for operation.

Excavation:

Excavation may be required to support installation of ventilation, electrical support and waste transfer equipment. Modifications to existing in route pits, vaults and piping and/or to support installation of new waste transfer lines from the 244-CR Facility to the identified DST may require excavation. Soil excavation activities will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), and will follow the radiological controls specified in that ALARACT.

Any Guzzler excavations in contamination areas will be performed in accordance with the December 18, 1998, WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use. Excavation of contaminated soils using heavy equipment shall follow the requirement of Site Wide Guzzler NOC.

Soil excavation outside the tank farm fence also may be performed with heavy equipment.

Soil will be excavated around the 244-CR vault facility to install new piping, equipment slabs, and new waste transfer system support equipment. It is expected that about 1,000 cubic yards may be excavated, with about 600 cubic yards from inside the tank farm. Backfill shall be from the original removed soil or non-contaminated controlled density fill (sand, water and a small amount of cement).

Current power within the 244-CR Vault Facility is limited. To provide power for new equipment installed under the project, the existing power distribution system shall be upgraded. Upgrades shall involve modification to the existing Motor Control Center (MCC), installation of equipment control panels, and installation of new conduits.

A compliant passive breather filter shall be installed to ventilate the 244-CR Facility vaults and tanks once waste transfer activities are completed. The passive breather filters shall be installed at two locations in the 244-CR facility. A 1,000 cfm HEPA filter shall be installed at the air inlet assembly (previously attached to the evaporative cooler) and a 200 cfm HEPA filter shall be installed upstream of the existing HEPA filter pit. Butterfly valves in the ventilation system just downstream of where the filters shall be installed can be shut to prevent any emission from the facility during filter installation. Installation of the filters shall be performed in accordance with ALARACT Demonstration 16, TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components.

During waste transfer and support activities the tank and vault air space shall be actively ventilated by a temporary ventilation system. The temporary ventilation system shall consist of a portable exhauster that shall be equipped with compliant monitoring and sampling equipment. The purpose of the exhauster is to ensure potential airborne contamination from the pits, cells, or process tanks, is not being released to the environment. Operation of the 1,000 cfm portable exhauster is considered an emissions control.

New waste transfer system, waste staging/consolidation.

The planned transfer system can utilize some existing equipment along with installation of new piping and equipment at 244-CR, ER-153 and/or 244-A Lift Station. Maintenance of the transfer system may be required during the waste staging/consolidation. Equipment, which may require on going maintenance includes but is not limited to leak detection and pump system equipment. The waste can be staged/consolidated in one or two of the 244-CR Facility tanks (CR-001, CR-002, CR-003 and CR-011) prior to transfer to a DST.

The following controls are used for the pit activities:

General Controls:

1. Pre-job and post-job radiation surveys are performed by radiation protection technicians. Radiation work

permits specify permissible occupational radiological limits during activities. Radiation control technicians' survey and release equipment, inspect and approve required containment, and provide radiological surveys to verify compliance to radiation work permit limits.

2. Pit work is shut down (or not initiated) when sustained wind speeds exceed 25 miles per hour as measured in the field and/or reported by the Hanford Meteorological Station.

3. Fixatives shall be applied inside the pit (with cover blocks on or off) or accessible portions of the pit decontaminated to less than 100,000 disintegrations per minute/100 square centimeters beta-gamma and 2,000 disintegrations per minute/100 square centimeters alpha.

4. When cover blocks are removed, a fall protection handrail is installed. This handrail is draped in plastic forming a contamination barrier. The plastic extends to the top of the pit and is taped or sealed at the top of the pit. Decontamination of the containment barrier is conducted as required by the job specific radiation work permit.

5. Radiation control technicians monitor the affected work area when the vault foam covering is removed, when jumpers and equipment are being removed from risers and nozzles, and when risers are entered for sampling of tanks and sumps. Jumpers removed from the pit are drained of free liquid and decontaminated or contained before removal. The outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha. If these limits are exceeded, surfaces shall be decontaminated. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

6. A bullpen designed to minimize the top opening shall be used. Pit covers or cover blocks will be removed as necessary. If the bullpen is to be left unattended at any time, a temporary cover is placed over the pit or the pit covers or cover blocks are reinstalled. Two tents shall be erected over two pits. Upon completion of the work in the first two 244-CR Facility instrumentation pits, the tents will be relocated to the other 244-CR facility instrumentation pits.

7. PTRAEU(s) shall actively ventilate the bullpens during activities that require work in the pits (after removal of the cover blocks) to control radiological releases. The PTRAEU(s) shall operate intermittently and shall be operated in accordance with the latest revision to the WDOH approved. Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

8. A compliant exhauster skid shall ventilate the process cells and tanks during waste transfer activities. The exhauster shall maintain a negative pressure under the cover blocks and prevent contaminants from reaching the environment. The exhauster skid shall be connected to the existing exhaust ductwork with rigid or flexible ductwork.

9. The 1,000 cfm exhauster shall be equipped with a two-stage HEPA filter, which meets the requirements of ASME AG-1, Section FC and shall be tested annually to requirements of ASME N510. The HEPA filters shall have an efficiency of 99.95 percent for 0.3-micron median diameter. Each filter housing shall meet the applicable sections of ASME N509 and the test requirement of ASME N510. The exhaust stack houses a Generic Effluent Monitoring System (GEMS) that contains an air velocity probe and the air sampling probe.

10. The breather filter shall consist of a housing that contains a HEPA filter, an outlet screen, and a small seal loop. Air flowing to and from the 244-CR Facility shall pass horizontally through the filter and vertically through the downward-facing exit weather hood. Seal loops, installed in the exhaust lines, are designed as a safety feature to prevent unlikely accident in which an over pressurization occurs when the HEPA filter is isolated for occasional (infrequent) maintenance.

Specific Controls include:

-Installation of portable 1,000 cfm exhauster shall use ALARACT 16.

-Removal and/or installation of vault foam covering - ALARACT 4.

-Application of fixative at pit interior - see General Controls.

-Temporary power installation - ALARA.

-Operation of PTRAEU for bullpen ventilation - Latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

-Removal and/or installation of pit covers - General Controls.

-Inspection of pits, vaults, and tanks - General Controls.

-Removal and disposition of excess equipment and waste in pits, risers, and tanks - ALARACT 15, and ALARACT 4.

-Decontamination activities - General Controls.

-Measurement of liquid level and sludge levels in tanks and sumps - General Controls.

-Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance - ALARACT 7 and ALARACT 1.

-Facility Equipment Activities: installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment) - ALARACT 4, and ALARACT 15.

-Modifications, maintenance, and/or isolation and sealing of existing in route pits, vaults and piping (drain and transfer lines) to support and/or installation of new transfer lines - General Controls.

-Excavation - ALARACT 5, and/or WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use.

-Installation of permanent power to 244-CR Vault Facility - ALARA.

-Installation of passive breather filter assembly - ALARACT 16.

-Operation of a portable exhauster at 244-CR vault for ventilation - ALARA.

-New waste transfer system, waste staging/consolidation - General Controls.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	6.85E-06	Am - 241	3.13E-03	Am - 243	3.96E-05
Ba - 137 m	6.41E+03	C - 14	3.62E-02	Cd - 113 m	1.99E-02
Cm - 242	8.48E-05	Cm - 243	5.01E-04	Cm - 244	9.49E-03
Co - 60	1.31E-03	Cs - 134	4.22E-04	Cs - 137	6.78E+03
Eu - 152	5.31E-02	Eu - 154	7.09E+00	Eu - 155	1.22E+01
H - 3	3.57E-01	I - 129	6.95E-05	Nb - 93 m	8.10E-03
Ni - 59	1.88E-01	Ni - 63	1.82E+01	Np - 237	1.75E-01
Pa - 231	3.19E-07	Pu - 238	1.75E-01	Pu - 239	7.01E+00
Pu - 240	1.02E+00	Pu - 241	3.66E+00	Pu - 242	8.89E+00
Ra - 226	5.30E-06	Ra - 228	4.68E-05	Ru - 106	1.29E-06

Sb - 125	1.80E-03	Se - 79	1.88E-02	Sm - 151	6.55E+00
Sn - 126	2.69E-03	Sr - 90	3.02E+04	Tc - 99	1.63E+00
Th - 229	3.11E-06	Th - 232	3.53E-05	U - 232	2.61E-03
U - 233	1.01E-02	U - 234	1.72E-01	U - 235	7.61E-03
U - 236	1.95E-03	U - 238	5.05E-03	Y - 90	3.02E+04
Zr - 93	6.85E-03				

4) The filter shall be tested in-place annually to the requirements of ASME N510 and have an efficiency of 99.95 percent.

Emission Unit ID: 714

200E P-244CR-003

244-CR Vault Passive Filter B

This is a MINOR, PASSIVELY ventilated emission unit.

244-CR VAULT

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a building/facility passive breather filter that is used to ventilate building and facility operations such as but not limited to process vessels, contaminated rooms, cells, glove boxes, hoods, abandoned facilities awaiting decommissioning, and vaults that support tank farm operations, maintenance, and surveillance activities for tank farms. Entry into the building/facility consists of activities to support current surveillance, maintenance, operations, decommissioning, decontamination, and cleanup activities. Many of the activities other than normal surveillance, maintenance, and operation support will be or are regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
244-CR Vault Isolation and Interim Stabilization	AIR 06-644	7/5/2006	685

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.10E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 5.82E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The activities performed at the 244-CR Vault Facility, ER-153 and/or 244-A Lift Station include:

Work Area Preparation:

- Miscellaneous work including equipment delivery, movement, set up and maintenance in the general work area

around the 244-CR Vault Facility.

- Construction and take down of open top containment tents (bullpens) over the facility vault area.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs).

- Installation of portable 1,000 cubic feet per minute (cfm) exhauster.

- Removal and/or installation of vault foam covering.

- Application of fixative at pit interior.

- Temporary power installation.

Facility/Interim Stabilization Work:

- Operation of PTRAEU for bullpen ventilation.

- Removal and/or installation of pit covers.

- Inspection of pits, vaults, and tanks.

- Removal and disposition of excess equipment and waste in pits, risers, and tanks.

- Decontamination activities.

- Measurement of liquid level and sludge levels in tanks and sumps.

- Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance.

Facility Equipment Activities:

- Installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment).

- Modifications, maintenance, and/or isolation and sealing of existing risers, pits, vaults and incoming and/or outgoing piping (drain and transfer lines) from 244-CR Vault or connected facility.

Excavation:

- Installation of permanent power to 244-CR Vault Facility.

- Installation/Operation of Passive Breather Filter Assembly.

Waste Transfer and Support Activities:

- Operation of 1,000 cfm portable exhauster at 244-CR Vault.

- New waste transfer system, waste staging/consolidation.

Miscellaneous activities shall include:

- Construction and take down of open top contaminant tents over the facility vault area.

- Open top containment tents (bullpens) shall be constructed over the facility pit area to prevent potential

airborne contamination from the effected work area to the environment. Two bullpens shall be erected around two instrumentation pits at the 244-CR Vault. Upon completion of the first pit's work, the bullpens shall be relocated to the other two pits and their work will be completed.

- Installation of Portable/Temporary Radioactive Air Emission Unit(s) (PTRAEUs)

- A Portable/Temporary Radioactive Air Emission Unit (2,000 cfm) or units (1,000 cfm each) shall be installed to ventilate the bullpens during activities that require work in the pits, cells and tank vault area prior to performing waste transfer activities. One thousand cfm PTRAEUs, if used, shall be directly connected to individual bullpens, while a 2,000 PTRAEU if used, shall be connected to two bullpens. Movement and installation of the PTRAEU can be performed to facilitate ventilation for the four vaults of the 244-CR Vault Facility. The PTRAEU shall operate intermittently (during work activities) and will be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

A portable 1,000 cfm exhauster shall be installed to ventilate the 244-CR Facility vaults and tanks during waste transfer activities. This exhauster shall operate intermittently to support waste transfer and support activities and shall monitor air emissions. The exhauster shall be piped into the existing 244-CR facility ventilation system upstream of the existing (non-operating) exhauster, 296-C-05 and HEPA filters. The existing 244-CR Facility exhaust system shall be isolated and not used. Tie in of the 1,000 cfm exhauster to the existing exhaust system shall be in accordance with ALARACT 16, Tank Farm ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components. After the waste transfer is completed, the exhauster shall be removed in accordance to the requirements of ALARACT 16.

A foam covering has been placed over the 244-CR Vault area to prevent intrusion of precipitation and snowmelt. In order to gain access to the pit cover (metal) plates or concrete cover blocks, sections of the foam shall be removed, packaged, transported and disposed of. ALARACT 4, Tank Farm ALARACT Demonstration for Packaging and Transportation of Waste shall be used to properly disposition the removed foamed covering. Radiation control technicians (RCT) shall monitor the affected work area while the foam covering is being removed. The foam covering shall be replaced after work is complete, as part of intrusion prevention measures completed by the project following waste transfer activities.

A fixative shall be applied either with the pit covers on. The fixatives shall be applied to pit surfaces through a port in the pit cover using a 'whirly' or by fogging. A hand held sprayer is used to apply fixatives to local areas within the pit when the pit cover is off.

Temporary power installation will be limited to meet the needs to support the work described in this NOC. Temporary installations can be removed when no longer needed.

Operation of PTRAEU for Bullpen Ventilation.

Ventilation of the bullpens during pre waste transfer tank activities and prior to the installation of the 1,000 cfm portable exhauster shall be accomplished with the use of PTRAEU(s). The PTRAEU(s) shall be operated in accordance with the latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

Concrete cover key blocks are removed first, and only blocks necessary to perform intended work are removed. Consideration is given to sliding blocks to minimize the number of blocks to be removed. As discussed in the following, pit covers are decontaminated and/or covered with fixative before removal. Pit Covers are raised a minimum distance to safely allow a radiation protection technician to perform a dose rate and contamination survey. Pit covers are wrapped in plastic and set down in a specially prepared lay-down area. On completion of activities, the plastic wrap is removed from the pit covers and the pit covers are re-installed in their original position and orientation. Post-job surveys are performed.

Inspections, such as visual, video, or nondestructive inspections, shall be performed with pit covers in place (for pit with access ports) or removed. The pit cover design, historical inspection information, and ALARA

information shall be used to determine whether the inspection shall be performed manually (with pit cover removed) or remotely with a camera and the pit covers in place.

Excess equipment and debris currently located in the 244-CR vault pits, and in-tank equipment shall be removed to accommodate new waste transfer equipment and piping. Excess equipment shall be replaced with replacement in kind equipment, as necessary.

To facilitate the removal and disposition of these items, size reduction and decontamination activities shall be utilized. Size reduction activities shall include cutting up unusable equipment (usually jumpers/blanks) remotely, using hydraulic shears or low revolutions per minute portable band saws. All size reduction activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal.

Disposition of excess equipment and waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Removable contamination in the accessible portions of the pit is reduced to less than 100,000 disintegrations per minute/100 square centimeters beta/gamma and 2,000 disintegrations per minute/100 square centimeters alpha by washing, or an approved fixative is applied to pit surfaces. Initial washing with a low pressure (125 pounds per square inch gauge), or high pressure (3,000 pounds per square inch gauge) 'whirly' is accomplished through a port in the pit cover blocks. Additional decontamination activities (with the cover block off) include the use of chemicals, peel and strip paints, water, or manual scrub brushes.

After a section of equipment has been washed it shall be pulled into plastic sleeving and sealed by horse tailing and taping.

Liquid and sludge levels are determined using zip cords or other appropriate means that shall not disturb the waste more than zip cords.

Sampling activities shall be performed in the tank and sump area of 244-CR Vault by way of risers in the riser pit in accordance with ALARACT 7, "Tank Farm ALARACT Demonstration For Tank Waste Grab Sampling." Radiological controls for riser preparation/opening listed in ALARACT 1, "Tank Farm ALARACT Demonstration for Riser Preparation/opening," shall be followed.

The waste transfer processes shall transfer waste from tanks CR-011, CR-001, CR-002 and CR-003 and sumps within 244-CR Vault Facility to a staging tank within the 244-CR Facility. The transfer system to consolidate the waste from individual tanks consists of above ground piping of a hose in hose with leak detection at each tank's pit being utilized to support the transfer line. Mixing and dilution of the waste may take place at the receiving tank or within the transfer lines directly. The transfer system may include equipment pump skids and shall include appropriate connections to the transfer lines to accommodate chemical and water addition to the 244-CR Facility tanks and mixing prior to transfer to the designated Double Shell Tank (DST).

Before entry into a pit, an evaluation is made by engineering and/or operations personnel to determine the transfer routing configuration after pit work is complete. On removal of cover blocks, a visual inspection of pit contents is made to verify present configuration.

Tools such as impact wrenches, T-bars, and pike poles are used to repair or replace pit equipment. All equipment coming out of the pit is wrapped in plastic or otherwise contained or decontaminated for reuse or disposal. Removable contamination on the outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha before removal from the bullpen. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

Jumper work shall be preceded by flushing the appropriate transfer lines with water. Jumper work is accomplished remotely, using a crane to maneuver heavy equipment and parts. Installation, disconnection,

and/or changing jumpers/blanks are accomplished by slowly loosening the jumper/blank at the connector head. The required jumper/blank is positioned and tightened to the new connector heads. If the process line or equipment being worked on is connected physically to other unnecessary transfer lines, or if the line is to be left unused, a cap, blank, or equivalent is installed on all open nozzles not connected to jumpers.

Leak testing of newly installed jumpers/blanks shall be performed with pressurized water before initiating waste transfers. Occasionally, a jumper leak test is performed during the initial stages of the transfer. In either case, cover blocks shall be in place before leak testing is performed.

Cutting up unusable pit equipment (usually jumpers/blanks) is accomplished remotely using hydraulic shears or low revolutions per minute portable band saws. Cutting activities shall be performed in the bullpen or in glovebags. The goal shall be to maintain a contamination level equal to or less than 1,000 dpm/100 cm2 beta gamma and 20 dpm/100 cm2 alpha, during cutting activities, but may not always be attainable. RCT coverage shall be provided. Should contamination levels exceed 1,000-dpm/100 cm2 additional sleeving, or use of a glove bag shall be used and/or decontamination activities performed to lower the levels in accordance with ALARA. Welding (if required) shall commence once removable contamination levels in the cut and weld area are reduced to ALARA. Size reduction (cutting) activities shall be performed in accordance with ALARACT Demonstration 15, TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal. To ensure that water intrusions or potential residual waste in piping are eliminated from the facility, existing piping and transfer lines to and from the 244-CR Vault facility shall be blanked, grouted, or sealed. The isolation includes activities such as installing plugs, caps, blind flanges, or grouting. Isolations may occur at the 244-CR riser pit area or at the other end of the pipe in a diversion or valve box, at the ER153 or the 244A Lift Station.

Modifications to existing in-route pits, vaults and piping shall be required to establish the waste transfer route or to ensure the integrity of the system prior to waste transfer. These modifications can include but are not limited to, removal of existing parts and replacement with like parts, installation of new jumpers, or blanking off of equipment. When possible existing blanks shall be utilized. Pipe cutting shall be minimized in compliance with ALARA. If it is determined that the installation of a new above ground transfer line would be the best engineering method to establish a waste transfer route, a temporary transfer route shall be established following existing design and installation procedures. This temporary route will be either above ground or in a shallow trench. If a trench is required excavation shall be performed as described under that activity in this NOC.

Pit drains are checked using water from a tanker truck or another source. Water at a flow rate of approximately 20 gallons per minute is added to a pit drain line and subsequently monitored to verify the pit drains are free of restrictions. At times it might be necessary to pump the DCRT that receives the water after the water passes through the pit drain if the volume of test water approaches the capacity of the DCRT.

Either flushing with water and/or using a retrieval tool to remove debris from the drain are used to clear plugged drains. Water supply valves are opened slowly to minimize splashing. Pressures above 50 pounds per square inch gauge require approval from the engineering organization. Cover blocks shall remain in place and work is accomplished through a penetration in the cover block.

The waste transfer operations involve the pumping of liquid waste that contains dissolved solids. These solids can precipitate out of solution anywhere in the transfer path and cause blockage. If blockage is detected in the system, flushing the lines with hot water is necessary. The hot water is introduced to the system to be flushed through a pressure manifold by piping connected directly to a jumper or nozzle. These operations shall be performed with the pit covers on.

To ensure that water intrusions are eliminated from the facility, a foam covering will be placed over the 244-CR Vault area after completion of isolation activities.

Other techniques to free blockages could include pressurization, temporary jumpers, and hydraulic scouring. All piping connections are designed to be leak tight and the pit cover block shall be installed before pressurization. If pressurization beyond that obtained from the tank farms water system or supply truck (i.e.,

approximately 150 pounds per square inch gauge) is necessary to remove blockage, an engineering evaluation shall be performed to determine the maximum allowable pressure for operation.

Excavation:

Excavation may be required to support installation of ventilation, electrical support and waste transfer equipment. Modifications to existing in route pits, vaults and piping and/or to support installation of new waste transfer lines from the 244-CR Facility to the identified DST may require excavation. Soil excavation activities will be performed in accordance with ALARACT Demonstration 5, TWRS ALARACT Demonstration for Soil Excavation (Using Hand Tools), and will follow the radiological controls specified in that ALARACT.

Any Guzzler excavations in contamination areas will be performed in accordance with the December 18, 1998, WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use. Excavation of contaminated soils using heavy equipment shall follow the requirement of Site Wide Guzzler NOC.

Soil excavation outside the tank farm fence also may be performed with heavy equipment.

Soil will be excavated around the 244-CR vault facility to install new piping, equipment slabs, and new waste transfer system support equipment. It is expected that about 1,000 cubic yards may be excavated, with about 600 cubic yards from inside the tank farm. Backfill shall be from the original removed soil or non-contaminated controlled density fill (sand, water and a small amount of cement).

Current power within the 244-CR Vault Facility is limited. To provide power for new equipment installed under the project, the existing power distribution system shall be upgraded. Upgrades shall involve modification to the existing Motor Control Center (MCC), installation of equipment control panels, and installation of new conduits.

A compliant passive breather filter shall be installed to ventilate the 244-CR Facility vaults and tanks once waste transfer activities are completed. The passive breather filters shall be installed at two locations in the 244-CR facility. A 1,000 cfm HEPA filter shall be installed at the air inlet assembly (previously attached to the evaporative cooler) and a 200 cfm HEPA filter shall be installed upstream of the existing HEPA filter pit. Butterfly valves in the ventilation system just downstream of where the filters shall be installed can be shut to prevent any emission from the facility during filter installation. Installation of the filters shall be performed in accordance with ALARACT Demonstration 16, TWRS ALARACT Demonstration for Work on Potentially Contaminated Ventilation System Components.

During waste transfer and support activities the tank and vault air space shall be actively ventilated by a temporary ventilation system. The temporary ventilation system shall consist of a portable exhauster that shall be equipped with compliant monitoring and sampling equipment. The purpose of the exhauster is to ensure potential airborne contamination from the pits, cells, or process tanks, is not being released to the environment. Operation of the 1,000 cfm portable exhauster is considered an emissions control.

New waste transfer system, waste staging/consolidation.

The planned transfer system can utilize some existing equipment along with installation of new piping and equipment at 244-CR, ER-153 and/or 244-A Lift Station. Maintenance of the transfer system may be required during the waste staging/consolidation. Equipment, which may require on going maintenance includes but is not limited to leak detection and pump system equipment. The waste can be staged/consolidated in one or two of the 244-CR Facility tanks (CR-001, CR-002, CR-003 and CR-011) prior to transfer to a DST.

The following controls are used for the pit activities:

General Controls:

1. Pre-job and post-job radiation surveys are performed by radiation protection technicians. Radiation work

permits specify permissible occupational radiological limits during activities. Radiation control technicians' survey and release equipment, inspect and approve required containment, and provide radiological surveys to verify compliance to radiation work permit limits.

2. Pit work is shut down (or not initiated) when sustained wind speeds exceed 25 miles per hour as measured in the field and/or reported by the Hanford Meteorological Station.

3. Fixatives shall be applied inside the pit (with cover blocks on or off) or accessible portions of the pit decontaminated to less than 100,000 disintegrations per minute/100 square centimeters beta-gamma and 2,000 disintegrations per minute/100 square centimeters alpha.

4. When cover blocks are removed, a fall protection handrail is installed. This handrail is draped in plastic forming a contamination barrier. The plastic extends to the top of the pit and is taped or sealed at the top of the pit. Decontamination of the containment barrier is conducted as required by the job specific radiation work permit.

5. Radiation control technicians monitor the affected work area when the vault foam covering is removed, when jumpers and equipment are being removed from risers and nozzles, and when risers are entered for sampling of tanks and sumps. Jumpers removed from the pit are drained of free liquid and decontaminated or contained before removal. The outer-most container shall not exceed 1,000 disintegrations per minute/100 square centimeters beta/gamma and 20 disintegrations per minute/100 square centimeters alpha. If these limits are exceeded, surfaces shall be decontaminated. Disposition of non reusable equipment waste shall be performed in accordance with ALARACT Demonstration 4, TWRS ALARACT Demonstration for packaging and transportation of waste.

6. A bullpen designed to minimize the top opening shall be used. Pit covers or cover blocks will be removed as necessary. If the bullpen is to be left unattended at any time, a temporary cover is placed over the pit or the pit covers or cover blocks are reinstalled. Two tents shall be erected over two pits. Upon completion of the work in the first two 244-CR Facility instrumentation pits, the tents will be relocated to the other 244-CR facility instrumentation pits.

7. PTRAEU(s) shall actively ventilate the bullpens during activities that require work in the pits (after removal of the cover blocks) to control radiological releases. The PTRAEU(s) shall operate intermittently and shall be operated in accordance with the latest revision to the WDOH approved. Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

8. A compliant exhauster skid shall ventilate the process cells and tanks during waste transfer activities. The exhauster shall maintain a negative pressure under the cover blocks and prevent contaminants from reaching the environment. The exhauster skid shall be connected to the existing exhaust ductwork with rigid or flexible ductwork.

9. The 1,000 cfm exhauster shall be equipped with a two-stage HEPA filter, which meets the requirements of ASME AG-1, Section FC and shall be tested annually to requirements of ASME N510. The HEPA filters shall have an efficiency of 99.95 percent for 0.3-micron median diameter. Each filter housing shall meet the applicable sections of ASME N509 and the test requirement of ASME N510. The exhaust stack houses a Generic Effluent Monitoring System (GEMS) that contains an air velocity probe and the air sampling probe.

10. The breather filter shall consist of a housing that contains a HEPA filter, an outlet screen, and a small seal loop. Air flowing to and from the 244-CR Facility shall pass horizontally through the filter and vertically through the downward-facing exit weather hood. Seal loops, installed in the exhaust lines, are designed as a safety feature to prevent unlikely accident in which an over pressurization occurs when the HEPA filter is isolated for occasional (infrequent) maintenance.

Specific Controls include:

-Installation of portable 1,000 cfm exhauster shall use ALARACT 16.

-Removal and/or installation of vault foam covering - ALARACT 4.

-Application of fixative at pit interior - see General Controls.

-Temporary power installation - ALARA.

-Operation of PTRAEU for bullpen ventilation - Latest WDOH approval, AIR 99-1102, for the Portable/Temporary Radioactive Air Emission Unit (PTRAEU) NOC (DOE/RL-96-75).

-Removal and/or installation of pit covers - General Controls.

-Inspection of pits, vaults, and tanks - General Controls.

-Removal and disposition of excess equipment and waste in pits, risers, and tanks - ALARACT 15, and ALARACT 4.

-Decontamination activities - General Controls.

-Measurement of liquid level and sludge levels in tanks and sumps - General Controls.

-Sampling activities in pits, vaults, and tanks including chemical addition and/or waste sampling to determine Double Shell Tank waste acceptance - ALARACT 7 and ALARACT 1.

-Facility Equipment Activities: installation, disconnection, repair, replacement, and/or leak testing, of new and existing facility equipment (valves, jumpers, pumps, leak detectors, or other instrumentation/equipment) - ALARACT 4, and ALARACT 15.

-Modifications, maintenance, and/or isolation and sealing of existing in route pits, vaults and piping (drain and transfer lines) to support and/or installation of new transfer lines - General Controls.

-Excavation - ALARACT 5, and/or WDOH approved Site Wide Guzzler NOC (Air 98-1215), or the most current NOC approved for Guzzler use.

-Installation of permanent power to 244-CR Vault Facility - ALARA.

-Installation of passive breather filter assembly - ALARACT 16.

-Operation of a portable exhauster at 244-CR vault for ventilation - ALARA.

-New waste transfer system, waste staging/consolidation - General Controls.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	6.85E-06	Am - 241	3.13E-03	Am - 243	3.96E-05
Ba - 137 m	6.41E+03	C - 14	3.62E-02	Cd - 113 m	1.99E-02
Cm - 242	8.48E-05	Cm - 243	5.01E-04	Cm - 244	9.49E-03
Co - 60	1.31E-03	Cs - 134	4.22E-04	Cs - 137	6.78E+03
Eu - 152	5.31E-02	Eu - 154	7.09E+00	Eu - 155	1.22E+01
H - 3	3.57E-01	I - 129	6.95E-05	Nb - 93 m	8.10E-03
Ni - 59	1.88E-01	Ni - 63	1.82E+01	Np - 237	1.75E-01
Pa - 231	3.19E-07	Pu - 238	1.75E-01	Pu - 239	7.01E+00
Pu - 240	1.02E+00	Pu - 241	3.66E+00	Pu - 242	8.89E+00
Ra - 226	5.30E-06	Ra - 228	4.68E-05	Ru - 106	1.29E-06

Sb - 125	1.80E-03	Se - 79	1.88E-02	Sm - 151	6.55E+00
Sn - 126	2.69E-03	Sr - 90	3.02E+04	Tc - 99	1.63E+00
Th - 229	3.11E-06	Th - 232	3.53E-05	U - 232	2.61E-03
U - 233	1.01E-02	U - 234	1.72E-01	U - 235	7.61E-03
U - 236	1.95E-03	U - 238	5.05E-03	Y - 90	3.02E+04
Zr - 93	6.85E-03				

4) The filter shall be tested in-place annually to the requirements of ASME N510 and have an efficiency of 99.95 percent.

Emission Unit ID: 716

200E P-241C-002

241-C-104

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 0.17 ft/second. 0.05 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows the SST to vent to the atmosphere under tank farm storage, maintenance, and operations. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The tanks are scheduled for waste retrieval, decommissioning, and eventual closure under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

Emission Unit ID: 717

200E P-241C-003

241-C-105

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows the SST to vent to the atmosphere under tank farm storage, maintenance, and operations. The tanks store radioactive waste until the waste is retrieved, treated, and properly disposed under the applicable federal and state regulations and/or permits. The tanks are scheduled for waste retrieval, decommissioning, and eventual closure under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

Emission Unit ID: 735

200E P-296A044-001

296-A-44

This is a MAJOR, ACTIVELY ventilated emission unit.

241-AN TANK FARM

Emission Unit Information

Stack Height: 28.13 ft. 8.57 m. Stack Diameter 0.84 ft. 0.26 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: 2000.00 ft/second. 609.60 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	Operational at all times, when the exhauster is in use.
	Heater	1	Operational at all times, when the exhauster is in use.
	Prefilter	1	
	HEPA	2	In series.
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Appendix B, Method 114	Sr-90, Cs-137, Am-241, C-14, Y90, Cs-134, Eu-154, Ac-227, Pa-231, U-233, Pu-238, Pu-240, Pu-241, Cm-244.	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241 AN Tank Farm during storage, maintenance and normal operations. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. This emission unit may be operated in alternation or concurrently with the 296-A-45. The emission unit is a primary exhauster ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of New Ventilation Systems in AN and AW Tank Farms	AIR 06-663	7/5/2006	706

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.60E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.33E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The 296-A-44 and 296-A-45 shall ventilate the 241-AN Double Shell Tank (DST) Farm which consists of

seven individual DSTs. The 296-A-46 and 296-A-47 shall ventilate the 241-AW Double Shell Tank (DST) Farm which consists of six individual DSTs. The DSTs are fabricated as two concentric tanks surrounded by a concrete shell. The inner tank containing the waste is 75 feet in diameter and 46.8 feet high at the crown. Each tank stores 1.14E6 gallons. The DSTs are used for storage, treatment, retrieval, and disposal of the waste contained in the tanks, as well as transfers to the Waste Treatment Plant.

The 296-A-44, 296-A-45, 296-A-46 and 296-A-47 ventilation systems serve to remove heat, and serve as containment systems for radioactive particulates present in the tank headspace, they ventilate/remove flammable gases and vapors that evolve from the liquid surface in the DSTs. The ventilation systems do this by drawing air into the tank vapor space. After the air leaves the vapor space the air is conditioned by the ventilation system. It removes entrained moisture, the relative humidity is reduced, and particulates are filtered out. Before discharge of this air to the atmosphere from the stack, the air is monitored and sampled for radionculide particulates.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.30E+02	Am - 241	1.03E+05	Am - 243	1.37E+01
Ba - 137 m	1.75E+07	C - 14	5.07E+02	Cd - 113 m	7.50E+03
Cm - 242	7.57E+01	Cm - 243	8.35E+00	Cm - 244	2.36E+02
Co - 60	4.46E+03	Cs - 134	1.81E+04	Cs - 137	1.85E+07
Eu - 152	1.06E+03	Eu - 154	4.63E+04	Eu - 155	4.56E+04
H - 3	2.71E+03	I - 129	9.18E+00	Nb - 93 m	1.82E+03
Ni - 59	7.70E+02	Ni - 63	7.26E+04	Np - 237	6.20E+01
Pa - 231	2.70E+02	Pu - 238	3.04E+03	Pu - 239	2.92E+04
Pu - 240	5.25E+03	Pu - 241	6.40E+04	Pu - 242	4.05E-01
Ra - 226	2.38E+02	Ra - 228	3.87E+01	Ru - 106	1.02E+03
Sb - 125	2.06E+04	Se - 79	5.70E+01	Sm - 151	1.53E+06
Sn - 126	2.40E+02	Sr - 90	2.30E+07	Tc - 99	6.89E+03
Th - 229	2.49E+01	Th - 232	6.16E+00	U - 232	2.79E+01
U - 233	4.48E+02	U - 234	6.76E+01	U - 235	2.58E+00
U - 236	2.87E+00	U - 238	5.61E+01	Y - 90	2.30E+07
Zr - 93	1.86E+03				

4) HEPA filters shall be individually tested in place at least annually in accordance with the requirements of ASME AG-1 Section TA, and have a minimum efficiency of 99.95%.
5) The Annual Possession Quantity shall be tracked on a WDOH approved log.
6) The ductwork between the de-entrainer and heater, along with the filter housings shall be insulated.
7) The exhauster shall be operational during all waste transfer, waste disturbing, or particulate generating activities.
8) Prior to operation of the ventilation system a leak test of the entire train including the ductwork from the exit of the tank to the entrance to the stack shall be performed meeting the requirements called out in ASME AG-1.
9) The effluent monitoring and sampling system shall meet the requirements of ANSI N13.1-1999. A written technical basis document required by Section 4 of ANSI N13.1-1999 shall be provided to WDOH for review and approval.

Emission Unit ID: 736

200E P-296A045-001

296-A-45

This is a MAJOR, ACTIVELY ventilated emission unit.

241-AN TANK FARM

Emission Unit Information

Stack Height: 28.13 ft. 8.57 m. Stack Diameter 0.84 ft. 0.26 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: 91.31 ft/second. 27.83 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	Operational at all times, when the exhauster is in use.
	Heater	1	Operational at all times, when the exhauster is in use.
	Prefilter	1	
	HEPA	2	In series.
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Appendix B, Method 114	Sr-90, Cs-137, Am-241, C-14, Y90, Cs-134, Eu-154, Ac-227, Pa-231, U-233, Pu-238, Pu-240, Pu-241, Cm-244.	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241 AN Tank Farm during storage, maintenance, and normal operations. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. This emission unit may be operated in alternation or concurrently with the 296-A-44. The emission unit is a primary exhauster ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of New Ventilation Systems in AN and AW Tank Farms	AIR 06-663	7/5/2006	706

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.60E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.33E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The 296-A-44 and 296-A-45 shall ventilate the 241-AN Double Shell Tank (DST) Farm which consists of

seven individual DSTs. The 296-A-46 and 296-A-47 shall ventilate the 241-AW Double Shell Tank (DST) Farm which consists of six individual DSTs. The DSTs are fabricated as two concentric tanks surrounded by a concrete shell. The inner tank containing the waste is 75 feet in diameter and 46.8 feet high at the crown. Each tank stores 1.14E6 gallons. The DSTs are used for storage, treatment, retrieval, and disposal of the waste contained in the tanks, as well as transfers to the Waste Treatment Plant.

The 296-A-44, 296-A-45, 296-A-46 and 296-A-47 ventilation systems serve to remove heat, and serve as containment systems for radioactive particulates present in the tank headspace, they ventilate/remove flammable gases and vapors that evolve from the liquid surface in the DSTs. The ventilation systems do this by drawing air into the tank vapor space. After the air leaves the vapor space the air is conditioned by the ventilation system. It removes entrained moisture, the relative humidity is reduced, and particulates are filtered out. Before discharge of this air to the atmosphere from the stack, the air is monitored and sampled for radionculide particulates.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.30E+02	Am - 241	1.03E+05	Am - 243	1.37E+01
Ba - 137 m	1.75E+07	C - 14	5.07E+02	Cd - 113 m	7.50E+03
Cm - 242	7.57E+01	Cm - 243	8.35E+00	Cm - 244	2.36E+02
Co - 60	4.46E+03	Cs - 134	1.81E+04	Cs - 137	1.85E+07
Eu - 152	1.06E+03	Eu - 154	4.63E+04	Eu - 155	4.56E+04
H - 3	2.71E+03	I - 129	9.18E+00	Nb - 93 m	1.82E+03
Ni - 59	7.70E+02	Ni - 63	7.26E+04	Np - 237	6.20E+01
Pa - 231	2.70E+02	Pu - 238	3.04E+03	Pu - 239	2.92E+04
Pu - 240	5.25E+03	Pu - 241	6.40E+04	Pu - 242	4.05E-01
Ra - 226	2.38E+02	Ra - 228	3.87E+01	Ru - 106	1.02E+03
Sb - 125	2.06E+04	Se - 79	5.70E+01	Sm - 151	1.53E+06
Sn - 126	2.40E+02	Sr - 90	2.30E+07	Tc - 99	6.89E+03
Th - 229	2.49E+01	Th - 232	6.16E+00	U - 232	2.79E+01
U - 233	4.48E+02	U - 234	6.76E+01	U - 235	2.58E+00
U - 236	2.87E+00	U - 238	5.61E+01	Y - 90	2.30E+07
Zr - 93	1.86E+03				

4) HEPA filters shall be individually tested in place at least annually in accordance with the requirements of ASME AG-1 Section TA, and have a minimum efficiency of 99.95%.
5) The Annual Possession Quantity shall be tracked on a WDOH approved log.
6) The ductwork between the de-entrainer and heater, along with the filter housings shall be insulated.
7) he emission unit shall meet the quality assurance requirements of 40 CFR 61 Subpart H, as effective on October 9, 2002.
8) The exhauster shall be operational during all waste transfer, waste disturbing, or particulate generating activities.
9) Prior to operation of the ventilation system a leak test of the entire train including the ductwork from the exit of the tank to the entrance to the stack shall be performed meeting the requirements called out in ASME AG-1.
10) The effluent monitoring and sampling system shall meet the requirements of ANSI N13.1-1999. A written technical basis document required by Section 4 of ANSI N13.1-1999 shall be provided to WDOH for review and approval.

Emission Unit ID: 737

200E P-241C103-001

241-C-103

This is a MINOR, PASSIVELY ventilated emission unit.

241-C TANK FARM

Emission Unit Information

Stack Height: 15.00 ft. 4.57 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements See additional requirements below.

Additional Requirements

Contamination surveys of breather filters with stack extensions will be performed on the downstream side of the filter or on the outside of the screen covering the outlet fo the vent (if one exists) or by removing the test port cap downstream of the HEPA filter, surveying the cap and inserting smear media (e.g. swab, masslin) in the opening and smearing the interior ducting surface on the opposite side of the test port cap opening.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows a SST to vent to the atmosphere under tank farm storage, maintenance, and operation. The tank stores the radioactive waste awaiting retrieval, treatment, and proper disposal under the applicable federal and state regulations and/or permits. The SST scheduled activities of waste retrieval, decommissioning, and eventual closure will be completed under applicable federal and state regulations and/or permits. Any activity other than storage, maintenance, and normal operation conducted at the tank will obtain the appropriate permits for the activity and the emission units associated with the activity as required by the regulations applicable to the activity. The emission unit is a passive breather filter and is part of the tank's ventilation system that operates continuously.

Emission Unit ID: 738

200E P-244A-002

244-A Primary HEPA

This is a MINOR, PASSIVELY ventilated emission unit.

244-A DCRT

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double contained receiver tank (DCRT) passive breather filter ventilation system used to support tank farm operations, such as waste retrieval and operation support activities for the 241-A Tank Farm. The tank stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit has a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Isolation and Closure of Exhaust Stacks 296-A-25, 296-B-28, 296-S-22 and 296-T-18	AIR 06-655	7/5/2006	697

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

244-S DCRT (296-S-22 STACK)

Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver

tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

244-TX DCRT (296-T-18 STACK)

Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for

the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	2.04E-02	Am - 241	1.17E+01	Am - 243	3.58E-04
Ba - 137 m	2.69E+03	C - 14	4.06E-01	Cd - 113 m	1.40E+00
Cm - 242	1.19E-02	Cm - 243	6.91E-04	Cm - 244	1.26E-02
Co - 60	6.18E-01	Cs - 134	6.84E-03	Cs - 137	2.84E+03
Eu - 152	1.18E-01	Eu - 154	9.29E+00	Eu - 155	5.09E+00
H - 3	1.53E+00	I - 129	5.01E-03	Nb - 93 m	4.18E-01
Ni - 59	1.57E-01	Ni - 63	1.46E+01	Np - 237	9.67E-03
Pa - 231	4.25E-02	Pu - 238	4.84E-01	Pu - 239	9.45E+00
Pu - 240	1.57E+00	Pu - 241	1.23E+01	Pu - 242	8.61E-05
Ra - 226	3.73E-02	Ra - 228	8.82E-03	Ru - 106	8.01E-06
Sb - 125	6.95E-01	Se - 79	1.22E-02	Sm - 151	3.74E+02
Sn - 126	6.02E-02	Sr - 90	5.31E+03	Tc - 99	2.76E+00
Th - 229	4.01E-03	Th - 232	1.13E-03	U - 232	6.22E-03
U - 233	7.78E-02	U - 234	3.07E-02	U - 235	1.28E-03
U - 236	6.36E-04	U - 238	2.87E-02	Y - 90 m	5.31E+03
Zr - 93	5.03E-01				

4) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.

5) The emissions shall be limited to 2.81E-02 mrem/year unabated and 2.81E-04 mrem/yr abated.

6) Under passive ventilation no activities shall be conducted which could generate aerosols within the 244-A DCRT.

Emission Unit ID: 740

200E P-244BX-002

244-BX Primary HEPA

This is a MINOR, PASSIVELY ventilated emission unit.

244-BX-DCRT

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.33 ft. 0.10 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double container receiver tank (DCRT) passive breather filter ventilation system used to support tank farm operations, such as but not limited to waste retrieval and operation support activities for 241 BX Tank Farm. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Isolation and Closure of Exhaust Stacks 296-A-25, 296-B-28, 296-S-22 and 296-T-18	AIR 06-655	7/5/2006	697

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

244-S DCRT (296-S-22 STACK)

Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver

tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

244-TX DCRT (296-T-18 STACK)

Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for

the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	4.12E-02	Am - 241	2.37E+01	Am - 243	7.23E-04
Ba - 137 m	5.43E+03	C - 14	8.19E-01	Cd - 113 m	2.83E+00
Cm - 242	2.40E-02	Cm - 243	1.39E-03	Cm - 244	2.56E-02
Co - 60	1.25E+00	Cs - 134	1.38E-02	Cs - 137	5.74E+03
Eu - 152	2.38E-01	Eu - 154	1.88E+01	Eu - 155	1.03E+01
H - 3	3.09E+00	I - 129	1.03E-02	Nb - 93 m	8.44E-01
Ni - 59	3.18E-01	Ni - 63	2.95E+01	Np - 237	1.95E-02
Pa - 231	8.58E-02	Pu - 238	9.78E-01	Pu - 239	1.91E+01
Pu - 240	3.17E+00	Pu - 241	2.48E+01	Pu - 242	1.74E-04
Ra - 226	7.54E-02	Ra - 228	1.78E-02	Ru - 106	1.62E-05
Sb - 125	1.40E+00	Se - 79	2.46E-02	Sm - 151	7.55E+02
Sn - 126	1.22E-01	Sr - 90	1.07E+04	Tc - 99	5.57E+00
Th - 229	8.09E-03	Th - 232	2.28E-03	U - 232	1.26E-02
U - 233	1.57E-01	U - 234	6.19E-02	U - 235	2.59E-03
U - 236	1.28E-03	U - 238	5.80E-02	Y - 90	1.07E+04
Zr - 93	1.02E+00				

4) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.

5) The emissions shall be limited to 2.81E-02 mrem/yr unabated and 2.81E-04 mrem/yr abated.

6) Under passive ventilation no activities shall be conducted which could generate aerosols within the 244-BX DCRT.

Emission Unit ID: 742

200W P-244S-002

244-S Primary HEPA

This is a MINOR, PASSIVELY ventilated emission unit.

244 S-DCRT

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double container receiver tank (DCRT) passive breather filter ventilation system used to support tank farm operations, such as but not limited to waste retrieval and operation support activities for 241 S Tank Farm. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Isolation and Closure of Exhaust Stacks 296-A-25, 296-B-28, 296-S-22 and 296-T-18	AIR 06-655	7/5/2006	697

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

244-S DCRT (296-S-22 STACK)

Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The

primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

244-TX DCRT (296-T-18 STACK)

Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect

potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	2.04E-02	Am - 241	1.17E+01	Am - 243	3.58E-04
Ba - 137 m	2.69E+03	C - 14	4.06E-01	Cd - 113 m	1.40E+00
Cm - 242	1.19E-02	Cm - 243	6.91E-04	Cm - 244	1.26E-02
Co - 60	6.18E-01	Cs - 134	6.84E-03	Cs - 137	2.84E+03
Eu - 152	1.18E-01	Eu - 154	9.29E+00	Eu - 155	5.09E+00
H - 3	1.53E+00	I - 129	5.10E-03	Nb - 93 m	4.18E-01
Ni - 59	1.57E-01	Ni - 63	1.46E+01	Np - 237	9.67E-03
Pa - 231	4.25E-02	Pu - 238	4.84E-01	Pu - 239	9.45E+00
Pu - 240	1.57E+00	Pu - 241	1.23E+01	Pu - 242	8.61E-05
Ra - 226	3.73E-02	Ra - 228	8.82E-03	Ru - 106	8.01E-06
Sb - 125	6.95E-01	Se - 79	1.22E-02	Sm - 151	3.74E+02
Sn - 126	6.02E-02	Sr - 90	5.31E+03	Tc - 99	2.76E+00
Th - 229	4.01E-03	Th - 232	1.13E-03	U - 232	6.22E-03
U - 233	7.78E-02	U - 234	3.07E-02	U - 235	1.28E-03
U - 236	6.36E-04	U - 238	2.87E-02	Y - 90	5.31E+03
Zr - 93	5.03E-01				

4) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.
5) The emissions shall be limited to 3.19E-02 mrem/yr unabated and 3.19E-04 mrem/yr abated.
6) Under passive ventilation no activities shall be conducted which could generate aerosols within the 244-S DCRT.

Emission Unit ID: 744

200W P-244TX-002

244-TX Primary HEPA

This is a MINOR, PASSIVELY ventilated emission unit.

244-TX DCRT

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double container receiver tank (DCRT) passive breather filter ventilation system used to support tank farm operations, such as but not limited to waste retrieval and operation support activities for 241 TX Tank Farm. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Isolation and Closure of Exhaust Stacks 296-A-25, 296-B-28, 296-S-22 and 296-T-18	AIR 06-655	7/5/2006	697

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

244-S DCRT (296-S-22 STACK)

Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver

tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

244-TX DCRT (296-T-18 STACK)

Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for

the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	4.12E-02	Am - 241	2.37E+01	Am - 243	7.23E-04
Ba - 137 m	5.43E+03	C - 14	8.19E-01	Cd - 113 m	2.83E+00
Cm - 242	2.40E-02	Cm - 243	1.39E-03	Cm - 244	2.56E-02
Co - 60	1.25E+00	Cs - 134	1.38E-02	Cs - 137	5.74E+03
Eu - 152	2.38E-01	Eu - 154	1.88E+01	Eu - 155	1.03E+01
H - 3	3.09E+00	I - 129	1.03E-02	Nb - 93 m	8.44E-01
Ni - 59	3.18E-01	Ni - 63	2.95E+01	Np - 237	1.95E-02
Pa - 231	8.58E-02	Pu - 238	4.50E+02	Pu - 239	3.16E+01
Pu - 240	1.92E+01	Pu - 241	6.28E+04	Pu - 242	1.74E-04
Ra - 226	7.54E-02	Ra - 228	1.78E-02	Ru - 106	1.62E-05
Sb - 125	1.40E+00	Se - 79	2.46E-02	Sm - 151	7.55E+02
Sn - 126	1.22E-01	Sr - 90	1.07E+04	Tc - 99	5.57E+00
Th - 229	8.09E-03	Th - 232	2.28E-03	U - 232	1.26E-02
U - 233	1.57E-01	U - 234	6.19E-02	U - 235	2.59E-03
U - 236	1.28E-03	U - 238	5.80E-02	Y - 90	1.07E+04
Zr - 93	1.02E+00				

4) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.

5) The emissions shall be limited to 3.19E-02 mrem/yr unabated and 3.19E-04 mrem/yr abated.

6) Under passive ventilation no activities shall be conducted which could generate aerosols within the 244-TX DCRT.

Emission Unit ID: 749

200 W-296P048-001

296-P-48

This is a MAJOR, ACTIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 21.00 ft. 6.40 m. Stack Diameter 0.50 ft. 0.15 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 38.22 ft/second. 11.65 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Demister	1	
	Heater	1	
	Prefilter	1	
	HEPA	2	2 HEPAs in series.
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Each radionuclides that could contribute greater than 10 percent of the potential TEDE to the MEI, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, and greater than 25 percent of the TEDE to the MEI after controls	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a skid/mobile type portable exhauster used to support Tank Farm operations, such as, but not limited to waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and construction ansd operational support activities. The emission unit is a portable exhauster that operate intermittently.

This Emission Unit has 2 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
241-C-200 Series Tanks Retrieval	AIR 06-656	7/5/2006	698

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.72E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.18E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The activities listed below are approved for the C-200 Series Waste Retrieval effort:

Retrieval Activities (Stack):

i. Operation of the new portable exhauster and ventilation system.
ii. Retrieve wastes from C-201, C-202, C-203, and C-204 using the AMS to vacuum wastes to the central vessel skid.
iii. Pump waste from central vessel skid to the double shell tank system using OGT lines

Diffuse and Fugitive:

a. Proposed Actions for Tanks C-201 through C-204:

i. Removal of weather covers and debris from jet pump pits and ventilation hatchways (ALARACTs 1, 4, 6, 12, 13, 14, and 15)
ii. Remove condenser pit filter assembly and replace tank breather filter with a Y-duct assembly (ALARACTs 1, 4, 12, 15, and 16)
iii. Remove liquid level reels and thermocouple trees, 1 each per tank (ALARACTs 1, 4, 6, 12, 13, 14, and 15)
iv. Remove sluice eductor pump from Tank C-204, if necessary (ALARACTs 1, 4, 6, 12, 13, 14, and 15)

b. Tank Equipment Installations:

i. AMS with connected hydraulic power pack, one per tank (ALARACTs 1, 4, 6, 12, 13, and 14)
ii. Ventiliation inlet filter assembly, one per tank (ALARACTs 1, 4, 12, 13 and 16)
iii. Ventilation exhaust ducting, one per tank (ALARACTs 1, 4, 12, and 16)
iv. Closed circuit TV s, one per tank (ALARACT 1, 4, 12, 13, and 16)
v. Master camera control system skid, and connects to in-tank cameras (ALARACT 6, 13, and 16)
vi. Central vessel skid, connect to individual AMS units, connect to the double shell tank via OGT lines (using hand digging or Guzzler, latest approved revision) (ALARACT 1, 4, 5, 6, 13, and 14)
vii. Pump skid with connected hydraulic power pack, and OGT lines (ALARACT 1, 4, 6, 12, 13, and 14)
viii. Vacuum skid with connected hydraulic power pack (ALARACT 1, 4, 6, 12, 13, and 14)
ix. Portable exhauster skid, connect via HVAC ducting to individual tank ventilation exhaust ducts (ALARACTs 1, 4, 6, 12, 13, and 14)
x. Electrical cable and electric supply to hydraulic power packs, vessel skid, pump skid, vacuum skid, portable exhauster skid, inlet filter, in-tank cameras, and generator, control instrumentation (ALARACT 5)
xi. Air compressor and associated air supply lines to AMS, vessel skid, vacuum skid (ALARACT 5)
xii. Instrumentation control room, water distribution sled, instrument electrical skid, diesel generator

c. Remove tank equipment installed under this NOC for maintenance, repair, disposal, or re-use for future tank retrievals. (ALARACTs 1, 4, 6, 12, 13, 14, 15 and 16)

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.36E-03	Am - 241	4.07E+01	Am - 243	9.41E-04
Ba - 137 m	3.96E+02	C - 14	1.07E-02	Cd - 113 m	3.83E-01
Cm - 242	6.10E-02	Cm - 243	2.92E-03	Cm - 244	1.29E-03
Co - 60	4.48E-03	Cs - 134	3.97E-06	Cs - 137	4.19E+02

Eu - 152	2.16E+00	Eu - 154	1.02E+00	Eu - 155	7.55E+01
H - 3	5.21E-03	I - 129	1.46E-04	Nb - 93 m	1.84E-01
Ni - 59	4.00E+00	Ni - 63	3.73E+02	Np - 237	2.28E-04
Pa - 231	4.61E-05	Pu - 238	2.60E+00	Pu - 239	1.16E+02
Pu - 240	1.91E+01	Pu - 241	1.42E+02	Pu - 242	9.77E-04
Ra - 226	3.47E-04	Ra - 228	9.45E-10	Ru - 106	7.24E-07
Sb - 125	7.50E-03	Se - 79	4.68E-03	Sm - 151	1.66E+02
Sn - 126	2.99E-02	Sr - 90	2.20E+03	Tc - 99	7.51E-02
Th - 229	3.53E-07	Th - 232	2.54E-12	U - 232	4.38E-08
U - 233	1.87E-09	U - 234	2.00E-03	U - 235	8.90E-05
U - 236	1.95E-05	U - 238	2.02E-03	Y - 90	2.20E+03
Zr - 93	2.06E-01				

4) A daily radiological survey of all the ductwork flange connections shall be performed to verify there is no leakage of radiological contamination from the exhauster ductwork.

5) At least once a shift a visual inspection of the ductwork, HEPA filter housing, fan, and flex connections shall be performed to verify the integrity of the ventilation system. Any deficiencies shall be reported to WDOH.

6) The batch holding vessel and associated piping shall be contained in a Conex-type container. That container shall be equipped with a single passive HEPA filter and leak detection devices. The leak detection shall be maintained and monitored in the two manifold boxes while in use [WAC 246-247-040(5)].

7) The differential pressure across the pre-filter, primary HEPA filter, secondary HEPA filter and total differential pressure across the pre-filter, primary HEPA filter and secondary HEPA filter shall be measured and recorded at least once each shift. The differential pressure readings shall be trended and any unexpected fluctuations in the differential pressure shall be reported to WDOH.

8) The new portable exhauster shall operate continuously when the AMS are operating in the tanks. Waste retrieval activities shall cease if the exhauster is not operating [WAC 246-247-040(5)].

9) The heater trip set point shall be set below 200 F. HEPAs shall be individually aerosol tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95% [WAC 246-247-040(5)].

10) The number of gallons of waste retrieved from each C-200 series tank shall be documented and reported to WDOH on completion [WAC 246-247-040(5)].

11) The total abated emission limit for 296-P-48 under this Notice of Construction is limited to 1.12E-03 to the Maximally Exposed Individual, comprised of 2.62E-04 mrem/year offsite and 8.53 E-04 mrem/year onsite. The total unabated emission limit on the potential-to-emit for 296-P-48 under this Notice of Construction is limited to 2.17 mrem/year to the Maximally Exposed Individual, comprised of 4.62E-01 offsite and 1.7E+00 mrem/year onsite to the Maximally Exposed Individual [WAC 246-247-040(5)].

12) Vacuum exhaust drawn from the batch holding vessel shall be routed back to tanks. The tanks shall be maintained under a negative pressure during tank retrieval activities [WAC 246-247-040(5)].

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.31E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.61E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The operation of the waste retrieval system(s) for the removal of radioactive wastes from all 149 Single Shell Tanks (SST) at the Hanford Site.

SALTCAKE DISSOLUTION WASTE RETRIEVAL SYSTEM

The saltcake dissolution waste retrieval system may be used to retrieve soluble saltcake waste. This method retrieves the soluble portion of the waste only, resulting in very few of the solids being pumped from the tank. The saltcake dissolution waste retrieval system deployed in the SSTs is for water, chemical agent, or catalyst liquid to be added to the tank using a variety of spray nozzles or "sprinklers". The approach is to sprinkle the waste surface with water, chemical agent, or catalyst liquid. The added water, chemical agent, or catalyst liquid must stay in contact with the saltcake for a long enough period of time for the brine to become saturated. Once the brine is saturated, it is pumped from the SST to a receiver tank, staging tank, storage DST or other staging/storage vessel associated with the supplemental treatment, packaging or disposal. Salt solution will be removed using the existing saltwell pump or other pump placed into the tank.

A tank not equipped with a saltwell pump, a transfer pump (progressive cavity, vertical turbine) can be installed and operated.

Remotely directable water distribution devices will be located in risers spaced as far apart as practical. A combination of spraying waster, chemical agent, or catalyst liquid to dissolve the saltcake can be used in conjunction with directing a flow of water or recirculating water at the waste to move it to the pump suction to allow the pumping of waste from the tank. Recirculated waste from the pump may be sent back to the tank as an alternative to using water to direct dissolution waste to the pump suction.

MODIFIED SLUCING WASTE RETRIEVAL SYSTEM

Modified sluicing can be used for some SST waste retrieval. Modified sluicing is the introduction of liquid at low to moderate pressures, not to exceed 1200 psi, and volumes into the waste. The liquid dissolves and breaks apart solid materials and suspends them in the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a receiver tank.

Modified sluicing introduces sluice liquid in a controlled fashion using multiple sluicing nozzles at varying pressures and flows, then pumps out the resultant waste slurry. This maintains minimal liquid inventories within the tank at all times. The liquids that could be used in modified sluicing include water, recirculated supernatant/water from the receiving Double Shell Tank, recirculated supernatant/water, chemical agent or catalyst liquid.

VACUUM WASTE RETRIEVAL SYSTEM

A vacuum waste retrieval system can be used for waste retrieval activities in the (SSTs). The vacuum waste retrieval system is introduced into the SSTs by means of an articulating mast system (AMS). The AMS has a horizontal reach and rotational capabilities of 360 degrees. The AMS has a retracted position and can be extended vertically. Air is mixed at the suction end of the AMS enabling the required vertical lift for the waste

to a topside receiver tank, batch vessel or a staging SST, storage DST, or other staging/storage vessels associated with supplemental treatment, packaging or disposal.

The AMS will be deployed through and attached to standard riser flanges that are available on the SSTs. Cameras can also be installed in other risers for in-tank viewing and control of the AMS.

For the 200-series tanks in the 241-C, 241-U, 241-B and 241-T Tank Farms a vacuum retrieval process tank, staging tank, staging SST, storage DST or other staging/storage vessel will be deployed. The receiver tank will receive waste in batches from whichever tank is connected into the vacuum retrieval system. The vacuum pressure used to draw up the waste from the tank to the receiver tank is relieved back into the SST being retrieved.

MOBILE RETRIEVAL SYSTEM

A Mobile Retrieval System (MRS) can be used to retrieve waste from some SSTs. The MRS consists of two in-tank systems. The first is a robotic crawler inserted through one riser the second is an AMS inserted through a second riser. The AMS retrieves the sludge from the tank using a vacuum with assisting pneumatic conveyance. The AMS vacuum tube has a horizontal reach and can be extended to the bottom of the tank. The arm rotates 360 degrees. The vacuum will be directed through the AMS in the tank to the end effector, which is in contact with the waste. The pneumatic conveyance-assisted vacuum retrieval system will draw the waste up through the vacuum to the waste vessel in the vessel skid in batches. The AMS is then valved out while the waste vessel is emptied and pumped out through the over ground transfer lines to a DST, a staging SST or other treatment/disposal options. When the waste vessel is nearly empty, the transfer line will be valved out and the AMS will be valved back in and another batch of waste will be removed from the tank. This process will be repeated until waste near the center of the tank is removed. The robotic crawler will be remotely controlled to move and/or wash waste toward the center of the tank.

The robotic crawler is equipped with a plow blade at the front for pushing/pulling wastes, a screw pump to jet wastes through a small nozzle towards the center of the tank, the ability to direct hot or cold water through the same nozzle to wash wastes off of in-tank equipment, dissolve waste agglomerations in the tank, and wash waste toward the center of the tank for removal.

Any new retrieval methods or changes to processes will need to be provided to WDOH in a revised NOC prior to implementation.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.99E+00	Am - 241	8.68E+03	Am - 243	3.39E-01
Ba - 137 m	4.26E+07	C - 14	6.25E+02	Cd - 113 m	4.95E+03
Cm - 242	1.97E+01	Cm - 243	1.80E+00	Cm - 244	1.90E+01
Co - 60	2.52E+03	Cs - 134	3.44E+04	Cs - 137	4.89E+07
Eu - 152	8.49E+02	Eu - 154	1.45E+04	Eu - 155	9.54E+03
H - 3	5.95E+03	I - 129	2.95E+01	Nb - 93 m	1.01E+03
Ni - 59	1.05E+02	Ni - 63	9.30E+03	Np - 237	9.50E+01
Pa - 231	1.25E+01	Pu - 238	1.65E+02	Pu - 239	3.17E+03
Pu - 240	5.36E+02	Pu - 241	4.80E+03	Pu - 242	3.34E-02
Ra - 226	1.27E-02	Ra - 228	1.15E+01	Ru - 106	1.22E-02
Sb - 125	1.73E+04	Se - 79	6.36E+01	Sm - 151	8.93E+05
Sn - 126	2.59E+02	Sr - 90	2.91E+06	Tc - 99	2.24E+04
Th - 229	4.20E-01	Th - 232	1.26E+00	U - 232	3.66E+00
U - 233	3.02E+01	U - 234	1.07E+01	U - 235	4.44E-01
U - 236	2.73E-01	U - 238	9.86E+00	Y - 90	2.91E+06
Zr - 93	1.25E+03				

4) A pre-operational NDA of the exhauster(s) HEPA filters and a post-operational NDA will be performed the first time each of the four waste retrieval methods (mobile retrieval system, vacuum retrieval, supernatant sluicing, and saltcake dissolution with supernatant) when placed into service. The post-operational NDA should occur after one cycle or phase of waste retrieval operation is completed, a method replaces another method during a cycle/phase or six months from the inservice date, whichever occurs first. The facility may opt to replace the exhauster's HEPA filters prior to placing a new waste retrieval method in service and eliminate the pre-operational NDA.
5) All ductwork connections shall have a radiological survey performed monthly to ensure ductwork connections are not degrading.
6) All ductwork shall be pressure tested in accordance with the requirements of ASME AG-1 Section SA.
7) All receiver tanks (including waste retrieval process tanks for tank TRU retrieval (stagging) SSTs, storage DSTs, or other staging/storage vessels, but not including batch vessel supporting vacuum retrieval) shall have active ventilation during waste receipt, unless alternative controls are documented and approved by WDOH.
8) All ventilation ductwork from the exit of the tank to the inlet of the exhauster filter housing shall be insulated.
9) During waste retrieval operations liquid shall be introduced through sluicing and saltcake dissolution nozzles at a pressure not to exceed 1200 psig, and the nozzle shall be at least five inches from the waste surface.
10) Each HEPA filter shall be in-place tested annually in accordance with the requirements of ASME AG-1 Section TA. HEPA filters shall have a minimum efficiency of 99.95%.
11) General WAC 246-247 technology standard exemptions justified and documented in RPP-19233, WAC 246-247 technology standard exemption justification for waste tank ventilation systems, may be applied to Phase II NOC retrieval exhauster operations.
12) Relative humidity shall be monitored, at least once a month, downstream of the heater and prior to the HEPA filters to ensure the air stream does not exceed 70% relative humidity.
13) The annual possession quantity shall be tracked on a WDOH approved log.
14) The differential pressure readings for the pre-filters and both stages of HEPA filters shall be monitored, recorded and trended daily. Action levels shall be developed and provided to WDOH for when actions will be taken to assure the pre-filters and HEPA filters will be operated within their design parameters.
15) This emission unit stack monitoring system shall meet the requirements of ANSI/HPS N13.1-1999 including the stack monitoring system inspection requirements. The technical justification document required by ANSI/HPS N13.1-1999 shall be provided to WDOH for review and approval.

Emission Unit ID: 751

200E P-241AZ301-001

241-AZ-301

This is a MINOR, PASSIVELY ventilated emission unit.

241-AZ TANK FARM

Emission Unit Information

Stack Height: 5.30 ft. 1.62 m. Stack Diameter 0.34 ft. 0.10 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114	Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a catch tank passive breather filter ventilation system used to support tank farm operations, such as but not limited to waste retrieval and operation support activities for 241-AZ Tank Farm. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
E-525 Double-Shell Tank (DST) Transfer System Modifications Project	AIR 06-647	7/5/2006	688

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.90E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 5.90E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Performing the following modifications to bring select portions of the DST system into conformance with regulatory, safety, and contractual requirements.

   The modifications shall be accomplished by performing the following activities:

   241-AZ-151 CATCH TANK BYPASS

A new RCRA-compliant condensate distribution system for condensate generated from the existing 241-AZ-702 ventilation system. This new system will consist of a 1200 gallon capacity catch tank (241-AZ-301), secondary containment, piping, pumps, and controls. The system is designed to collect condensate at a rate of 0.29 gallons per minute (154,424 gallons per year). The tank will be emptied every 2 to 3 days. At that time, condensate will be pumped back to one of the 241-AY or 241-AZ tanks at a rate of 4 to 5 gallons per minute.

The new 241-AZ-301 tank and system will be located outside the northeast corner of building 241-AZ-702. Most of the secondary containment structure will be located below grade (except for the cover that will be located above grade) to provide operator access. A HEPA filter will also be installed above grade. This filter will be connected to the 241-AZ-301 tank and will be used as the vent for the 241-AZ-301 tank.

The lower level of the fabricated tank system shall contain the receiver tank for the condensate coming from the AZ-PC-SP-1 seal pot via line AZ-503. Other components housed in the lower level shall include the sump, sump suction line, tank suction piping, tank return piping, tank vent lines, instrument access risers, leak detection, and freeze protection, as required.

The upper level of the fabricated tank system will contain the distribution piping, pumps, valves, instrumentation, and controls. Operator access shall be provided as required (e.g., access ladder, hatch or door in system cover, mid-level grating to support operator). Distribution valves shall be located to provide the ability to use remote valve actuators if required. Freeze protection for the piping, pumps, and valves shall be used as required.

The AZ-PC-SP-1 seal pot is located in the 241-AZ-702 Building and this seal pot serves as a collection point for condensate originating from the 241-AZ-702 ventilation system. The 241-AZ-702 ventilation system provides primary tank ventilation for the 241-AY and 241-AZ DSTs. The existing 241-AZ-151 catch tank would be isolated in a separate effort to support other commitments.

Currently there are two drain paths into the 241-AZ-151 catch tank that will remain active after June 30, 2005. Those two drain paths are the condensate from the 241-AZ-702 Facility and the 241-AZ-801A floor drain. The 241-AZ-702 condensate drain line shall be rerouted to the 241-AY tanks and also to the 241-AZ tanks. In addition, the 241-AZ-801A floor drain shall be isolated.

241-AN AND 241-AW CLEAN OUT BOX TRANSFER LINE MODIFICATIONS

Sixteen Clean Out Boxes (COBs) have been identified on transfer lines. These COBs shall have access ports cut into the non-contaminated 12 inch vertical stand pipe, the primary pipes and encasements shall be cut and caps welded in place; and the upper portion of the structure cut off, isolated, and disposed in accordance with ALARACT 15, "Demonstration for Size Reduction of Waste Equipment for Disposal" and ALARACT 4, "Demonstration for Packaging and Transportation of Waste". This modification will entail approximately 100 one-inch pipe cuts, 20 two-inch pipe cuts, and 10 three-inch pipe cuts. The primary transfer lines and encasement pipes shall be capped on the branch section and welded to the COB structure.

The COBs must either be modified to be regulatory compliant or deactivated/isolated and removed.

The AN and AW Farms COB design consists of a 24-inch diameter steel cylinder formed from a 1/4 inch thick rolled steel plate and mounted on a 12-inch vertical stand pipe. The vertical stand pipe extends about four feet below grade to the slurry transfer line. A concrete anchor block supports the COB, encasement, and transfer pipe.

The sixteen COBs to be deactivated and/or isolated by the E-525 Project are:

AN Farm:
COB-AN-7, COB-AN-8, COB-AN-9

AW Farm:
COB-AW-1, COB-AW-2, COB-AW-3, COB-AW-4, COB-AW-5, COB-AW-6, COB-AW-7, COB-AW-8,

COB-AW-9, COB-AW-10, COB-AW-11, COB-AW-12

242-A Evaporator
COB-A-30

SY TRANSFER LINE MODIFICATIONS

The following transfer lines, SL-177, SN-277, SN-285, SL-180, SN-280, and SN-286 shall be removed, cut into sections, and disposed of in accordance with ALARACT 15 "TWRS ALARACT Demonstration for Size Reduction of Waste Equipment for Disposal", and ALARACT 4, "TWRS ALARACT Demonstration For Packaging and Transportation of Waste". Pit walls shall be core drilled as needed to accommodate the new pipe-in-pipe RCRA compliant configuration.

Pipe trenches shall be excavated to remove and install the new transfer lines. Excavation shall be accomplished with the guzzler and hand digging.

204-AR TRANSFER LINE MODIFICATION

Waste transfer line LIQW-702 shall be modified to extend the transfer line encasement through the pit wall. This pipe is buried approximately three and a half feet below grade, so the excavated area shall be approximately 10' x 10' x 6'. Demolition of a portion of the slab under an old laundry facility and a section of the asphalt surface adjacent to the doorstep of the facility will be required for access.

The new encasement section shall be open-ended, upstream of the exterior wall seal plate. The obsolete air purge connection to the existing encasement shall be removed.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.41E-07	Am - 241	1.82E-01	Am - 243	1.72E-06
Ba - 137 m	4.27E+01	C - 14	1.64E-04	Cd - 113 m	5.09E-03
Cm - 242	3.50E-03	Cm - 243	6.62E-06	Cm - 244	1.11E-04
Co - 60	2.52E-03	Cs - 134	1.30E-04	Cs - 137	4.53E+01
Eu - 152	2.36E-04	Eu - 154	1.02E-02	Eu - 155	1.20E-02
H - 3	1.07E-02	I - 129	3.05E-05	Nb - 93 m	9.15E-04
Ni - 59	5.45E-05	Ni - 63	5.30E-03	Np - 237	1.03E-03
Pa - 231	3.45E-07	Pu - 238	2.98E-04	Pu - 239	4.23E-03
Pu - 240	9.67E-04	Pu - 241	1.93E-02	Pu - 242	1.13E-07
Ra - 226	1.27E-08	Ra - 228	6.84E-06	Ru - 106	4.32E-09
Sb - 125	2.36E-03	Se - 79	1.23E-04	Sm - 151	9.39E-01
Sn - 126	1.70E-04	Sr - 90	1.43E+01	Tc - 99	3.49E-02
Th - 229	2.02E-07	Th - 232	9.02E-07	U - 232	2.18E-05
U - 233	8.95E-05	U - 234	8.06E-05	U - 235	3.11E-06
U - 236	5.81E-06	U - 238	5.92E-05	Y - 90	6.33E+00
Zr - 93	9.61E-04				

4) The breather filter shall be individually tested, annually, to the requirements of ASME AG-1 Section TA, and shall have a minimum efficiency of 99.95%.

Emission Unit ID: 755

200W DVS - Active

Drum Venting System (Active Vent)

This is a MINOR, ACTIVELY ventilated emission unit.

TRU Waste Retrieval

Emission Unit Information

Stack Height: ft. m. Stack Diameter 0.10 ft. 0.03 m.

Average Stack Effluent Temperature: 70 degrees Fahrenheit. 21 degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA Type Filter	1	Shall be a NucFil Model IHF-004 or other with prior approval by the department.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		TOTAL ALPHA TOTAL BETA TOTAL GAMMA	End of each shift of operation

Sampling Requirements Smears of the exhuast vent at the end of each shift of operation.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities for the TRU Retrieval Project support decontamination and decommissioning operations at the Hanford Site.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of the Transuranic Waste Retrieval Project	AIR 06-657	7/5/2006	700

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.30E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Approved is the retrieval (unearth) and inspection of containers of suspect-transuranic (TRU) and TRU waste from trenches in the Low Level Burial Grounds (LLBG) and install NucFil filters or equivalent (as approved by the department) in the unvented (or inadequately vented) TRU containers. Venting and headspace gas sampling (HSGS) may be performed at the LLBG (in place with engineering controls or within venting enclosure) or at the following facilities licensed for such work (CWC, WRAP, or T Plant Complex). In addition, LLW containers posing a safety hazard (e.g., potential for pressurization, bulging, or similar abnormal condition) may also be vented.

   Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 5.40E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	4.30E-04	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Alpha release rate based on Am-241. See condition 4.			
B/G - 0	6.40E-03	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Beta/Gamma release rate based on Cs-137. See condition 4.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Cf - 252	Cm - 244	Cs - 134
Cs - 137	Eu - 152	Eu - 154	Pu - 238	Pu - 239/240
Pu - 241	Sr - 90	U - 234	U - 235	U - 236
U - 238				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) A maximum of 9,000 containers of TRU waste are approved to be processed per year using the DVS. The processing rate is designed to be 3 to 6 drums per hour, or a maximum of 20 minutes per drum. Only one drum shall be process at a time per DVS unit (If a second DVS is acquired, it shall be registered and licensed by the department prior to use). Using the release fraction of 1.0E-3 for particulates and a time factor of 1.9E-1 (20 minutes per container multiplied by 9, 000 containers and divided by 526,000 minutes per year) the potential unabated release rates using the DVS is 4.3E-4 Ci/yr americium 241 and 6.43E-3 Ci/yr cesium 137. This alternative release fraction is approved for this emission unit.
5) It is recognized that other radionuclides may be present in very limited quantities.
6) The department shall be notified within 24 hours of all drum vents that fail to be installed properly when using the drum venting system. (An example of a "failure" is a pressure release that blows past the seatl of the boot or a deflgration)."
7) The system shall be built to meet NQA-1 requirements and shall be aerosol tested annually using ANSI N-510 as guidance for non-ANSI N-509 systems. If in-field aerosol testing is not feasible, an approved alternative is given to replace the filters on an annual basis with the manufacturer tested and certification of HEPA filter with a tested rating of 99.97% efficiency. Records of this testing shall be maintained on file.
8) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

TRU Waste Retrieval

The area to be excavated is managed as a 'clean' area, free of surface contamination measurable with field survey instruments. Because of the possibility of encountering previously undetected subsurface contamination, or future contamination from windblown sources, all work will be performed in accordance with as low as reasonably achievable (ALARA) requirements as determined by the Radiological Control organization. These requirements shall be carried out through the activity work packages and associated radiological work permits (RWP) which will be managed as required retrievable records for this activity.
The overburden soil will be removed to expose the waste containers. Excavation equipment will be chosen to effectively remove soil and retrieve the waste containers while minimizing damage to the containers. Excavation activities will be monitored to identify contamination that might be present and to minimize emissions. Any contaminated soils will be managed in accordance with applicable requirements and regulations.

The most efficient methodology for removing the uncontaminated overburden from the containers will include the maximum use of conventional methods such as backhoes, frontend loaders, mechanical brooms (boom mounted), or manual digging with shovels and similar hand tools. Only manual methods shall be used to excavate contaminated

soil. High-efficiency particulate air (HEPA) filtered vacuums are allowed for use for spot contamination in accordance with the HEPA-filtered vacuum unit (HVU) NOC (DOE/RL-97-50, as amended).

The specific steps or approach to uncovering the containers will vary according to the configuration of the trench to be uncovered, the nearby trenches or fences, the designated location of the spoils pile, the planned extent of the soil removal, etc. Therefore, excavation activities will be planned before arriving at the job site. Excavation activities will be controlled closely. When the quantity of soil removed with heavy equipment has reached the logical end, hand tools or HVUs could be used to complete the uncontaminated soil removal operations to access and remove the plastic and plywood materials (to be set aside for reuse or disposal) covering the containers.

The exposed containers will be visually inspected and surveyed for contamination. Abnormal drum conditions will be managed as follow: Contaminated containers will be decontaminated or overpacked. Bulging or potentially pressurized containers will be vented as described in the Venting Containers Section. Retrieval activities will include appropriate disposition of small amounts of incidental contaminated soil (e.g., containerized or fixed in place). Larger areas of contamination shall be fixed and the area posted as required by the Radiological Control organization for later disposition. Bulk transfer of contaminated soils for disposal in another trench also could occur.

All containers will be inspected to verify integrity. The container inspection will consist of a visual examination to determine if there are significant corrosion, holes, dents or other visual deformities. All containers may be moved, turned, or otherwise relocated (manually or with powered equipment, slings, clamps, or appropriate rigging) to facilitate an adequate visual inspection.
Overpacking containers with minor defects (pinholes, corrosion) is routinely performed at the LLBG and CWC and is expected for up to 10 to 50 percent of the retrieved containers. Precautions will be provided to safely retrieve containers of questionable integrity. The process description for management of abnormal containers will be maintained in written procedures. Operating procedures will be established to safely deal with these containers. Containers that obviously are breached or deformed also will be safely removed. Removal methods will be determined on a case-by-case basis. A breached container that can provide secure confinement will be relocated to an area for repackaging or overpacking. If the container cannot provide adequate confinement for the contents, the container and contents will be overpacked before being relocated. The overpacked containers will be managed according to the LLW (including mixed waste) or TRU waste designation (TRU containers are those with TRU content greater than 100 nCi/g), established by records or assay.

After a container is inspected visually and the structural integrity established, the container (if shown by assay or records to be designated as TRU) will be staged for venting, if necessary, or moved to another TSD unit for venting. Retrieved TRU waste containers in their staged configuration at the LLBG will be inspected for outwardly visible signs of corrosion or degradation (overpacking as needed).

9) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Venting of Containers

All work shall be performed in accordance with the LLBG radiological control procedures and ALARA requirements. These requirements are carried out through the procedures, activity work packages, and associated RWPs.

The vent filters will be installed in designated containers by using the Drum Venting System (DVS) and/or Dart System that ensures personnel and environmental protection. The methodology will require penetrating the container and inserting a vent. Penetration of the lid will be accomplished by either drilling through the lid with a filter assembly fitted with a short hollow drill bit (using DVS) or puncturing the lid with a filter dart (using Dart system). Either method will result in emissions being routed through a filter during the venting process.

Most drums slated for venting will be vented with the DVS, consisting of a trailer with a chamber allowing an operator to sample the drum (screening HSGS for hydrogen content) and install a NucFil filter. Potential emissions from these operations are point source emissions.

Bulging or potentially pressurized drums will be evaluated to determine best method and location to vent (Dart-in place, Dart-relocate, or move to the DVS). The Dart System is a portable unit that straps directly onto a drum, using a pneumatic driver remotely activated by wire or radio transmitter. This system penetrates the drum lid to install a NucFil filter with an aluminum bronze housing to prevent the possibility of sparking. Potential emissions from these operations will be considered diffuse and fugitive. The same Dart System will be used to install sample ports, consisting of a closure set screw covering a septum for withdrawing a sample for HSGS, in containers with existing vents at the LLBG, CWC, WRAP, or T Plant Complex, without creating a new pathway for potential emissions.

Emission Unit ID: 756

200W DVS - Passive

Drum Venting System (Passive Vent)

This is a MINOR, PASSIVELY ventilated emission unit.

TRU Waste Retrieval

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: 70 degrees Fahrenheit. 21 degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA Type Filter	1	Shall be a Pall Model Ultramet or other with prior approval by the department.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		TOTAL ALPHA TOTAL BETA TOTAL GAMMA	End of each shift of operation.

Sampling Requirements Smears of the exhuast vent at the end of each shift of operation.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities for the TRU Retrieval Project support decontamination and decommissioning operations at the Hanford Site.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of the Transuranic Waste Retrieval Project	AIR 06-657	7/5/2006	700

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 4.30E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Approved is the retrieval (unearth) and inspection of containers of suspect-transuranic (TRU) and TRU waste from trenches in the Low Level Burial Grounds (LLBG) and install NucFil filters or equivalent (as approved by the department) in the unvented (or inadequately vented) TRU containers. Venting and headspace gas sampling (HSGS) may be performed at the LLBG (in place with engineering controls or within venting enclosure) or at the following facilities licensed for such work (CWC, WRAP, or T Plant Complex). In addition, LLW containers posing a safety hazard (e.g., potential for pressurization, bulging, or similar abnormal condition) may also be vented.

   Additional approval of the process for this activity is contained in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 5.40E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	4.30E-07	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Alpha release rate based on Am-241. See condition 6.			
B/G - 0	2.20E-05	Liquid/Particulate Solid	WAC 246-247-030(21)(e)
Beta/Gamma release rate based on Cs-137. See condition 6..			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241	Am - 243	Cf - 252	Cm - 244	Cs - 134
Cs - 137	Eu - 152	Eu - 154	Pu - 238	Pu - 239/240
Pu - 241	Sr - 90	U - 234	U - 235	U - 236
U - 238				

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) It is recognized that other radionuclides may be present in very limited quantities.

5) The department shall be notified within 24 hours of all drum vents that fail to be installed properly when using the drum venting system (An example of a "failure" is a pressure release that blows past the seal of the boot or a deflagration).

6) The passive vent of the DVS exhausts potential emissions from the use of the HEPA Vacuum mounted in the test chamber to collect metal filings after installation of a NucFil filter. Release rates are calculated by multiplying surface area vacuumed by the contamination level. An estimate of the release rate is calculated by assuming the surface area of the boot that covers the drum lid during the filter installation process (8.3 square inches) multiplied by 9,000 drums with an average contamination level of 10,000 dpm/100 cm^2 beta/gamma and 200 dpm/100 cm^2 alpha. Using a release fraction of 1.0 for the HEPA vacuum use, the potential release rates from using the DVS is 4.3E-7 Ci/yr americium-241 and 2.2E-05 Ci/yr cesium-137. This alternative release fraction is approved for this emission unit.

7) The system shall be built to meet NQA-1 requirements and shall be aerosol tested annually using ANSI N-510 as guidance for non-ANSI N-509 systems. If in-field aerosol testing is not feasible, an approved alternative is given to replace the filters on an annual basis with the manufacturer tested and certification of HEPA filter with a tested rating of 99.97% efficiency. Records of this testing shall be maintained on file.

8) The test compartment is passively ventilated with a HEPA-type filter and is designed to withstand a deflagration as described in the performance specification for this venting system. If deflagration occurs, all activities associated with this license shall cease and the department shall be notified.

9) The top of the drum shall be surveyed while inside the DVS, after installation of the NucFil filter. If removable contamination is found, the drum lid shall be decontaminated before removal from the DVS. The drum shall be surveyed prior to leaving or immediately after removal from the DVS. Once removed from the DVS, the drum must be immediately decontaminated or contained such that the drum is free of removable contamination (i.e., less than 20 dpm/ 100 cm2 alpha and less than 1000 dpm/100 cm2 beta/gamma). Decontamination at the LLBG is attempted in a graded approach (dry rags, wet rags, decontamination solutions, fixatives, or overpacking if other methods prove unsuccessful).

10) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

TRU Waste Retrieval

The area to be excavated is managed as a 'clean' area, free of surface contamination measurable with field survey instruments. Because of the possibility of encountering previously undetected subsurface contamination, or future contamination from windblown sources, all work will be performed in accordance with as low as reasonably

achievable (ALARA) requirements as determined by the Radiological Control organization. These requirements shall be carried out through the activity work packages and associated radiological work permits (RWP) which will be managed as required retrievable records for this activity.
The overburden soil will be removed to expose the waste containers. Excavation equipment will be chosen to effectively remove soil and retrieve the waste containers while minimizing damage to the containers. Excavation activities will be monitored to identify contamination that might be present and to minimize emissions. Any contaminated soils will be managed in accordance with applicable requirements and regulations.

The most efficient methodology for removing the uncontaminated overburden from the containers will include the maximum use of conventional methods such as backhoes, frontend loaders, mechanical brooms (boom mounted), or manual digging with shovels and similar hand tools. Only manual methods shall be used to excavate contaminated soil. High-efficiency particulate air (HEPA) filtered vacuums are allowed for use for spot contamination in accordance with the HEPA-filtered vacuum unit (HVU) NOC (DOE/RL-97-50, as amended).

The specific steps or approach to uncovering the containers will vary according to the configuration of the trench to be uncovered, the nearby trenches or fences, the designated location of the spoils pile, the planned extent of the soil removal, etc. Therefore, excavation activities will be planned before arriving at the job site. Excavation activities will be controlled closely. When the quantity of soil removed with heavy equipment has reached the logical end, hand tools or HVUs could be used to complete the uncontaminated soil removal operations to access and remove the plastic and plywood materials (to be set aside for reuse or disposal) covering the containers.

The exposed containers will be visually inspected and surveyed for contamination. Abnormal drum conditions will be managed as follow: Contaminated containers will be decontaminated or overpacked. Bulging or potentially pressurized containers will be vented as described in the Venting Containers Section. Retrieval activities will include appropriate disposition of small amounts of incidental contaminated soil (e.g., containerized or fixed in place). Larger areas of contamination shall be fixed and the area posted as required by the Radiological Control organization for later disposition. Bulk transfer of contaminated soils for disposal in another trench also could occur.

All containers will be inspected to verify integrity. The container inspection will consist of a visual examination to determine if there are significant corrosion, holes, dents or other visual deformities. All containers may be moved, turned, or otherwise relocated (manually or with powered equipment, slings, clamps, or appropriate rigging) to facilitate an adequate visual inspection.
Overpacking containers with minor defects (pinholes, corrosion) is routinely performed at the LLBG and CWC and is expected for up to 10 to 50 percent of the retrieved containers. Precautions will be provided to safely retrieve containers of questionable integrity. The process description for management of abnormal containers will be maintained in written procedures. Operating procedures will be established to safely deal with these containers. Containers that obviously are breached or deformed also will be safely removed. Removal methods will be determined on a case-by-case basis. A breached container that can provide secure confinement will be relocated to an area for repackaging or overpacking. If the container cannot provide adequate confinement for the contents, the container and contents will be overpacked before being relocated. The overpacked containers will be managed according to the LLW (including mixed waste) or TRU waste designation (TRU containers are those with TRU content greater than 100 nCi/g), established by records or assay.

After a container is inspected visually and the structural integrity established, the container (if shown by assay or records to be designated as TRU) will be staged for venting, if necessary, or moved to another TSD unit for venting. Retrieved TRU waste containers in their staged configuration at the LLBG will be inspected for outwardly visible signs of corrosion or degradation (overpacking as needed).

11) This approval applies to these additional activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Venting of Containers

All work shall be performed in accordance with the LLBG radiological control procedures and ALARA requirements. These requirements are carried out through the procedures, activity work packages, and associated RWPs.

The vent filters will be installed in designated containers by using the Drum Venting System (DVS) and/or Dart System that ensures personnel and environmental protection. The methodology will require penetrating the container and inserting a vent. Penetration of the lid will be accomplished by either drilling through the lid with a filter assembly fitted with a short hollow drill bit (using DVS) or puncturing the lid with a filter dart (using Dart system). Either method will result in emissions being routed through a filter during the venting process.

Most drums slated for venting will be vented with the DVS, consisting of a trailer with a chamber allowing an operator to sample the drum (screening HSGS for hydrogen content) and install a NucFil filter. Potential emissions from these operations are point source emissions.

Bulging or potentially pressurized drums will be evaluated to determine best method and location to vent (Dart-in place, Dart-relocate, or move to the DVS). The Dart System is a portable unit that straps directly onto a drum, using a pneumatic driver remotely activated by wire or radio transmitter. This system penetrates the drum lid to install a NucFil filter with an aluminum bronze housing to prevent the possibility of sparking. Potential emissions from these operations will be considered diffuse and fugitive. The same Dart System will be used to install sample ports, consisting of a closure set screw covering a septum for withdrawing a sample for HSGS, in containers with existing vents at the LLBG, CWC, WRAP, or T Plant Complex, without creating a new pathway for potential emissions.

Emission Unit ID: 855

200E P-296A046-001

296-A-46

This is a MAJOR, ACTIVELY ventilated emission unit.

241-AW TANK FARM

Emission Unit Information

Stack Height: 28.13 ft. 8.57 m. Stack Diameter 0.84 ft. 0.26 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: 91.31 ft/second. 27.83 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	Operational at all times, when the exhauster is in use.
	Heater	1	Operational at all times, when the exhauster is in use.
	Prefilter	1	
	HEPA	2	In series.
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Sr-90, Cs-137, Am-241, C-14, Y90, Cs-134, Eu-154, Ac-227, Pa-231, U-233, Pu-238, Pu-240, Pu-241, Cm-244.	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241-AW Tank Farm during storage, maintenance, and normal operations. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. This emission unit may be operated in alternation or concurrently with the 296-A-47. The emission unit is a primary exhauster ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of New Ventilation Systems in AN and AW Tank Farms	AIR 06-663	7/5/2006	706

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.60E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.33E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The 296-A-44 and 296-A-45 shall ventilate the 241-AN Double Shell Tank (DST) Farm which consists of

seven individual DSTs. The 296-A-46 and 296-A-47 shall ventilate the 241-AW Double Shell Tank (DST) Farm which consists of six individual DSTs. The DSTs are fabricated as two concentric tanks surrounded by a concrete shell. The inner tank containing the waste is 75 feet in diameter and 46.8 feet high at the crown. Each tank stores 1.14E6 gallons. The DSTs are used for storage, treatment, retrieval, and disposal of the waste contained in the tanks, as well as transfers to the Waste Treatment Plant.

The 296-A-44, 296-A-45, 296-A-46 and 296-A-47 ventilation systems serve to remove heat, and serve as containment systems for radioactive particulates present in the tank headspace, they ventilate/remove flammable gases and vapors that evolve from the liquid surface in the DSTs. The ventilation systems do this by drawing air into the tank vapor space. After the air leaves the vapor space the air is conditioned by the ventilation system. It removes entrained moisture, the relative humidity is reduced, and particulates are filtered out. Before discharge of this air to the atmosphere from the stack, the air is monitored and sampled for radionculide particulates.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.29E+02	Am - 241	9.67E+04	Am - 243	1.34E+01
Ba - 137 m	1.61E+07	C - 14	4.38E+02	Cd - 113 m	7.25E+03
Cm - 242	6.99E+01	Cm - 243	7.92E+00	Cm - 244	2.25E+02
Co - 60	4.13E+03	Cs - 134	1.80E+04	Cs - 137	1.70E+07
Eu - 152	1.01E+03	Eu - 154	4.26E+04	Eu - 155	4.42E+04
H - 3	2.47E+03	I - 129	8.13E+00	Nb - 93 m	1.77E+03
Ni - 59	7.44E+02	Ni - 63	7.02E+04	Np - 237	5.81E+01
Pa - 231	2.70E+02	Pu - 238	2.95E+03	Pu - 239	2.71E+04
Pu - 240	4.86E+03	Pu - 241	6.00E+04	Pu - 242	3.77E-01
Ra - 226	2.38E+02	Ra - 228	3.65E+01	Ru - 106	1.02E+03
Sb - 125	2.04E+04	Se - 79	5.38E+01	Sm - 151	1.48E+06
Sn - 126	2.21E+02	Sr - 90	2.08E+07	Tc - 99	6.09E+03
Th - 229	2.49E+01	Th - 232	6.08E+00	U - 232	2.73E+01
U - 233	4.46E+02	U - 234	6.14E+01	U - 235	2.34E+00
U - 236	2.73E+00	U - 238	5.06E+01	Y - 90	2.08E+07
Zr - 93	1.80E+03				

4) HEPA filters shall be individually tested in place at least annually in accordance with the requirements of ASME AG-1 Section TA, and have a minimum efficiency of 99.95%.
5) Prior to operation of the ventilation system a leak test of the entire train including the ductwork from the exit of the tank to the entrance to the stack shall be performed meeting the requirements called out in ASME AG-1.
6) The Annual Possession Quantity shall be tracked on a WDOH approved log.
7) The ductwork between the de-entrainer and heater, along with the filter housings shall be insulated.
8) The effluent monitoring and sampling system shall meet the requirements of ANSI N13.1-1999. A written technical basis document required by Section 4 of ANSI N13.1-1999 shall be provided to WDOH for review and approval.
9) The exhauster shall be operational during all waste transfer, waste disturbing, or particulate generating activities.

Emission Unit ID: 856

200E P-296A047-001

296-A-47

This is a MAJOR, ACTIVELY ventilated emission unit.

241-AW TANK FARM

Emission Unit Information

Stack Height: 28.13 ft. 8.57 m. Stack Diameter 0.84 ft. 0.26 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: 91.31 ft/second. 27.83 m/second.

Abatement Technology NONE WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	Operational at all times, when the exhauster is in use.
	Heater	1	Operational at all times, when the exhauster is in use.
	Prefilter	1	
	HEPA	2	In series.
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Sr-90, Cs-137, Am-241, C-14, Y90, Cs-134, Eu-154, Ac-227, Pa-231, U-233, Pu-238, Pu-240, Pu-241, Cm-244.	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a primary exhauster used to support tank farm operations by ventilating the DSTs in 241-AW Tank Farm during storage, maintenance, and normal operations. Any activity other than storage, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. This emission unit may be operated in alternation or concurrently with the 296-A-46. The emission unit is a primary exhauster ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Operation of New Ventilation Systems in AN and AW Tank Farms	AIR 06-663	7/5/2006	706

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.60E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.33E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The 296-A-44 and 296-A-45 shall ventilate the 241-AN Double Shell Tank (DST) Farm which consists of

seven individual DSTs. The 296-A-46 and 296-A-47 shall ventilate the 241-AW Double Shell Tank (DST) Farm which consists of six individual DSTs. The DSTs are fabricated as two concentric tanks surrounded by a concrete shell. The inner tank containing the waste is 75 feet in diameter and 46.8 feet high at the crown. Each tank stores 1.14E6 gallons. The DSTs are used for storage, treatment, retrieval, and disposal of the waste contained in the tanks, as well as transfers to the Waste Treatment Plant.

The 296-A-44, 296-A-45, 296-A-46 and 296-A-47 ventilation systems serve to remove heat, and serve as containment systems for radioactive particulates present in the tank headspace, they ventilate/remove flammable gases and vapors that evolve from the liquid surface in the DSTs. The ventilation systems do this by drawing air into the tank vapor space. After the air leaves the vapor space the air is conditioned by the ventilation system. It removes entrained moisture, the relative humidity is reduced, and particulates are filtered out. Before discharge of this air to the atmosphere from the stack, the air is monitored and sampled for radionculide particulates.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.29E+02	Am - 241	9.67E+04	Am - 243	1.34E+01
Ba - 137 m	1.61E+07	C - 14	4.38E+02	Cd - 113 m	7.25E+03
Cm - 242	6.99E+01	Cm - 243	7.92E+00	Cm - 244	2.25E+02
Co - 60	4.13E+03	Cs - 134	1.80E+04	Cs - 137	1.70E+07
Eu - 152	1.01E+03	Eu - 154	4.26E+04	Eu - 155	4.42E+04
H - 3	2.47E+03	I - 129	8.13E+00	Nb - 93 m	1.77E+03
Ni - 59	7.44E+02	Ni - 63	7.02E+04	Np - 237	5.81E+01
Pa - 231	2.70E+02	Pu - 238	2.95E+03	Pu - 239	2.71E+04
Pu - 240	4.86E+03	Pu - 241	6.00E+04	Pu - 242	3.77E-01
Ra - 226	2.38E+02	Ra - 228	3.65E+01	Ru - 106	1.02E+03
Sb - 125	2.04E+04	Se - 79	5.38E+01	Sm - 151	1.48E+06
Sn - 126	2.21E+02	Sr - 90	2.08E+07	Tc - 99	6.09E+03
Th - 229	2.49E+01	Th - 232	6.08E+00	U - 232	2.73E+01
U - 233	4.46E+02	U - 234	6.14E+01	U - 235	2.34E+00
U - 236	2.73E+00	U - 238	5.06E+01	Y - 90	2.08E+07
Zr - 93	1.80E+03				

4) HEPA filters shall be individually tested in place at least annually in accordance with the requirements of ASME AG-1 Section TA, and have a minimum efficiency of 99.95%.
5) Prior to operation of the ventilation system a leak test of the entire train including the ductwork from the exit of the tank to the entrance to the stack shall be performed meeting the requirements called out in ASME AG-1.
6) The Annual Possession Quantity shall be tracked on a WDOH approved log.
7) The ductwork between the de-entrainer and heater, along with the filter housings shall be insulated.
8) The effluent monitoring and sampling system shall meet the requirements of ANSI N13.1-1999. A written technical basis document required by Section 4 of ANSI N13.1-1999 shall be provided to WDOH for review and approval.
9) The emission unit shall meet the quality assurance requirements of 40 CFR 61 Subpart H, as effective on October 9, 2002.
10) The exhauster shall be operational during all waste transfer, waste disturbing, or particulate generating activities.

Emission Unit ID: 874

200W Concrete Containers

Concrete Containers

This is a MINOR, PASSIVELY ventilated emission unit.

PLUTONIUM FINISHING PLANT(Z PLANT)

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	WAC 246-247-040(3) & (5)	TOTAL ALPHA TOTAL BETA	Annually at a minimum

Sampling Requirements Radiological surveys to include smears of vents and seal area

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Activities at the concrete containers include maintenance inspections in support of the surveillance and maintenance mission at the Hanford Site. These are minor, passively ventilated emission units at the Plutonium Finishing Plant Complex (PFP).

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Deactivation of the Plutonium Finishing Plant Complex	AIR 06-664	7/5/2006	709

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 6.70E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

The proposed activities involve transitioning the PFP Complex to a state of low-risk, low-cost, long-term surveillance and maintenance pending final disposition. All work would be performed in accordance with the approved radiological control procedures and as low as reasonably achievable (ALARA) program requirements as implemented by the project radiological control manual, as amended. These requirements would be carried out through the activity work packages and associated radiological work permits.

This activity includes deactivation of buildings and also includes deactivation of systems no longer necessary once stabilization and storage activities and planned legacy hold-up removal have been concluded; removal/disposition of equipment/components; contamination characterization and reduction/mitigation; packaging plutonium holdup material meeting waste acceptance criteria; maintaining and operating muffle furnaces, as needed, for removed plutonium holdup material; and demolition of radiologically contaminated, non-process ancillary buildings.

This activity also includes deactivation activities or activities to prepare and place a facility in a safe and stable condition to minimize the long-term cost of a surveillance and maintenance program while being protective of personnel, the public, and the environment until demolition of former processing and material storage buildings occurs. Deactivation activities would include those actions foreseeably necessary for implementation of the proposed action, such as associated transportation activities, waste removal and disposal, and award of grants and contracts. Specific actions could include the following work involving the potential for radioactive

contamination:
- Draining and/or de-energizing systems as appropriate.
- Stabilizing contaminated areas (e.g., with fixatives, sealants, paint).
- Stabilizing or removing gloveboxes, process equipment, tanks, piping, fume hoods, and support equipment.
- Removing fencing and paved parking areas adjacent to facilities.
- Installing alternate environmental monitoring, surveillance, and safety components (e.g., lighting, fencing) if required.
- Removing/packaging radioactive (including equipment calibration sources and laboratory standards) and hazardous materials and waste, including stabilization and/or removal of asbestos, and removal, cleanup, and disposition of polychlorinated biphenyls and other regulated materials and transportation to existing waste management facilities.
- Removing equipment and system components.
- Size-reducing process equipment for disposal as waste.
- Performing physical or chemical treatment processes (e.g., neutralization, solidification, filtering) to render a material less hazardous or to reduce the volume (such processes will not increase the potential release rates)..
- Decontamination to support the excess of surplus equipment.
- Removing excess combustible material.
- Disconnecting utilities, piping, and communication service systems (if the systems are not necessary to maintain required environmental monitoring or building safety systems), including associated excavation.
- Ensuring adequate freeze and heat protection.
- Stabilizing, reducing, combining, or removing waste materials at outdoor locations within the PFP Complex (such processes will not increase the potential release rates provided in this NOC).
- Sealing cracks, gratings, and openings to the building exterior, and repairing roofs.
- Conducting general housekeeping activities (e.g., vacuuming, sweeping, dusting) in areas where radiological contamination is not anticipated (e.g., radiological buffer area) but could be encountered.
- Removing or reducing radioactive or hazardous contamination from facilities and equipment by washing, heating, chemical or electrochemical action, mechanical cleaning, or other similar techniques.
- Removing residual plutonium holdup material, which might remain throughout the PFP Complex after stabilization activities described in the PFP EIS have been completed; packaging residual plutonium holdup meeting waste acceptance criteria for shipment to an onsite waste management facility, or thermally stabilizing material in muffle furnace operations and packaging for storage in existing PFP Complex vaults.
- Designing and executing changes to utility service systems and/or utility structures necessary to place a facility in surveillance and maintenance, pending demolition.
- Conducting final process operations to stabilize or eliminate residual operational materials or effluents, such as final process runs; cleaning of vessels, valve pits and pipe trenches; installation and operation of small evaporators; flushing piping systems; removal or replacement of filters; and other similar closeout actions.
- Demolishing non-process ancillary buildings.
- Deactivation activities will require actions to provide for continued routine maintenance, repair, and replacement-in-kind of operating portions of PFP.

Other actions include:
- Remove residual plutonium from gloveboxes, filterboxes, equipment, piping, ductwork, and the building surfaces and package for disposition to onsite or offsite disposal facilities.
- Remove internal equipment from gloveboxes and building equipment/system components and package for disposition to onsite or offsite disposal facilities.
- Decontaminate gloveboxes, filterboxes, ductwork, and equipment to less than transuranic levels if possible.
- Remove gloveboxes, filterboxes, ductwork, and equipment and package for disposition to onsite or offsite disposal facilities.
- Decontaminate or fix contamination on building interior and exterior.
- Disconnect utilities and services not necessary for monitoring.
- Perform radiological and chemical characterization in preparation for dismantlement.

In preparation for the proposed transition activities, housekeeping, assays, preventive maintenance, minor decontamination, and reactivation of glovebox access ports would occur.

See additional process description in the following Conditions/Limitations.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 9.00E+02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	3.20E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Based on Am-241. Isotopes of plutonium and americium may be present based on process knowledge of PFP operations.			
Beta - 0	3.20E-06	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Based on Sr-90.			

The radioactive isotopes identified for this emission unit are (no quantities specified):

Am - 241 Co - 60 Cs - 137 Sr - 90

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

Concrete containers shall be installed as an array of fourteen containers. Existing fuel packages shall be transferred to an area immediately adjacent to the concrete container prepared to receive the fuel. After loading the fuel (via crane), each concrete container shall be closed and managed as a point source. The concrete containers shall be either closed with a seal or vented passively through a NucFil or equivalent filter.

Fuel assemblies/pins repackaging and storage activities shall be conducted outdoors. All work shall be performed in accordance with approved radiological control methods and as low as reasonably achievable (ALARA) program requirements. These requirements shall be carried out through activity work packages and associated radiological work permits.

Presently, at the PFP Complex, there are closed interim storage casks (ISCs) that each contain a core component container (CCC). A CCC contains fuel received from the Fast Flux Test Facility (located in the 400 Area of the Hanford Site). Five (5) of the CCCs have residual surface contamination associated with them due to handling at FFTF.

The lids of each ISC shall be removed and the CCCs transferred via crane to a new concrete container. After loading the CCC (via crane), each concrete container would be closed and managed as a point source. The emptied ISCs shall be closed and returned to FFTF.

Emission Unit ID: 878

200W P-BULKVIT-001

Bulk Vit Demo Exhauster

This is a MAJOR, ACTIVELY ventilated emission unit.

Supplemental Treatment Test Demonstration Facility

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Quench		One in operation
	Mist Eliminator		One in operation
	Heater		One in operation
	HEPAs		Two banks of HEPAs in series.

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	Appendix B, Method 114	Cs-137, C-14, Sr-90, Tc-99	Continuous

Sampling Requirements Record Sample collected biweekly, and a continuous air monitor for beta, and gamma.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a building/facility exhauster that is use to ventilate building and facility operations such as but not limited to process vessels, contaminated rooms, cells, glove boxes, hoods, abandoned facilities awaiting decommissioning, and vaults that support tank farm operations, maintenance and surveillance activities for tank farms. The exhauster can be used to support current surveillance, maintenance activities, operations or decommissioning, decontamination, and cleanup activities within the building/facility. Many of the activities other normal surveillance, maintenance, and operation support will be or are regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a building/facility exhauster ventilation system that operates intermittently. This exhauster is not operational at this time.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Supplemental Treatment Test and Demonstration Facility	AIR 06-662	7/5/2006	705

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 5.50E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 7.35E+01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Liquid salt-solution received at the Demonstration Bulk Vitrification System (DBVS) from the 241-S-109 Single Shell Tank will be mixed with appropriate glass formers and excess water will be removed from the

mixture. The mixture will be transported and distributed into a refractory-lined waste container, where electrodes, penetrating the waste mixture, will vitrify the waste via resistive heating. Preparation of the DBVS site could require excavation of up to 5,445 cubic feet of radioactively contaminated soil.

After completion of the vitrification process, soil and sand will be added to sufficiently fill the void container volume. The waste and waste container will undergo cooling, sampling, and external decontamination. The waste container with final vitrified waste will be allowed to cool, and will be stored at the Test and Demonstration Facility awaiting transfer to an approved storage facility or transferred to an approved onsite low-level burial ground.

The DBVS RD&D program will be operated in two phases. The Phase 1 DBVS will consist of treatment of up to three container loads, each incorporating up to 1135 L (300 gallons) of tank waste. Simulants (i.e., materials similar in chemical composition to tank waste) will be added to the waste load along with the glass formers to create a container load (including insulation materials) up to 54.4 m3 (1920 ft3). The containers will be stored at the Test and Demonstration Facility and ultimately be transferred to the IDF or another permitted disposal facility.

The goal of Phase 2 is to optimize the DBVS performance and operation for full-scale use. Phase 2 will consist of treatment of up to 50 (including containers from Phase I) container loads of waste totaling up to 1,355,500 L (300,000 gallons) of tank waste. Tank waste, process additives, and process control parameters will be varied to establish optimum operating process parameters or envelopes. It is anticipated that one container load of material will be vitrified weekly over one operating year.

The DBVS will receive Low Activity Waste (LAW) from Tank 241-S-109 into tanks for process feed, storage, and sampling. The tank capacities for the DBVS waste receipt are 18,000 gallons, and will be used in the production of up to 50 containers. The waste receipt tanks will be vented through the Off Gas Treatment System (OGTS). The 1,000 gallon staging tank used for receipt of waste for up to 3 batches will be passively ventilated through a HEPA filter.

Process Additives

The DBVS will receive soil, glass additives, container refractory sand, and other material necessary to the vitrification process. Soil will be used to form the matrix for the vitrification process. Vitrification aids such as graphite, boron, and zirconium can be used to initiate melting and increase glass performance (waste retention).

Waste Feed Preparation

Prior to starting the vitrification process, the waste feed material will be mixed with soil and additives and dried to approximately two percent moisture content. The mixer/dryer will be heated by steam from an onsite boiler. The dry material transfer system will be equipped with weigh stations to control the amount of material being added to the mixer/dryer. The design capacity of the mixer/dryer is 2,640 gallons (10,000 L) and the nominal cycle time is between six and eight hours. During the mixing/drying cycle the unit will be operated under a vacuum.

Vitrification Container Preparation

The waste containers will be a steel box approximately 10 feet high by 8 feet wide and 24 feet long. Prior to waste being added to the container the box will be lined with insulating board, sand, and a layer of castable refractory which will face the waste material. A layer of melt-initiating graphite and soil will be placed over the castable refractory in the bottom of the container. A steel lid with attached electrodes will be sealed to the box, using bolted flanges and a refractory gasket, prior to waste being added. The lid contains several ports for waste material addition, electrode connections, venting, sampling, and introduction of post-vitrification materials. All connections to the lid will be mechanically sealed. In addition the waste transfer connections will be equipped with shutoff valves to prevent spillage of material as the chute is attached to and removed from the port. Each connection port will be equipped with secondary containment and spilled material recovery provisions during material transfer, melting and cool down. The container-filling operation is performed under

negative pressure and exhausted out the vent port to the OGTS.

In-Container Vitrification

The waste mixture from the mixer/dryer will be placed into the vitrification container through ports in the sealed box lid. Electrical power will be applied to the electrodes, vitrifying the container contents via resistive heating. Ambient air, filtered through a HEPA filter, is injected to cool the vitrification offgases and provide thermal protection for the sintered metal filters. Both "bottom-up" and "top-down" melting can be conducted during testing. Top-down melting is conducted by applying power to the electrodes only after all waste materials and process additives have been placed in the container. Bottom-up melting begins melting with a shallow layer of material in the container and continues as more material is added until the desired depth of melt is obtained.

Post-Vitrification Container Handling

After vitrification has been completed the container connection to the OGTS will be maintained, and clean fill materials will be added to fill cavities around the electrodes and cover the top of the vitrified waste to minimize headspace in the container. Sampling of the vitrified waste, radiation surveying, and external decontamination can be conducted after initial cooling has been completed. Sampling of the melt will be conducted as required by a coring process through a port in the side of the container. Temporary storage of up to 50 treated waste containers will be located at the Test and Demonstration Facility.

Offgas Treatment System

The offgas treatment for the DBVS operations will include the following:
Particulate and gaseous emissions from waste receipt;
Particulate emissions from process additive receipt, storage, and transfer;
Particulate and gaseous emissions from mixer/dryer;
Particulate and gaseous emissions from waste container filling and vitrification;
Particulate emissions from waste container topoff after vitrification.

Mixer/Dryer Offgass emissions will be partially treated for moisture removal using a glycol-cooled condenser and mist eliminator prior to being routed to the OGTS downstream of the venturi scrubber.

The Offgas Treatment System shall consist of two sintered metal filters in series, a quencher, venturi scrubber, and mist eliminator system. Dilute sodium hydroxide will be injected in both the quencher and venturi scrubber to reduce hydrogen chloride and other acid gas emissions. Scrubber offgases will pass through an additional condenser and mist eliminator, with drainage from those units routed to the scrubber recycle tanks. An offgas heater, two banks of HEPA filters (in series), and a carbon filter will follow the mist eliminator. A polishing filter will be installed downstream of the carbon filter. Based on results from Phase l a larger selective catalytic reduction unit can be added or an additional SCR unit added in series. An optional packed tower scrubber may be used.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	1.40E-03	Am - 241	4.82E+00	Am - 243	1.37E-04
Ba - 137 m	2.23E+04	C - 14	3.76E+01	Cd - 113 m	8.88E+01
Cm - 242	9.18E-03	Cm - 243	7.16E-04	Cm - 244	7.16E-03
Co - 60	2.10E+01	Cs - 134	2.09E-01	Cs - 137	2.36E+04
Eu - 152	3.96E+00	Eu - 154	9.65E+01	Eu - 155	7.95E+01
H - 3	1.09E+02	I - 129	3.47E-01	Nb - 93 m	1.80E+01
Ni - 59	4.20E+00	Ni - 63	3.89E+02	Np - 237	6.69E-01
Pa - 231	6.25E-03	Pu - 238	1.48E-01	Pu - 239	7.26E+00
Pu - 240	1.11E+00	Pu - 241	6.91E+00	Pu - 242	4.90E-05
Ra - 226	2.25E-04	Ra - 228	6.78E-02	Ru - 106	7.24E-05

Sb - 125	3.98E+01	Se - 79	5.02E-01	Sm - 151	1.68E+04
Sn - 126	3.04E+00	Sr - 90	8.70E+03	Tc - 99	1.80E+02
Th - 229	1.77E-03	Th - 232	6.60E-03	U - 232	1.03E-02
U - 233	4.21E-02	U - 234	3.73E-02	U - 235	1.56E-03
U - 236	9.91E-04	U - 238	3.54E-02	Y - 90	8.70E+03
Zr - 93	2.46E+01				

4) During waste and soil additions and during the melting process the Ancillary Waste Transfer Enclosure (AWTE) shall be inplace. Any time the AWTE is removed the container shall be surveyed and wiped down to remove any contamination on the outside of the waste container.

5) HEPA filters shall be tested in-place at least annually in accordance with the requirements of ASME AG-1 Section TA, and have a minimum efficiency of 99.95%.

6) In order to confirm the use of alternative release fractions and the proposed potential-to-emit, a Non-Destructive Analysis (NDA) of the HEPA filters using gamma spectroscopy shall be performed prior to the introduction of radioactive material. Another NDA shall be performed after 25 containers have been processed, or if the HEPA filters are changed out prior to 25 containers. Based on the data obtained from the NDA a potential-to-emit shall be calculated to verify operations are within the bounds of activities described in this approval. Results shall be provided to WDOH within 60 days of the final NDA.

7) Prior to operation of the ventilation systems a leak test of the entire train, from the waste receipt tanks to the exhaust fan shall be performed, meeting the requirements called out in ASME AG-1.

8) The effluent monitoring and sampling system shall meet the requirement of ANSI 13.1-1999. A written technical basis document are required by Section 4 of ANSI 13.1-1999 shall be provided to WDOH for review and approval prior to installation of the sampling system.

9) The HEPA filters in the current trailer shall be replaced by a new HEPA filter housing compliant with the requirements of ASME AG-1 Section HA and use filters compliant with Section FC.

Emission Unit ID: 885

200 W-296P049-001

296-P-49

This is a MAJOR, ACTIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 28.00 ft. 8.53 m. Stack Diameter 0.83 ft. 0.25 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 91.72 ft/second. 27.96 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deentrainer	1	Operational at all times, when the exhauster is in use.
	Heater	1	Operational at all times, when the exhauster is in use.
	Prefilter	1	
	HEPA	2	In series.
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Each radionuclides that could contribute greater than 10 percent of the potential TEDE to the MEI, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, and greater than 25 percent of the TEDE to the MEI after controls	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a skid/mobile type portable exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities. The emission unit is a portable exhauster that operates intermittently or continuously. The exhauster is not operational at this time.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Categorical Tank Farm Facility Waste Retrieval and Closure: Phase II Waste Retrieval Operations	AIR 06-660	7/5/2006	703

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.31E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.61E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)),

may be conducted.

The operation of the waste retrieval system(s) for the removal of radioactive wastes from all 149 Single Shell Tanks (SST) at the Hanford Site.

SALTCAKE DISSOLUTION WASTE RETRIEVAL SYSTEM

The saltcake dissolution waste retrieval system may be used to retrieve soluble saltcake waste. This method retrieves the soluble portion of the waste only, resulting in very few of the solids being pumped from the tank. The saltcake dissolution waste retrieval system deployed in the SSTs is for water, chemical agent, or catalyst liquid to be added to the tank using a variety of spray nozzles or "sprinklers". The approach is to sprinkle the waste surface with water, chemical agent, or catalyst liquid. The added water, chemical agent, or catalyst liquid must stay in contact with the saltcake for a long enough period of time for the brine to become saturated. Once the brine is saturated, it is pumped from the SST to a receiver tank, staging tank, storage DST or other staging/storage vessel associated with the supplemental treatment, packaging or disposal. Salt solution will be removed using the existing saltwell pump or other pump placed into the tank.

A tank not equipped with a saltwell pump, a transfer pump (progressive cavity, vertical turbine) can be installed and operated.

Remotely directable water distribution devices will be located in risers spaced as far apart as practical. A combination of spraying waster, chemical agent, or catalyst liquid to dissolve the saltcake can be used in conjunction with directing a flow of water or recirculating water at the waste to move it to the pump suction to allow the pumping of waste from the tank. Recirculated waste from the pump may be sent back to the tank as an alternative to using water to direct dissolution waste to the pump suction.

MODIFIED SLUCING WASTE RETRIEVAL SYSTEM

Modified sluicing can be used for some SST waste retrieval. Modified sluicing is the introduction of liquid at low to moderate pressures, not to exceed 1200 psi, and volumes into the waste. The liquid dissolves and breaks apart solid materials and suspends them in the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a receiver tank.

Modified sluicing introduces sluice liquid in a controlled fashion using multiple sluicing nozzles at varying pressures and flows, then pumps out the resultant waste slurry. This maintains minimal liquid inventories within the tank at all times. The liquids that could be used in modified sluicing include water, recirculated supernatant/water from the receiving Double Shell Tank, recirculated supernatant/water, chemical agent or catalyst liquid.

VACUUM WASTE RETRIEVAL SYSTEM

A vacuum waste retrieval system can be used for waste retrieval activities in the (SSTs). The vacuum waste retrieval system is introduced into the SSTs by means of an articulating mast system (AMS). The AMS has a horizontal reach and rotational capabilities of 360 degrees. The AMS has a retracted position and can be extended vertically. Air is mixed at the suction end of the AMS enabling the required vertical lift for the waste to a topside receiver tank, batch vessel or a staging SST, storage DST, or other staging/storage vessels associated with supplemental treatment, packaging or disposal.

The AMS will be deployed through and attached to standard riser flanges that are available on the SSTs. Cameras can also be installed in other risers for in-tank viewing and control of the AMS.

For the 200-series tanks in the 241-C, 241-U, 241-B and 241-T Tank Farms a vacuum retrieval process tank, staging tank, staging SST, storage DST or other staging/storage vessel will be deployed. The receiver tank will receive waste in batches from whichever tank is connected into the vacuum retrieval system. The vacuum pressure used to draw up the waste from the tank to the receiver tank is relieved back into the SST being retrieved.

MOBILE RETRIEVAL SYSTEM

A Mobile Retrieval System (MRS) can be used to retrieve waste from some SSTs. The MRS consists of two in-tank systems. The first is a robotic crawler inserted through one riser the second is an AMS inserted through a second riser. The AMS retrieves the sludge from the tank using a vacuum with assisting pneumatic conveyance. The AMS vacuum tube has a horizontal reach and can be extended to the bottom of the tank. The arm rotates 360 degrees. The vacuum will be directed through the AMS in the tank to the end effector, which is in contact with the waste. The pneumatic conveyance-assisted vacuum retrieval system will draw the waste up through the vacuum to the waste vessel in the vessel skid in batches. The AMS is then valved out while the waste vessel is emptied and pumped out through the over ground transfer lines to a DST, a staging SST or other treatment/disposal options. When the waste vessel is nearly empty, the transfer line will be valved out and the AMS will be valved back in and another batch of waste will be removed from the tank. This process will be repeated until waste near the center of the tank is removed. The robotic crawler will be remotely controlled to move and/or wash waste toward the center of the tank.

The robotic crawler is equipped with a plow blade at the front for pushing/pulling wastes, a screw pump to jet wastes through a small nozzle towards the center of the tank, the ability to direct hot or cold water through the same nozzle to wash wastes off of in-tank equipment, dissolve waste agglomerations in the tank, and wash waste toward the center of the tank for removal.

Any new retrieval methods or changes to processes will need to be provided to WDOH in a revised NOC prior to implementation.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.99E+00	Am - 241	8.68E+03	Am - 243	3.39E-01
Ba - 137 m	4.26E+07	C - 14	6.25E+02	Cd - 113 m	4.95E+03
Cm - 242	1.97E+01	Cm - 243	1.80E+00	Cm - 244	1.90E+01
Co - 60	2.52E+03	Cs - 134	3.44E+04	Cs - 137	4.89E+07
Eu - 152	8.49E+02	Eu - 154	1.45E+04	Eu - 155	9.54E+03
H - 3	5.95E+03	I - 129	2.95E+01	Nb - 93 m	1.01E+03
Ni - 59	1.05E+02	Ni - 63	9.30E+03	Np - 237	9.50E+01
Pa - 231	1.25E+01	Pu - 238	1.65E+02	Pu - 239	3.17E+03
Pu - 240	5.36E+02	Pu - 241	4.80E+03	Pu - 242	3.34E-02
Ra - 226	1.27E-02	Ra - 228	1.15E+01	Ru - 106	1.22E-02
Sb - 125	1.73E+04	Se - 79	6.36E+01	Sm - 151	8.93E+05
Sn - 126	2.59E+02	Sr - 90	2.91E+06	Tc - 99	2.24E+04
Th - 229	4.20E-01	Th - 232	1.26E+00	U - 232	3.66E+00
U - 233	3.02E+01	U - 234	1.07E+01	U - 235	4.44E-01
U - 236	2.73E-01	U - 238	9.86E+00	Y - 90	2.91E+06
Zr - 93	1.25E+03				

4) A code compliance matrix demonstrating compliance to AG-1 shall be provided to WDOH prior to installation of the exhausters.

5) A pre-operational NDA of the exhauster(s) HEPA filters and a post-operational NDA will be performed the first time each of the four waste retrieval methods (mobile retrieval system, vacuum retrieval, supernatant sluicing, and saltcake dissolution with supernatant) when placed into service. The post-operational NDA should occur after one cycle or phase of waste retrieval operation is completed, a method replaces another method during a cycle/phase or six months from the inservice date, whichever occurs first. The facility may opt to replace the exhauster's HEPA filters prior to placing a new waste retrieval method in service and eliminate the pre-operational NDA.

6) All ductwork connections shall have a radiological survey performed monthly to ensure ductwork connections are

not degrading.

7) All ductwork shall be pressure tested in accordance with the requirements of ASME AG-1 Section SA.
8) All receiver tanks (including waste retrieval process tanks for tank TRU retrieval (stagging) SSTs, storage DSTs, or other staging/storage vessels, but not including batch vessel supporting vacuum retrieval) shall have active ventilation during waste receipt, unless alternative controls are documented and approved by WDOH.
9) All ventilation ductwork from the exit of the tank to the inlet of the exhauster filter housing shall be insulated.
10) During waste retrieval operations liquid shall be introduced through sluicing and saltcake dissolution nozzles at a pressure not to exceed 1200 psig, and the nozzle shall be at least five inches from the waste surface.
11) Each HEPA filter shall be in-place tested annually in accordance with the requirements of ASME AG-1 Section TA. HEPA filters shall have a minimum efficiency of 99.95%.
12) General WAC 246-247 technology standard exemptions justified and documented in RPP-19233, WAC 246-247 technology standard exemption justification for waste tank ventilation systems, may be applied to Phase II NOC retrieval exhauster operations.
13) Relative humidity shall be monitored, at least once a month, downstream of the heater and prior to the HEPA filters to ensure the air stream does not exceed 70% relative humidity.
14) The annual possession quantity shall be tracked on a WDOH approved log.
15) The differential pressure readings for the pre-filters and both stages of HEPA filters shall be monitored, recorded and trended daily. Action levels shall be developed and provided to WDOH for when actions will be taken to assure the pre-filters and HEPA filters will be operated within their design parameters.
16) The emission unit stack monitoring system shall meet the requirements of ANSI/HPS N13.1-1999 including the stack monitoring system inspection requirements. The technical justification document required by ANSI/HPS N13.1-1999 shall be provided to WDOH for review and approval.

Emission Unit ID: 886

200 W-296P050-001

296-P-50

This is a MAJOR, ACTIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 28.00 ft. 8.53 m. Stack Diameter 0.83 ft. 0.25 m.

Average Stack Effluent Temperature: 90 degrees Fahrenheit. 32 degrees Celsius.

Average Stack ExhaustVelocity: 91.72 ft/second. 27.96 m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	Deenttrainer	1	Operational at all times, when exhauster is in use.
	Heater	1	Operational at all times, when exhauster is in use.
	Prefilter	1	
	HEPA	2	In series.
	Fan	1	

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(2)	40 CFR 61, Appendix B Method 114	Each radionuclides that could contribute greater than 10 percent of the potential-to-emit TEDE to the MEI, greater than 0.1 mrem/yr potential-to-emit TEDE to the MEI, and greater than 25 percent of the TEDE to the MEI after controls	Continuous

Sampling Requirements Record sample collected biweekly

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a skid/mobile type portable exhauster used to support tank farm operations, such as but not limited to, waste characterization, waste retrieval, decommissioning, deactivation, maintenance, and construction and operation support activities. The emission unit is a portable exhauster that operates intermittently or continuously. The exhauster is not operational at this time.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Categorical Tank Farm Facility Waste Retrieval and Closure: Phase II Waste Retrieval Operations	AIR 06-660	7/5/2006	703

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.31E+00 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.61E+03 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)),

may be conducted.

The operation of the waste retrieval system(s) for the removal of radioactive wastes from all 149 Single Shell Tanks (SST) at the Hanford Site.

SALTCAKE DISSOLUTION WASTE RETRIEVAL SYSTEM

The saltcake dissolution waste retrieval system may be used to retrieve soluble saltcake waste. This method retrieves the soluble portion of the waste only, resulting in very few of the solids being pumped from the tank. The saltcake dissolution waste retrieval system deployed in the SSTs is for water, chemical agent, or catalyst liquid to be added to the tank using a variety of spray nozzles or "sprinklers". The approach is to sprinkle the waste surface with water, chemical agent, or catalyst liquid. The added water, chemical agent, or catalyst liquid must stay in contact with the saltcake for a long enough period of time for the brine to become saturated. Once the brine is saturated, it is pumped from the SST to a receiver tank, staging tank, storage DST or other staging/storage vessel associated with the supplemental treatment, packaging or disposal. Salt solution will be removed using the existing saltwell pump or other pump placed into the tank.

A tank not equipped with a saltwell pump, a transfer pump (progressive cavity, vertical turbine) can be installed and operated.

Remotely directable water distribution devices will be located in risers spaced as far apart as practical. A combination of spraying waster, chemical agent, or catalyst liquid to dissolve the saltcake can be used in conjunction with directing a flow of water or recirculating water at the waste to move it to the pump suction to allow the pumping of waste from the tank. Recirculated waste from the pump may be sent back to the tank as an alternative to using water to direct dissolution waste to the pump suction.

MODIFIED SLUCING WASTE RETRIEVAL SYSTEM

Modified sluicing can be used for some SST waste retrieval. Modified sluicing is the introduction of liquid at low to moderate pressures, not to exceed 1200 psi, and volumes into the waste. The liquid dissolves and breaks apart solid materials and suspends them in the waste slurry. A transfer pump installed in the tank provides the motive force to transfer the liquid slurry to a receiver tank.

Modified sluicing introduces sluice liquid in a controlled fashion using multiple sluicing nozzles at varying pressures and flows, then pumps out the resultant waste slurry. This maintains minimal liquid inventories within the tank at all times. The liquids that could be used in modified sluicing include water, recirculated supernatant/water from the receiving Double Shell Tank, recirculated supernatant/water, chemical agent or catalyst liquid.

VACUUM WASTE RETRIEVAL SYSTEM

A vacuum waste retrieval system can be used for waste retrieval activities in the (SSTs). The vacuum waste retrieval system is introduced into the SSTs by means of an articulating mast system (AMS). The AMS has a horizontal reach and rotational capabilities of 360 degrees. The AMS has a retracted position and can be extended vertically. Air is mixed at the suction end of the AMS enabling the required vertical lift for the waste to a topside receiver tank, batch vessel or a staging SST, storage DST, or other staging/storage vessels associated with supplemental treatment, packaging or disposal.

The AMS will be deployed through and attached to standard riser flanges that are available on the SSTs. Cameras can also be installed in other risers for in-tank viewing and control of the AMS.

For the 200-series tanks in the 241-C, 241-U, 241-B and 241-T Tank Farms a vacuum retrieval process tank, staging tank, staging SST, storage DST or other staging/storage vessel will be deployed. The receiver tank will receive waste in batches from whichever tank is connected into the vacuum retrieval system. The vacuum pressure used to draw up the waste from the tank to the receiver tank is relieved back into the SST being retrieved.

MOBILE RETRIEVAL SYSTEM

A Mobile Retrieval System (MRS) can be used to retrieve waste from some SSTs. The MRS consists of two in-tank systems. The first is a robotic crawler inserted through one riser the second is an AMS inserted through a second riser. The AMS retrieves the sludge from the tank using a vacuum with assisting pneumatic conveyance. The AMS vacuum tube has a horizontal reach and can be extended to the bottom of the tank. The arm rotates 360 degrees. The vacuum will be directed through the AMS in the tank to the end effector, which is in contact with the waste. The pneumatic conveyance-assisted vacuum retrieval system will draw the waste up through the vacuum to the waste vessel in the vessel skid in batches. The AMS is then valved out while the waste vessel is emptied and pumped out through the over ground transfer lines to a DST, a staging SST or other treatment/disposal options. When the waste vessel is nearly empty, the transfer line will be valved out and the AMS will be valved back in and another batch of waste will be removed from the tank. This process will be repeated until waste near the center of the tank is removed. The robotic crawler will be remotely controlled to move and/or wash waste toward the center of the tank.

The robotic crawler is equipped with a plow blade at the front for pushing/pulling wastes, a screw pump to jet wastes through a small nozzle towards the center of the tank, the ability to direct hot or cold water through the same nozzle to wash wastes off of in-tank equipment, dissolve waste agglomerations in the tank, and wash waste toward the center of the tank for removal.

Any new retrieval methods or changes to processes will need to be provided to WDOH in a revised NOC prior to implementation.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	5.99E+00	Am - 241	8.68E+03	Am - 242	3.39E-01
Ba - 137 m	4.26E+07	C - 14	6.25E+02	Cd - 113 m	4.95E+03
Cm - 242	1.97E+01	Cm - 243	1.80E+00	Cm - 244	1.90E+01
Co - 60	2.52E+03	Cs - 134	3.44E+04	Cs - 137	4.89E+07
Eu - 152	8.49E+02	Eu - 154	1.45E+04	Eu - 155	9.54E+03
H - 3	5.95E+03	I - 129	2.95E+01	Nb - 93 m	1.01E+03
Ni - 59	1.05E+02	Ni - 63	9.30E+03	Np - 237	9.50E+01
Pa - 231	1.25E+01	Pu - 238	1.65E+02	Pu - 239	3.17E+03
Pu - 240	5.36E+02	Pu - 241	4.80E+03	Pu - 242	3.34E-02
Ra - 226	1.27E-02	Ra - 228	1.15E+01	Ru - 106	1.22E-02
Sb - 125	1.73E+04	Se - 79	6.36E+01	Sm - 151	8.93E+05
Sn - 126	2.59E+02	Sr - 90	2.91E+06	Tc - 99	2.24E+04
Th - 229	4.20E-01	Th - 232	1.26E+00	U - 232	3.66E+00
U - 233	3.02E+01	U - 234	1.07E+01	U - 235	4.44E-01
U - 236	2.73E-01	U - 238	9.86E+00	Y - 90	2.91E+06
Zr - 93	1.25E+03				

4) A code compliance matrix demonstrating compliance to AG-1 shall be provided to WDOH prior to installation of the exhausters.

5) A pre-operational NDA of the exhauster(s) HEPA filters and a post-operational NDA will be performed the first time each of the four waste retrieval methods (mobile retrieval system, vacuum retrieval, supernatant sluicing, and saltcake dissolution with supernatant) when placed into service. The post-operational NDA should occur after one cycle or phase of waste retrieval operation is completed, a method replaces another method during a cycle/phase or six months from the inservice date, whichever occurs first. The facility may opt to replace the exhauster's HEPA filters prior to placing a new waste retrieval method in service and eliminate the pre-operational NDA.

6) All ductwork connections shall have a radiological survey performed monthly to ensure ductwork connections are

not degrading.

7) All ductwork shall be pressure tested in accordance with the requirements of ASME AG-1 Section SA.
8) All receiver tanks (including waste retrieval process tanks for tank TRU retrieval (stagging) SSTs, storage DSTs, or other staging/storage vessels, but not including batch vessel supporting vacuum retrieval) shall have active ventilation during waste receipt, unless alternative controls are documented and approved by WDOH.
9) All ventilation ductwork from the exit of the tank to the inlet of the exhauster filter housing shall be insulated.
10) During waste retrieval operations liquid shall be introduced through sluicing and saltcake dissolution nozzles at a pressure not to exceed 1200 psig, and the nozzle shall be at least five inches from the waste surface.
11) Each HEPA filter shall be in-place tested annually in accordance with the requirements of ASME AG-1 Section TA. HEPA filters shall have a minimum efficiency of 99.95%.
12) General WAC 246-247 technology standard exemptions justified and documented in RPP-19233, WAC 246-247 technology standard exemption justification for waste tank ventilation systems, may be applied to Phase II NOC retrieval exhauster operations.
13) Relative humidity shall be monitored, at least once a month, downstream of the heater and prior to the HEPA filters to ensure the air stream does not exceed 70% relative humidity.
14) The annual possession quantity shall be tracked on a WDOH approved log.
15) The differential pressure readings for the pre-filters and both stages of HEPA filters shall be monitored, recorded and trended daily. Action levels shall be developed and provided to WDOH for when actions will be taken to assure the pre-filters and HEPA filters will be operated within their design parameters.
16) The emission unit stack monitoring system shall meet the requirements of ANSI/HPS N13.1-1999 including the stack monitoring system inspection requirements. The technical justification document required by ANSI/HPS N13.1-1999 shall be provided to WDOH for review and approval.

Emission Unit ID: 887

200E J-244ER152-002

244-A Lift Station Valve Pit

This is a MINOR, ACTIVELY ventilated emission unit.

244-A DCRT

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency

Sampling Requirements None

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a diffuse source for radiological emissions in the form of dust, or emissions that are generated from point sources or areas/buildings where the emissions are not expected to be emitted through a stack. The emission unit is typically part of the surveillance program however there is a number of units that could be used during waste retrieval, decommissioning, and closure, such as but not limited to pits, pipelines, valves, pumps, and diversion boxes. The emission unit does not contain control equipment that is functional or maintained to specifications however, ALARACT methods are used to minimize releases. The area has contamination contained within the soil, a structure without ventilation systems, areas sources with multiple fugitive emission sources, such as but not limited to tanks farms, abandoned buildings/structures, pipelines, valves, pumps, pits, diversion boxes, etc. that may omit fugitive emissions while in operation. If the contamination is buried, or is fixed in such a manner that a release to the air is not expected, then the emission source is not contained within this category of emission units. The emission unit is a continuous source of emissions.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Tank Farm Waste Transfer Pits 241-ER-152 and 244-A Lift Station	AIR 06-625	7/5/2006	660

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.45E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.45E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

   Work in the Tank Farm Waste Transfer Pits 241-ER-152 and 244-A Lift Station Valve Pit.

   These activities include:
   a) Remove or install cover blocks;
   b) Perform inspections;
   c) Install, disconnect, change and cut up jumpers/blanks or other pit equipment;
   d) Repair/replace valves, jumpers, pumps, filters, leak detectors or other instrumentation/equipment;
   e) Perform decontamination activities;
   f) Apply fixative with cover blocks on or off;
   g) Clear drains, and check flow of drains.

Waste transfer pits are located at transfer piping network intersections and provide access from the surface to process piping and tank risers. Pits are the points where jumpers, pumps, and other equipment are installed to establish waste transfer routings. Leak detection is provided in pits used during transfers.

The 244-A Lift Station

A Double Contained Receiver Tank (DCRT) is a type of waste transfer pit which, together with its related equipment, constitutes a short term storage facility for liquid waste and a pump pit for waste transfer operations. This DCRT is passively ventilated and consists of an underground concrete structure that contains a filter pit, pump pit and a vault in which a receiver tank is installed. This station provides short term storage and waste routing for interstitial liquid wastes pumped from the 241-B, 241-BX, 241-BY Tank Farms and B plant in the 200 East Area, pumped cross-site, and as a pump pit by installing a jumper between connecting nozzles. Waste transferred out of the 244-A Lift Station can be routed to any of the 200 East Area double shell tanks (DSTs).

The receiver tank has a capacity of approximately 16,000 gallons and is constructed of carbon steel. It is surrounded by a tank vault that acts as a secondary containment vessel. The tank and vault are separated by an annular space. The floor is sloped to a sump for leak detection, collection and pump out.

The receiver tank and the tank vault annulus are vented through a single exhaust system. Remote instrument readout and alarm panels are located in the 242-A Evaporator control room and Computer Automated Surveillance System (CASS) room.

Outside air enters the double contained receiver tank (DCRT) annulus through an air intake equipped with an electric heater, prefilter, and a single stage high efficiency particulate air (HEPA) filter. The vault and receiver tank air streams flow through one of two parallel HEPA filter banks in the filter pit, and then join into a single line. The DCRT is currently passively ventilated through the atmosphere through stack 296-A-25. The only physical tie-in for ventilation to the pit is a small nozzle through which there is minimal flow. This stack also services the rest of 244-A Lift Station (this constitutes the majority of the flow).

This ventilation system is operating when pit activities are being conducted. However, emissions through the 296-A-25 stack are minimal during the performance of pit activities, since the unused nozzles are capped and there is one remaining nozzle that could allow ventilation in-flow to the stack.

241-ER-152 Pit is a diversion box which is covered, below grade, reinforced concrete structure that provides a flexible method of directing liquid waste from one point to another. Diversion boxes also provide confinement for leaks in waste transfer lines and leaks at jumper nozzle connections. Waste transfer lines are connected inside the diversion box.

Minimal controls are used for all activities. The following activities require only these minimal controls; (1) pre-job and post-job rad surveys are performed by HPTs. Radiation Work Permit (RWPs) specify permissible occupational radiological limits during activities. HPTs survey and release equipment, inspect and approve required containment and provide radiological surveys to verify compliance to RWP limits; (2) Pit work is shut down (or will not be initiated) when sustained wind speeds exceed 25 miles per hour (mph) or are predicted to do so by Hanford Meteorological Station during the period of planned pit work.

* Perform remote inspections with cover block on;
* Perform decontamination of pit surfaces or pit contents with cover bocks on;
* Apply fixative with cover blocks on;
* Flush drains and check flow of drains with cover blocks on.

In addition to the minimum controls a fall protection handrail draped in plastic forming a contamination barrier around the top of the pit is used for the following activities:

* Remove/replace cover blocks;

* Perform inspections with cover blocks off;
* Perform decontamination of pit surfaces or pit contents with cover blocks off;
* Apply fixative with a hand held (Hudson Type) sprayer with cover blocks off;
* Flush drains and check flow of drains with cover blocks off;
* Repair/replace/ move leak detectors or other pit instrumentation/equipment with cover blocks off.

In addition to the minimum controls a fall protection handrail draped in plastic forming a contamination barrier around the top of the open pit and a bull pen with an operating portable exhauster(s) are required for the following activities:

* Removal of cover blocks and performing the following operations: install, disconnect, change or cut up jumpers/blanks/valves or nozzles.

While cover blocks are on, low pressure fogging or a low volume whirly shall apply a fixative through an open valve handle hole or port which is closed during fixative application. The fogging or whirly operation is initiated gradually to coat the pit surfaces and cover blocks with fixative which reduces the potential for dislodging any contamination. Continuous surveys are performed during the fixative application. Additional fixative shall be applied, using a low pressure wand at any time there is an additional need for contamination control.

Anytime jumper work will be done a bull pen shall be in place. Jumper work in a pit cannot be performed without the use of a crane, therefore the bull pen top cannot be closed during jumper work.

The portable exhauster(s) shall be used anytime the pit is uncovered and the bull pen is in place.

Cutting up unusable pit equipment with hydraulic shears or a low revolutions per minute (RPM) portable band saw shall be done within the pit with the bull pen in place and the portable exhauster operating.

The cover blocks are replaced at the end of each work shift.

The bull pen is continuously occupied to assure that required pit controls remain in place any time the pit is uncovered. If a temporary pit cover is used, it will be put in place to fully cover the pit openings. If the temporary cover used is 3/4 inch plywood sheets, they are wrapped in plastic, placed over the pit, and weighted down by using lead filled blankets. If a tarp is used as a temporary cover, it is laid over the handrail surrounding the pit and extends to the ground on all four sides. This tarp is then secured around the outside perimeter near ground level using tape or an elastic strap. In this way, the tarp forms a cap over the pit and raised portion of the handrail structure.

During 244-A Lift Station Valve Pit and 241-ER-152 pit work operations, primary air inflow shall be through the open top of the bull pen and out the operating portable exhauster(s).

Additional special controls shall be added based upon the removable contamination level, contamination stability, and the operation to be performed as outlined in Attachment A of TFC-ESHQ-RP_RWP-C-02, Radiological Containment.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Am - 241	8.48E+00	Cm - 244	4.83E+00	Co - 60	3.87E-01
Cs - 137	3.01E+03	Eu - 154	2.05E+00	Np - 237	1.35E-02
Pu - 238	2.70E-01	Pu - 239	4.40E+00	Pu - 241	1.05E+01
Sr - 90	3.61E+02	Y - 90	3.61E+02		

4) If flushing pressure is expected to exceed 50 psig, the department must be notified and assured that proper hoses, couplings and fittings are appropriate for the pressure used. Between 50 and 120 psig a notification is required. Anything above 120 psig requires approval from the department.

5) The annual possession quantity is limited to 3.92E+03 curies per pit.

Emission Unit ID: 888

Hanford Sitewide

Tanker Loading of Contaminated Waste Water

This is a MINOR, PASSIVELY ventilated emission unit.

Tanker Truck Loading Catagorical

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)	Appendix B, Method 114	Total alpha, total beta	As listed in the following Conditions and Limitations.

Sampling Requirements As listed in the following Conditions and Limitations.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status Tanker truck designed to transport low-level contaminated liquid to LERF and/or ETF.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Tanker Truck Loading of Radioactively Contaminated Waste Water	AIR 06-654	7/5/2006	696

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 6.00E-02 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

The approved activities are limited to: transfer radioactive waste water (e.g., purgewater, pool cell water, decontamination solutions) from various locations on the Hanford site to mobile tanker trucks, and transport the wastewater to the Liquid Effluent Retention Facility (LERF) and/or 200 Areas Effluent Treatment Facility (ETF). The proposed action includes isolated instances where small quantities of wastewater might be transferred to 55 gallon drums or smaller containers, for transport to LERF and/or ETF. The license is a categorical license under WAC 246-247-060(8). In the text of the license conditions, it should be understood that the term "tanker" or "tanker/drum" or variants of these terms includes smaller containers, so that the license shall apply to loading of tankers, drums, or smaller containers.

The physical and chemical processes associated with tanker truck loading activities are:

Isotopic analysis of wastewater.
Tanker truck or truck deployment.
Hookup of transfer equipment for transfer of wastewater into tanker, drums, or smaller containers.
Wastewater transfer to the tanker truck, drums, or smaller containers via pumping or vacuum transfer.
Associated surveys, spill prevention, other radcon activities.
Decontamination of tanker/drums/smaller containers.
Decontamination or packaging of transfer equipment for transport.
Decontamination or packaging of spillage and resulting contamination.

Unloading of the tanker trucks, drums, or smaller containers is not licensed under this approval.

3) The PTE for this project as determined under WAC 246-247-030(21)(a-e) [as specified in the application] is 6.00E-02 mrem/year. Approved are the associated potential release rates (Curies/year) of:

Alpha - 0	3.60E-07	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Any radionuclide on the chart of the nuclides could be encountered during tanker loading operations. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all beta/gamma is assumed to be Cs-137 and all alpha is assumed to be Am-241 for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			
Beta - 0	1.10E-02	Liquid/Particulate Solid	WAC 246-247-030(21)(a)
Any radionuclide on the chart of the nuclides could be encountered during tanker loading operations. The radionuclides specifically listed in the NOC application were chosen to conservatively represent all radionuclide emissions that may occur in particulate form. A small contribution from the gaseous radionuclides may be encountered. Although any radionuclide could be present, for conservatism all beta/gamma is assumed to be Cs-137 and all alpha is assumed to be Am-241 for dose calculation estimates. Other radionuclides may be encountered and are approved so long as they are conservatively represented by the total alpha and total beta-gamma constituents.			

The potential release rates described in this Condition were used to determine control technologies and monitoring requirements for this approval. DOE must notifiy the Department of a "modification" to the emission unit, as defined in WAC 246-247-030(16). DOE must notify the Department of any changes to a NESHAP major emission unit when a specific isotope is newly identified as contributing greater than 10% of the potential TEDE to the MEI, or greater than 25% of the TEDE to the MEI after controls. (WAC 246-247-110(9)) DOE must notify the Department of any changes to potential release rates as required by state or federal regulations including changes that would constitute a significant modification to the Air Operating Permit under WAC 173-401-725(4). Notice will be provided according to the particular regulation under which notification is required. If the applicable regulation(s) does not address manner and type of notification, DOE will provide the Department with advance written notice by letter or electronic mail but not solely by copies of documents.

4) At all times, activities shall conform to procedures for prior characterization and handling of radioactive liquid approved in accord with applicable QA program. Prior to commencing liquid transfer into tanker/drum/smaller container:

a) Waste liquid shall be characterized, and acceptability at the ETF and/or LERF shall be verified.
b) All transfer line hookups shall be inspected to verify leak-tight connections.
c) Spill prevention measures shall be verified to be in place.
d) Volume of tanker/drum/smaller container contents shall be verified and documented.
e) Seals separating tanker/drum/smaller container contents from environment shall be verified fully functional.

During the loading operation:

f) Surveys shall be performed according to radiation control procedures approved via applicable QA program.
g) Fill rates shall be controlled below 50 cfm.

On completion of the loading operation:

h) All tanker/drum fittings shall be disconnected and closed.
i) All liquid/gas release points on the tanker/drum shall be closed and shall remain closed until commencement of unloading operations at the LERF or ETF
j) Spill prevention measures shall remain in place until the tanker/drum is closed.
k) The tanker/drum shall be surveyed and if necessary decontaminated before release for transport.
l) Transfer equipment shall be surveyed and if necessary decontaminated or packaged for transport subject to radcon procedures approved in accord with applicable QA program.
m) Spillage shall be surveyed and if necessary decontaminated or packaged for transport and disposal subject to radcon procedures approved in accord with applicable QA program.
n) Volume of tanker/drum contents shall be verified and documented.

The surface contamination release criteria for the vehicle, tanker, drums, and transport equipment shall be documented and approved in accord with an applicable QA program.

(WAC 246-247-040(5))

5) Log, Monitoring, and Demonstration of Compliance to Licensed Emission Limit:

a) A single log shall be maintained, reflect each individual loading operation, and be updated after each individual tanker/drum/container is offloaded, so long as the emissions associated with the transferred but un-logged quantity (material residing in partially filled tankers) remain less than 10% of licensed limit, as estimated using the method described in this condition.

b) The log shall record the sum to date of the calendar year's emissions estimated using the method described in this condition for activities herein licensed.

c) The log shall include monthly confirmation that licensed annual emission limits have not been exceeded, that transfer flow rates remain below the limit specified in this license, and identify the radiological work package under which each loading is accomplished.

d) The estimated emissions for each loading operation shall be determined using one of the following methods:

Method 1: From the characterization of the liquid being loaded, gross alpha and gross beta/gamma activities shall be determined. The emission shall be determined using the volume of liquid transferred, an assumed release fraction of 0.001, location-specific dose conversion factors from the latest revision of HNF-3602, assuming gross alpha is 241-Am and gross beta/gamma is 137-Cs

Method 2: From the characterization of the liquid being loaded, a complete isotopic distribution of radionuclides shall be determined. The emission shall be determined using the volume of liquid transferred, an assumed release fraction of 0.001, and location-specific dose conversion factors from the latest revision of HNF-3602 for the known isotopes

(WAC 246-247-040(5), WAC 246-247-080(7), WAC 246-247-075(3))

Emission Unit ID: 894

200W P-241UX302A-001

241-UX-302A

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows the catch tank to vent to the atmosphere under tank farm storage, maintenance, and operations. Any activity other than waste transfer support, maintenance, and normal opeations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Installation and Operation of Breather Filter on Tank 241-UX-302A, 241-AZ-154, and 241-U-301B	AIR 06-624	7/5/2006	659

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.73E-06 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.73E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

   Installation of a passive breather filter on the 241-UX-302A catch tank. The breather filter will be a radial HEPA filter with a removal efficiency of 99.97% and a rated capacity of 40 cfm. The filter will be replaced on an annual basis, eliminating the need for annual aerosol testing.

   The 241-UX-302A catch tank is a 17,760 gallon capacity catch tank which has been isolated and currently contains 1,736 gallons of waste. The breather filter shall minimize the amount of radioactive particulates emitted as a consequence of tank breathing due to barometric pressure changes. The catch tank will breath at a rate of approximately 0.007 cfm with a flow rate less than 1 cfm.

The 241-AZ-154 catch tank is an 869 gallon capcity catch tank designed to receive condensate from the 241-AZ and 241-AY double shell tank heating coils. The steam coils have sense been blanked off and use fo the catch tank dicontinued in 1992. Current data indicates this tank is empty.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Alpha - 0	8.48E-05	Beta - 0	3.02E+00	Gamma - 0	3.14E-01

4) The breather filter must be replaced annually. The new filter must be a Type 1 (radial flow filter) with a Type C filter pack, as define by AG-1 Code on Nuclear Air and Gas Treatment Section FK, Special HEPA Filters. The filter frames, end-caps, flanges, and grilles must be made of 304/304L stainless steel. The filter must use UL-586 compliant resin to provide the sealing of the filter media to the frame. The filter must have a minimum removal efficiency of 99.97% and a rated flow of 40 cfm.

5) All removal and installation operations, of the breather filter, must follow the requirements outlined in ALARACT 1 "Demonstration for Riser Preparation/Opening", and ALARACT 16 "Demonstration for Work on Potentially Contaminated Ventilation System Components".

6) The breather filter must meet all of the requirements as described in the "AG-1 COMPLIANCE MATRIX FOR FLANDERS FILTER MODEL 0-007-1-12-RF-NU-00-E3-Z04059B", of the DOE letter 06-ED-001, dated January 18, 2006 titled RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION APPLICATION FOR INSTALLATION OF A BREATHER FILTER ON TANK 241-UX-302A.Should a change to the Compliance Matrix be required, WDOH approval of the deviation shall be obtained prior to installation of the new breather filter.

Emission Unit ID: 910

200 E P-241ER311-001

ER311

This is a MINOR, PASSIVELY ventilated emission unit.

Tank Farms

Emission Unit Information

Stack Height: 6.25 ft. 1.91 m. Stack Diameter 0.34 ft. 0.10 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a passive breather filter that allows the catch tank to vent to the atmosphere under tank farm storage, maintenance, and operations. Any activity other than waste transfer support, maintenance, and normal operations will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

Emission Unit ID: 912

200E P-244A-003

244-A Annulus HEPA

This is a MINOR, ACTIVELY ventilated emission unit.

244-A DCRT

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 0.31 ft. 0.09 m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: 1.90 ft/second. 0.58 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double contained receiver tank (DCRT) passive breather filter ventilation system used to support tank farm operations, such as waste retrieval and operation support activities for the 241-A Tank Farm. The tank stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit has a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Isolation and Closure of Exhaust Stacks 296-A-25, 296-B-28, 296-S-22 and 296-T-18	AIR 06-655	7/5/2006	697

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

244-S DCRT (296-S-22 STACK)

Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver

tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

244-TX DCRT (296-T-18 STACK)

Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for

the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	2.04E-02	Am - 241	1.17E+01	Am - 243	3.58E-04
Ba - 137 m	2.69E+03	C - 14	4.06E-01	Cd - 113 m	1.40E+00
Cm - 242	1.19E-02	Cm - 243	6.91E-04	Cm - 244	1.26E-02
Co - 60	6.18E-01	Cs - 134	6.84E-03	Cs - 137	2.84E+03
Eu - 152	1.18E-01	Eu - 154	9.29E+00	Eu - 155	5.09E+00
H - 3	1.53E+00	I - 129	5.01E-03	Nb - 93 m	4.18E-01
Ni - 59	1.57E-01	Ni - 63	1.46E+01	Np - 237	9.67E-03
Pa - 231	4.25E-02	Pu - 238	4.84E-01	Pu - 239	9.45E+00
Pu - 240	1.57E+00	Pu - 241	1.23E+01	Pu - 242	8.61E-05
Ra - 226	3.73E-02	Ra - 228	8.82E-03	Ru - 106	8.01E-06
Sb - 125	6.95E-01	Se - 79	1.22E-02	Sm - 151	3.74E+02
Sn - 126	6.02E-02	Sr - 90	5.31E+03	Tc - 99	2.76E+00
Th - 229	4.01E-03	Th - 232	1.13E-03	U - 232	6.22E-03
U - 233	7.78E-02	U - 234	3.07E-02	U - 235	1.28E-03
U - 236	6.36E-04	U - 238	2.87E-02	Y - 90 m	5.31E+03
Zr - 93	5.03E-01				

4) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.

Emission Unit ID: 922

200E 200E P-244BX-003

244-BX Annulus HEPA

This is a MINOR, PASSIVELY ventilated emission unit.

244-BX-DCRT

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double container receiver tank (DCRT) passive breather filter ventilation system used to support tank farm operations, such as but not limited to waste retrieval and operation support activities for 241-BX Tank Farm. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal opeation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Isolation and Closure of Exhaust Stacks 296-A-25, 296-B-28, 296-S-22 and 296-T-18	AIR 06-655	7/5/2006	697

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

244-S DCRT (296-S-22 STACK)

Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver

tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

244-TX DCRT (296-T-18 STACK)

Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for

the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	4.12E-02	Am - 241	2.37E+01	Am - 243	7.23E-04
Ba - 137 m	5.43E+03	C - 14	8.19E-01	Cd - 113 m	2.83E+00
Cm - 242	2.40E-02	Cm - 243	1.39E-03	Cm - 244	2.56E-02
Co - 60	1.25E+00	Cs - 134	1.38E-02	Cs - 137	5.74E+03
Eu - 152	2.38E-01	Eu - 154	1.88E+01	Eu - 155	1.03E+01
H - 3	3.09E+00	I - 129	1.03E-02	Nb - 93 m	8.44E-01
Ni - 59	3.18E-01	Ni - 63	2.95E+01	Np - 237	1.95E-02
Pa - 231	8.58E-02	Pu - 238	9.78E-01	Pu - 239	1.91E+01
Pu - 240	3.17E+00	Pu - 241	2.48E+01	Pu - 242	1.74E-04
Ra - 226	7.54E-02	Ra - 228	1.78E-02	Ru - 106	1.62E-05
Sb - 125	1.40E+00	Se - 79	2.46E-02	Sm - 151	7.55E+02
Sn - 126	1.22E-01	Sr - 90	1.07E+04	Tc - 99	5.57E+00
Th - 229	8.09E-03	Th - 232	2.28E-03	U - 232	1.26E-02
U - 233	1.57E-01	U - 234	6.19E-02	U - 235	2.59E-03
U - 236	1.28E-03	U - 238	5.80E-02	Y - 90	1.07E+04
Zr - 93	1.02E+00				

4) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.

Emission Unit ID: 959

200W

244-S Annulus HEPA

This is a MINOR, PASSIVELY ventilated emission unit.

244 S-DCRT

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double container receiver tank (DCRT) passive breather filter ventilation system used to support tank farm operations, such as but not limited to waste retrieval and operation support activities for 241-S Tank Farm. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission untis associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Isolation and Closure of Exhaust Stacks 296-A-25, 296-B-28, 296-S-22 and 296-T-18	AIR 06-655	7/5/2006	697

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

244-S DCRT (296-S-22 STACK)

Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver

tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

244-TX DCRT (296-T-18 STACK)

Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for

the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	2.04E-02	Am - 241	1.17E+01	Am - 243	3.58E-04
Ba - 137 m	2.69E+03	C - 14	4.06E-01	Cd - 113 m	1.40E+00
Cm - 242	1.19E-02	Cm - 243	6.91E-04	Cm - 244	1.26E-02
Co - 60	6.18E-01	Cs - 134	6.84E-03	Cs - 137	2.84E+03
Eu - 152	1.18E-01	Eu - 154	9.29E+00	Eu - 155	5.09E+00
H - 3	1.53E+00	I - 129	5.10E-03	Nb - 93 m	4.18E-01
Ni - 59	1.57E-01	Ni - 63	1.46E+01	Np - 237	9.67E-03
Pa - 231	4.25E-02	Pu - 238	4.84E-01	Pu - 239	9.45E+00
Pu - 240	1.57E+00	Pu - 241	1.23E+01	Pu - 242	8.61E-05
Ra - 226	3.73E-02	Ra - 228	8.82E-03	Ru - 106	8.01E-06
Sb - 125	6.95E-01	Se - 79	1.22E-02	Sm - 151	3.74E+02
Sn - 126	6.02E-02	Sr - 90	5.31E+03	Tc - 99	2.76E+00
Th - 229	4.01E-03	Th - 232	1.13E-03	U - 232	6.22E-03
U - 233	7.78E-02	U - 234	3.07E-02	U - 235	1.28E-03
U - 236	6.36E-04	U - 238	2.87E-02	Y - 90	5.31E+03
Zr - 93	5.03E-01				

4) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.

Emission Unit ID: 969

200W

244-TX Annulus HEPA

This is a MINOR, PASSIVELY ventilated emission unit.

244-TX DCRT

Emission Unit Information

Stack Height: 3.00 ft. 0.91 m. Stack Diameter 1.00 ft. 0.30 m.

Average Stack Effluent Temperature: 55 degrees Fahrenheit. 13 degrees Celsius.

Average Stack ExhaustVelocity: 1.91 ft/second. 0.58 m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a double container receiver tank (DCRT) passive breather filter ventilation system used to support tank farm operations, such as but not limited to wasted retrieval and operation support activities for 241-TX Tank Farm. The tanks stored radioactive waste during transfer operations. Any activity other than temporary storage and normal operation support will be regulated and/or permitted under the appropriate regulations and/or permits for the activity being performed and the emission units associated with the activity. The emission unit is a passive breather filter ventilation system that operates continuously.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Isolation and Closure of Exhaust Stacks 296-A-25, 296-B-28, 296-S-22 and 296-T-18	AIR 06-655	7/5/2006	697

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 1.20E-03 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 1.20E-01 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in WAC 246-247-030(16), may be conducted.

244-S DCRT (296-S-22 STACK)

Passive Ventilation Breather Filter System Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver

tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will allow vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

The isolation and removal of the HEPA filter bank located in the 244-S DCRT filter pit will require the deactivation of the HEPA filter bank instrumentation and alarms, the removal and disposal of the HEPA filter bank, and the installation of the filter pit duct jumper assembly, in accordance with ALARACT Demonstrations 6, 14, and 16. The 296-S-22 exhauster is equipped with a HEPA filter bank inside the filter pit. The HEPA filter bank is attached to three nozzles in the filter pit: one nozzle to the catch tank, one nozzle to the annulus, and one nozzle to the ventilation exhaust ductwork. The HEPA filter bank will be disconnected from the nozzles and removed for disposal. A filter pit duct jumper assembly (4" schedule 40 pipe) will be connected to the catch tank nozzle and ventilation exhaust ductwork nozzle to provide the ventilation path to the newly installed passive breather filters. The third nozzle to the annulus will be closed in the filter pit. The filter pit duct jumper assembly will be fabricated in accordance with ASME B31.3 and tested in accordance with ASME AG-1.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-S DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system in accordance with ALARACT 16. Disconnection is the physical disconnection and removal of wires from the power source. Pit entries are not required to disconnect power or isolate instrumentation.

296-S-22 Stack Isolation:

The 296-S-22 stack will be isolated via mechanical isolations. Blank flanges will be installed on the duct end and on the suction side of the exhaust fan. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

244-TX DCRT (296-T-18 STACK)

Passive Ventilation Breather Filter Installation:

A passive ventilation breather filter system will be installed on an existing above-grade riser on the primary receiver tank in accordance with ALARACT Demonstration 1 and 16. The primary tank breather filter will serve as the static vent for the instrument air injected (at a maximum of 9 cubic feet per hour) into the receiver tank through a set of three weight-factor dip tubes, which mixes with, and dilutes, any flammable gases. The primary tank breather filter will allow flammable gases to escape while collecting any airborne radioactive particulates.

A passive ventilation breather filter system will be installed above-grade on an existing riser or the existing annulus inlet filter riser in accordance with ALARACT 1 and 16. The annulus breather filter will provide for

the exchange of ambient air with the annulus tank during atmospheric pressure fluctuations and will collect potential airborne radioactive particulates from the annulus space while allowing vapors to escape.

The breather filter system will, at a minimum, consist of an isolation valve (normally open during operation), filter housing, HEPA filter, and loop seal assembly. The isolation valve will isolate the HEPA filter from the tank to facilitate testing of the filter, and to isolate the system until the filter or housing can be replaced.

HEPA Filter Bank Isolation and Removal:

Removal of the HEPA filter bank in the 244-TX DCRT filter pit is not required. The HEPA filter bank will be isolated via closure of manual valves and the deactivation of motor-controlled valves. Above-grade duct/pipe will be capped. The associated HEPA filter bank instrumentation and alarms will be deactivated. This work will be done in accordance with ALARACT 16.

Electrical Equipment and Instrumentation Isolation:

The isolation of electrical equipment and instrumentation on the 244-TX DCRT will require the disconnection of various power supplies (e.g., exhaust fan, motor operated valves, heat trace, sampler pumps, continuous air monitor, and alarms) and isolation of instrumentation (e.g., HEPA filter bank pressure indicators) that support operation and monitoring of the stack ventilation system. Disconnection is the physical disconnection and removal of wires from the power source in accordance with ALARACT Demonstration 16. Pit entries are not required to disconnect power or isolate instrumentation.

296-T-18 Stack Isolation:

The 296-T-18 stack will be isolated via mechanical isolations. A blank flange will be installed at the suction side of the exhaust fan or at another suitable location near the filter pit outlet to the exhaust stack. A closure cap will be installed on top of the exhaust stack. The exhaust stack drain line will be cut and capped above grade. This work will be done in accordance with ALARACT Demonstration 16.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

Ac - 227	4.12E-02	Am - 241	2.37E+01	Am - 243	7.23E-04
Ba - 137 m	5.43E+03	C - 14	8.19E-01	Cd - 113 m	2.83E+00
Cm - 242	2.40E-02	Cm - 243	1.39E-03	Cm - 244	2.56E-02
Co - 60	1.25E+00	Cs - 134	1.38E-02	Cs - 137	5.74E+03
Eu - 152	2.38E-01	Eu - 154	1.88E+01	Eu - 155	1.03E+01
H - 3	3.09E+00	I - 129	1.03E-02	Nb - 93 m	8.44E-01
Ni - 59	3.18E-01	Ni - 63	2.95E+01	Np - 237	1.95E-02
Pa - 231	8.58E-02	Pu - 238	4.50E+02	Pu - 239	3.16E+01
Pu - 240	1.92E+01	Pu - 241	6.28E+04	Pu - 242	1.74E-04
Ra - 226	7.54E-02	Ra - 228	1.78E-02	Ru - 106	1.62E-05
Sb - 125	1.40E+00	Se - 79	2.46E-02	Sm - 151	7.55E+02
Sn - 126	1.22E-01	Sr - 90	1.07E+04	Tc - 99	5.57E+00
Th - 229	8.09E-03	Th - 232	2.28E-03	U - 232	1.26E-02
U - 233	1.57E-01	U - 234	6.19E-02	U - 235	2.59E-03
U - 236	1.28E-03	U - 238	5.80E-02	Y - 90	1.07E+04
Zr - 93	1.02E+00				

4) Each breather filter shall be individually tested, annually, to the requirements of ASME N510, and shall have a minimum efficiency of 99.95%.

Emission Unit ID: 1128

400 400 Area Diffuse/Fugitive

400 Area Diffuse/Fugitive Emissions

This is a MINOR, FUGITIVE, non-point source emission unit.

400 diffuse/fugitive emissions

Abatement Technology ALARACT WAC 246-247-040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
WAC 246-247-075(3)	Appendix B, Method 114	Each radionuclide that could contribute greater than 10 percent of the potential-to-emit TEDE	Per the sitewide ambient monitoring program

Sampling Requirements Per the sitewide ambient monitoring program samples will be collected from the existing near-facility monitoring stations

Additional Requirements

See Section 5 of the general conditions in this license for additional information.

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status This emission unit is a diffuse source for radiological emissions in the form of dust, or emissions that are generated from point sources or areas/buildings where the emissions are not expected to be emitted through a stack. The emission unit is typically part of the surveillance program however there is a number of units that could be used during waste retrieval, decommissioning, and closure, such as but not limited to pits, pipelines, valves, pumps, and diversion boxes. The emission unit does not contain control equipment that is functional or maintained to specifications however, ALARACT methods are used to minimize releases. The area has contamination contained within the soil, a structure without ventilation systems, areas sources with multiple fugitive emission sources, such as but not limited to tanks farms, abandoned buildings/structures, pipelines, valves, pumps, pits, diversion boxes, etc. that may omit fugitive emissions while in operation. If the contamination is buried, or is fixed in such a manner that a release to the air is not expected, then the emission source is not contained within this category of emission units. The emission unit is a continuous source of emissions.

Emission Unit ID: 1129

200W

241-U-301B

This is a MINOR, PASSIVELY ventilated emission unit.

241-U TANK FARM

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status The 241-U301B catch tank is a 36,000 gallon capacity catch tank designed to support waste transfers from 244-TX via 241-U-151 and 241-U-152. Waste was last transferred out of U-301B by truck in December of 2003. The transfer route was taken out of service in June of 2005. Currently data indicates that 1,467 gallons of waste remian in this tank.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Installation and Operation of Breather Filter on Tank 241-UX-302A, 241-AZ-154, and 241-U-301B	AIR 06-624	7/5/2006	659

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.73E-06 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.73E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

   Installation of a passive breather filter on the 241-UX-302A catch tank. The breather filter will be a radial HEPA filter with a removal efficiency of 99.97% and a rated capacity of 40 cfm. The filter will be replaced on an annual basis, eliminating the need for annual aerosol testing.

   The 241-UX-302A catch tank is a 17,760 gallon capacity catch tank which has been isolated and currently contains 1,736 gallons of waste. The breather filter shall minimize the amount of radioactive particulates emitted as a consequence of tank breathing due to barometric pressure changes. The catch tank will breath at a rate of approximately 0.007 cfm with a flow rate less than 1 cfm.

The 241-AZ-154 catch tank is an 869 gallon capcity catch tank designed to receive condensate from the 241-AZ and 241-AY double shell tank heating coils. The steam coils have sense been blanked off and use fo the catch tank dicontinued in 1992. Current data indicates this tank is empty.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

4) The breather filter must meet all of the requirements as described in the "AG-1 COMPLIANCE MATRIX FOR FLANDERS FILTER MODEL 0-007-1-12-RF-NU-00-E3-Z04059B", of the DOE letter 06-ED-001, dated January 18, 2006 titled RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION APPLICATION FOR INSTALLATION OF A BREATHER FILTER ON TANK 241-UX-302A.

   Should a change to the Compliance Matrix be required, WDOH approval of the deviation shall be obtained prior to installation of the new breather filter.

5) All removal and installation operations, of the breather filter, must follow the requirements outlined in ALARACT 1 "Demonstration for Riser Preparation/Opening", and ALARACT 16 "Demonstration for Work on Potentially Contaminated Ventilation System Components".

6) The breather filter must be replaced annually. The new filter must be a Type 1 (radial flow filter) with a Type C filter pack, as define by AG-1 Code on Nuclear Air and Gas Treatment Section FK, Special HEPA Filters. The filter frames, end-caps, flanges, and grilles must be made of 304/304L stainless steel. The filter must use UL-586 compliant resin to provide the sealing of the filter media to the frame. The filter must have a minimum removal efficiency of 99.97% and a rated flow of 40 cfm.

Emission Unit ID: 1130

200E

241-AZ-154

This is a MINOR, PASSIVELY ventilated emission unit.

241-AZ TANK FARM

Emission Unit Information

Stack Height: ft. m. Stack Diameter ft. m.

Average Stack Effluent Temperature: degrees Fahrenheit. degrees Celsius.

Average Stack ExhaustVelocity: ft/second. m/second.

Abatement Technology

BARCT WAC 246-247-040(3), 040(4)

state only enforceable: WAC 246-247-010(4), 040(5), 060(5)

Zone or Area	Abatement Technology	Required # of Units	Additional Description
	HEPA	1	Passive Breather Filter

Monitoring Requirements

state enforceable: WAC 246-247-040(5), 060(5), and federally enforceable: 40 CFR 61 subpart H

Federal and State Regulatory	Monitoring and Testing Requirements	Radionuclides Requiring Measurement	Sampling Frequency
40 CFR 61.93(b)(4)(i) & WAC 246-247-075(3)		Levels below 10,000 dpm/100cm2 beta/gamma and 200 dpm/100cm2 alpha will verify low emissions.	1 per year

Sampling Requirements Smear survey on the inside surface of the ducting and downstream of the HEPA filter or on the outside of the screen covering the outlet of the vent.

Additional Requirements

Additional monitoring or sampling requirements established by this License will be listed in the Conditions and Limitations section, if applicable.

Operational Status The 241-AZ-154 catch tank is an 869 gallon capacity catch tank designed to receive condensate from the 241-AZ and 241-AY double shell tank heating coils. The steam coils have since been blanked off and use fo the catch tank discontinued in 1992. Currently data indicates this tank is empty. Periodically water intrusion is seen in this tank from rain and snow.

This Emission Unit has 1 active Notice(s) of Construction.

Project Title	Approval No	Date Approved	NOC_ID
Installation and Operation of Breather Filter on Tank 241-UX-302A, 241-AZ-154, and 241-U-301B	AIR 06-624	7/5/2006	659

Conditions (state only enforceable)

1) The total abated emission limit for this Notice of Construction is limited to 2.73E-06 mrem/year to the Maximally Exposed Individual (WAC 246-247-040(5)). The total limit on the Potential-To-Emit for this Notice of Construction is limited to 2.73E-04 mrem/year to the Maximally Exposed Individual (WAC 246-247-030(21)).

2) This approval applies only to those activities described below. No additional activities or variations on the approved activities that constitute a "modification" to the emission unit, as defined in (WAC 246-247-030(16)), may be conducted.

   Installation of a passive breather filter on the 241-UX-302A catch tank. The breather filter will be a radial HEPA filter with a removal efficiency of 99.97% and a rated capacity of 40 cfm. The filter will be replaced on an annual basis, eliminating the need for annual aerosol testing.

   The 241-UX-302A catch tank is a 17,760 gallon capacity catch tank which has been isolated and currently contains 1,736 gallons of waste. The breather filter shall minimize the amount of radioactive particulates emitted as a consequence of tank breathing due to barometric pressure changes. The catch tank will breath at a rate of approximately 0.007 cfm with a flow rate less than 1 cfm.

The 241-AZ-154 catch tank is an 869 gallon capcity catch tank designed to receive condensate from the 241-AZ and 241-AY double shell tank heating coils. The steam coils have sense been blanked off and use fo the catch tank dicontinued in 1992. Current data indicates this tank is empty.

3) **The Annual Possession Quantity is limited to the following radionuclides (Curies/year):**

4) The breather filter must meet all of the requirements as described in the "AG-1 COMPLIANCE MATRIX FOR FLANDERS FILTER MODEL 0-007-1-12-RF-NU-00-E3-Z04059B", of the DOE letter 06-ED-001, dated January 18, 2006 titled RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION APPLICATION FOR INSTALLATION OF A BREATHER FILTER ON TANK 241-UX-302A.

   Should a change to the Compliance Matrix be required, WDOH approval of the deviation shall be obtained prior to installation of the new breather filter.

5) All removal and installation operations, of the breather filter, must follow the requirements outlined in ALARACT 1 "Demonstration for Riser Preparation/Opening", and ALARACT 16 "Demonstration for Work on Potentially Contaminated Ventilation System Components".

6) The breather filter must be replaced annually. The new filter must be a Type 1 (radial flow filter) with a Type C filter pack, as define by AG-1 Code on Nuclear Air and Gas Treatment Section FK, Special HEPA Filters. The filter frames, end-caps, flanges, and grilles must be made of 304/304L stainless steel. The filter must use UL-586 compliant resin to provide the sealing of the filter media to the frame. The filter must have a minimum removal efficiency of 99.97% and a rated flow of 40 cfm.

Attachment 2 Table 2-1 Diffuse and Fugitive Emission Units

Table 2–1. The List of Current Diffuse or Fugitive Radioactive Air Emission Sources at the Hanford Site. See Section 5.0 of the License for a description of monitoring and reporting requirements.

169	P-241ER153-001	170	P-241ER152-001	424	P-340BBLDG-001
808	V10-11-1	809	216A-2-2	818	State Approved Land Disposal Structure Pipeline 1
819	State Approved Land Disposal Structure Pipeline 2	820	State Approved Land Disposal Structure Pipeline 3	821	State Approved Land Disposal Structure Pipeline 4
822	State Approved Land Disposal Structure Pipeline 5	823	State Approved Land Disposal Structure Pipeline 6	824	State Approved Land Disposal Structure Pipeline 7
825	State Approved Land Disposal Structure Pipeline 8	826	State Approved Land Disposal Structure Pipeline 9	827	State Approved Land Disposal Structure Pipeline 10
828	State Approved Land Disposal Structure Pipeline 11	829	State Approved Land Disposal Structure Pipeline 12	830	State Approved Land Disposal Structure Pipeline 13
832	WESF LLW Floor Drain Vent (Central)	833	WESF LLW Floor Drain Vent (Southeast)	841	291-B-1
895	200-E-44	896	200-E-5	897	200-E-117
898	200-E-118	899	200-E-120	900	200-E-121
901	200-E-125	902	207-B	903	207-A-SOUTH
904	216-A-24	905	216-A-40	906	216-B-3
907	218-E-10	908	218-E-12A	909	218-E-12B
911	241-A-302A	913	P-241ER151-001	914	P-241AX155-001
915	P-241AR151-001	916	241-A	917	241-AN
918	241-AP	919	241-AW	920	241-AX
921	241-AY	923	241-AZ	924	241-B
925	241-BX-154	926	241-BX	927	241-EW-151
928	244-AR Vault	929	UPR-200-E-18	930	UPR-200-E-100
931	UPR-200-E-112	932	241-C	933	UPR-200-E-78
934	UPR-200-E-84	935	UPR-600-20	936	200-W-54
937	200-W-81	938	200-W-82	939	200-W-83
940	200-W-84	941	200-W-92	942	200-W-106
943	207-U	944	216-T-4b	945	218-W-3A
946	218-W-3AE	947	218-W-4B	948	218-W-4C
949	231-W-151	950	241-S	951	241-SX
952	241-SY	953	241-T	954	241-TX
955	241-TX-154	956	241-TX-155	957	241-TY
958	241-U	960	241-U-151	961	241-U-152
962	242-T-135	963	291-S	964	291-U
965	600-148	966	UPR-200-W-38	967	UPR-20-W-65;UPR-200-W-73
968	UPR-200-W-82	970	UPR-200-W-113	971	UPR-200-E-83
972	UPR-200-N-1	973	116-K-3	978	2025EC71
979	203A	980	204A	981	206A
982	207BA	983	207S	984	207SL

Table 2–1. The List of Current Diffuse or Fugitive Radioactive Air Emission Sources at the Hanford Site. See Section 5.0 of the License for a description of monitoring and reporting requirements.

985	210A	986	210E	987	211A
988	211B	989	211BA	990	211BA151
991	211BB	992	211S	993	211T
994	211T52	995	212A	996	212B
997	212N	998	212P	999	212R
1000	213A	1001	214T	1002	215C
1003	216A	1004	216A29A	1005	216A524
1006	216E28A	1007	216E28B	1008	216E28C
1009	216ZP1	1010	216ZP1A	1011	216ZP1B
1012	216ZP1C	1013	217B	1014	218B
1015	218E14	1016	218E15	1017	218E7
1018	221A	1019	221BA	1020	221BB
1021	221BC	1022	221BD	1023	221BF
1024	221BG	1025	221BK	1026	221TA
1027	211TB	1028	222B	1029	222T
1030	224U	1035	225EC	1036	225W
1037	225WA	1038	231Z	1039	241B361
1040	241WR	1041	2420W	1042	242AL11
1043	242B	1044	242BL	1045	252AB
1046	252AC	1047	2706T	1048	2706TA
1049	2706TB	1050	2710S	1051	2711A
1052	2711B	1053	2711S	1054	2712A
1055	2713W	1056	2714A	1057	2715B
1058	2716B	1059	2716T	1060	2718S
1061	271B	1062	271BA	1063	271T
1064	271U	1065	2727W	1066	272B
1067	272BA	1068	272BB	1069	275EA
1070	276B	1071	276C	1072	276S
1073	276S141	1074	276S142	1075	276U
1076	281A	1077	2901A	1078	2904S160
1079	2904S170	1080	2904S171	1081	2904S172
1082	2904SA	1083	291A	1084	291AA
1085	291AB	1086	291AC	1087	291AD
1088	291AE	1089	291AF	1090	291AG
1091	291AH	1092	291AJ	1093	291AK
1094	291B	1095	291BA	1096	291BB
1097	291BC	1098	291BD	1099	291BF
1100	291BG	1101	291BH	1102	291BJ
1103	291BK	1104	292AA	1105	292AB

Table 2–1. The List of Current Diffuse or Fugitive Radioactive Air Emission Sources at the Hanford Site. See Section 5.0 of the License for a description of monitoring and reporting requirements.

1106	292B	1107	292S	1108	292T
1109	292U	1110	293A	1111	293S
1112	294A	1113	294B	1114	295A
1115	295AA	1116	295AB	1117	295AC
1118	295AD	1119	295AE	1120	296S012
1121	307	1122	403	1123	4713C
1124	4717	1125	Alkali Metal	1136	241-BY
1137	241-A-401	1138	241-A-431	1140	241-AP-271
1141	241-BY-254	1142	241-BY-301	1143	241-BY-302
1144	241-CX-70	1145	241-CX-71	1146	241-CX-72
1147	242-A-702	1148	243-G-8	1149	2707-AR
1150	2714-S	1151	271-CR	1152	292-AR

Attachment 3 ALARACT Agreements

ALARACT 1

TANK FARM ALARACT DEMONSTRATION FOR RISER PREPARATION/OPENING

1. **Description of Activity/Requirements**

   This ALARACT demonstration applies to risers which open directly into tanks containing high level waste, such as waste storage tanks, catch tanks, double contained receiver tanks and IMUSTs. Other potentially, and known, contaminated risers in Tank Farm facilities shall be accessed using appropriate controls from the HNF-5183, Tank Farms Radiological Control Manual and the latest revision of the Radiological Containment Guide matrix and the latest revision of the Containment Selection Guide, Attachment A, in TFC-ESHQ-RP_RWP-C-02, latest revision.

   Risers may have screw caps, blind flanges, shield plugs, or equipment installed in them. Preparation may include the following:

   Screw caps: A pre-work survey is completed of the riser and the area around the riser. Soil covering is installed around the riser. If the riser or screw cap is highly contaminated, a glove bag may be installed to control contamination spread. Slight contamination is wiped off the riser with damp rags.

   Blind flanges: A pre-work survey is completed of the riser and the immediate work area around the riser, a glove bag may be used to contain the blind flange during removal. Slight contamination is removed with damp rags.

   Shield plugs and other equipment to be removed from risers: Risers may have various types of equipment installed. The equipment will be installed and removed per ALARACT 13. To open the riser, it will be necessary to remove the equipment. A pre-work survey is completed of the riser, installed equipment, and the area around the riser. Soil covering is installed around the risers. If necessary, glove bags or sleeving may be used on smaller pieces of equipment to be removed. Larger items may require the need for a windbreak or containment tent.

   When the riser is opened, Industrial Hygiene samples may be taken.

   All containments used are in accordance with the Containment Selection Guide, Attachment A, found in TFC-ESHQ-RP_RWP-C-02, latest revision.

   Soil covering may be of a material such as, plastic sheeting, rubber matting, foil backed paper, griflon, or any material that will prevent possible contamination from reaching the soil.

   The riser will be closed after all riser activities are completed

2. **Radiological Controls**

   a. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

   b. Follow ALARACT demonstration for "Installation, Operation, and Removal of Equipment" (ALARACT 13)

c. Pre-job survey is performed

d. Use approved Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

e. Do not open risers if sustained winds are >25 mph. A local wind speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind speed readings taken from it must be documented in the JCS Work Record.

f. Open riser time will be minimized.

g. HPT coverage will be performed as specified in the Radiological Work Permit

3. <u>Monitoring</u>

a. At a minimum, pre and post-job surveys (smears) shall be taken.

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual

4. <u>Records/Documentation</u>

a. Work Package

b. Radiological Work Permit

c. Radiological survey report's

5. <u>Emission Pathway</u>

a. Existing, active or passive point source

6. <u>Facility Description</u>

a. All Tank Farm Facilities

ALARACT 2

TANK FARM ALARACT DEMONSTRATION FOR INSTALLATION/OPERATION/REMOVAL OF PUSH MODE CORE SAMPLING EQUIPMENT

1. Description of Activity/Requirements

Push Mode Core Sampling (PMCS) is conducted with the Rotary Mode Core Sampling (RMCS) System. The RMCS System can operate in either push mode or rotary mode. The preferred mode of RMCS sampling is push mode, which does not involve rotation of the drill string or significant purge gas flow, and is the subject of this ALARACT demonstration. Each RMCS System consists of the sample truck, an optional diesel powered electric generator, an optional in-tank video camera, a pressurized nitrogen supply, and other support equipment. In addition to the three RMCS Systems, there is one PMCS System that operates only in push mode

Core Sampling system set up and sampling are controlled by operating procedures. Prior to moving the RMCS truck and equipment onto a tank, a walk down is performed. The walk down identifies any physical obstructions/barriers to truck placement and verifies the riser locations. The Core Sampling truck and equipment are then moved to the tank farm for system set up. System set up includes installation of the riser sleeve and riser equipment. This requires that the riser flange cover be removed. Following removal of the riser flange cover, the riser sleeve and riser adapter equipment are installed. This equipment seals against the riser flange, protecting the air pathway. The time between the removal of the flange cover and installation of the riser adapter equipment is kept to the minimum necessary to safely complete the task. HPT coverage is provided the entire time the riser is open.

The operation of core sampling begins by inserting a drill string made up of drill rod sections, into the waste. The first section to be installed is the core barrel in which the core sampler itself is seated. The rotary mode core samplers contain a seal against the bottom of the core barrel. The seal is designed to prevent back flow of tank waste into the drill string. This protects the air pathway out of the tank. The remaining drill rod sections are screwed on to the drill string and inserted into the tank until the starting point for the first core sample segment is reached.

After the first core sample segment has been taken, additional drill string sections and samplers may be added as needed. During push mode sampling, nitrogen (or other fluid such as water with a Lithium Bromide tracer) is used only in amounts sufficient to maintain the hydrostatic head and prevent or minimize movement of tank waste into the core barrel.

When the segment is complete, the drill string is disconnected from the core sample truck and is capped. The core sampler truck platform is rotated to align and connect the shielded receiving vessel (shielded receiver) with the drill string. During the connection the air pathway is protected by closed valves on the shielded receiver and on the adapter on the end of the drill string.

When the sampler is removed from the tank, it is placed directly into the shielded receiver without disturbing the air-tight seal between the shielded receiver and the drill string. The isolation valves on the shielded receiver and the drill string adapter are closed before disconnecting the shielded receiver from the drill string. The truck platform then rotates to place the shielded receiver either directly over a shipping cask, or the shielded receiver may be positioned over an x-ray machine to allow the sampler to be x-rayed. In either case, the sealed drill string remains in place at the tank riser to maintain the seal to

the atmosphere. From the shielded receiver, the sampler is mechanically lowered into a transport cask. Once the sampler is in the transport cask and the shielded receiver has been disconnected, the cask is immediately sealed. While the sampler is being replaced after each segment, with the RMCS System, nitrogen is injected into the drill string at approximately 0.03 cubic meter per minute. This maintains the hydrostatic head in the drill string, minimizing waste from entering the drill string. This also allows for pressurization and depressurization of the shielded receiver, as necessary, for sampler change out. For the PMCS System, water is used to maintain the hydrostatic head. Once a complete core has been obtained, the RMCS truck can be repositioned on the same riser or moved to a different riser on the same tank to obtain additional cores. During RMCS breakdown, the drill string is sleeved as it is removed from the tank and placed into a waste container. When sampling is complete at one tank, the RMCS system will be disconnected and moved to the next tank

2. <u>Radiological Controls</u>

a. When opening riser, use ALARACT demonstration controls for "Riser Preparation/Opening" (ALARACT 1)

b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

c. HPT coverage will be performed as specified in the Radiological Work Permit

d. Do not initiate sampling activities if sustained winds are >25 mph. A local wind speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind speed readings taken from it must be documented in the JCS Work Record.

e. Valves, caps, and plugs are used to minimize open riser time

f. Core sampler seal in place

g. Threaded connections and/or cam-locks

h. Verify passive or active HEPA filtration on tanks

I. Use approved Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

3. <u>Monitoring</u>

a. At a minimum, pre and post-job surveys (smears) shall be taken

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual.

4. <u>Records/Documentation</u>

a. Work package

b. Radiological work permit

c. Radiological survey report(s)

5. **Emission Pathway**

   a. Existing active or passive point sources (Displacement gas is used in drill string which is a closed system and has minimal/no emission impact

6. **Facility Description**

   a. All SSTs, DSTs and IMUST

ALARACT 3

TANK FARM ALARACT DEMONSTRATION FOR INSTALLATION/OPERATION/REMOVAL OF AUGER SAMPLING EQUIPMENT

1. Description of Activity/Requirements

Auger sampling represents one technique to remove a sample from tanks that have less than 25 vertical inches of hardened waste material. The auger sampling assembly uses the auger "bit" to obtain a sample of tank waste. Auger sampling equipment consists of an auger "bit," auger rod, auger sleeving assembly, receiving cask, and an on-site transfer cask (OTC)

To begin, a tank riser is opened and the auger adapter sleeving assembly is installed into the tank headspace. The installation of the auger sleeving assembly reduces open riser time. The auger sleeving assembly provides lateral strength to the auger bit and auger rod, and extends from the riser to the top of the waste surface. The receiver cask is then mounted on top of the auger adapter sleeving assembly via a cam lock fitting. This cam lock fitting seals the receiver cask to the auger adapter assembly that is sealed to the riser, thereby minimizing the open riser time.

The auger rod and auger bit assembly are lowered through the top of the receiver cask assembly, through the interior of the auger sleeving assembly, down to the surface of the tank waste. The portion of the auger rod extending above the riser is then hand rotated forcing the auger bit to penetrate the tank waste. The tank waste material fills the grooves (flutes) of the auger bit and this constitutes the waste sample.

The auger bit (now containing the sample) and auger rod are pulled up from the tank waste surface, through auger sleeving, and into the receiver cask on top of the riser. During this sample removal step, the auger rod exits the top of the receiver cask into the ambient environment. The auger rod is surveyed for contamination as it is extracted and contained if found to be contaminated. When the auger bit (sample) is within the receiver cask, a ball valve, mounted on the bottom of the receiver cask is closed. The receiver cask is then isolated by placing a temporary cover over the auger rod port.

The receiver cask is moved via crane to the OTC. Once the receiver cask has been connected by a cam lock to the OTC, a handle is connected to the auger bit through the top of the receiver cask and the sample is lowered into the cask. The OTC is sealed and then provides a shipping container for the auger sample

2. Radiological Controls

a. Follow ALARACT demonstration for "Riser Preparation/Opening" (ALARACT 1)

b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

c. HPT coverage will be performed as specified in the Radiological Work Permit

d. Do not initiate auger sampling if sustained winds are >25 mph. A local wind speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind speed readings taken from it must be documented in the JCS Work Record.

e. Use valves, caps, and plugs to minimize open riser time

f. Cam locks used to secure receiving cask to riser and shipping cask

g. Verify passive or active HEPA filtration on tanks

h. Contain contaminated equipment

I. Temporary cover placed on top of receiving cask

j. Sample contained when in shipping cas

3. <u>Monitoring</u>

a. At a minimum, pre and post-job smears (surveys) shall be taken.

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual

4. <u>Records/Documentation</u>

a. Work package

b. Radiological work permit

c. Radiological survey report(s)

5. <u>Emission Pathway</u>

a. Existing, active or passive point source

6. <u>Facility Description</u>

a. All Tank Farm Facilities

ALARACT 4

TANK FARM ALARACT DEMONSTRATION FOR PACKAGING AND TRANSPORTATION OF WASTE

1. **Description of Activity/Requirements**

   Some materials become contaminated during work conducted within all Tank Farm facilities. Such contaminated materials, which are not released or otherwise controlled, are handled as radioactive waste. Radioactive waste generated from Tank Farms operations activities such as pit work, excavations, surveillances, housekeeping, maintenance and tank sampling, will be double-contained at a minimum. A radiological survey is conducted prior to storage or transportation of the outer-most container to verify that removable contamination meets the requirements under the Radiological Controls section

2. **Radiological Controls**

   a. Follow ALARACT demonstration for "Size Reduction of Waste Equipment for Disposal" (ALARACT 15)

   b. Radiological controls shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual

3. **Monitoring**

   a. At a minimum, pre and post-job surveys (smears) shall be taken

   b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual

4. **Records/Documentation**

   a. Radiological survey report(s))

   b. Radiological work permit

5. **Emission Pathway**

   a. Active or passive, point sources and fugitive source

6. **Facility Description**

   a. All Tank Farm facilities (except special nuclear material in 2718-E

ALARACT 5

TANK FARM ALARACT DEMONSTRATION SOIL EXCAVATION (using hand tools)

1. **Description of Activity/Requirements**

Soil is routinely excavated in the Tank Farm facilities to support riser preparation, repair and maintenance activities, soil sampling, cleanup of contamination, removal of vegetation and biological hazards, and operational activities (laying conduit or cables for power). An initial survey is performed of the area to be excavated. Surveys are performed throughout the excavation to assure that worker safety and environmental protection is maintained. Once the excavation begins, water is used, as necessary, to prevent the spread of dust. To the extent practicable using hand held instrument field survey techniques, the clean soil is separated from the soil identified as contaminated. The contaminated soil has a fixative applied or is covered by plastic at the end of the shift, and as necessary, to stabilize the contaminated soil. The activities covered by this ALARACT demonstration do not include D&D. All radioactively contaminated soil excavation is conducted using hand tools

2. **Radiological Controls**

a. Follow ALARACT demonstration for "Packaging and Transportation of Waste. (ALARACT 4)

b. HPT coverage will be performed as specified in the radiological work permit.

c. A beta-gamma survey of the ground surface is required prior to excavation in Contamination Areas (CA's), High Contamination Areas (HCA's), Soil Contamination Areas (SCA's), and Underground Radioactive Material Areas (URMA's). An alpha survey may be required prior to excavation per the "Justification for Dual Survey Exemption in Tank Farm Facilities," HNF-3391.

d. For excavation in CA's, HCA's, SCA's, and URMA's, if beta-gamma activity greater than 1000 dpm/probe area (5000 dpm/100cm 2) is identified, alpha surveys will also be performed.

c. Suppressants such as water, fixatives, covers, or windscreens will be used as necessary, including at the end of each shift or when sustained or predicted winds are >20mph.

d. Excavation of radioactive material shall not commence if sustained winds are predicted to exceed 20 mph during the work shift.

e. Excavation of radioactive material shall cease if sustained winds exceed 20 mph. A local wind-speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind-speed readings taken from it must be documented in the JCS Work Record.

f. If the net contamination for the general area is greater than 200 dpm/probe area alpha or greater than 500,000 dpm/probe area beta-gamma, stop work, notify Environmental and Radcon, and implement the controls listed below. Once notifications have been made and the following controls implemented, excavation may continue:

g. Soil shall be wetted prior to excavation if not already damp

h. General area workplace air monitoring shall be performed during excavation activities

i. Excavation and contaminated soil piles will be covered with plastic, or fixative applied at the end of each shift, and/or as necessary to prevent airborne dust particles

j. Contaminated soil containing >500,000 dpm per probe area beta-gamma or >200 dpm/probe area alpha will be containerized or covered with clean fill if it is to be left for greater than 48 hours

k. If soil contamination exceeds 20 mrad/hr (open window reading), work will be stopped, Environmental and Radcon notified, and adequacy of controls will be reassessed. WDOH will be notified. Work may continue when approved by Environmental and Radcon with WDOH concurrence.

l. If hot specks are detected during the radiological surveys, the specks will be removed and contained before the activity is allowed to continue unless located in the bottom of the trench after excavation has been completed. Specks found in the bottom of the completed trench may be covered with clean fill. A hot speck will be defined as a very small amount (i.e. less than or equal to 100 cm 2) of contamination reading greater than or equal to 1,000,000 dpm/probe size beta-gamma and/or greater than or equal to 490 dpm/probe size alpha

3. <u>Monitoring</u>

a. At a minimum, pre and post-job surveys shall be made

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manua

4. <u>Records/Documentation</u>

a. Work package

b. Radiological work permit

c. Radiological survey report(s

5. <u>Emission Pathway</u>

a. Existing passive (fugitive/diffuse

6. <u>Facility Description</u>

a. All Tank Farm facilitie

ALARACT 6

TANK FARM ALARACT DEMONSTRATION FOR PIT ACCESS

1. **Description of Activity/Requirements**

This ALARACT demonstration applies to all pits and filter pits which have the potential for exposing tank waste to the pit environment, except 241-ER-152, 241-S-151, 241-UX-154, 241-TX-154, 244-CR Vault DCRT, 244-A Lift Station DCRT, and 244-TX DCRT. Access to these pits must follow the existing Notice of Construction.

If the work activities are such that they can be performed without removal of pit covers, the controls listed in this ALARACT demonstration do not apply. Instead, the work shall be performed using appropriate controls from HNF-5183 "Tank Farms Radiological Control Manual" and the latest revision of the approved Radiological Containment Selection Guide matrix from TFC-ESHQ-RP_RWP-C-02. Activities which may be conducted in this manner include pit videos/boroscopes, filling seal loops, valve handle change-out, pit wash-downs, fixative application, radiological surveys, remote operation of pit drains, leak detector troubleshooting or changeout, pit drain leak rate tests and removal or insertion of gas sampling lines. Any activity not included in this list must be approved by WDOH on a case-by-case basis.

Pits that do not have the potential for exposing tank waste to the pit environment do not require implementation of ALARACT controls for entry. Examples include flush pits, service pits, annulus pump pits and leak detection pits. These pits shall be accessed using appropriate controls from HNF-5183 "Tank Farms Radiological Control Manual" and the latest revision of the Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

PREPARATION WORK: A pre-job survey is performed on the exterior surface of the pit and the surrounding area. For pits that are partially or entirely below grade, a fall protection handrail is installed around the pit. The fall protection is draped in plastic sheeting that extends to the top of the pit. This establishes a splashguard around the pit. Before the pit covers are removed, an approved fixative may be applied inside the pit or the pit may be decontaminated as described below. These processes are generally performed through an access port. If there is no access port(s), the pit covers are raised and suspended, a radiological survey is performed, and/or a fixative may be applied inside the pit as described in Section 2, Radiological Control. The pit covers are removed.

DECONTAMINATION: Uniformly distributed removable contamination levels in the pit are decontaminated to less than 100,000 dpm/100 cm 2 beta/gamma and 2,000 dpm/100 cm 2 alpha by washing or an approved fixative is applied to pit surfaces. A fixative will matrix the contamination to ensure minimization of potential airborne contamination. If a high pressure (up to 3,000 psi) or low pressure (approximately 125 psi) whirly is installed, it is done through an opening (if one exists) in the pit covers and the pit is washed down. The pit covers are lifted and contained if the removable level is greater than 50,000 dpm/100 cm 2 beta/gamma and 20 dpm/100 cm 2 alpha. The pit covers are then moved to a storage area. With the pit covers off, additional decontamination activities may include the use of chemicals, peel and strip paints, water, or manual scrub brushes. When decontamination activities are complete, other work may begin or a temporary cover is installed over the pit.

CLOSURE: After all activities in the pit are completed, the pit covers are reinstalled and the splashguard

is removed

2. **Radiological Controls**

a. Follow ALARACT demonstration for "Riser Preparation/Opening" (ALARACT 1)

b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

c. Uniformly distributed removable contamination levels within the pit are decontaminated so that a swipe reads less than 100,000 dpm/100 cm 2 beta/gamma and 2,000 dpm/100 cm 2 alpha. Alternatively, a fixative may be applied. An approved fixative will be applied to pit surfaces if contamination levels exceed the limits stated above or as needed. Note: The fixative will matrix the contamination to ensure minimization of potential airborne contamination.

d. Swipes will be taken to determine that splash guards are to be maintained below 50,000 dpm/100 cm 2 beta/gamma and 20 dpm/100 cm 2 alpha.

e. Use a splashguard extending to the edge of the pit. Splashguard will be taped or sealed to the edge of the pit. If it is not feasible to seal the splashguard to the edge of the pit, an additional rail will be installed at the base of the handrail and the splashguard will be taped or sealed to that bottom rail. This rail will be as close as possible to the pit edge. A ground cover will be placed around the edge of the pit and extending under the bottom rail.

f. Pit work will not be performed if sustained winds are >25 mph. A local wind speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind speed readings taken from it must be documented in the JCS Work Record.

g. HPT coverage will be performed as specified in the Radiological Work Permit

h. Use approved Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

i. Active ventilation may be utilized in accordance with the PTRAEU NOC

3. **Monitoring**

a. At a minimum, pre and post-job surveys (smears) shall be taken.

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual

4. **Records/Documentation**

a. Work package

b. Radiological work permit

c. Radiological survey report(s

5. **Emission Pathway**

a. Existing passive non-point source

6. Facility Description

a. This ALARACT demonstration applies to all Tank Farm pits except 241-ER-152, 241-S-151, 241-UX-154, 241 TX-154, 244-CR Vault DCRT, 244-A Lift Station DCRT, and 244-TX DCRT

ALARACT 7

TANK FARM ALARACT DEMONSTRATION FOR TANK WASTE GRAB SAMPLING

1. Description of Activity/Requirements

Grab sampling is used to obtain small volume samples of tank waste materials. Individual samples are typically <1 liter, but multiple samples can be taken from the tank. The sampled material consists of liquid, sludges, and solids. Grab sampling techniques are suitable for relatively soft waste. If the waste material is too thick or hard, other sampling techniques (such as core sampling) may be required.

Grab samples are acquired through tank risers. A riser is prepared for grab sampling by first installing a riser adapter called a top hat. The top hat acts as a temporary seal for the open riser to minimize open riser time. The next step is to install a glove bag over the tank riser.

The sampling assembly consists of a sample device suspended on a wire cable. The most commonly used sample devices are a bottle in a weighted bottle holder, and a finger sampler. The bottle is used when the waste material is primarily liquid, while the finger sampler is used to sample relatively solid material.

The sample assembly is placed into the glovebag, the glovebag is closed and the riser is opened. The sample device is lowered with a winch, the waste sample collected, and retrieved from the tank. If the collected sample is a bottle, the bottled is capped, bagged and placed into a shielded container. If the sample is collected in a finger sampler, the waste is transferred to a secondary container, bagged and placed into the shielded container. If the sample is collected in a finger sampler, the waste is transferred to a secondary container, bagged and placed into a shielded container. If a glovebag is used the sample assembly is placed in the glovebag. The glovebag is closed and the riser is opened. If a glovebox is used, the sample assembly is contained in the glovebox. If the sample is collected in a clam shell sampler, it is clipped, removed from the sampler body, transferred to a secondary container, bagged, and placed into the shielded container.

When sampling is finished, the glove bag is collapsed, venting air through a small HEPA type filter, and all contaminated sampling equipment contained inside is disposed as waste. If a glovebox is used, the glovebox is decontaminated, as necessary, and stored for future sampling evolutions. Air from the glovebox is vented through a "paint can" HEPA filter.

A small percentage of grab-sampling jobs are performed on top of a tank riser without a glovebag. An example would be raising a saltwell pump (accessed from within a pit) and sampling between the pump legs and the saltwell screen. Such sample jobs are controlled through work planning utilizing the Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

2. Radiological Controls

a. Follow ALARACT demonstration for "Riser Preparation/Opening" (ALARACT 1)

b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

c. Follow ALARACT demonstration for "Pit Access" (ALARACT 6), if applicable

d. HPT coverage will be performed as specified in the Radiological Work Permit

e. Do not initiate sampling if sustained winds are >25 mph. A local wind speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind speed readings taken from it must be documented in the JCS Work Record.

f. Use riser adapter to minimize open riser time

g. Samples contained prior to placement in a shielded container

h. Sample contained when in shipping cask

i. Contain contaminated equipment

j. Use approved Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

3. <u>Monitoring</u>

a. At a minimum, pre and post-job surveys (smears) shall be taken.

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual

4. <u>Records/Documentation</u>

a. Work package

b. Radiological work permit

c. Radiological survey report(s

5. <u>Emission Pathway</u>

a. Existing active or passive point source

6. <u>Facility Description</u>

a. All Tank Farm SST's, DST's and IMUST'

ALARACT 8

TANK FARM ALARACT DEMONSTRATION FOR VAPOR SAMPLING

1. Description of Activity/Requirements

Vapor Samples are acquired through risers or other accessible ports such as Standard Hydrogen Monitoring Systems (SHMS) ports, flush ports, or test ports. There are two methods to collect vapor samples from waste tanks: grab sampling (with SUMMA canisters), and In-Situ Vapor Sampling (ISVS or Type IV) equipment. SUMMA is an evacuated container. Other equivalent evacuated containers may be used in its place

SUMMA VAPOR SAMPLING

SUMMA sampling equipment consists of a riser adapter (not used for drill string vapor samples), sample tubing, and SUMMA canisters.

To begin SUMMA sampling through a tank riser, the riser is opened and the riser adapter is installed. The riser adapter contains sampling tubes that extend above the top of the riser and continue down into the tank headspace. The sampling tubes are fitted with isolation valves. An installed riser adapter with the sample tube valve closed isolates the tank vapor space from the ambient environment. To sample through a port, the port is opened, a tube is inserted and an adapter or fitting is installed as appropriate.

In the first step, the sampling tube is purged using portable industrial hygiene instruments and the headspace vapor is drawn into the tube. A tank headspace sample is collected by attaching a SUMMA canister to the top end of a sampling tube and opening the valve. The SUMMA canister, an evacuated container, allows the tank headspace gas to be pulled into the container. The self-contained sample canister is shipped to a laboratory for analysis.

When vapor sampling is finished, the riser adapter/tubing assembly is removed, surveyed by an HPT, and placed into containment sleeving if found contaminated. If a riser is used, a cap or flange is then installed.

TYPE IV VAPOR SAMPLING

The second method of vapor sampling is the In-Situ Vapor sampling (ISVS or Type IV sampling) method. Contrasting SUMMA grab sampling, ISVS sample media is directly exposed to tank vapor gases by placement in the tank headspace. The ISVS sampling equipment consists of a riser adapter, an air pump mounted on a handcart, a manifold for connecting sample tubing, tube bundle assembly which has a sampling head containing the sample and the sample media.

The sampling begins by opening a tank riser designated for sampling; installing the riser adapter; inserting the plastic sleeved sample tubes (with the sampling head/media attached) into the riser to the required sampling depth; attaching the sample tubes to the air pump handcart; sampling for a period of time; removal of the sample lines and sample media; removal of the riser adapter and closing the riser; packaging the samples for shipment to a laboratory; and packaging waste for eventual disposal

2. Radiological Controls

a. Follow ALARACT demonstration for "Riser Preparation/Opening" (ALARACT 1)

b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

c. HPT coverage will be performed as specified in the Radiological work permit

d. Minimize open riser and port time

e. Verify passive or active HEPA filtration on tanks

f. HEPA-type filtration in sample line

g. Contain contaminated equipment

h. Sample contained when in shipping containe

3. <u>Monitoring</u>

a. At a minimum, pre and post-job surveys (smears) shall be taken.

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manua

4. <u>Records/Documentation</u>

a. Work package

b. Radiological work permit

c. Radiological survey report(s

5. <u>Emission Pathway</u>

a. Existing active or passive point source

6. <u>Facility Description</u>

a. All Tank Farm SSTs, DSTs, and IMUST

ALARACT 10

TANK FARM ALARACT DEMONSTRATION FOR WATER LANCING

1. Description of Activity/Requirements

Water lancing the waste in an underground storage tank is performed to determine the depth of the tank from the riser location and to prepare for equipment installation, such as salt well screens, jet pump assemblies and liquid observation wells

There are two types of water lances:

a) A long pipe approximately 7.62 cm in diameter with a single nozzle at the end. This design uses hot water (supplied by a truck) at low pressure, approximately 1034 kilopascals (150 psi). Use of this design may require the lance to be raised and lowered into the waste multiple times so that a large enough hole can be formed in the waste to accommodate the equipment to be installed in the hole.

b) A newer design lance has a 28 cm diameter pipe and multiple nozzles on the bottom to facilitate waste penetration. It is designed to create a large hole with one insertion of the lance into the waste. This design requires less (hot) water volume and operates at higher pressure, 20685 kilopascals (3000 psi).

C) A pipe approximately 7.62 cm in diameter with multiple nozzles on the bottom to facilitate waste penetration. It is designed to create a larger hole with one insertion into the waste. This design uses hot water and operates at a pressure of approximately 20685 kilopascals (3000+/- 20%).

In each case, a hose from a water truck is connected to the top end of the water lance. The water lance is inserted into a tank riser which has a water spray ring mounted within the riser. Additionally, a plastic sleeve is staged and tied off at the top of the lance for deployment during lance retrieval. During insertion of the water lance, air emissions are controlled by the use of the water spray ring. The water spray ring sprays water in the annulus between the outside diameter of the water lance and the inside diameter of the riser. The water lance is lowered until it penetrates the solid portions of the waste that need to be broken up to allow insertion of the saltwell screen or other equipment. The water lance withdrawal steps are the reverse of the insertion sequence. The water spray ring is used to wash radioactive tank waste from the outside of the water lance. Hand wiping of the lance may also take place immediately above the riser and below the plastic sleeving. Washing is repeated until radiation readings are <100 mrem/hr. If the lance cannot be decontaminated below 100 mrem/hr, the lance will be sleeved in plastic, removed from the tank, and stored. The pit or riser will be closed.

Contingency plans within the scope of this ALARACT demonstration are:

a) Removing the lance from the tank for further decontamination by washing, wiping or brushing. The activities will be conducted in accordance with the Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

b) Replacement of contaminated parts if they cannot be adequately decontaminated as noted in (a) above. This activity will be conducted in accordance with the Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

c) Packaging, storing and transporting the lance "as is" if the external dose rates exceed 100 mrem/hr.

As the water lance is withdrawn from the tank, it is placed inside a plastic sleeve (during the withdrawal process), surveyed, and stored until its next use.

The actual water lancing time (residence time in waste) usually ranges from 10 minutes to 4 hours with an average time of about 30 minutes. Riser open time is minimized

2. <u>Radiological Controls</u>

a. Follow ALARACT demonstration for "Riser Preparation/Opening" (ALARACT 1)

b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

c. Follow ALARACT demonstration for "Pit Access" (ALARACT 6), if applicable

d. Follow ALARACT demonstration for "Packaging and Transportation of Equipment" (ALARACT 12)

e. During insertion and removal, radionuclide control is achieved by spraying the annulus between the lance outside diameter and riser inside diameter with water

f. Verify passive or active HEPA filtration on tanks

g. Use approved Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

h. HPT coverage will be performed as specified in the Radiological Work Permi

3. <u>Monitoring</u>

a. At a minimum, pre and post-job surveys (smears) shall be taken

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manua

4. <u>Records/Documentation</u>

a. Work package

b. Radiological work permit

c. Radiological survey report(s

5. <u>Emission Pathway</u>

a. Existing active or passive point source

6. <u>Facility Description</u>

a. All Tank Farm SSTs, DSTs, and IMUST

ALARACT 11

TANK FARM ALARACT DEMONSTRATION FOR WASTE TRANSFERS

1. **Description of Activity/Requirements**

   Wastes are transferred to, from, and within actively ventilated tank farm storage facilities (i.e. double-shell tanks), chemical processing facilities, receiver vaults, mobile tanks, and evaporators. Wastes are also transferred from single-shell tanks during (and due to) salt well pumping. Transfers are made through a network of existing or to be installed above or below ground pipelines, and operating equipment. Transfers also utilize the existing network of controls or transfer structures (currently in use, or constructed under a Notice of Construction) such as diversion boxes, valve pits, double contained receiver tanks, and diverter stations. Jet, submersible, or transfer pumps are used to transfer waste at flow rates up to 300 gallons (1,132 liters) per minute. The pit covers are reinstalled on the pits before starting any waste transfer operation. Occasionally, water is added to a tank or transfer system to prevent or remove plugs. Other techniques to free blockages include chemical flushing, pressurization, temporary jumpers, hydraulic scouring, and the use of heat tracing. Flow rates and pressures used are determined by engineering evaluations. Flow into the sending/receiving tank is exhausted using a HEPA filtered vent

2. **Radiological Controls**

   a. Verify HEPA filtration on receiving tanks

   b. Follow ALARACT demonstration for "Riser Preparation/Opening" (ALARACT 1)

   c. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

   d. Follow ALARACT demonstration for "Pit Access" (ALARACT 6)

   e. Follow ALARACT demonstration for "Packaging and Transportation of Equipment and Vehicles" (ALARACT 12)

   f. Follow ALARACT demonstration for "Installation and Removal of Equipment from Tanks" (ALARACT 13)

   g. Follow ALARACT demonstration for "Pit Work" (ALARACT 14

3. **Monitoring**

   a. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual

   b. Radiological surveys of the work area as required by the work package and/or procedure

   c. Post job survey(s

4. **Records/Documentation**

   a. Flow rate and pressure engineering evaluations

b. Work package and/or Procedures

c. Radiological work permit

d. Radiological survey report(s

5. **Emission Pathway**

a. Existing active Tank Farm passive point sources or fugitive non-point source

6. **Facility Description**

a. All Tank Farm Facilitie

ALARACT 12

TANK FARM ALARACT DEMONSTRATION FOR PACKAGING AND TRANSPORTATION OF EQUIPMENT & VEHICLES

1. **Description of Activity/Requirements**

   Equipment and vehicles that become contaminated during work activities are reused when possible. If the equipment or vehicle is to be reused or stored in a contamination area, the removable activity levels on the surface of the item, or the outer-most container, must be in accordance with the latest revision of HNF-5183, "Tank Farms Radiological Control Manual.

2. **Radiological Controls**

   a. Radiological controls shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manua

3. **Monitoring**

   a. At a minimum, pre and post-job surveys (smears) shall be taken

   b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manua

4. **Records/Documentation**

   a. Radiological work permit

   b. Radiological survey report(s

5. **Emission Pathway**

   a. Fugitive/diffuse source

6. **Facility Description**

   a. All Tank Farm facilitie

ALARACT 13

TANK FARM ALARACT DEMONSTRATION FOR INSTALLATION, OPERATION, AND REMOVAL OF TANK EQUIPMENT

1. **Description of Activity/Requirements**

This ALARACT demonstration does not provide approval for the following activities: waste sampling, sluicing, lancing, operations of mixer pumps, and use of the LDUA. While operating under these activities, the applicable ALARACT demonstrations must be complied with.

A multitude of equipment may be installed, operated, and removed from tanks (actively and passively ventilated) and cascade of transfer lines. For purposes of this ALARACT, the term equipment covers any expanding foam or other types of material added to a cascade or transfer line to plug the line and preclude waste or water movement necessary for interim isolation of a tank.

When installing and removing equipment from tanks, risers and pits are opened. ALARACT 1 (Riser Preparation/Opening) and ALARACT 6 (Pit Access) describe the activities necessary to prepare the risers and pits.

If water lancing is performed to assist in the installation of equipment, it will be done in accordance with ALARACT 10 (Water Lancing)

Equipment is lowered into and removed from tanks either manually or remotely (e.g. using a crane). Once the equipment is installed, mating surfaces of the equipment and riser are sealed.

All equipment removed from tanks is contained using glovebags, sleeving, or other containment devices in accordance with the latest revision of the Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

The riser is closed under ALARACT 1 (Riser Preparation/Opening) and the pit is closed under ALARACT 6 (Pit Access) following installation or removal of equipment.

Waste is packaged and transported per ALARACT 4 (Packaging and Transportation of Waste). Equipment is packaged and transported per ALARACT 12 (Packaging and Transportation of Equipment and Vehicles)

2. **Radiological Controls**

a. Follow ALARACT demonstration for "Riser Preparation/Opening" (ALARACT 1)

b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

c. Follow ALARACT demonstration for "Pit Access" (ALARACT 6)

d. Follow ALARACT demonstration for "Water Lancing" (ALARACT 10)

e. Follow ALARACT demonstration for "Packaging and Transportation of Equipment and Vehicles" (ALARACT 12)

f. Follow ALARACT demonstration for "Size Reduction of Waste Equipment for Disposal" (ALARACT 15)

g. Equipment is decontaminated or contained when removed from tanks

h. Swipes will be taken to determine that the surface of the item or the outermost surface of the container are maintained <50,000 dpm/100 cm 2 beta/gama and/or <20 dpm/100 cm 2 alpha

i. HPT coverage will be performed as specified in the Radiological Work Permit

j. Do not install or remove equipment if sustained winds are >25 mph. A local wind speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind speed readings taken from it must be documented in the JCS Work Record.

k. Use approved Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

3. <u>Monitoring</u>

a. At a minimum, pre and post-job surveys (smears) shall be taken

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manua

4. <u>Records/Documentation</u>

a. Work package

b. Radiological work permit

c. Radiological survey report(s

5. <u>Emission Pathway</u>

a. Active or passive, point sources and fugitive source

6. <u>Facility Description</u>

a. All Tank Farm facilitie

ALARACT 14

TANK FARM ALARACT DEMONSTRATION FOR PIT WORK This ALARACT demonstration applies to all pits except 241-ER-152, 241-S-151, 241-UX-154, 241-TX-154, 244-CR Vault DCRT, 244-A Lift Station DCRT, and 244-TX DCRT.

1. **Description of Activity/Requirements**

When entering or exiting the pit, ALARACT 6 "Pit Access" must be complied with.

All equipment removed from the pit is decontaminated or contained. A temporary or permanent cover is placed over the pit if ever left unattended.

Installing pit leak detectors, unplugging drains, and housekeeping/waste removal activities are performed following the above description

Specific activities performed in pits follows:

(NOTE: the "Pit Viper" may be used for any of the following activities as long as the appropriate controls, indentified below, are implemented.)

Jumper Work

Before any jumper work takes place, the affected lines are flushed (if possible) and an approved fixative is applied. The fixative will be applied in accordance with ALARACT 6 "Pit Access" and reapplied as necessary.

Swipes of the splash guard will be taken during the jumper work. If a used jumper is to be removed from the pit, it is drained and a fixative is applied. If removable contamination is greater than 50,000 dpm/100 cm 2 beta/gamma and/or 20 dpm/100 cm 2 alpha, the jumper will be contained and/or decontaminated.

If jumpers are cut, they are cut by hydraulic shears or a portable band saw within the pit. The pieces are contained before they are removed from the pit.

Pressure Testing Lines

A pressure test assembly is installed on the line to be tested in one pit. A blank with a drain is installed on the other end of the line in a separate pit. Temporary and/or permanent covers are placed over the pits during the pressure test

2. **Radiological Controls**

a. Follow ALARACT demonstration for "Riser Preparation/Opening" (ALARACT 1)

b. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

c. Follow ALARACT demonstration for "Pit Access" (ALARACT 6)

d. Follow ALARACT demonstration for "Packaging and Transportation of Equipment and Vehicles" (ALARACT 12)

e. A splashguard will extend to the edge of the pit where it is taped or sealed. If it is not feasible to seal the splashguard to the edge of the pit, an additional rail will be installed at the base of the handrail and the splashguard will be taped or sealed to that bottom rail. This rail will be as close as possible to the pit edge. A ground cover will be placed around the edge of the pit and extending under the bottom rail.

f. Swipes will be taken to determine that splash guards are maintained below 50,000 dpm/100 cm 2 beta/gamma and 20 dpm/100 cm 2 alpha

g. Uniformly distributed removable contamination levels within the pit are decontaminated so that a swipe reads less than 100,000 dpm/100 cm 2 beta/gamma and 2,000 dpm/100 cm 2 alpha. An approved fixative will be applied to pit surfaces if contamination levels exceed the limits stated above or as needed. Note: The fixative will matrix the contamination to ensure minimization of potential airborne contamination.

h. If a used jumper is to be removed from the pit, it is drained and a fixative is applied. If removable contamination is greater than 50,000 dpm/100 cm 2 beta/gamma and/or 20 dpm/100 cm 2 alpha, the jumper will be contained and/or decontaminated.

I. A temporary or permanent cover is placed over the pit if the pit is ever left unattended

j. Pit work will not be performed if sustained winds are >25 mph. A local wind speed measurement device may be utilized in lieu of Hanford Meteorological Station readings, provided the reading is taken in an unobstructed location that is representative of the work area. Use of a local device and the measured wind speed readings taken from it must be documented in the JCS Work Record.

k. HPT coverage will be performed as specified in the Radiological Work Permi

3. <u>Monitoring</u>

a. At a minimum, pre and post-job surveys (smears) shall be taken

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manua

4. <u>Records/Documentation</u>

a. Work package

b. Radiological work permit

c. Radiological survey report(s

5. <u>Emission Pathway</u>

a. Existing passive non-point source

6. <u>Facility Description</u>

a. This ALARACT demonstration applies to all Tank Farm pits except 241-ER-152, 241-S-151, 241-

ALARACT 15

TANK FARM ALARACT DEMONSTRATION FOR SIZE REDUCTION OF WASTE EQUIPMENT FOR DISPOSAL

1. Description of Activity/Requirements

Size reducing, cutting or disassembling contaminated material and equipment is done for more economical waste packaging. Containment devices are employed as applicable per the Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision. The process is limited to mechanical cutting techniques such as low speed and high speed sawing, snipping, shearing, as well as hot work such as cutting torches. The process will also include bending, crimping, and compaction to preclude the need for cutting operations.

Examples of items cut up or disassembled for waste disposal during facility operations include long-length contaminated equipment (i.e. waste tank level instrumentation, thermocouple trees, specific gravity probes, observation ports, hose and piping), waste sampling equipment (i.e. drill strings or augers), pumps, compressors, and deactivated exhausters with associated ductwork. This includes replacement and disposal of flexible ventilation ductwork located upstream of HEPA filtration

2. Radiological Controls

a. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

b. Equipment with removable contamination will be contained per the Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision, or decontaminated.

c. HPT coverage as specified in the Radiological Work Permit

3. Monitoring

a. At a minimum, pre and post-job surveys (smears) shall be taken

b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manua

4. Records/Documentation

a. Radiological work permit

b. Radiological survey report(s

5. Emission Pathway

a. Active or passive, point sources and fugitive source

6. Facility Description

a. All Tank Farm Facilitie

ALARACT 16

TANK FARM ALARACT DEMONSTRATION FOR WORK ON POTENTIALLY CONTAMINATED VENTILATION SYSTEM COMPONENTS

1. **Description of Activity/Requirements**

   Scope will include work on potentially contaminated ventilation system components. This may include repair or replacement of ductwork, dampers, valves, recirculation fans, flexible boots, heaters, instrumentation, or other ventilation system components.

   The process will be performed using mechanical techniques such as unbolting, drilling, snipping, shearing, cutting, abrading, or low and high-speed sawing, as well as hot work such as cutting torches. Other activities may include installation of instrumentation, test ports, or sample ports. Containment devices are employed as applicable per the Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision. .

   If exhaust systems are replaced under the "replacement-in-kind" provisions of WAC 246-247 utilizing this ALARACT demonstration, then the abatement controls of the new system must be equivalent or better than those of the system that is replaced. The operational flow rate of the new system may not exceed that of the replaced system

2. **Radiological Controls**

   a. Follow ALARACT demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

   b. Work with removable contamination will be contained per the latest revision of the Containment Selection Guide, Attachment A, from TFC-ESHQ-RP_RWP-C-02, latest revision.

   c. HPT coverage as specified in the Radiological Work Permi

3. **Monitoring**

   a. At a minimum, pre and post-job survey (smears) shall be taken

   b. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manua

4. **Records/Documentation**

   a. Radiological work permit

   b. Radiological survey report(s

5. **Emission Pathway**

   a. Active and passive, point sources and fugitive source

6. **Facility Description**

   a. All Tank Farm Facilitie

ALARACT 18

ENVIRONMENTAL RESTORATION PROGRAM
ALARACT DEMONSTRATION FOR DRILLING

1. Description of Activity/Requirements

Drilling, outside of the Tank Farms fence line, is conducted to meet multiple needs on the Hanford Site. These include, but are not limited to, the installation of groundwater monitoring wells, extraction wells, injection wells, vadose zone characterization, aquifer/river sampling tubes, etc. The drilling methods currently used include cable tool, sonic, air rotary, diesel hammer direct push, and mud rotary technologies as described in Appendix 1. In some cases, more than one method (e.g. air rotary and cable tool) may be used to complete a boring. All drilling and well decommissioning activities are conducted in compliance with WAC 173-160.

The drilling process generates wastes, such as soil cuttings, purge water, decontamination fluids and other wastes that are managed in accordance with applicable regulations and contractor procedures. Soil and/or groundwater samples may be taken during the drilling process. Upon reaching the desired total depth, some borings are completed as groundwater monitoring wells. Groundwater wells and borings that have no further intended purpose are decommissioned.

The drilling and sampling equipment is cleaned between borings to prevent cross contamination. Equipment cleaning techniques for push technologies include wiping/scrubbing with clean paper towels and/or rags, and may be followed by a 3 bucket wash. These methods are used to remove smearable contamination prior to transporting the equipment to another location. These methods are also used for the other drilling techniques. High temperature and pressure (180 °F and 1000 psi) washing at a decontamination pad is necessary as a final cleaning step for some drilling equipment.

Abrasive decontamination methods are sometimes needed to remove small isolated areas of fixed contamination after all smearable contamination has been eliminated. It may consist of scrubbing the contaminated area with a wire brush (or other mechanical means) using an approved cleaner, or removing a thin layer of metal using a metal file and/or sandpaper.

The following is a description of drilling techniques that may be utilized in areas outside the Tank Farms fence line.

Cable Tool Drilling:

A temporary drive casing and cuttings drive barrel is driven into the soil by mechanical means at ground surface. The outer drive casing prevents caving of the formations penetrated as the hole is advanced. Once filled, the barrel is withdrawn to the surface and the cuttings are emptied from the barrel into an appropriate waste container, or to ground surface, depending on environmental and health risk determination. “Hard tool” cable tool drilling is used in difficult to penetrate formations. In this case, water is added to form a slurry at the bottom of the hole to facilitate cuttings removal by means of a wireline bailer. With either method, if contamination levels of concern are present, the cuttings are placed in a containment drum for appropriate disposal. This process is repeated until the drive casing reaches the desired depth. The inner barrel is then withdrawn, and the drive casing is incrementally pulled back to the surface as well completion components are installed, or plug back materials are placed

if the hole is decommissioned.

Sonic Drilling:

This drilling method consists of a drive casing and may include an inner cuttings barrel system. A vibration is induced in the drive casing system and it is mechanically pushed into the formation. As the system advances, formation materials are compressed as the tool advances. If sampling is desired, an inner sample barrel can be installed to capture a sample of the material penetrated. Excess material is compressed outside the drive casing. The drive casing/inner barrel assembly is advanced incrementally to obtain a sample, the inner barrel is withdrawn, and the cuttings are contained or discarded, as described above. This process is repeated until the drive casing reaches the desired depth. Boring completion or decommissioning is similar to the cable tool method.

Direct Push Technologies:

Push technology is conducted on the Hanford site using cone penetrometers, Geoprobes™ , and hand driving techniques. The Geoprobe and cone penetrometers utilize hydraulics to push small diameter rods (1” to 3”) into the formation by using the weight of the heavy truck as resistance. The system minimizes contaminant exposure since there are no drill cuttings or exhaust air as the hole is advanced. An instrumented real-time sensor can be used on the cone penetrometer to obtain formation parameters as it is being pushed, and a detachable (pull-back) shoe can be opened to obtain formation or groundwater samples by means of a retrievable inner wire-line tool. Limited geophysical logging can also be conducted in these holes using very small diameter tools compatible with steel casing. Hand driving for aquifer tube installation uses sledges, portable jackhammers, etc., to mechanically drive ~1” diameter rods to very shallow depths (<30 ft). A miniature screen with attached polyethylene tubing is placed in the hand driven holes prior to withdrawing the rod. The Geoprobe is sometimes used to support aquifer tube installations, and sonic technology can be used to assist small diameter cone penetrometer rod penetration.

Air Rotary Drilling:

This drilling method consists of a dual-wall casing, assembly consisting of an outer drive casing and an inner rotary drill stem and bit assembly. The outer drive casing is driven from ground surface, or hydraulically pushed down, as the inner rotary assembly advances into the formation. Air is injected through the inner drill stem/bit and flushes the cuttings up the drive casing/drill stem annulus. Cuttings are handled as above. Advancing the boring is generally continuous since cuttings are removed as the boring is advanced. Water may be added to the air stream to assist in lifting the cuttings and to minimize dust emissions. Return air is put through cyclone separators to remove solids and minimize dust. This process is repeated until the drive casing reaches the desired depth. Boring completion or decommissioning is similar to the cable tool method.

Diesel Hammer Drilling:

The drive casing in this drilling method is advanced using a diesel hammer technique. Drill cuttings are removed using an inner core barrel on a wire-line system. Cuttings are handled as above. This process is repeated until the drive casing reaches the desired depth. Boring completion or decommissioning is similar to the cable tool method.

Mud Rotary Drilling:

Mud rotary drilling is a drilling method that involves the continuous circulation of fluids (commonly referred to a drilling mud) in the borehole as the drill bit is advanced. There are two methods where drilling fluids are used: 1) direct rotary and 2) reverse circulation rotary. With either method, the drilling mud is circulated from the surface to the bottom of the borehole and into a pit collection system at the surface. The drilling method itself involves the rotation of a bit attached to a drill string with downward applied weight or pressure to advance the borehole. The method is similar to Air Rotary drilling discussed above, except that a fluid is circulated instead of air. The essential functions of a drilling mud are to:

1) Lift the formation cuttings from the bottom of the hole to the surface and carry them to a settling tank.
2) Seal the borehole wall to reduce mud loss to the formation.
3) Cool and clean the drilling bit.
4) Lubricate the drilling bit, bearings, mud pump and drill pipe.
5) Allow drill cuttings to be easily removed through solids control.
6) Clean the bottom of the hole.
7) Aid in formation evaluation.
8) Aid in formation stability.

The drilling mud requires constant monitoring and conditioning to ensure required mud properties are maintained to meet the above functions.

The drilling mud and drill cuttings are disposed of as appropriate either in an approved disposal facility, or to ground surface, depending on environmental and health risk determination. Borehole completion or decommissioning is similar to the cable tool method.

2. Radiological Controls

a. Contractor radiological, waste management, sampling, decontamination, drilling, decommissioning, transportation, and health and safety procedures are followed.

b. A Radiological Risk Assessment is conducted prior to, and for, each prospective drilling location. A Radiological Risk Assessment Checklist is completed, and a Hanford Site Excavation Permit is completed and approved. A Radiological Work
Permit (RWP) is completed for all High Risk intervals to be drilled.

c. A ranking system is used at each drilling location (and the intervals within, as appropriate) of Low, Medium, or High Risk. It is important to note that different depth intervals may have different risk levels in the same well. Controls are upgraded and downgraded according to the interval exposed during the drilling process.

d. Controls are based on risk level and the site-specific drilling location.

High Risk borings (e.g., those located in a crib, pond or ditch) are drilled using methods that have the least potential for air releases (i.e., not air rotary). The equipment is wiped clean as it is brought out of the boring. Core barrel samples are contained in plastic sleeves and the bottom tied off. The sleeves and drill cuttings are placed into appropriate containers for analysis and/or disposal. Continuous radiological control technician (RCT) coverage is provided for the duration of the High Risk drilling. The RWP

identifies radiological conditions, establishes worker protection and monitoring requirements, and contains specific approvals for radiological work activities. When characterizing highly contaminated waste sites a HEPA ventilated glove bag or enclosure is used to obtain samples of the cuttings.

Medium Risk borings (e.g., those located within 50 feet of a crib, pond or ditch) are evaluated on a case-by-case basis and controls depend on site-specific factors. In most cases, the boring is drilled in a conservative manner using methods that have the least potential for air releases (i.e., not air rotary). Continuous RCT coverage is provided. If radioactivity is detected, the work is immediately stopped, and the boring is upgraded to High Risk with appropriate controls in place prior to proceeding.

Low Risk borings (balance of the Hanford site) may be drilled with any of the methods described in Appendix 1. If using air rotary techniques, water may be added to minimize dust and assist in cuttings removal. RCT surveys are conducted either every morning or afternoon to verify the absence of contamination. If radioactivity is detected, the work is immediately stopped, and the boring is upgraded to High Risk with appropriate controls in place prior to proceeding.

Drilling equipment is checked for contamination prior to moving it to a new location. Smearable contamination is removed by the manual methods discussed earlier. It is sometimes necessary to apply a fixative or to wrap the area to prevent the spread of contamination that is not easily washed or wiped off. High temperature and pressure (180 °F and 1000 psi) washing is necessary as a final cleaning step for some drilling equipment.

3. <u>Monitoring</u>

Air monitoring is required for drilling in High Risk intervals. Existing near-facility air monitoring stations will be utilized when possible. If existing near-facility air monitoring stations do not provide adequate coverage for the predominate wind direction, additional monitoring will be conducted.

4. <u>Records/Documentation</u>

a. Radiological Work Permit, if applicable.

b. Analytical results from the near-facility air monitoring station.

c. Notify the WDOH of all drilling locations prior to initiating field activities and in the event that unanticipated contamination is encountered.

5. <u>Emission Pathway</u>

a. Potential fugitive emissions

6. <u>Facility Description</u>

a. Hanford Site outside of the Tank Farms fence line

ALARACT 26

DISPOSAL BY BURNING OF POTENTIALLY CONTAMINATED TUMBLEWEEDS

1. **Description of Activity/Requirements**

   Windblown collections of tumbleweeds along fence lines, buildings, and other locations must be removed for purposes involving safety and security. Due to the volume and makeup of these collections, the only reasonable option for large-scale disposal is collection followed by controlled burning outdoors.

   Some burns are conducted near the collection point while others are conducted in designated central locations which receive compacted, shredded, or pitched loads of the weeds during various times of the year. Due to their being an opportunistic invader species with deep roots, there are very infrequent occasions where the weeds may grow in areas with contaminated soil, and uptake low levels of radioactive contamination. This ALARACT demonstration provides the description of radiological controls and monitoring that will be performed in taking reasonable precautions during disposal of the weeds by open burning.

2. **Radiological Controls**

   If collected in areas, which may reasonably provide some potential for incurring contaminated windblown tumbleweeds, collection of the windblown weeds includes radiological, field surveys using hand held instruments. The surveys are conducted of each weed upon their first being handled. Handling may involve loading for transport, compacting, shredding, piling for disposal, or other manual methods.

   If the weeds prepared for burning have been in place for longer than one week, additional field surveys will be conducted around the perimeter of the burn pile to assure no detectable windblown contamination has settled in the burn area. This precaution is taken even though it is known only a very few locations might be impacted by windblown contamination. Any detected contamination will be removed prior to burning.

   The burning will not occur in any area posted as containing radioactive contamination.

   The burning will be conducted under an approved Hanford Fire burn plan, and with constant job coverage by Hanford Fire personnel and equipment.

   Note: If radioactive contamination is found after the burn, DOH will be notified.

3. **Monitoring**

   Monitoring will consist of the radiological field surveys conducted as part of the activities described above.

4. **Records/Documentation**

   Tumbleweeds collected from areas with a reasonable potential for contamination are surveyed using hand held instruments. The surveys are conducted of each weed upon their first being handled.

   Surveys are documented on Radiological Survey Reports, reviewed, and retained with HSO Radiological Control Organization at MO 406 according to Department of Energy requirements.

The burning will be conducted under Special Prescribed Fire Proposal - Hanford Site Designated Safe Areas # FH-0201185.

5. **Emission Pathway**

   Emission from the proposed burn will be a diffuse emission.

6. **Facility Description**

   The Waste Information Data System site 200-W BP (also known as 200-W Burning Pit, Pit 34).

ALARACT 28

SHUTDOWN OF STACK SYSTEM(s) (Maintenance and incidental)

1. **Description of Activity/Requirements**

The listed facilities are currently under Surveillance and Maintenance (S&M) status, meaning active processing has ceased with radioactive feed materials no longer brought in. Surveillances and maintenance activities are performed in these facilities including, but not limited to minor activities such as exterior and interior inspections; checking for door security, for any unauthorized building intrusions, and for structural integrity; water intrusion cleanup; waste handling/removal; maintaining radiological airborne control zones; animal or insect intrusion abatement; maintaining operating systems and building integrity, eliminating utilities when possible; identifying and reducing hazards; and housekeeping. The primary ventilation systems and associated record sampling systems operate at each facility as described in the Hanford Site Air Operating Permit.

At certain times to support these various S&M activities, or related to maintenance or replacement-in-kind, any one of these primary ventilation systems may be shut down for a period exceeding two days duration.

The four ventilation systems which may be shut down are: 332 REDOX, 402 B-Plant, 369 PUREX, 310 U-Plant.

2. **Radiological Controls**

It was agreed that an As Low As Reasonably Achievable Control Technology (ALARACT) demonstration is appropriate to address control and monitoring of potential radioactive air emissions during these extended periods of shutdown.

During shutdown periods exceeding two days, the following controls will be implemented:

Inform the Washington Department of Health (WDOH) by telecon or email at the start of each use of this ALARACT action or as soon as it is realized that the systems will be shutdown for more than two days.

To provide assurance that containment of airborne contamination is maintained during the subject periods of shutdown, Fluor Hanford (or successor)
Contractor Radiological Control Technicians (RCTs) will perform daily (during normal work days I.e., not weekends or holidays) radiological swipe
surveys on a representative few normally accessible outer facility doors. If an increase in removable (smearable) contamination is detected at any of
these locations during the period of shutdown, notify the WDOH and describe containment measures to be taken.

During the subject periods of shutdown, to avoid situations which might encourage increased diffuse or fugitive emissions, no activities will be
conducted inside the facility except those approved for unfiltered containment in accordance with established Radiological Control criteria.

If the fans are not restarted within the scheduled time discussed with WDOH, WDOH will be contacted, and continued monitoring and/or airborne controls will be discussed.

3. **Monitoring**

It was agreed that an As Low As Reasonably Achievable Control Technology (ALARACT) demonstration is appropriate to address control and monitoring of potential radioactive air emissions during these extended periods of shutdown.

4. **Records/Documentation**

5. **Emission Pathway**

6. **Facility Description**

ALARACT 29

242-A EVAPORATOR MAINTENANCE FACILITY SHUTDOWNS

1. **Description of Activity/Requirements**

   Scope will include planned maintenance facility shutdowns at 242-A Evaporator where electrical power to both 296-A-21 and 296-A-22 stacks are de-energized for greater than 24 hours.

   The process of planned maintenance outages and facility upgrades that require de-energizing both the building stack (296-A-21) and vessel vent (296-A-22) for facility upgrades or maintenance will be performed. Building process areas will have the interior doors sealed with tape to help minimize diffuse and fugitive emissions to facility personnel and the outside ambient atmosphere pursuant to meeting WAC 246-247-130 to meet ALARACT compliance demonstration requirements. If entry to process areas is required then radiological controls will be done per HNF-5183 to minimize both time and provide controls for diffuse and fugitive emissions. No facility operational (double shell tank liquid minimization) activities will be performed during the time that neither the 296-A-21 and 296-A-22 stacks are not operating. Radiological containment practices and devices will be employed as applicable per the Containment Selection Guide Attachment A, in TFC-ESHQ-RP_RWP-C-02, latest revision.

2. **Radiological Controls**

   - Work with removable contamination will be contained per the latest revision of the Containment Selection Guide, Attachment A, in TFC-ESHQ-RP_RWP-C-02, latest revision.

   - HPT coverage as specified in the Radiological Work Permit.

3. **Monitoring**

   - Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual.

4. **Records/Documentation**

   - Radiological Work Permit.

   - Radiological survey report(s).

5. **Emission Pathway**

   - Active and passive, point sources and fugitive sources

6. **Facility Description**

   The 242-A Evaporator Facility stacks 296-A-21 and 296-A-22.

ALARACT 30

TANK FARM ALARACT DEMONSTRATION FOR STACK EXTENSION AND PASSIVE EMISSION POINT VENTURI

1. Description of Activity/Requirements

This work is for passively ventilated tank that have a breather filter for filtration that require a stack extension to aid chemical vapors in the work space. These filter attachments will be attached, bolted, flanges attached and welds applied to raise the stack exit height. There is no plan to change the existing breather filter housings other than modification of the downstream and upstream piping simply to aid placement of the stack extension.

The process will be performed using mechanical techniques such as unbolting, drilling, snipping, shearing, cutting, grinding, abrading, or law and high speed sawing, as well as hot works such as cutting torches or welding. Other activities may include installation of instrumentation, test ports, or sample ports. Containment devices are employed as applicable per the Containment Selection Guide Attachment A, in TFC-ESHQ-RP-RWP-C-02, latest revision.

If exhaust systems are replaced under the "replacement-in-kind" provision of WAC 246-247 utilizing this ALARACT demonstration, then the abatement controls of the new system must be equivalent or better than those of the system that is replaced.

2. Radiological Controls

a. Follow ALARACT Demonstration for "Packaging and Transportation of Waste" (ALARACT 4)

b. Follow ALARACT Demonstration for "Size Reduction of Waste Equipment for Disposal" (ALARACT 15)

c. Follow Tank Farm ALARACT Demonstration for "Work on Potentially Contaminated Ventilation System Components" (ALARACT 16)

d. Work with removable contamination will be contained per the latest revision of the Containment Selection Guide, Attachment A in TFC-ESHQ-RP-RWP-C-02, latest revision.

E. HPT coverage as specified in the Radiological Work Permit.

3. Monitoring

a. At a minimum, pre and post-job survey (smears) shall be taken.

B. Radiological monitoring shall be in accordance with the latest revision of HNF-5183, Tank Farms Radiological Control Manual.

4. Records/Documentation

a. Radiological Work Permit.

B. Radiological Survey Report(s).

5. **Emission Pathway**

   Active and passive, point source and fugitive sources.

6. **Facility Description**

   All tank farm facilities.

Attachment 3

Number: 00-05-006 Renewal 1 (2006)

Benton Clean Air Authority
114 Columbia Point Drive, Suite C
Richland, WA 99352

The National Emissions Standards for Hazardous Air Pollutants (NESHAP), 40 Code of Federal Regulations (CFR) Part 61, Subpart M, "National Emission Standard for Asbestos," and the Benton Clean Air Authority (BCAA) Regulation 1, Article 8, "Asbestos" require the Department of Energy, its contractors, or its subcontractors to file a notification prior to commencement of a demolition or renovation activity at an affected facility. Pursuant to the authorities delegated by the State of Washington, Department of Ecology (Ecology) and the U.S. Environmental Protection Agency (EPA), the BCAA is the responsible authority to conduct day-to-day regulatory responsibility and ensure compliance with 40 CFR 61 Subpart M and Article 8 of Regulation 1 of BCAA, adopted by reference in this air operating permit (AOP), for the Hanford Site. BCAA shall inform Ecology prior to taking any final permitting or enforcement actions at Hanford.

In addition, Chapter 173-425 Washington Administrative Code (WAC) and BCAA Regulation 1, Article 5, "Outdoor Burning," require the Department of Energy, its contractors, or its subcontractors to follow these rules regulating outdoor burning, including obtaining special outdoor burning permits if required. The BCAA, pursuant to the authorities delegated by Ecology, is the responsible authority to ensure compliance with WAC 173-425 and Article 5 of Regulation 1 of BCAA adopted by reference in this AOP for the Hanford Site.

Approved by:

_____ _____

David A. Lauer
Control Officer
Benton Clean Air Authority

Date

Statement of Basis

For
Hanford Site Air Operating Permit No. 00-05-006 Renewal 1 (2006)

Attachment 3: Benton Clean Air Authority Permit

This attachment includes regulatory requirements at the Hanford Site for asbestos handling and outdoor burning enforced by the Benton Clean Air Authority (BCAA). In 1994, the Washington State Department of Ecology (Ecology) delegated asbestos handling and outdoor burning regulatory responsibilities to BCAA. The text of the March 11, 1994 delegation letter from Ecology to BCAA is shown in the next page (Enclosure 1).

Since the issuance of the delegation letter in 1994, a number of personnel and terminology changes have taken place. Specific changes, although not affecting regulatory delegation, are summarized below:

1. The Benton-Franklin Counties Clean Air Authority (BFCCAA) was renamed Benton Clean Air Authority (BCAA) in January 1995 due to reorganization.
2. BCAA moved from 650 George Washington Way to 114 Columbia Point Drive in January 2002.
3. "Open burning" was renamed "outdoor burning" in March 2000 by revising WAC 173-425.
4. Jane Hedges is now the Program Manager of the Nuclear Waste Program.
5. In lieu of contacting Dave Nylander or Bob King regarding regulatory matters, Oliver Wang (509-372-7932) is the current contact at the Nuclear Waste Program.

A copy of the most recent memorandum of agreement between DOE and the BCAA regarding asbestos abatement management on the Hanford Site is also provided in this statement of basis (Enclosure 2).

At the Hanford Site, BCAA enforces Washington Administrative Code 173-425, last updated in March 2000, and BCAA Regulation 1, Article 5, last updated in April 2005, regarding Outdoor Burning. BCAA also enforces 40 Code of Federal Regulations Part 61, Subpart M, on National Emission Standards for Asbestos, last updated in July 2004, and BCAA Regulation 1, Article 8, on Asbestos, last updated in April 2005. Attachment 3 of the AOP identifies the BCAA outdoor burning and asbestos handling requirements and the methods of compliance utilized by the Department of Energy at the Hanford Site.

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Enclosure 1: The 1994 delegation letter from Ecology to BCAA for asbestos handling and outdoor burning.

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March 11, 1994

David A. Lauer, Director
Benton-Franklin Counties
Clean Air Authority
650 George Washington Way
Richland, WA 99352-4289

Dear Mr. Lauer:

Re: Delegation of Asbestos and Open Burning Regulatory Responsibility

After receiving your letter of December 15, 1993, regarding asbestos and open burning at the Hanford Site, I realized your immediate concern about these two issues. I have asked Mr. Joe Stohr, Manager of the Technical Assistance and Regulatory Coordination Section, to work on these issues.

In discussing this matter with Mr. Myron Saikewicz, Manager of the Engineering Section at Ecology's Air Quality Program, we agreed that the Benton-Franklin Counties Clean Air Authority (BFCCAA) should continue to handle asbestos and open burning issues at the Hanford Site. The Nuclear Waste Program is not planning to actively exercise its preemptive authority under RCW 70.105.240 and regulate asbestos and open burning at the Hanford Site. I feel that the Benton-Franklin Counties Clean Air Authority has the needed qualifications and experience to accomplish these regulatory functions at Hanford.

Ecology exercises "preemptive" authority for all regulatory functions at certain hazardous waste management facilities, including Hanford, based upon RCW 70.105.240. Since Hanford is a federal facility, Ecology exercises this authority only in areas where the federal government has waived its sovereign immunity. Under the Federal Clean Air Act, the federal government has waived sovereign immunity at Hanford. Ecology, therefore, can preempt local government or other state agencies in regulating asbestos and open burning at Hanford.

Ecology remains reluctant to assume preemptive responsibility in areas where local government is clearly qualified to accomplish such regulatory responsibilities and where it is more appropriate for Ecology to delegate such responsibility. In the case of asbestos and open burning regulations, I believe it is appropriate to delegate such authority to the BFCCAA. This delegation, therefore, extends to BFCCAA, the authority to ensure compliance with 40 CFR 61, Asbestos, Handling, Notifications, and Reporting. WAC 173-425, and applicable local regulations at the Hanford Site.

In order to further clarify the issues, I would like to respond to the questions addressed in your letter as follows:

1. The BFCCAA will continue to serve the role that your agency currently has as the recipient of asbestos notifications required under 40 CFR 61.145(b).

2. Ecology does not grant BFCCAA the authority to collect permit fees. The BFCCAA must decide for itself whether to collect such fees based on its regulatory authority.

3. Your agency will be responsible for permitting and inspecting fire training areas, and open burning at the Hanford Site.

4. Your agency will be lead for enforcing the regulations regarding demolition by burning and for gaining compliance with the state open burning regulations at the Hanford Site. Mr. Dave Nylander of our Kennewick Office needs to be contacted by your office on these issues.

Please be advised that Ecology can withdraw this delegation at any time. However, we will not exercise this option without providing prior notice to BFCCAA. In addition, we believe that RCW 70.105.240 does not give

Ecology the option of delegating its final decision-making authority over preempted matters, notwithstanding any delegation to exercise day-to-day regulatory responsibility. Therefore, we request that your office inform Mr. Dave Nylander of our Kennewick Office, prior to taking any final permitting or enforcement actions at Hanford.

We look forward to a positive and cooperative working relationship with BFCCAA, as we work to assure the health and safety of the citizens of the state. Questions regarding this matter should be addressed to Mr. Bob King at (206) 407-7147. Thank you for bringing this matter to our attention.

Sincerely,

Original signed by Dru Butler

Dru Butler
Program Manager
Nuclear Waste Program

DB:BK:db

cc: James Bauer, DOE-RL

Enclosure 2: The 2003 memorandum of agreement between DOE and the BCAA regarding asbestos abatement management on the Hanford Site.

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0301588
CC Recd: 04/14/2003

BENTON
CLEAN AIR AUTHORITY
114 Columbia Point Drive, Suite C
Richland, WA 99352-4387
Phone: (509) 943-3396 -- FAX: (509) 943-2232
E-mail: *email@bcaa.net* Internet: *http://bcaa.net*

April 3, 2003

Memorandum of Agreement (MOA) Regarding Asbestos Material/Demolition Management on the Hanford Site

The Benton Clean Air Authority (BCAA) Regulation 1, Article 10 "Fees and Charges" had adopted changes with relation to the fee structure for asbestos renovation and demolition projects. The BCAA also received NESHAPS delegation from EPA effective October 19, 2001. These changes, along with the U.S. Department of Energy's (DOE) request to submit a single streamlined annual notification of intent (NOI), prompted a revision to the previous agreement between the BCAA and the DOE, signed November 18, 1996.

This revised MOA continues in the spirit of the original agreement in that DOE and Hanford Contractors will comply with all provisions of the NESHAP (i.e., 40 Code of Federal Regulations 61, Subpart M), as well as Regulation 1, Articles 8 and10, as clarified by the attached MOA relating to asbestos management under DOE control on the Hanford Site.

David A. Lauer

Dr. David A. Lauer, Director
Benton Clean Air Authority

MEMORANDUM OF AGREEMENT (MOA) RELATING TO REMOVAL OF ASBESTOS MATERIALS AND DEMOLITIONS ON THE HANFORD SITE

The U.S. Department of Energy (DOE) and the Benton Clean Air Authority (BCAA) agree that the Richland Operations Office (RL) will take the lead within the DOE, pursuant to this memorandum of agreement (MOA) and the applicable requirements identified under attachment three to the Hanford Site Air Operating Permit. Specifically, this MOA pertains to implementation of requirements identified under Regulation 1, Article 8, "Asbestos," which incorporates by reference the National Emission Standards for Hazardous Air Pollutants (NESHAP) 40 CFR 61, Subpart M, - "National Emission Standard for Asbestos."

A. FREQUENTLY USED DEFINITIONS:

Demolition -- means the wrecking or taking out of any load-supporting structural member of a facility together with any regulated handling operations or the intentional burning of any facility.

Emergency renovation operation -- means a renovation operation that was not planned but results from a sudden, unexpected event that, if not immediately attended to, presents a safety or public health hazard, is necessary to protect equipment from damage, or is necessary to avoid imposing an unreasonable financial burden. This term includes operations necessitated by nonroutine failures of equipment.

Nonscheduled renovation operation -- means a renovation operation necessitated by the routine failure of equipment, which is expected to occur within a given period based on past operating experience, but for which an exact date cannot be predicted.

Planned renovation operation -- means a renovation operation, or a number of such operations, in which some regulated asbestos-containing material (RACM) will be removed or stripped within a given period of time and than can be predicted. Individual nonscheduled operations are included if a number of such operations can be predicted to occur during a given period of time based on operating experience.

A. FREQUENTLY USED DEFINITIONS CONTINUED:

Renovation -- means altering a facility or one or more facility components in any way, including the stripping or removal of RACM from a facility component. Operations in which load-supporting structural members are wrecked or taken out are **demolitions**.

*Note: Asbestos removal activities **NOT** requiring submittal of an NOI include:*

- *Asbestos material **NOT** meeting the definition of RACM.*
- *Manual removal of vinyl asbestos tile and/or mastics removed with a solvent.*
- *Manual removal of tar-based roofing materials in good condition*
- *Other asbestos removal methods, as defined under 40 CFR 61, Subpart M, Appendix A.*

B. ASBESTOS MANAGEMENT

1. Requests for technical assistance regarding applicability of a project or operation can be directed to the BCAA or the Hanford contractor given responsibility for managing the Hanford Site Asbestos Program. (*Refer to Section E for frequently used definitions regarding compliance with the asbestos Clean Air Act requirements.*)
2. The Hanford contractor managing the Hanford Site Asbestos Program will provide a current asbestos point-of-contact (POC) list to the BCAA, and will provide updates to this list as POCs for the various Hanford contractors change.
3. Emergency Safeguards – RL shall take reasonable precautions (such as those described in Regulation 1, Section 8.4 A and B) to protect the public in the case of asbestos spills or scattering.

C. NOTIFICATIONS:

Notifications of intent to remove asbestos-containing material or to demolish (hereafter referred to as an **NOI**) shall be submitted to the BCAA in accordance with 40 CFR 61.145(b) and BCAA Regulation 1, Article 8. As specified under these regulatory citations, all projects involving the removal of regulated asbestos-containing material (RACM) in amounts that exceed the BCAA thresholds **AND ALL** projects meeting the definition of a demolition (whether asbestos is present or not) require submittal/ coverage under an NOI with the BCAA. Streamlined methods for an applicable facility/ project to submit an NOI are outlined below. For CERCLA activities, a courtesy summary will be provided to the BCAA in lieu of an NOI, as identified in C.4, below.

1. An NOI for asbestos **renovation** operations meeting applicability under BCAA Regulation 1, Article 8, will be submitted for new individual projects not already covered under C.2, below. For these projects, the NOI shall be submitted to the BCAA at least 10 working days prior to the start of asbestos removal activities. An **exception** to the 10-day advance NOI submittal requirement is offered for activities meeting the definition of **emergency renovation operations.** Asbestos renovation activities under this scope shall complete the Emergency Waiver Request Form (available from the BCAA) **and** an NOI form and submit both forms to the BCAA in accordance with the instructions provided on the forms and this MOA.

2. Projects with planned or nonscheduled asbestos renovation operations can satisfy the NOI submittal requirements with coverage under a combined annual

NOI estimate for DOE Contractors. The annual NOI will be received by the BCAA at least 10 working days before the end of the calendar year preceding the year for which notice is being given. DOE Contractors shall maintain documentation on all jobs included under the annual estimate and make this information available upon inspection. The annual NOI may only include:

- **planned renovation operations** involving individual **nonscheduled renovation operations** if the amount of RACM is less than 10 linear feet or 48 square feet, and
- **planned renovation operations** that are scheduled to be conducted during the calendar year, that involve less than 260 linear feet or 160 square feet.

3. **Demolition** projects meeting the applicability of a demolition, pursuant to 40 CFR 61, Subpart M, shall file an NOI under one of the following methods:
   a. Projects involving asbestos renovation that exceed the BCAA limits **AND** involve a demolition can satisfy the requirement for submittal of an NOI with a combined NOI (i.e., the asbestos POC would check both the appropriate asbestos renovation **and** demolition boxes on a single form) for submittal to the BCAA at least 10 working days before the project begins. Fees will be assessed for both actions, pursuant to the fee structure outlined in Regulation 1, Article 10.
   b. All demolition projects meeting the definition under 40 CFR 61 (**even if there is no asbestos present**) and not already covered under a combined NOI submittal, C.3.a., above, will require submittal of an NOI at

least 10 working days before the demolition activity begins. The fees shall be in accordance with BCAA Regulation 1, Article 10.

4. Hanford Site asbestos renovation or demolition activities regulated/performed under CERCLA will provide a courtesy summary to the BCAA in lieu of the NOI administrative process. The summary will accompany the annual NOI submittal to the BCAA (see C.3 above) and will include the following information:
   a. Project location,
   b. Planned **OR** Ongoing during the respective calendar year,
   c. Lead agency identification, and
   d. Identification of whether the activity is an asbestos renovation and/or demolition.

5. NOIs provided to the BCAA, as described under C.1 through C.3, above, will be via U.S. Postal Service, commercial delivery service, hand delivery service, or other equivalent method approved by the BCAA.

D. INSPECTIONS:

BCAA personnel performing inspections of asbestos management activities in controlled areas of the Hanford Site will adhere to RL's standardized access requirements. These requirements include two standard levels of controlled area access to ensure appropriate training and/or orientations have occurred prior to entrance of a controlled area. The Regulatory Compliance and Analysis Division of

DOE-RL is the point of contact organization regarding access requirements for regulators.

E. PAYMENT:

Payment shall be made in accordance with Regulations 1, Article 10, and this MOA, as more specifically set forth below:

1. BCAA will bill the Regulatory Compliance and Analysis Division of DOE-RL with a copy to the Hanford contractor managing the Hanford Site Asbestos Program, or such other contractor as RL may direct by written notification. Invoices will be sent through U.S. mail by the last day of each month following the end of each calendar quarter for all notifications under C.1 through C.3, above, that were processed during the preceding quarter.
2. The Hanford contractor or the Department of Energy will make prompt payment on all valid invoices from BCAA, by payment methods approved by the BCAA. If payment is not received as per the invoice, BCAA may require payment prior to accepting each additional new NOI until said payment is received.
3. Only names identified on the POC list, see B.2 above, will be authorized to utilize the invoice billing/payment system for fees incurred. All other subcontactors processing NOIs will pay the required fee upon submittal of the NOI to the BCAA.

DATED THIS 8th DAY OF APRIL, 2003

Joel B. Hebdon, Director
Regulatory Compliance & Analysis Division
U.S. Department of Energy,
Richland Operations Office

Dr. David A. Lauer, Director
Benton Clean Air Authority

April 3, 2003

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