



OFFICE OF RIVER PROTECTION

P.O. Box 450, MSIN H6-60
Richland, Washington 99352

MAR 27 2015

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DEPARTMENT OF ECOLOGY
NWP - RICHLAND

15-ECD-0016

Ms. Jane A. Hedges, Program Manager
Nuclear Waste Program
Washington State
Department of Ecology
3100 Port of Benton Blvd.
Richland, Washington 99354

COPY
Review & Recycle

Ms. Hedges:

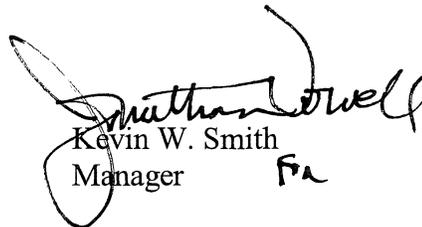
U.S. DEPARTMENT OF ENERGY, OFFICE OF RIVER PROTECTION REQUESTS REVIEW AND APPROVAL OF SUBMITTAL OF CRITERIA AND TOXIC AIR EMISSIONS NOTICE OF CONSTRUCTION MODIFICATION FORM FOR AY/AZ TANK FARM VENTILATION MODIFICATIONS

The U.S. Department of Energy, Office of River Protection hereby submits to the Washington State Department of Ecology (Ecology) the attached Notice of Construction (NOC) Application Form and supporting documentation for your review and approval. Meetings between Washington River Protection Solutions LLC, Office of River Protection, and Ecology have taken place prior to transmittal of this letter to support the permitting activities necessary to retrieve the waste from Double-Shell Tank 241-AY-102. This NOC application will be the first of two planned modifications to Ecology Order DE11NWP-001. This modification will support the current AY-102 schedule to allow retrieval of the AY-102 tank utilizing the existing ventilation system.

The NOC application discusses the following changes for the first modification:

- A modification of the 702-AZ ventilation system for the AY/AZ tank farms
- Addition of 241-AY-102 annulus stack to Ecology Order DE11NWP-001.

If you have any questions, please contact Dennis W. Bowser, Environmental Compliance Division, (509) 373-2566.


Kevin W. Smith
Manager *FW*

ECD:DWB

Attachment

cc: See page 2

Ms. Jane A. Hedges
15-ECD-0016

-2-

MAR 27 2015

cc w/attach:

P.M. Gent, Ecology
M.B. Skorska, Ecology
R.A. Kaldor, MSA
Administrative Record
Environmental Portal, LMSI
WRPS Correspondence

cc w/o attach:

J. Cox, CTUIR
S. Harris, CTUIR
D. Zhen, EPA (Region 10, Seattle)
P.C. Miller, North Wind
G. Bohnee, NPT
K. Niles, Oregon Energy
D.E. Jackson, RL
J. Martell, WDOH
T.G. Beam, WRPS
J.A. Joyner, WRPS
B.P. Rumburg, WRPS
J.A. Voogd, WRPS
R. Jim, YN

Attachment
15-ECD-0016
(41 Pages)

Notice of Construction Application Form

 for

Dennis W. Bowser



Notice of Construction Application

This application applies statewide for facilities under the Department of Ecology’s jurisdiction. Submit this form for review of your project to construct a new or modified source of air emissions. Please refer to Ecology Forms ECY 070-410a-g, “Instructions for NOC Application,” for general information about completing the application.

Ecology offers up to two hours of free pre-application assistance. We encourage you to schedule a pre-application meeting with the contact person specified for the location of your proposal, below. If you use up your two hours of free pre-application assistance, we will continue to assist you after you submit Part 1 of the application and the application fee. You may schedule a meeting with us at any point in the process.

Upon completion of the application, please enclose a check for the initial fee and mail to:

**Department of Ecology
Cashiering Unit
P.O. Box 47611
Olympia, WA 98504-7611**

<i>For Fiscal Office Use Only:</i> 001-NSR-216-0299-000404

Check the box for the location of your proposal. For assistance, call the contact listed below:		
	Ecology Permitting Office	Contact
<input type="checkbox"/> CRO	Chelan, Douglas, Kittitas, Klickitat, or Okanogan County Ecology Central Regional Office – Air Quality Program	Lynnette Haller (509) 457-7126 lynnette.haller@ecy.wa.gov
<input type="checkbox"/> ERO	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Stevens, Walla Walla or Whitman County Ecology Eastern Regional Office – Air Quality Program	Greg Flibbert (509) 329-3452 gregory.flibbert@ecy.wa.gov
<input type="checkbox"/> NWRO	San Juan County Ecology Northwest Regional Office – Air Quality Program	David Adler (425) 649-7082 david.adler@ecy.wa.gov
<input type="checkbox"/> IND	For actions taken at Kraft and Sulfite Paper Mills and Aluminum Smelters Ecology Industrial Section – Waste 2 Resources Program Permit manager: _____	Garin Schrieve (360) 407-6916 garin.schrieve@ecy.wa.gov
<input checked="" type="checkbox"/> NWP	For actions taken on the US Department of Energy Hanford Reservation Ecology Nuclear Waste Program	Philip Gent (509) 372-7983 philip.gent@ecy.wa.gov



Notice of Construction Application

Check the box below for the fee that applies to your application.

New project or equipment:

<input type="checkbox"/>	\$1,500: Basic project initial fee covers up to 16 hours of review.
<input type="checkbox"/>	\$10,000: Complex project initial fee covers up to 106 hours of review.

Change to an existing permit or equipment:

<input type="checkbox"/>	\$200: Administrative or simple change initial fee covers up to 3 hours of review Ecology may determine your change is complex during completeness review of your application. If your project is complex, you must pay the additional \$675 before we will continue working on your application.
<input checked="" type="checkbox"/>	\$875: Complex change initial fee covers up to 10 hours of review
<input type="checkbox"/>	\$350 flat fee: Replace or alter control technology equipment under WAC 173-400-114 Ecology will contact you if we determine your change belongs in another fee category. You must pay the fee associated with that category before we will continue working on your application.

Read each statement, then check the box next to it to acknowledge that you agree.

<input checked="" type="checkbox"/>	The initial fee you submitted may not cover the cost of processing your application. Ecology will track the number of hours spent on your project. If the number of hours Ecology spends exceeds the hours included in your initial fee, Ecology will bill you \$95 per hour for the extra time.
<input checked="" type="checkbox"/>	You must include all information requested by this application. Ecology may not process your application if it does not include all the information requested.
<input checked="" type="checkbox"/>	Submittal of this application allows Ecology staff to visit and inspect your facility.



Notice of Construction Application

Part 1: General Information

I. Project, Facility, and Company Information

1. Project Name Project T3W02. AY/AZ Ventilation Upgrades Project	
2. Facility Name Hanford Site	
3. Facility Street Address <u>200 East Area, Hanford Site, Washington</u>	
4. Facility Legal Description Hanford Site, Washington	
5. Company Legal Name (if different from Facility Name) <u>United States Department of Energy, Office of River Protection</u>	
6. Company Mailing Address (street, city, state, zip) <u>P.O. Box 450, MSIN H6-60, Richland, WA 99352</u>	

II. Contact Information and Certification

1. Facility Contact Name (who will be onsite) Dennis Bowser	
2. Facility Contact Mailing Address (if different than Company Mailing Address) Same as Company Mailing Address	
509/373-2566	4. Facility Contact E-mail <u>Dennis_W_Bowser@orp.doe.gov</u>
5. Billing Contact Name (who should receive billing information) <u>Dennis Bowser</u>	
6. Billing Contact Mailing Address (if different than Company Mailing Address) same as Company Mailing Address	
7. Billing Contact Phone Number <u>(509) 373-2566</u>	8. Billing Contact E-mail <u>Dennis_W_Bowser@orp.doe.gov</u>
9. Consultant Name (optional – if 3 rd party hired to complete application elements)	
10. Consultant Organization/Company	
11. Consultant Mailing Address (street, city, state, zip)	
12. Consultant Phone Number	13. Consultant E-mail
14. Responsible Official Name and Title (who is responsible for project policy or decision-making) <u>Kevin Smith, Manager</u>	
16. Responsible Official Phone <u>(509) 372-2315</u>	17. Responsible Official E-mail <u>Kevin_W_Smith@orp.doe.gov</u>
18. Responsible Official Certification and Signature I certify, based on information and belief formed after reasonable inquiry, the statements and information in this application are true, accurate and complete.	



Notice of Construction Application

1. Facility Contact Name (who will be onsite) Dennis Bowser	
2. Facility Contact Mailing Address (if different than Company Mailing Address) Same as Company Mailing Address	
509/373-2566	4. Facility Contact E-mail Dennis_W_Bowser@orp.doe.gov
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9. Consultant Name (optional – if 3 rd party hired to complete application elements)	
10. Consultant Organization/Company	
11. Consultant Mailing Address (street, city, state, zip)	
12. Consultant Phone Number	13. Consultant E-mail
Signature _____ Date _____	

Part 2: Technical Information

III. Project Description

Introduction:

The 241-AY/AZ Tank Farms ventilation system is currently permitted under Notice of Construction (NOC) Order 94-07, Revision 3, dated May 7, 2008. A NOC for construction and operation to replace the 241-AY/AZ ventilation system was submitted and approved under NOC Approval Order DE11NWP-001, Revision 0. A revision to the NOC Approval Order DE11NWP-001, Revision 1 dated August 5, 2014 addressed upgrading the current system instead of replacing the system. As part of preparation for transfer of waste from 241-AY-102, further evaluation has been completed and has concluded that previously planned upgrades of stack and fan replacement are not required. However, a modification to the portion of the ventilation system for Tank 241-AY-102 will be necessary to support Tank 241-AY-102 retrieval. Additionally, due to leakage from the 241-AY-102 primary tank to the annulus, potential emissions from the annulus ventilation system need to be included in this Approval Order.

The toxics emitted from the annulus is the same as the 241-AY/AZ ventilation system due to the source term being the same. The emission rate will only be a small fraction due to the annulus only containing a small fraction of the waste. The dispersion modeling impacts to the public are the same due to the close location of the AY-102 annulus ventilation system to the 241-AY/AZ ventilation



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system and the distance to the off-site receptor. There are no changes to the emissions estimate or dispersion modeling approved in DE11NWP-001, Revision 1. The emission and modeling results are unchanged for dimethyl mercury (CAS # 539-74-8) so the previously submitted Second Tier Review Petition was not modified.

This application is being submitted to request modification to NOC Approval Order DE11NWP-001 Revision 1 for the construction upgrades of the 241-AY/AZ ventilation system, and to include the 241-AY-102 annulus exhauster under the Order, and to trigger operational use of the Order for the 241-AY/AZ system. No changes are proposed to permit conditions in place for the ventilation systems to be installed in 241-AP and 241-SY Tank Farms.

Proposed Action:

The upgrade of the current ventilation system will include the following:

- Remove the fan in the recirculation cooling loop of the Tank 241-AY-102 ventilation system and replace with a spool piece.
- Relocate inlet air intakes, as necessary, on Tank 241-AY-102.

The fan in the recirculation cooling loop for Tank 241-AY-102 will be replaced with a spool piece. This change will allow use of the moisture removal components associated with the recirculation loop thereby reducing condensate loading in the 241-AY/AZ ventilation system. The ventilation inlet point on Tank 241-AY-102 will be relocated to improve ventilation within the tank.

Due to leakage from the 241-AY-102 primary tank to the annulus tank, potential emissions from the annulus ventilation system were evaluated. Any emissions from the annulus stack would represent a shifting of a small portion of the original emission estimate from the primary exhauster to the annulus exhauster. Due to the close proximity of these two emission points and the fact that the point of highest off-site public exposure was caused by the 241-SY ventilation system in 200 West area, dispersion modeling of the emission through this alternate potential emission path would not affect offsite impact associated with the emission addressed by the DE11NWP-001 Revision 1 approval.

The ventilation system for 241-AY-102 including the annulus is depicted in Appendix A.

IV. State Environmental Policy Act (SEPA) Compliance

Check the appropriate box below.

SEPA review is complete:

Include a copy of the final SEPA checklist and SEPA determination (e.g., DNS, MDNS, EIS) with your application.

SEPA review has not been conducted:



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If review will be conducted by another agency, list the agency. You must provide a copy of the final SEPA checklist and SEPA determination before Ecology will issue your permit.

Agency Reviewing SEPA:

If the review will be conducted by Ecology, fill out a SEPA checklist and submit it with your application. You can find a SEPA checklist online at www.ecy.wa.gov/programs/sea/sepa/docs/echecklist.doc

V. Emissions Estimations of Criteria Pollutants

Does your project generate criteria air pollutant emissions? Yes No

No change in criteria pollutants

VI. Emissions Estimations of Toxic Air Pollutants

Does your project generate toxic air pollutant emissions? Yes No

No change in toxic pollutants

VII. Emission Standard Compliance

None applicable

Provide a list of all applicable new source performance standards, national emission standards for hazardous air pollutants, national emission standards for hazardous air pollutants for source categories, and emission standards adopted under Chapter 70.94 RCW.

Does your project comply with all applicable standards identified? Yes No

VIII. Best Available Control Technology

The Best Available Control Technology (BACT) and Toxic Best Available Control Technology (tBACT) will be the operation of the tank ventilation systems not exceeding 1,000 scfm with a condenser, High Efficiency Mist Eliminator, heater, and two stage HEPA filtration system in service in the treatment train. This is the same BACT and tBACT as in Order 94-07, Revision 3, dated May 7, 2008.

The Best Available Control Technology (BACT) and Toxic Best Available Control Technology (tBACT) will be the operation of the annulus ventilation systems not exceeding 3,850 scfm with a two stage HEPA filtration system in service in the treatment train.



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The annulus exhauster has a maximum design flow rate of 3,850 scfm but due to the inlet path restrictions, it operates at a nominal ventilation flow rate of 1000 scfm with two stage HEPA filtration system in service in the treatment train.

IX. Ambient Air Impacts Analyses

No change. Due to the relative location of these two emission points, dispersion modeling of the emission through this alternate potential emission path would not affect offsite impact associated with the emission addressed by the DE11NWP-001 Revision 1 approval.

Discharge point data for annulus exhauster 296-A-19:

- Exhaust height - 12.90 ft (3.93 m)
- Exhaust inside dimensions 1.33 ft (0.41 m)
- Exhaust gas velocity or volumetric flow rate – 13.5 ft/second. 4.1 m/second.
- Exhaust gas exit temperature - 83 degrees Fahrenheit. 28.3 degrees Celsius.
- The volumetric flow rate – 1000 scfm
- Description of the discharges (i.e., vertically or horizontally) and whether there are any obstructions (ex., raincap) - vertical
- Identification of the emission unit(s) discharging from the point 296-A-19
- The distance from the stack to the nearest property line – No Change
- Emission unit building height, width, and length – No Change
- Height of tallest building on-site or in the vicinity and the nearest distance of that building to the exhaust No Change
- Whether the facility is in an urban or rural location – rural

Discharge point data for Primary AY/AZ exhauster 296-A-42: - (No Change from Previous NOC Revision)

Whether the facility is in an urban or rural location – rural

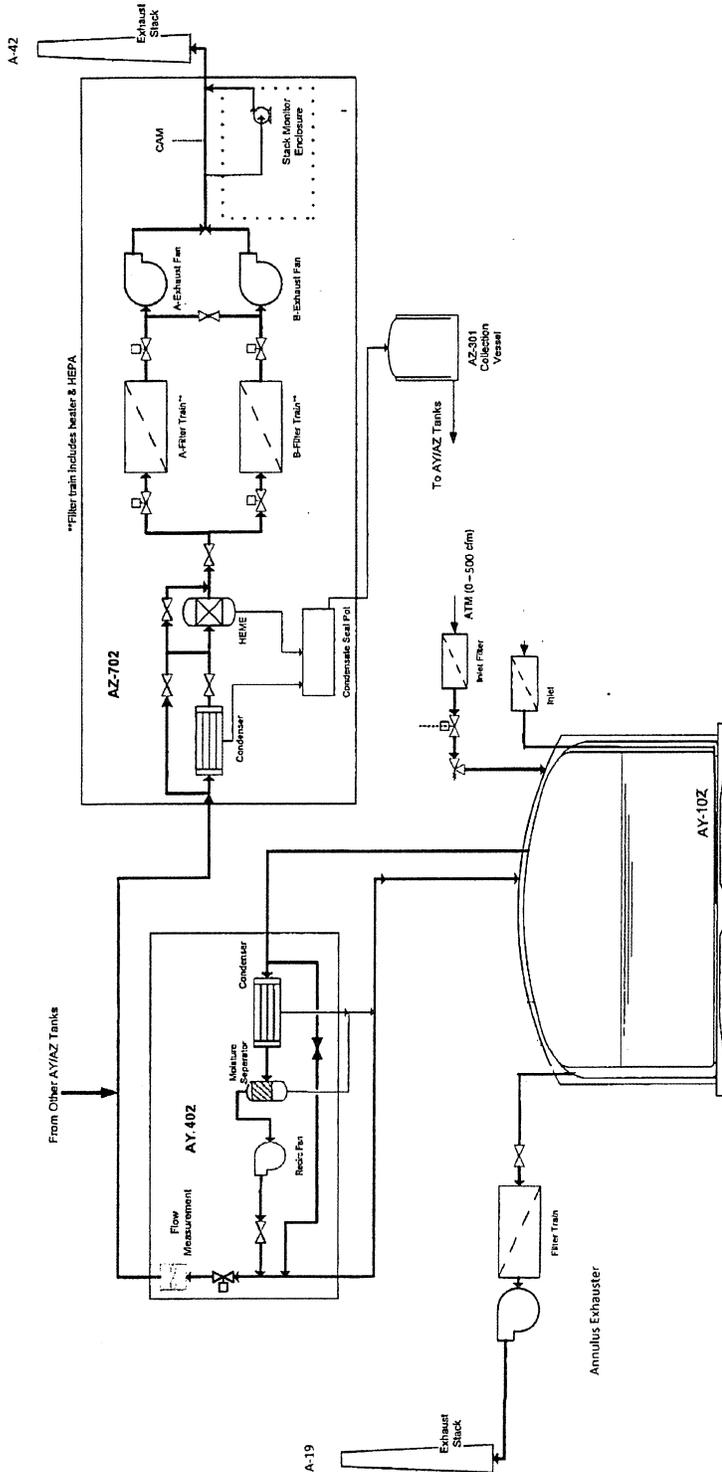
Does your project cause or contribute to a violation of any ambient air quality standard or acceptable source impact level? Yes No



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Appendix A – Existing System

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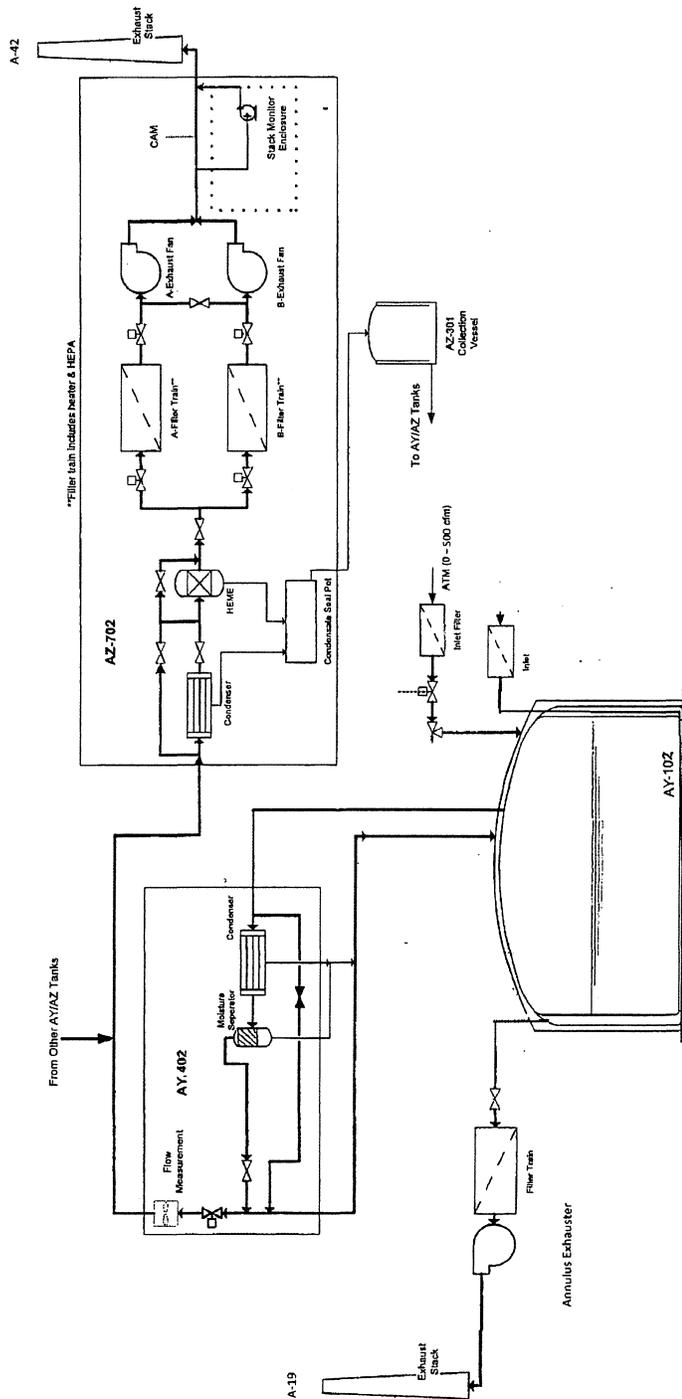
Existing System



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Appendix B – Modified System

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Modified System



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Appendix C – Proposed changes to DE11NWP-001



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NON-RADIOACTIVE AIR EMISSIONS NOTICE OF CONSTRUCTION APPROVAL ORDER CONDITIONS AND RESTRICTIONS DE11NWP-001, Revision __

REGULATORY AUTHORITY

Pursuant to the Washington State Department of Ecology (Ecology) General Regulations for Air Pollution Sources, Chapter 173-400 Washington Administrative Code (WAC), and Controls for New Sources of Toxic Air Pollutants, Chapter 173-460 WAC, Ecology now finds the following:

FINDINGS:

1. The United States Department of Energy proposes to modify their existing facility (Hanford) located in Richland, Washington.
2. A Notice of Construction (NOC) application was submitted on February 11, 2011 and supplemented on April 27, 2011. The application was found to be complete on May 18, 2011.
3. Existent operations of 241-AY and 241-AZ Tank Farms ventilation associated with the NOC application have been permitted under NOC Order 94-07, Revision 3, dated May 7, 2008.
4. Hanford is an existing major stationary source that emits more than 250 tons of a regulated pollutant per year.
5. The proposed project consists of replacement of primary tank ventilation exhaust systems (ventilation systems) for each of the 241-AP and 241-SY tank farms, and component ~~upgrades to modification~~ to the existing ventilation system for 241-AY/AZ tank farm. Activities include installation of two mixer pumps per tank farm during Waste Feed Delivery operations. The tank farm ventilation systems will be constructed, installed, tested, and fully operational in three phases, beginning with 241-AP, to be followed by 241-SY and 241-AY/AZ, respectively.
6. Emissions of criteria pollutants from the proposed project are below the Prevention of Significant Deterioration Significant Emission Rates.
7. Hanford is located in a Class II Area designated as "attainment" for the purpose of NOC permitting for all pollutants.
8. Criteria air pollutant emission increases from the proposed project are below the *de minimis* levels in WAC 173-400-110(5)(d) with the exception of nitrogen oxides (NO_x) and volatile organic compounds (VOCs) and identified Toxic Air Pollutants (TAPs).
9. The proposed project anticipates emission of dimethyl mercury (Chemical Abstract Services [CAS] # 593-74-8), resulting in an ambient consequence above its Acceptable Source Impact Levels (ASIL) of WAC 173-460-150. Emissions of a TAP with ambient consequences above its ASIL require approval of a Second Tier Petition [WAC 173-460-090]. Second Tier



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analysis indicated exhauster emissions are permissible as they fall within the risk limits defined in WAC 173-460-090(7).

10. The proposed installation of an optional portable closed loop independent Cooling Module (ICM) has been retracted and is not part of the application being considered.
11. As proposed, the project would emit 32 TAPs exceeding small quantity emission rates (SQERs) of WAC 173-460-150. All TAPs met the ASILs except for dimethyl mercury (see finding 9, above).
12. The emissions from the annulus are the same as the 241-AY/AZ ventilation system due to the source term being the same. The emission rate will only be a small fraction due to the annulus only containing a small fraction of the waste.
13. Best Available Control Technology (BACT) and Toxics Best Available Control Technology (tBACT) for the 241-SY and 241-AP tank ventilation systems have been determined to be operation of each primary tank ventilation exhauster system not exceeding the maximum ventilation rates in Table 1 with a moisture de-entrainer, heater, pre-filters, and a two-stage High Efficiency Particulate Air (HEPA) filtration system in service in each treatment train. The BACT and tBACT for the 241-AY/AZ Ventilation System have been determined to be the operation of the tank ventilation systems not exceeding the maximum ventilation rates in Table 1 with a condenser, HEME, heater, and two-stage HEPA filtration system in service of the treatment train. The BACT and tBACT for the AY-102 annulus ventilation system have been determined to be the operation of the annulus ventilation systems not exceeding 3,850 scfm with a two stage HEPA filtration system in service in the treatment train.
14. The proposed project, if constructed and operated as herein required, will provide BACT and tBACT.
15. The proposed project, if operated as herein required, will be in accordance with applicable rules and regulations, as set forth in Chapter 173-400 WAC and Chapter 173-460 WAC, and the operation thereof will not result in ambient air quality standards being exceeded.
16. The proposed project will include the addition of the annulus ventilation system for the AY-102 tank because waste exists in the annulus.
17. The project will have no significant impact on air quality.

THEREFORE, IT IS ORDERED that the project as described in said Notice of Construction application, and as detailed in emissions estimates and impact and control technology assessments submitted to the Washington State Department of Ecology in reference thereto, is approved for construction, installation, and operation, provided compliance with the conditions and restrictions described below. This Order shall be identified as NOC ORDER **DE11NWP-001**. This Order does not apply to the existing ventilation systems and will become effective upon each ventilation system, 241-AP, 241-SY, and 241-AY/AZ, becoming fully operational. Upon the effective date of this Order covering the fully operational status of the 241-AY/AZ ventilation system, NOC ORDER 94-07, Revision 3, is voided.



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1.0 APPROVAL CONDITIONS

1.1 Effective Date

The effective date of this authorization shall be that as signed in Section 4.0. All references to procedures or test methods shall be to those in effect as of the effective date of this ORDER.

1.2 Emission Limits

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

1.2.2 Volatile organic compound emissions shall not exceed 10.1 tons per year from the 241-AP, 241-SY and 241-AY/AZ ventilations systems. As the ventilation systems become fully operational the volatile organic emissions from the 241-SY, 241-AP, and 241-AY/AZ combined (241-AY-AZ and AY-102 Annulus) ventilation system shall not exceed 3.1, 3.8, and 3.2 tons per year, respectively. Emissions of VOCs are based upon the operation of two tanks being mixed per tank farm.

1.2.3 All TAPs, as submitted in the Permittee’s Notice of Construction Application (Table 2), shall be below their respective ASIL or approved through a Second Tier review.

1.2.4 Ammonia emissions from the project shall not exceed 190.8 pounds per day from the 241-AP, 241-SY and 241-AY/AZ ventilation systems. As the ventilation systems become fully operational, the ammonia emissions from the 241-SY, 241-AP, and 241-AY/AZ combined ventilation system shall not exceed 58.1, 71.9, and 60.8 pounds per day, respectively. Emissions of ammonia are based upon the operation of two tanks being mixed per tank farm.

1.3 Operational Limits

1.3.1 Normal Annulus and Double-Shell Tank (DST) primary tank ventilation system flow rates during Normal Operations (e.g. storage, retrieval, and sampling) are shown in Table 1. The maximum flow rates for the DST ventilation systems shall not exceed ventilation rates for Maximum Operations (Table 1).

Table 1: Project Farm Ventilation Rates

Tank Farm(s) or Tank	Normal Operations	Maximum Operations
241-SY	1,360 scfm	2,500 scfm
241-AP	1,500 scfm	3,000 scfm
241-AY/AZ	850 scfm	1,000 scfm
<u>AY-102 Annulus</u>	<u>1,000 scfm</u>	<u>3,850 scfm</u>

scfm = standard cubic foot per minute, 1 atmosphere pressure at 20°C



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- 1.3.2** At no time shall more than two of the three tanks in the 241-SY tank farm (241-SY-101 through 241-SY-103) be under active mixing and Waste Feed Delivery operations. Waste Feed Delivery operations are defined as those which mix and transfer waste, including transfers to the Waste Treatment and Immobilization Plant.
- 1.3.3** At no time shall more than two of the eight tanks in the 241-AP Tank Farm (241-AP-101 through 241-AP-108) be under active mixing and Waste Feed Delivery operations.
- 1.3.4** At no time shall more than two of the three ~~four~~ tanks within the 241-AY and 241-AZ Tank Farms [241-AY-101, ~~241-AY-102~~, 241-AZ-101, and 241-AZ-102] be under active mixing and Waste Feed Delivery operations.
- 1.3.5** The ventilation systems shall be operated in compliance with tBACT controls in Finding 11 or 12.
- 1.4 Compliance Demonstration**
- 1.4.1** Compliance with Approval Condition 1.2.1 shall be met by Tier 3 Visible Emissions Survey requirements of the Hanford Air Operating Permit.
- 1.4.2** Should visible emissions be observed which are not solely attributable to water condensation, compliance with Approval Condition 1.2.1 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.
- 1.4.3** Compliance with Approval Condition 1.2.2 shall be demonstrated by VOC stack sampling as described in Section 3.0, and applying these concentration readings with contemporaneous stack flow rate and temperatures to determine mass release rate of VOCs in pounds per year.
- 1.4.4** Compliance with Approval Condition 1.2.3 shall be demonstrated by stack sampling as described in Section 3.0 for TAPs, and applying these concentration readings with contemporaneous stack flow rate and temperatures to determine the mass release rate of these TAPs in pounds and their respective release rate averaging times in WAC 173-460-150.
- 1.4.5** Compliance with Approval Condition 1.2.4 shall be demonstrated by stack sampling as described in Section 3.0 for ammonia, and applying these concentration readings with contemporaneous stack flow rate and temperatures to determine daily release rate of ammonia.
- 1.4.6** Compliance with Approval Condition 1.3.1 shall be demonstrated by stack gas flow and temperature measurement annually.
- 1.4.7** Compliance with Approval Conditions 1.3.2, 1.3.3 and 1.3.4 shall each be demonstrated through operational record keeping provisions of Section 2.4.
- 1.4.8** Compliance with Approval Condition 1.3.5 shall be met by operating the exhauster systems in accordance with tBACT emission controls found for this project.



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2.0 NOTIFICATIONS AND SUBMITTALS

2.1 Addressing

Any required notifications and submittals required under these Approval Conditions shall be sent to:

Washington State Department of Ecology
Nuclear Waste Program
3100 Port of Benton Boulevard
Richland, Washington 99354

2.2 Schedule

A schedule of installation and operation activities for these exhauster systems shall be submitted within thirty (30) days of issuance of this order. Ecology shall be notified 30 days prior to the starting of construction of each tank farm ventilation system, unless construction starts within 30-days of the effective date in which case notification will be accomplished as soon as possible.

2.3 Operational Notice

Notification will be made at least ten (10) days prior to initial testing. The initial testing period may include periodic alternate operation of either the old exhauster or the new exhausters covered by this order. Notification will be made at least ten (10) days prior to the new ventilations systems becoming fully operational.

2.4 Recordkeeping

Specific records shall be kept on the Hanford 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:

1. Records of calibration of stack gas flow rate and temperature measurement devices.
2. Exhauster system stack flow rates and temperatures records.
3. Emission monitoring results required in Section 3.0.
4. Supporting data and calculations to demonstrate compliance as detailed in Approval Conditions 1.4.3, 1.4.4, and 1.4.5.
5. All monitoring and operations records required to operate and maintain the emission control equipment which implements tBACT as described in Section 1.0.
6. Laboratory analysis result summaries taken in accordance with these approval conditions of any samples undertaken after the effective date of this ORDER from 241-AP, 241-SY or 241-AY/AZ tank farm tank headspaces or primary tank ventilation system exhaust which are examined for organic species or other TAPS.
7. Waste Feed Delivery operations will be recorded into operational records sufficient to determine the onset and cessation of such operations for each tank subject to this Order.



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2.5 Reporting

Results of emission assessments conducted pursuant to Section 3.1 shall be submitted to Ecology within ninety (90) days of completion of such assessment.

Identification of any TAP not previously identified within the Notice of Construction Application emissions estimate 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.

Visible emission surveys, conducted pursuant to Compliance Demonstration requirement 1.4.2, shall be submitted to Ecology within thirty (30) days of completion of the survey with an assessment of the cause of visible emissions and a report of the maintenance conducted to maintain the subject exhaust system's tBACT operations.

3.0 EMISSION MONITORING

The following sampling and monitoring are required in order to verify emissions estimates and compliance with Section 1.3, above. The term 'each exhauster system,' herein, shall mean each primary tank ventilation exhauster system within the 241-AP Tank Farm, 241-SY Tank Farm, and 241-AY/AZ Tank Farms.

3.1 Baseline Assessment

All baseline assessments shall be conducted within ninety (90) days of commencement of operations of each exhauster system.

3.1.1 Ammonia Baseline

Ammonia stack concentrations shall be sampled a minimum of three times. 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 pounds per day.

3.1.2 Dimethyl Mercury Baseline

Dimethyl mercury sampling and analysis will be in accord with the United States Environmental Protection Agency (EPA) approved procedures for each exhauster system.

3.2 VOC Emission Assessment

VOC emissions shall be assessed annually in accord with EPA approved procedures for each exhauster system.

3.3 TAPs Emission Assessment

Permittee will develop and implement an annual sampling and analysis plan (SAP) for each exhauster system. Each SAP shall address the emission of a minimum of the three TAPs with the



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highest potential ambient concentration relative to their ASILs of WAC 173-460-150 in addition to dimethyl mercury. The TAPs addressed in the SAP shall be identified from Table 2 and based upon best engineering judgment and most current tank content data. Analytical methods for the analyses shall be the EPA, Occupational Safety and Health Administration (OSHA), or National Institute for Occupational Safety and Health (NIOSH) approved, or by approved equivalent method.

3.4 Ammonia Emission Assessment

In order to maintain reasonable assurance of continued compliance with emission limitations from these exhauster systems, quarterly assessment of ammonia stack emissions will be conducted according to Section 3.1.1. A minimum of three samples shall be used to assess these emissions.

4.0 APPROVAL ORDER AND RESTRICTIONS

Operation of the subject primary tank ventilation systems is intended for the storage, treatment, sampling, and Waste Feed Delivery of waste contained in the tanks as described in the NOC application. For the purposes of this Authorization, "Waste Feed Delivery" includes mixing and pumping as necessary and sufficient for transfer of wastes to or from the subject tank. Waste Feed Delivery operations may encompass waste sampling activity but such sampling shall not, in and of itself, be deemed the basis for identifying operations as Waste Feed Delivery operations.

Approved TAP emissions, for purposes of evaluation of potential future emission increases, shall be as identified within the NOC application and detailed in Table 2 for the 241-AP, 241-SY, and 241-AY/AZ ventilation systems. Approved TAP emissions per ventilation system are detailed in Table 3 for the 241-SY ventilation system, Table 4 for the 241-AP ventilation system, and Table 5 for the 241-AY/AZ ventilation system.

5.0 GENERAL CONDITIONS

All plans, specifications, and other information submitted to the Department of Ecology relative to this project and any authorizations or approvals or denials in relation thereto shall be incorporated herein and made a part thereof.

5.1 Availability of Order and O&M Manual

Legible copies of this Order and the O&M manual shall be available to employees in direct operation of the tank farm exhaust systems, and be available for review upon request by Ecology.

5.2 Registration Fees

The applicant will pay the required registration fees within the deadline date specified on the invoice from Ecology.

5.3 Discontinuing Construction and/or Operations

It shall be grounds for rescission of this approval if physical construction and/or operation is discontinued for a period of eighteen (18) months or more. Ecology may extend the 18-month period upon a satisfactory showing that an extension is justified.



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5.4 Compliance Assurance Access

Access to the source by representatives of Ecology or the EPA shall be permitted upon request. Failure to allow such access is grounds for enforcement action under the federal Clean Air Act or the Washington State Clean Air Act, and may result in revocation of this Approval Order.

5.5 Equipment Operation

Operation of the tank farm ventilation system and related equipment shall be conducted in compliance with all data and specifications submitted as part of the NOC application and in accordance with the O&M manual, unless otherwise approved in writing by Ecology.

5.6 Activities Inconsistent with the NOC Application and this Approval Order

Any activity undertaken by the permittee or others, in a manner that is inconsistent with the NOC application and this determination, shall be subject to Ecology enforcement under applicable regulations.

5.7 Obligations under Other Laws or Regulations

Nothing in this Approval Order shall be construed to relieve the permittee of its obligations under any local, state or federal laws or regulations.

5.8 Modifications

Any modifications to the tank farm ventilation system's operating and maintenance procedures, contrary to information in the NOC application, shall be reported to Ecology at least 60 days before such modification. Such modification may require a new or amended NOC Approval Order.

YOUR RIGHT TO APPEAL

You have a right to appeal this Order to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this Order. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do all of the following within 30 days of the date of receipt of this Order:

- File your appeal and a copy of this Order with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this Order on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.



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ADDRESS AND LOCATION INFORMATION

Street Addresses	Mailing Addresses
Department of Ecology Attn: Appeals Processing Desk 300 Desmond Drive SE Lacey, WA 98503	Department of Ecology Attn: Appeals Processing Desk PO Box 47608 Olympia, WA 98504-7608
Pollution Control Hearings Board 1111 Israel RD SW STE 301 Tumwater, WA 98501	Pollution Control Hearings Board PO Box 40903 Olympia, WA 98504-0903

This Authorization may be modified, suspended, or revoked in whole, or in part, for cause including, but not limited to, the following:

1. Violation of any terms or conditions of this authorization;
2. Obtaining this authorization by misrepresentation, or failure to fully disclose all relevant facts.

The provisions of this authorization are severable and, if any provision of this authorization, or application of any provisions of this authorization to any circumstance, is held invalid, the application of such provision to their circumstances, and the remainder of this authorization, shall not be affected thereby.

The New Source Review Fee has been assessed according to WAC 173-455. No approval of a permit or service for any activity covered in this Order will be valid until the required fee is paid in full.

DATED at Richland, Washington, this _____



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Table 2: Toxic Air Pollutants from the 241-SY, 241-AP, and 241-AY/AZ Ventilation Systems (DE11NWP-001)

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg period)	SQER (lbs/avg. period)	Emissions Above SQER?	ASIL (µg/m ³)	Dispersed Conc. (µg/m ³)
Ethylbenzene	100-41-4	Year	1.41E-03	98.1	76.8	Yes	0.4	7.90E-05
Styrene	100-42-5	24-hr	4.62E-04	0.088	118	No	900	8.79E-04
Benzyl Chloride	100-44-7	Year	1.34E-05	0.932	3.91	No	0.0204	7.51E-07
Nitrogen dioxide	10102-44-0	1-hr	5.51E-02	0.438	1.03	No	470	9.37E-01
n-Nitroso-n-methylethylamine	10595-95-6	Year	1.94E-06	0.135	0.0305	Yes	0.000159	1.09E-07
p-Xylene	106-42-3	24-hr	1.63E-03	0.310	29	No	221	3.09E-03
1,4-Dichlorobenzene	106-46-7	Year	6.21E-05	4.32	17.4	No	0.0909	3.48E-06
1,2-Epoxybutane	106-88-7	24-hr	4.04E-05	0.00769	2.63	No	20	7.67E-05
1,2-Dibromoethane	106-93-4	Year	7.97E-05	5.54	2.71	Yes	0.0141	4.46E-06
1,3-Butadiene	106-99-0	Year	1.99E-04	13.9	1.13	Yes	0.00588	1.12E-05
Acrolein	107-02-8	24-hr	2.98E-06	0.000568	0.00789	No	0.06	5.66E-06
Allyl Chloride	107-05-1	Year	1.02E-05	0.709	32	No	0.167	5.71E-07
1,2-Dichloroethane	107-06-2	Year	1.63E-03	113.20	7.39	Yes	0.0385	9.12E-05
Acrylonitrile	107-13-1M	Year	1.23E-05	0.856	0.662	Yes	0.00345	6.90E-07
Vinyl acetate	108-05-4	24-hr	4.48E-07	8.53E-05	26.3	No	200	8.51E-07
Methyl Isobutyl Ketone	108-10-1	24-hr	2.77E-03	0.527	394	No	3000	5.26E-03
m-Xylene	108-38-3M	24-hr	9.42E-04	0.179	29	No	221	1.79E-03
3-Methylphenol	108-39-4	24-hr	4.74E-06	0.00090	78.9	No	600	9.01E-06
Toluene	108-88-3	24-hr	4.09E-02	7.78	657	No	5000	7.76E-02
Chlorobenzene	108-90-7	24-hr	4.99E-04	0.095	131	No	1000	9.49E-04
Phenol	108-95-2	24-hr	8.14E-03	1.55	26.3	No	200	1.55E-02



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Table 2: Toxic Air Pollutants from the 241-SY, 241-AP, and 241-AY/AZ Ventilation Systems (DE11NWP-001)

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg period)	SQER (lbs/avg. period)	Emissions Above SQER?	ASIL (µg/m ³)	Dispersed Conc. (µg/m ³)
n-Hexane	110-54-3	24-hr	5.16E-03	0.98	92	No	700	9.81E-03
Cyclohexane	110-82-7	24-hr	1.58E-03	0.301	789	No	6001	3.01E-03
Ethylene glycol monoethyl ether	111-76-2	24-hr	1.52E-04	0.029	1710	No	13000	2.88E-04
Propylene	115-07-1	24-hr	3.93E-03	0.748	394	No	3000	7.46E-03
Di(2-ethylhexyl)phthalate	117-81-7	Year	7.46E-07	0.0518	8	No	0.0417	4.18E-08
1,4-Dioxane	123-91-1	Year	7.02E-04	48.8	24.9	Yes	0.13	3.93E-05
Perchloroethylene	127-18-4	Year	1.62E-03	112.4	32.4	Yes	0.169	9.06E-05
Vanadium Pentoxide	1314-62-1	1-hr	1.17E-04	0.00093	0.0657	No	30	1.99E-03
Polychlorinated Biphenyls (PCBs)	1336-36-3	Year	2.04E-05	1.415	0.336	Yes	0.00175	1.14E-06
Trans-1,2-dichloroethene	156-60-5	24-hr	1.19E-07	2.27E-05	106	No	807	2.27E-07
Butylated hydroxyanisole	25013-16-5	Year	1.42E-06	0.0989	3360	No	17.5	7.97E-08
Formaldehyde	50-00-0	Year	2.35E-05	1.64	32	No	0.167	1.32E-06
n-Nitrosodiethylamine	55-18-5	Year	1.94E-06	0.135	0.0192	Yes	0.0001	1.09E-07
Carbon Tetrachloride	56-23-5	Year	1.64E-03	114.0	4.57	Yes	0.0238	9.18E-05
1,1-Dimethylhydrazine	57-14-7	24-hr	1.74E-06	0.000332	0.0657	No	0.5	3.31E-06
Propylene Glycol	57-55-6	24-hr	2.25E-04	0.0429	3.75	No	28.5	4.28E-04
n-Nitrosomorpholine	59-89-2	Year	8.96E-06	0.623	0.101	Yes	0.000526	5.01E-07
Dimethyl Mercury	593-74-8	24-hr	4.12E-08	7.85E-06	1.00E-99	Yes	1.00E-99	7.83E-08
Acetamide	60-35-5	Year	6.05E-06	0.421	9.59	No	0.05	3.39E-07
n-Nitrosodimethylamine	62-75-9	Year	2.65E-03	184	0.0416	Yes	0.000217	1.48E-04
n-Nitrosodi-n-propylamine	621-64-7	Year	1.94E-06	0.135	0.0959	Yes	0.0005	1.09E-07
Methyl Isocyanate	624-83-9	24-hr	1.77E-06	0.000337	0.131	No	1	3.36E-06



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Table 2: Toxic Air Pollutants from the 241-SY, 241-AP, and 241-AY/AZ Ventilation Systems (DE11NWP-001)

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg period)	SQER (lbs/avg. period)	Emissions Above SQER?	ASIL (µg/m ³)	Dispersed Conc. (µg/m ³)
Carbon monoxide	630-08-0	1-hr	3.73E-02	0.296	50.4	No	23000	6.34E-01
Methyl Alcohol	67-56-1	24-hr	7.11E-02	13.5	526	No	4000	1.35E-01
Isopropyl Alcohol	67-63-0	1-hr	3.37E-03	0.0268	7.01	No	3200	5.74E-02
Chloroform	67-66-3	Year	1.64E-03	114.0	8.35	Yes	0.0435	9.18E-05
Hexachloroethane	67-72-1	Year	1.68E-03	117.0	17.4	Yes	0.0909	9.42E-05
Benzene	71-43-2	Year	1.63E-03	113.2	6.62	Yes	0.0345	9.12E-05
1,1,1-Trichloroethane	71-55-6	24-hr	6.74E-05	0.0128	131	No	1000	1.28E-04
Methyl Bromide	74-83-9	24-hr	6.42E-05	0.0122	0.657	No	5	1.22E-04
Methyl Chloride	74-87-3	24-hr	2.24E-04	0.0426	11.8	No	90	4.25E-04
Hydrogen Cyanide	74-90-8	24-hr	5.69E-06	0.00108	1.18	No	9	1.08E-05
Lead and compounds (NOS)	7439-92-1	Year	6.55E-05	4.56	16	No	0.0833	3.67E-06
Manganese & Compounds	7439-96-5	24-hr	6.55E-05	0.0125	0.00526	Yes	0.04	1.25E-04
Mercury, Elemental	7439-97-6	24-hr	1.99E-05	0.00378	0.0118	No	0.09	3.77E-05
Arsenic & Inorganic Arsenic Compounds	7440-38-2	Year	6.55E-05	4.56	0.0581	Yes	0.000303	3.67E-06
Beryllium & Compounds (NOS)	7440-41-7	Year	3.28E-06	0.228	0.08	Yes	0.000417	1.84E-07
Cadmium & Compounds	7440-43-9	Year	3.28E-05	2.28	0.0457	Yes	0.000238	1.84E-06
Chromium Hexavalent: Soluble, except Chromic Trioxide	7440-47-3	Year	1.00E-04	6.98	0.00128	Yes	6.67E-06	5.63E-06
Cobalt	7440-48-4	24-hr	6.55E-05	0.0125	0.013	No	0.1	1.25E-04
Copper & Compounds	7440-50-8	1-hr	3.28E-05	0.000261	0.219	No	100	5.58E-04
Sulfur dioxide	7446-09-05	1-hr	2.43E-04	0.00193	1.45	No	660	4.13E-03
Ethyl Chloride	75-00-3	24-hr	2.87E-04	0.0546	3940	No	30000	5.44E-04



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Table 2: Toxic Air Pollutants from the 241-SY, 241-AP, and 241-AY/AZ Ventilation Systems (DE11NWP-001)

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg period)	SQER (lbs/avg. period)	Emissions Above SQER?	ASIL (µg/m ³)	Dispersed Conc. (µg/m ³)
Vinyl Chloride	75-01-4	Year	1.64E-03	114.0	2.46	Yes	0.0128	9.18E-05
Acetonitrile	75-05-8	Year	3.83E-03	266	11500	No	60	2.14E-04
Acetaldehyde	75-07-0	Year	4.10E-03	285	71	Yes	0.37	2.30E-04
Dichloromethane	75-09-2	Year	1.11E-02	773	192	Yes	1	6.23E-04
Carbon disulfide	75-15-0	24-hr	4.01E-04	0.0763	105	No	800	7.61E-04
Ethylene oxide	75-21-8	Year	7.73E-06	0.538	2.19	No	0.0114	4.33E-07
Bromoform	75-25-2	Year	8.76E-06	0.609	174	No	0.909	4.91E-07
1,1-Dichloroethane	75-34-3	Year	2.72E-05	1.89	120	No	0.625	1.52E-06
1,1-Dichloroethylene	75-35-4	24-hr	3.13E-03	0.595	26.3	No	200	5.94E-03
Chlorodifluoromethane	75-45-6	24-hr	9.98E-04	0.190	6570	No	50000	1.90E-03
1-Chloro-1,1-difluoroethane	75-68-3	24-hr	1.08E-03	0.206	6570	No	50000	2.06E-03
Ammonia	7664-41-7	24-hr	1.00E+00	191	9.31	Yes	70.8	1.90E+00
Selenium & Selenium Compounds (other than Hydrogen Selenide)	7782-49-2	24-hr	5.70E-06	0.00109	2.63	No	20	1.08E-05
1,2-Dichloropropane	78-87-5	Year	4.78E-05	3.32	19.2	No	0.1	2.68E-06
Methyl Ethyl Ketone	78-93-3	24-hr	9.59E-03	1.83	657	No	5000	1.82E-02
1,1,2-Trichloroethane	79-00-5	Year	5.92E-04	41.1	12	Yes	0.0625	3.31E-05
Trichloroethylene	79-01-6	Year	1.63E-03	113.2	95.9	Yes	0.5	9.12E-05
Acrylic Acid	79-10-7	24-hr	6.51E-04	0.124	0.131	No	1	1.24E-03
1,1,2,2-Tetrachloroethane	79-34-5	Year	7.45E-04	51.8	3.3	Yes	0.0172	4.17E-05
2-Nitropropane	79-46-9M	24-hr	1.91E-04	0.0365	2.63	No	20	3.64E-04
Hexachlorobutadiene	87-68-3	Year	1.16E-03	80.8	8.73	Yes	0.0455	6.50E-05
Naphthalene	91-20-3M	Year	1.30E-05	0.903	5.64	No	0.0294	7.28E-07



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Table 2: Toxic Air Pollutants from the 241-SY, 241-AP, and 241-AY/AZ Ventilation Systems (DE11NWP-001)

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg period)	SQER (lbs/avg. period)	Emissions Above SQER?	ASIL ($\mu\text{g}/\text{m}^3$)	Dispersed Conc. ($\mu\text{g}/\text{m}^3$)
n-Nitroso-di-n-butylamine	924-16-3	Year	1.94E-06	0.135	0.062	Yes	0.000323	1.09E-07
n-Nitrosopyrrolidine	930-55-2	Year	1.94E-06	0.135	0.32	No	0.00167	1.09E-07
o-Xylene	95-47-6	24-hr	1.61E-03	0.306	29	No	221	3.05E-03
2-Methylphenol	95-48-7M	24-hr	2.85E-05	0.00542	78.9	No	600	5.41E-05
Cumene	98-82-8	24-hr	7.03E-05	0.0134	52.6	No	400	1.34E-04

Note: CAS # = Chemical Abstracts Service registry number



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**Table 3: Toxic Air Pollutants from the 241-SY Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Ethylbenzene	100-41-4	Year	4.29E-04	2.98E+01	76.8	No
Styrene	100-42-5	24-hr	1.41E-04	2.69E-02	118	No
Benzyl Chloride	100-44-7	Year	4.08E-06	2.84E-01	3.91	No
Nitrogen dioxide	10102-44-0	1-hr	1.68E-02	1.33E-01	1.03	No
n-Nitroso-n-methylethylamine	10595-95-6	Year	5.90E-07	4.10E-02	0.0305	Yes
p-Xylene	106-42-3	24-hr	4.96E-04	9.45E-02	29	No
1,4-Dichlorobenzene	106-46-7	Year	1.89E-05	1.31E+00	17.4	No
1,2-Epoxybutane	106-88-7	24-hr	1.23E-05	2.34E-03	2.63	No
1,2-Dibromoethane	106-93-4	Year	2.43E-05	1.69E+00	2.71	No
1,3-Butadiene	106-99-0	Year	6.06E-05	4.21E+00	1.13	Yes
Acrolein	107-02-8	24-hr	9.07E-07	1.73E-04	0.00789	No
Allyl Chloride	107-05-1	Year	3.10E-06	2.16E-01	32	No
1,2-Dichloroethane	107-06-2	Year	4.96E-04	3.45E+01	7.39	Yes
Acrylonitrile	107-13-1M	Year	3.75E-06	2.61E-01	0.662	No
Vinyl acetate	108-05-4	24-hr	1.36E-07	2.59E-05	26.3	No
Methyl Isobutyl Ketone	108-10-1	24-hr	8.42E-04	1.60E-01	394	No
m-Xylene	108-38-3M	24-hr	2.87E-04	5.47E-02	29	No
3-Methylphenol	108-39-4	24-hr	1.44E-06	2.74E-04	78.9	No
Toluene	108-88-3	24-hr	1.24E-02	2.36E+00	657	No
Chlorobenzene	108-90-7	24-hr	1.52E-04	2.90E-02	131	No



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**Table 3: Toxic Air Pollutants from the 241-SY Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Phenol	108-95-2	24-hr	2.48E-03	4.72E-01	26.3	No
n-Hexane	110-54-3	24-hr	1.57E-03	2.99E-01	92	No
Cyclohexane	110-82-7	24-hr	4.81E-04	9.16E-02	789	No
Ethylene glycol monoethyl ether	111-76-2	24-hr	4.61E-05	8.78E-03	1710	No
Propylene	115-07-1	24-hr	1.20E-03	2.29E-01	394	No
Di(2-ethylhexyl)phthalate	117-81-7	Year	2.27E-07	1.58E-02	8	No
1,4-Dioxane	123-91-1	Year	2.14E-04	1.49E+01	24.9	No
Perchloroethylene	127-18-4	Year	4.92E-04	3.42E+01	32.4	Yes
Vanadium Pentoxide	1314-62-1	1-hr	3.57E-05	2.83E-04	0.0657	No
Polychlorinated Biphenyls (PCBs)	1336-36-3	Year	6.19E-06	4.30E-01	0.336	Yes
Trans-1,2-dichloroethene	156-60-5	24-hr	3.63E-08	6.91E-06	106	No
Butylated hydroxyanisole	25013-16-5	Year	4.33E-07	3.01E-02	3360	No
Formaldehyde	50-00-0	Year	7.16E-06	4.98E-01	32	No
n-Nitrosodiethylamine	55-18-5	Year	5.90E-07	4.10E-02	0.0192	Yes
Carbon Tetrachloride	56-23-5	Year	4.99E-04	3.47E+01	4.57	Yes
1,1-Dimethylhydrazine	57-14-7	24-hr	5.30E-07	1.01E-04	0.0657	No
Propylene Glycol	57-55-6	24-hr	6.85E-05	1.30E-02	3.75	No
n-Nitrosomorpholine	59-89-2	Year	2.73E-06	1.90E-01	0.101	Yes
Dimethyl Mercury	593-74-8	24-hr	1.25E-08	2.38E-06	1.00E-99	Yes



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**Table 3: Toxic Air Pollutants from the 241-SY Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Acetamide	60-35-5	Year	1.84E-06	1.28E-01	9.59	No
n-Nitrosodimethylamine	62-75-9	Year	8.05E-04	5.60E+01	0.0416	Yes
n-Nitrosodi-n-propylamine	621-64-7	Year	5.90E-07	4.10E-02	0.0959	No
Methyl Isocyanate	624-83-9	24-hr	5.38E-07	1.02E-04	0.131	No
Carbon monoxide	630-08-0	1-hr	1.13E-02	8.97E-02	50.4	No
Methyl Alcohol	67-56-1	24-hr	2.16E-02	4.11E+00	526	No
Isopropyl Alcohol	67-63-0	1-hr	1.03E-03	8.17E-03	7.01	No
Chloroform	67-66-3	Year	4.99E-04	3.47E+01	8.35	Yes
Hexachloroethane	67-72-1	Year	5.12E-04	3.56E+01	17.4	Yes
Benzene	71-43-2	Year	4.96E-04	3.45E+01	6.62	Yes
1,1,1-Trichloroethane	71-55-6	24-hr	2.05E-05	3.90E-03	131	No
Methyl Bromide	74-83-9	24-hr	1.95E-05	3.71E-03	0.657	No
Methyl Chloride	74-87-3	24-hr	6.81E-05	1.30E-02	11.8	No
Hydrogen Cyanide	74-90-8	24-hr	1.73E-06	3.30E-04	1.18	No
Lead and compounds (NOS)	7439-92-1	Year	1.99E-05	1.38E+00	16	No
Manganese & Compounds	7439-96-5	24-hr	1.99E-05	3.79E-03	0.00526	No
Mercury, Elemental	7439-97-6	24-hr	6.05E-06	1.15E-03	0.0118	No
Arsenic & Inorganic Arsenic Compounds	7440-38-2	Year	1.99E-05	1.38E+00	0.0581	Yes
Beryllium & Compounds (NOS)	7440-41-7	Year	1.00E-06	6.95E-02	0.08	No



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**Table 3: Toxic Air Pollutants from the 241-SY Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Cadmium & Compounds	7440-43-9	Year	1.00E-05	6.95E-01	0.0457	Yes
Chromium Hexavalent: Soluble, except Chromic Trioxide	7440-47-3	Year	3.06E-05	2.13E+00	0.00128	Yes
Cobalt	7440-48-4	24-hr	1.99E-05	3.79E-03	0.013	No
Copper & Compounds	7440-50-8	1-hr	1.00E-05	7.94E-05	0.219	No
Sulfur dioxide	7446-09-05	1-hr	7.39E-05	5.87E-04	1.45	No
Ethyl Chloride	75-00-3	24-hr	8.72E-05	1.66E-02	3940	No
Vinyl Chloride	75-01-4	Year	4.99E-04	3.47E+01	2.46	Yes
Acetonitrile	75-05-8	Year	1.16E-03	8.06E+01	11500	No
Acetaldehyde	75-07-0	Year	1.25E-03	8.69E+01	71	Yes
Dichloromethane	75-09-2	Year	3.39E-03	2.36E+02	192	Yes
Carbon disulfide	75-15-0	24-hr	1.22E-04	2.32E-02	105	No
Ethylene oxide	75-21-8	Year	2.35E-06	1.63E-01	2.19	No
Bromoform	75-25-2	Year	2.67E-06	1.86E-01	174	No
1,1-Dichloroethane	75-34-3	Year	8.28E-06	5.76E-01	120	No
1,1-Dichloroethylene	75-35-4	24-hr	9.51E-04	1.81E-01	26.3	No
Chlorodifluoromethane	75-45-6	24-hr	3.04E-04	5.79E-02	6570	No
1-Chloro-1,1-difluoroethane	75-68-3	24-hr	3.30E-04	6.29E-02	6570	No
Ammonia	7664-41-7	24-hr	3.05E-01	5.81E+01	9.31	Yes



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**Table 3: Toxic Air Pollutants from the 241-SY Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Selenium & Selenium Compounds (other than Hydrogen Selenide)	7782-49-2	24-hr	1.73E-06	3.30E-04	2.63	No
1,2-Dichloropropane	78-87-5	Year	1.46E-05	1.02E+00	19.2	No
Methyl Ethyl Ketone	78-93-3	24-hr	2.92E-03	5.56E-01	657	No
1,1,2-Trichloroethane	79-00-5	Year	1.80E-04	1.25E+01	12	Yes
Trichloroethylene	79-01-6	Year	4.96E-04	3.45E+01	95.9	No
Acrylic Acid	79-10-7	24-hr	1.98E-04	3.77E-02	0.131	No
1,1,2,2-Tetrachloroethane	79-34-5	Year	2.27E-04	1.58E+01	3.3	Yes
2-Nitropropane	79-46-9M	24-hr	5.83E-05	1.11E-02	2.63	No
Hexachlorobutadiene	87-68-3	Year	3.53E-04	2.45E+01	8.73	Yes
Naphthalene	91-20-3M	Year	3.95E-06	2.75E-01	5.64	No
n-Nitroso-di-n-butylamine	924-16-3	Year	5.90E-07	4.10E-02	0.062	No
n-Nitrosopyrrolidine	930-55-2	Year	5.90E-07	4.10E-02	0.32	No
o-Xylene	95-47-6	24-hr	4.89E-04	9.31E-02	29	No
2-Methylphenol	95-48-7M	24-hr	8.66E-06	1.65E-03	78.9	No
Cumene	98-82-8	24-hr	2.14E-05	4.08E-03	52.6	No

Note: CAS # = Chemical Abstracts Service registry number



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**Table 4: Toxic Air Pollutants from the 241-AP Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Ethylbenzene	100-41-4	Year	5.32E-04	3.70E+01	76.8	No
Styrene	100-42-5	24-hr	1.74E-04	3.32E-02	118	No
Benzyl Chloride	100-44-7	Year	5.05E-06	3.51E-01	3.91	No
Nitrogen dioxide	10102-44-0	1-hr	2.08E-02	1.65E-01	1.03	No
n-Nitroso-n-methylethylamine	10595-95-6	Year	7.30E-07	5.08E-02	0.0305	Yes
p-Xylene	106-42-3	24-hr	6.14E-04	1.17E-01	29	No
1,4-Dichlorobenzene	106-46-7	Year	2.34E-05	1.63E+00	17.4	No
1,2-Epoxybutane	106-88-7	24-hr	1.52E-05	2.90E-03	2.63	No
1,2-Dibromoethane	106-93-4	Year	3.00E-05	2.09E+00	2.71	No
1,3-Butadiene	106-99-0	Year	7.51E-05	5.22E+00	1.13	Yes
Acrolein	107-02-8	24-hr	1.12E-06	2.14E-04	0.00789	No
Allyl Chloride	107-05-1	Year	3.84E-06	2.67E-01	32	No
1,2-Dichloroethane	107-06-2	Year	6.14E-04	4.27E+01	7.39	Yes
Acrylonitrile	107-13-1M	Year	4.64E-06	3.23E-01	0.662	No
Vinyl acetate	108-05-4	24-hr	1.69E-07	3.21E-05	26.3	No
Methyl Isobutyl Ketone	108-10-1	24-hr	1.04E-03	1.99E-01	394	No
m-Xylene	108-38-3M	24-hr	3.55E-04	6.76E-02	29	No
3-Methylphenol	108-39-4	24-hr	1.79E-06	3.40E-04	78.9	No
Toluene	108-88-3	24-hr	1.54E-02	2.93E+00	657	No
Chlorobenzene	108-90-7	24-hr	1.88E-04	3.58E-02	131	No



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**Table 4: Toxic Air Pollutants from the 241-AP Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Phenol	108-95-2	24-hr	3.07E-03	5.84E-01	26.3	No
n-Hexane	110-54-3	24-hr	1.94E-03	3.70E-01	92	No
Cyclohexane	110-82-7	24-hr	5.96E-04	1.14E-01	789	No
Ethylene glycol monoethyl ether	111-76-2	24-hr	5.71E-05	1.09E-02	1710	No
Propylene	115-07-1	24-hr	1.48E-03	2.82E-01	394	No
Di(2-ethylhexyl)phthalate	117-81-7	Year	2.81E-07	1.95E-02	8	No
1,4-Dioxane	123-91-1	Year	2.65E-04	1.84E+01	24.9	No
Perchloroethylene	127-18-4	Year	6.09E-04	4.24E+01	32.4	Yes
Vanadium Pentoxide	1314-62-1	1-hr	4.42E-05	3.51E-04	0.0657	No
Polychlorinated Biphenyls (PCBs)	1336-36-3	Year	7.67E-06	5.33E-01	0.336	Yes
Trans-1,2-dichloroethene	156-60-5	24-hr	4.50E-08	8.57E-06	106	No
Butylated hydroxyanisole	25013-16-5	Year	5.36E-07	3.73E-02	3360	No
Formaldehyde	50-00-0	Year	8.87E-06	6.16E-01	32	No
n-Nitrosodiethylamine	55-18-5	Year	7.30E-07	5.08E-02	0.0192	Yes
Carbon Tetrachloride	56-23-5	Year	6.18E-04	4.29E+01	4.57	Yes
1,1-Dimethylhydrazine	57-14-7	24-hr	6.56E-07	1.25E-04	0.0657	No
Propylene Glycol	57-55-6	24-hr	8.48E-05	1.62E-02	3.75	No
n-Nitrosomorpholine	59-89-2	Year	3.37E-06	2.35E-01	0.101	Yes
Dimethyl Mercury	593-74-8	24-hr	1.55E-08	2.96E-06	1.00E-99	Yes



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**Table 4: Toxic Air Pollutants from the 241-AP Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Acetamide	60-35-5	Year	2.28E-06	1.59E-01	9.59	No
n-Nitrosodimethylamine	62-75-9	Year	9.97E-04	6.93E+01	0.0416	Yes
n-Nitrosodi-n-propylamine	621-64-7	Year	7.30E-07	5.08E-02	0.0959	No
Methyl Isocyanate	624-83-9	24-hr	6.66E-07	1.27E-04	0.131	No
Carbon monoxide	630-08-0	1-hr	1.40E-02	1.12E-01	50.4	No
Methyl Alcohol	67-56-1	24-hr	2.68E-02	5.10E+00	526	No
Isopropyl Alcohol	67-63-0	1-hr	1.27E-03	1.01E-02	7.01	No
Chloroform	67-66-3	Year	6.18E-04	4.29E+01	8.35	Yes
Hexachloroethane	67-72-1	Year	6.34E-04	4.41E+01	17.4	Yes
Benzene	71-43-2	Year	6.14E-04	4.27E+01	6.62	Yes
1,1,1-Trichloroethane	71-55-6	24-hr	2.54E-05	4.84E-03	131	No
Methyl Bromide	74-83-9	24-hr	2.42E-05	4.61E-03	0.657	No
Methyl Chloride	74-87-3	24-hr	8.43E-05	1.60E-02	11.8	No
Hydrogen Cyanide	74-90-8	24-hr	2.14E-06	4.09E-04	1.18	No
Lead and compounds (NOS)	7439-92-1	Year	2.47E-05	1.72E+00	16	No
Manganese & Compounds	7439-96-5	24-hr	2.47E-05	4.70E-03	0.00526	No
Mercury, Elemental	7439-97-6	24-hr	7.49E-06	1.43E-03	0.0118	No
Arsenic & Inorganic Arsenic Compounds	7440-38-2	Year	2.47E-05	1.72E+00	0.0581	Yes
Beryllium & Compounds (NOS)	7440-41-7	Year	1.24E-06	8.61E-02	0.08	Yes



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**Table 4: Toxic Air Pollutants from the 241-AP Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Cadmium & Compounds	7440-43-9	Year	1.24E-05	8.61E-01	0.0457	Yes
Chromium Hexavalent: Soluble, except Chromic Trioxide	7440-47-3	Year	3.79E-05	2.63E+00	0.00128	Yes
Cobalt	7440-48-4	24-hr	2.47E-05	4.70E-03	0.013	No
Copper & Compounds	7440-50-8	1-hr	1.24E-05	9.82E-05	0.219	No
Sulfur dioxide	7446-09-05	1-hr	9.15E-05	7.26E-04	1.45	No
Ethyl Chloride	75-00-3	24-hr	1.08E-04	2.06E-02	3940	No
Vinyl Chloride	75-01-4	Year	6.18E-04	4.29E+01	2.46	Yes
Acetonitrile	75-05-8	Year	1.44E-03	1.00E+02	11500	No
Acetaldehyde	75-07-0	Year	1.55E-03	1.07E+02	71	Yes
Dichloromethane	75-09-2	Year	4.19E-03	2.91E+02	192	Yes
Carbon disulfide	75-15-0	24-hr	1.51E-04	2.87E-02	105	No
Ethylene oxide	75-21-8	Year	2.91E-06	2.03E-01	2.19	No
Bromoform	75-25-2	Year	3.30E-06	2.29E-01	174	No
1,1-Dichloroethane	75-34-3	Year	1.03E-05	7.13E-01	120	No
1,1-Dichloroethylene	75-35-4	24-hr	1.18E-03	2.24E-01	26.3	No
Chlorodifluoromethane	75-45-6	24-hr	3.76E-04	7.16E-02	6570	No
1-Chloro-1,1-difluoroethane	75-68-3	24-hr	4.08E-04	7.77E-02	6570	No
Ammonia	7664-41-7	24-hr	3.78E-01	7.19E+01	9.31	Yes



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**Table 4: Toxic Air Pollutants from the 241-AP Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Selenium & Selenium Compounds (other than Hydrogen Selenide)	7782-49-2	24-hr	2.15E-06	4.09E-04	2.63	No
1,2-Dichloropropane	78-87-5	Year	1.80E-05	1.25E+00	19.2	No
Methyl Ethyl Ketone	78-93-3	24-hr	3.61E-03	6.88E-01	657	No
1,1,2-Trichloroethane	79-00-5	Year	2.23E-04	1.55E+01	12	Yes
Trichloroethylene	79-01-6	Year	6.14E-04	4.27E+01	95.9	No
Acrylic Acid	79-10-7	24-hr	2.45E-04	4.67E-02	0.131	No
1,1,2,2-Tetrachloroethane	79-34-5	Year	2.81E-04	1.95E+01	3.3	Yes
2-Nitropropane	79-46-9M	24-hr	7.21E-05	1.37E-02	2.63	No
Hexachlorobutadiene	87-68-3	Year	4.38E-04	3.04E+01	8.73	Yes
Naphthalene	91-20-3M	Year	4.90E-06	3.40E-01	5.64	No
n-Nitroso-di-n-butylamine	924-16-3	Year	7.30E-07	5.08E-02	0.062	No
n-Nitrosopyrrolidine	930-55-2	Year	7.30E-07	5.08E-02	0.32	No
o-Xylene	95-47-6	24-hr	6.05E-04	1.15E-01	29	No
2-Methylphenol	95-48-7M	24-hr	1.07E-05	2.04E-03	78.9	No
Cumene	98-82-8	24-hr	2.65E-05	5.05E-03	52.6	No

Note: CAS # = Chemical Abstracts Service registry number



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**Table 5: Toxic Air Pollutants from the 241-AY/AZ Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Ethylbenzene	100-41-4	Year	4.50E-04	3.13E+01	76.8	No
Styrene	100-42-5	24-hr	1.47E-04	2.81E-02	118	No
Benzyl Chloride	100-44-7	Year	4.27E-06	2.97E-01	3.91	No
Nitrogen dioxide	10102-44-0	1-hr	1.76E-02	1.40E-01	1.03	No
n-Nitroso-n-methylethylamine	10595-95-6	Year	6.18E-07	4.30E-02	0.0305	Yes
p-Xylene	106-42-3	24-hr	5.19E-04	9.89E-02	29	No
1,4-Dichlorobenzene	106-46-7	Year	1.98E-05	1.38E+00	17.4	No
1,2-Epoxybutane	106-88-7	24-hr	1.29E-05	2.45E-03	2.63	No
1,2-Dibromoethane	106-93-4	Year	2.54E-05	1.77E+00	2.71	No
1,3-Butadiene	106-99-0	Year	6.35E-05	4.42E+00	1.13	Yes
Acrolein	107-02-8	24-hr	9.50E-07	1.81E-04	0.00789	No
Allyl Chloride	107-05-1	Year	3.25E-06	2.26E-01	32	No
1,2-Dichloroethane	107-06-2	Year	5.19E-04	3.61E+01	7.39	Yes
Acrylonitrile	107-13-1M	Year	3.93E-06	2.73E-01	0.662	No
Vinyl acetate	108-05-4	24-hr	1.43E-07	2.72E-05	26.3	No
Methyl Isobutyl Ketone	108-10-1	24-hr	8.83E-04	1.68E-01	394	No
m-Xylene	108-38-3M	24-hr	3.00E-04	5.72E-02	29	No
3-Methylphenol	108-39-4	24-hr	1.51E-06	2.88E-04	78.9	No
Toluene	108-88-3	24-hr	1.30E-02	2.48E+00	657	No
Chlorobenzene	108-90-7	24-hr	1.59E-04	3.03E-02	131	No



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**Table 5: Toxic Air Pollutants from the 241-AY/AZ Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Phenol	108-95-2	24-hr	2.60E-03	4.94E-01	26.3	No
n-Hexane	110-54-3	24-hr	1.65E-03	3.13E-01	92	No
Cyclohexane	110-82-7	24-hr	5.04E-04	9.61E-02	789	No
Ethylene glycol monoethyl ether	111-76-2	24-hr	4.83E-05	9.21E-03	1710	No
Propylene	115-07-1	24-hr	1.25E-03	2.39E-01	394	No
Di(2-ethylhexyl)phthalate	117-81-7	Year	2.38E-07	1.65E-02	8	No
1,4-Dioxane	123-91-1	Year	2.24E-04	1.56E+01	24.9	No
Perchloroethylene	127-18-4	Year	5.16E-04	3.59E+01	32.4	Yes
Vanadium Pentoxide	1314-62-1	1-hr	3.74E-05	2.97E-04	0.0657	No
Polychlorinated Biphenyls (PCBs)	1336-36-3	Year	6.49E-06	4.51E-01	0.336	Yes
Trans-1,2-dichloroethene	156-60-5	24-hr	3.81E-08	7.25E-06	106	No
Butylated hydroxyanisole	25013-16-5	Year	4.54E-07	3.15E-02	3360	No
Formaldehyde	50-00-0	Year	7.50E-06	5.22E-01	32	No
n-Nitrosodiethylamine	55-18-5	Year	6.18E-07	4.30E-02	0.0192	Yes
Carbon Tetrachloride	56-23-5	Year	5.23E-04	3.63E+01	4.57	Yes
1,1-Dimethylhydrazine	57-14-7	24-hr	5.55E-07	1.06E-04	0.0657	No
Propylene Glycol	57-55-6	24-hr	7.18E-05	1.37E-02	3.75	No
n-Nitrosomorpholine	59-89-2	Year	2.86E-06	1.99E-01	0.101	Yes
Dimethyl Mercury	593-74-8	24-hr	1.31E-08	2.50E-06	1.00E-99	Yes



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**Table 5: Toxic Air Pollutants from the 241-AY/AZ Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Acetamide	60-35-5	Year	1.93E-06	1.34E-01	9.59	No
n-Nitrosodimethylamine	62-75-9	Year	8.44E-04	5.87E+01	0.0416	Yes
n-Nitrosodi-n-propylamine	621-64-7	Year	6.18E-07	4.30E-02	0.0959	No
Methyl Isocyanate	624-83-9	24-hr	5.64E-07	1.07E-04	0.131	No
Carbon monoxide	630-08-0	1-hr	1.19E-02	9.44E-02	50.4	No
Methyl Alcohol	67-56-1	24-hr	2.27E-02	4.32E+00	526	No
Isopropyl Alcohol	67-63-0	1-hr	1.08E-03	8.54E-03	7.01	No
Chloroform	67-66-3	Year	5.23E-04	3.63E+01	8.35	Yes
Hexachloroethane	67-72-1	Year	5.36E-04	3.73E+01	17.4	Yes
Benzene	71-43-2	Year	5.19E-04	3.61E+01	6.62	Yes
1,1,1-Trichloroethane	71-55-6	24-hr	2.15E-05	4.09E-03	131	No
Methyl Bromide	74-83-9	24-hr	2.05E-05	3.90E-03	0.657	No
Methyl Chloride	74-87-3	24-hr	7.13E-05	1.36E-02	11.8	No
Hydrogen Cyanide	74-90-8	24-hr	1.81E-06	3.46E-04	1.18	No
Lead and compounds (NOS)	7439-92-1	Year	2.09E-05	1.45E+00	16	No
Manganese & Compounds	7439-96-5	24-hr	2.09E-05	3.98E-03	0.00526	No
Mercury, Elemental	7439-97-6	24-hr	6.33E-06	1.21E-03	0.0118	No
Arsenic & Inorganic Arsenic Compounds	7440-38-2	Year	2.09E-05	1.45E+00	0.0581	Yes
Beryllium & Compounds (NOS)	7440-41-7	Year	1.05E-06	7.28E-02	0.08	No



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**Table 5: Toxic Air Pollutants from the 241-AY/AZ Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Cadmium & Compounds	7440-43-9	Year	1.05E-05	7.28E-01	0.0457	Yes
Chromium Hexavalent: Soluble, except Chromic Trioxide	7440-47-3	Year	3.20E-05	2.23E+00	0.00128	Yes
Cobalt	7440-48-4	24-hr	2.09E-05	3.98E-03	0.013	No
Copper & Compounds	7440-50-8	1-hr	1.05E-05	8.31E-05	0.219	No
Sulfur dioxide	7446-09-05	1-hr	7.74E-05	6.14E-04	1.45	No
Ethyl Chloride	75-00-3	24-hr	9.14E-05	1.74E-02	3940	No
Vinyl Chloride	75-01-4	Year	5.23E-04	3.63E+01	2.46	Yes
Acetonitrile	75-05-8	Year	1.22E-03	8.48E+01	11500	No
Acetaldehyde	75-07-0	Year	1.31E-03	9.10E+01	71	Yes
Dichloromethane	75-09-2	Year	3.55E-03	2.47E+02	192	Yes
Carbon disulfide	75-15-0	24-hr	1.28E-04	2.43E-02	105	No
Ethylene oxide	75-21-8	Year	2.47E-06	1.71E-01	2.19	No
Bromoform	75-25-2	Year	2.79E-06	1.94E-01	174	No
1,1-Dichloroethane	75-34-3	Year	8.68E-06	6.03E-01	120	No
1,1-Dichloroethylene	75-35-4	24-hr	9.97E-04	1.90E-01	26.3	No
Chlorodifluoromethane	75-45-6	24-hr	3.18E-04	6.06E-02	6570	No
1-Chloro-1,1-difluoroethane	75-68-3	24-hr	3.45E-04	6.58E-02	6570	No
Ammonia	7664-41-7	24-hr	3.19E-01	6.08E+01	9.31	Yes



Notice of Construction Application

**Table 5: Toxic Air Pollutants from the 241-AY/AZ Ventilation System
(DE11NWP-001)**

Chemical Name	CAS #	Avg. Period	Emissions (g/s)	Emissions (lbs/avg. period)	SQER (lbs/avg. period)	Emissions Above SQER?
Selenium & Selenium Compounds (other than Hydrogen Selenide)	7782-49-2	24-hr	1.82E-06	3.46E-04	2.63	No
1,2-Dichloropropane	78-87-5	Year	1.52E-05	1.06E+00	19.2	No
Methyl Ethyl Ketone	78-93-3	24-hr	3.06E-03	5.82E-01	657	No
1,1,2-Trichloroethane	79-00-5	Year	1.89E-04	1.31E+01	12	Yes
Trichloroethylene	79-01-6	Year	5.19E-04	3.61E+01	95.9	No
Acrylic Acid	79-10-7	24-hr	2.08E-04	3.96E-02	0.131	No
1,1,2,2-Tetrachloroethane	79-34-5	Year	2.37E-04	1.65E+01	3.3	Yes
2-Nitropropane	79-46-9M	24-hr	6.10E-05	1.16E-02	2.63	No
Hexachlorobutadiene	87-68-3	Year	3.70E-04	2.57E+01	8.73	Yes
Naphthalene	91-20-3M	Year	4.14E-06	2.88E-01	5.64	No
n-Nitroso-di-n-butylamine	924-16-3	Year	6.18E-07	4.30E-02	0.062	No
n-Nitrosopyrrolidine	930-55-2	Year	6.18E-07	4.30E-02	0.32	No
o-Xylene	95-47-6	24-hr	5.12E-04	9.76E-02	29	No
2-Methylphenol	95-48-7M	24-hr	9.07E-06	1.73E-03	78.9	No
Cumene	98-82-8	24-hr	2.24E-05	4.27E-03	52.6	No

Note: CAS # = Chemical Abstracts Service registry number