



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

**Statement of Basis**

**Proposed Permit Modification of the  
*Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste  
Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste,  
Part III, Operating Unit Group 10, Waste Treatment and Immobilization Plant,  
WA7890008967***

This page is intentionally left blank.

## Statement of Basis

### **Proposed Permit Modification of the Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit Group 10, Waste Treatment and Immobilization Plant, WA7890008967**

#### **Permittees**

United States Department of Energy  
Office of River Protection  
PO Box 450  
Richland, Washington 99352

Bechtel National, Inc.  
2435 Stevens Center Place  
Richland, Washington 99354

The Washington State Department of Ecology (Ecology) developed this Statement of Basis to fulfill the requirements of Washington Administrative Code (WAC) 173-303-840(2)(f)(iv).

The Statement of Basis provides information on Ecology's decision to modify the *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste*, Part III, Operating Unit Group 10, Waste Treatment and Immobilization Plant (WTP), hereafter called the "WTP Permit."

This modification includes supporting technical information and engineering drawings for construction on the regulated portions of the WTP:

- Pretreatment Facility (PTF).
- Low Activity Waste (LAW) Facility.
- High Level Waste (HLW) Facility.
- Laboratory (LAB) Facility.
- Balance of Facilities (BOF).

This modification also incorporates format changes to the WTP Permit appendices and changes to supporting information. Ecology chose to prepare a Statement of Basis as described in WAC 173-303-840(2)(f)(iv), rather than a Fact Sheet.

We prepared a Statement of Basis for previous major WTP Permit modifications. This process will be followed for all permit modifications that incorporate similar design package information and other changes to the WTP Permit Conditions.

This Statement of Basis is divided into four sections:

- 1.0 Hanford Facility Resource Conservation and Recovery Act Permit.
- 2.0 The WTP Permitting Process.
- 3.0 Procedures for Reaching a Final Decision on the Draft Permit Modification.
- 4.0 Proposed Modifications to the WTP Permit.

Also included at the end of the Statement of Basis are tables, provided by the Permittees, listing the design documents and drawings they submitted for incorporation into the WTP Permit.

## **1.0 Hanford Facility Resource Conservation and Recovery Act Permit (Site-wide Permit)**

Ecology first issued the Site-wide Permit in 1994. The Site-wide Permit provides standard and general facility conditions, as well as unit-specific conditions for the operation, closure, and post-closure care of mixed and dangerous waste treatment, storage, and disposal (TSD) units at Hanford. Approximately 40 TSD units are operating or closing under Resource Conservation and Recovery Act final status standards.

Conditions of the Site-wide Permit are presented in six parts:

- |          |   |
|----------|---|
| Part I   | Standard Conditions.  |
| Part II  | General Facility Conditions.                                    |
| Part III | Unit-Specific Conditions for Final Status Operating Units.      |
| Part IV  | Corrective Action for Past Practice Units (Part IV).            |
| Part V   | Unit-Specific Conditions for Units Undergoing Closure (Part V). |
| Part VI  | Unit-Specific Conditions for Units in Post-Closure (Part VI).   |

The WTP TSD Unit was added to Part III of the Site-wide Permit on September 25, 2002. The WTP Permit portion was effective on October 25, 2002. The WTP TSD Unit is currently being constructed under final permit status standards.

The Washington State Dangerous Waste Regulations in WAC 173-303-830 describe the types of changes or modifications that may be made to a Dangerous Waste Permit issued by Ecology.

The WTP Permit is modified as needed, typically one or more times a year, to incorporate newly permitted units. This includes Class 1, <sup>1</sup>1, 2, and 3 modifications; Agency-Initiated modifications; and minor changes in grammar, consistency, and presentation.

## **2.0 The WTP Permitting Process**

We are using a phased (or stepped) approach to permit the WTP TSD Unit. The first phase was completed on September 25, 2002, with issuance of a final Dangerous Waste Permit allowing construction of the LAW, PTF, HLW, LAB, and BOF facilities to start.

A WTP Interim Compliance Schedule for the United States Department of Energy provides Ecology additional detailed information addressing the submittal of information necessary to support construction of the rest of the WTP TSD Unit and eventual operation.

The second phase of permitting is implementation of the compliance schedule, which requires design and other information to be submitted for Ecology approval before regulated portions of the WTP TSD Unit are constructed.

The third phase of permitting is implementation of the last portion of the compliance schedule, which requires updating portions of the Dangerous Waste Permit Application and then modifying the WTP Permit prior to facility start-up operations. These portions of the WTP Permit are operational in nature and cannot be completed before the design is nearly complete (Contingency Plan, Closure Plan, and Training Plan).

At completion of the three phases of permitting, the WTP TSD Unit will comply with all the applicable requirements of WAC 173-303. Then, after receiving written permission from Ecology, the Permittees can begin treatment and storage of dangerous and mixed waste at the WTP.

The design submittals (second permitting phase) were structured to allow the Permittees to provide design information in roughly the same order as the WTP facilities are constructed.

The design packages start at the lowest level of the facilities (below-grade levels) and are submitted for regulated areas of each level before construction begins. This process was adjusted for some design packages. When the facility process systems are installed on more than one level, the design packages will address the associated components for each level. This prevents confusion caused by one process system description being segmented into multiple design packages.

The WTP Permit organizes design packages into three general groups by the type of regulated equipment:

1. Primary containment (for example, tanks, miscellaneous units [evaporators and melters], and containment buildings).
2. Secondary containment.
3. Other associated regulated equipment (for example, ancillary equipment, equipment associated with miscellaneous units, and instrumentation).

Using tank systems as an example, secondary containment packages include details of the design of secondary containment that must be in place in regulated areas when the floors and walls are built for that level of each facility (floor slope, sump location).

The installation of tanks and other large equipment usually follows construction of the floors and walls. Therefore, a tank package on that level will be included in the WTP Permit before installation (for example, structural details for those tanks or miscellaneous units showing nozzle locations, unit volumes, and tank shell thickness).

The last equipment usually installed on a level for a tank system is the ancillary equipment (for example, piping, pumps, process instrumentation, and electrical equipment). Therefore, the ancillary equipment package that provides details for equipment on that level will be included in the WTP Permit before installation (for example, materials of construction and pump types and their operating limits).

Because each WTP facility consists of multiple levels, many design packages are required. Of the estimated 180 design packages, approximately 40 remain to be incorporated in the WTP Permit.

The primary containment, secondary containment, and the other associated regulated equipment packages for different levels require repetitive information submittals in each package. Using tank systems as an example, most tanks will use the same construction specifications.

The WTP Permit allows the Permittees to reference the previously submitted design information, so some design packages consist mostly of references to information already provided.

### **3.0 Procedures for Reaching a Final Decision on the Draft WTP Permit Modification**

The Washington State Hazardous Waste Management Act (Chapter 70.105, Revised Code of Washington) and the rules declared in WAC Chapter 173-303 regulate the management of dangerous waste in Washington State. WAC 173-303-800 requires facilities that treat, store, and/or dispose of dangerous waste to obtain a permit for these activities.

Regulatory requirements for public notice and involvement on permit modifications are described in WAC 173-303-840(3) and (4). As required by WAC 173-303-840(3)(d), draft modifications to the WTP Permit will have at least a 45-day public comment period. The public comment period for this proposed permit modification begins on October 15, 2013, and ends on December 3, 2013.

Comments must be post-marked, received by e-mail, or hand-delivered no later than close of business (5:00 p.m. PST) December 3, 2013. Direct all written comments to:

Erika Holmes  
Washington State Department of Ecology  
3100 Port of Benton Blvd.  
Richland, Washington 99354  
E-mail address: [hanford@ecy.wa.gov](mailto:hanford@ecy.wa.gov)

Ecology will consider and respond to all written comments submitted by the deadline. Ecology will then make a final permit decision, which will become effective 30 days after Ecology provides notice of the decision to the Permittees and to all who commented. If the final decision includes substantial changes to the WTP Permit because of public comment, we will initiate a new public comment period.

Ecology will provide a Response to Comments document and a notification of the final permit decision to the Permittees and all others who commented. The final permit decision may be appealed within 30 days after issuance of that decision.

Copies of the WTP Permit, including the proposed permit modifications, are available for review at the Hanford Public Information Repositories. For additional information, call the Hanford Cleanup Hotline toll-free at 800-321-2008 or email [hanford@ecy.wa.gov](mailto:hanford@ecy.wa.gov).

### **Hanford Public Information Repositories**

#### **Richland**

United States Department of Ecology  
Nuclear Waste Program Resource Center  
3100 Port of Benton Boulevard  
Richland, Washington 99354  
Contact: Valarie Peery (509) 372-7950

United States Department of Energy  
Administrative Record  
2440 Stevens Drive  
Richland, Washington 99354  
Contact: Heather Childers (509) 376-2530

United States Department of Energy  
Reading Room  
2770 Crimson Way  
Richland, Washington 99354  
Contact: Janice Parthree (509) 375-3308

### **Portland**

Portland State University  
Branford Price Millar Library  
1875 Southwest Park Avenue  
Portland, Oregon 97207  
Contact: Claudia Weston (503) 725-4542

### **Seattle**

University of Washington Suzzallo Library  
PO Box 352900  
Seattle, Washington 98195  
Contact: Hilary Reinert (206) 543-5597

### **Spokane**

Gonzaga University  
Foley Center  
502 East Boone Avenue  
Spokane, Washington 99258  
Contact: John Spencer (509) 313-6110

This Statement of Basis and Public Notice for the proposed permit modification is also available online at <http://www.ecy.wa.gov/programs/nwp/commentperiods.htm>. If special accommodations are needed for public comment, contact Erika Holmes, Ecology, at (509) 412-2244 or (360) 407-6006 (TDD).

## **4.0 Proposed Modifications to the WTP Permit**

This proposed permit modification contains the following packages. New or revised documents submitted with the packages are listed below. See Tables 1 and 2 at the end of this document for the entire list of package documents.

### ***Design Package No. LAW-026C, Rev. 0, Miscellaneous Unit Subsystems for LAW Facility LVP System (LVP Exhausters)***

This design package addresses the installation of Offgas/Vessel Vent Process (LVP) System miscellaneous unit subsystems in the LAW Facility at the +48-foot elevation.

The purpose of the LVP system is to remove gases and particulates from the combined primary offgas and vessel vent streams. The LVP system consists of preheaters, high-efficiency particulate air (HEPA) filters, exhausters, mercury adsorbers, a catalytic oxidizer/reducer, a caustic scrubber, and a caustic collection tank. This permit package only addresses the exhausters.

There are three multistage exhausters (LVP-EXHR-00001A/B/C) with adjustable speed drives that are located downstream of the caustic scrubber. This location maintains the offgas at a negative pressure through all of the abatement processes. These exhausters will be high integrity multi-stage fans with double mechanical seals with purge to ensure that any seal leakage that may develop will be infiltration versus exfiltration.

The exhausters provide the motive force for discharging treated offgas to the atmosphere through the LAW stack. Normally, two exhausters will be running at a time, with the third exhauster in standby. If one exhauster fails, the standby exhauster automatically starts. If the standby exhauster fails to start, the single remaining online exhauster is adequately sized to maintain negative pressure in the melter.

This design package consists of a final assessment report signed by an Independent, Qualified, Registered, Professional Engineer (IQRPE) certifying the:

- LVP Exhauster Design.
- Two Process Flow Diagrams (PFDs) and associated change documents to replace permitted LVP PFDs.
- A mechanical data sheet for the exhausters.
- An engineering specification for exhausters and hoses.
- A technical change notice to the exhauster specification.
- A supplier deviation disposition request to the exhauster specification.
- A corrosion evaluation for melter offgas exhausters.

The complete list of documents is located in Table 1.

***Permit Package No. BOF-001, Rev. 0, Container Storage Area for the Balance of Facilities (Failed Melter Storage Facility)***

This permit package addresses the Container Storage Area located in the Failed Melter Storage Facility (Building 32) at the southeast corner of the WTP Facility. This container storage area is further described in Chapter 4, Section 4.2.1.4.2 of the WTP Permit.

This permit package includes the General Arrangement Drawing, update of WTP Permit Tables III.10.D.A and III.10.D.B, and vendor cut sheets describing a typical commercially available waste container management building and drum spill collection pallet. Container Storage Area packages do not require an IQRPE report.

The Failed Melter Storage Facility will be used primarily to store HLW Melter units that have completed their service life. These units will be received in carbon-steel overpack containers allowing limited hands-on contact. These overpacks will not be opened while the waste melter units are located in this storage facility. The facility is capable of storing up to three overpacked waste melter units at any given time. The spent HLW Melter units will not be stacked.

The Failed Melter Storage Facility may also receive containerized miscellaneous mixed waste. These waste containers will be sealed prior to transport to the Failed Melter Storage Facility. The containers will not be opened while at this storage facility. Waste containers will not be stacked more than two containers high. If wastes containing liquids, or exhibiting the characteristics of ignitability or reactivity are generated, then portable secondary containment that meets the requirements of WAC 173-303-630(7) or WAC 173-303-630(8) will be provided.

The Failed Melter Storage Facility (Building 32) described in this submittal is subject to the following outstanding questions:

- Preliminary estimates of HLW melter waste concentrations indicate that alterations to this facility may be required.
- Depending on future waste characterization data, the design and location of the facility described in this submittal may require alterations. For example, additional radionuclide shielding may be required to reduce personnel exposure levels, which may impact the final design, dimensions, or location of the building.
- Alternatively, future long-term storage decisions for HLW melters that have completed their useful service life may identify another facility suitable for melter storage as a more acceptable alternative to this facility, in which case the WTP Failed Melter Storage Facility would not need to be constructed.

Submittal of this package fulfills the requirements of Compliance Schedule Item 10. However, due to the outstanding uncertainties remaining, Ecology added a new Compliance Schedule Item 46 that requires submittal of final design information associated with the Failed Melter Storage Facility (Building 32) pending resolution of these uncertainties.

The complete list of documents is located in Table 2.

***IQRPE Structural Integrity Assessment Report for the LAW Facility Secondary Containment Bulge Enclosures (LCP/LFP/LOP/RLD)***

This IQRPE report was included in permit modification request 24590-LAW-PCN-ENV-12-001. It describes the design and structural integrity of the installed LAW Facility bulges. A bulge is a metal box located outside of a hard-to-reach cell. The bulges provide secondary containment for hands-on operation and maintenance of process equipment such as pumps, valves, instruments and associated equipment. Bulges provide secondary containment for dangerous waste processing ancillary equipment inside the bulge. A more complete description of bulges is provided in Section 4.2.2.2.2 in Chapter 4 of the WTP Permit.

The bulges were previously addressed in four separate LAW ancillary equipment IQRPE integrity assessment reports listed below, which are located in Appendix 9.11 of the WTP Permit:

- *IQRPE Structural Integrity Assessment Report for LAW LCP Ancillary Equipment, IA-3001932-000*
- *Structural Integrity Assessment of the Low-Activity Waste (LAW) Melter Feed Process System (LFP) Elev. 3'0" Ancillary Equipment, COGEMA-IA-055*

- *IQRPE Structural Integrity Assessment Report for LAW LOP Ancillary Equipment*, IA-3002314-000
- *IQRPE Structural Integrity Assessment Report for LAW RLD Ancillary Equipment*, IA-3001885-000

Combining the LAW bulge design into a single IQRPE structural integrity assessment report more clearly describes the design and structural integrity of the bulges as secondary containment structures. A single report also helps to clearly demonstrate compliance with WAC secondary containment requirements.

This bulge IQRPE report does not describe any changes to the design of the bulges, nor does it replace any of the existing IQRPE reports listed. The report addresses the existing structures as secondary containment, which requires a different set of assessment criteria than the previously approved ancillary equipment IQRPE reports listed. The new report also references the final design documents used to construct and install the LAW bulges.

Ecology is providing the opportunity to review and comment on this IQRPE report because it is being submitted as a new report in Appendix 9.11 of the WTP Permit and because of the significant changes between the ancillary equipment and the secondary containment IQRPE reports.

***Engineering Specification for Plate and Frame Heat Exchangers, 24590-WTP-3PS-MEP0-T0001, Revision 0***

This is a supplement to *Engineering Specification for Pressure Vessel Design and Fabrication*, 24590-WTP-3PS-MV00-T0001, which is included in the WTP Permit and is applicable to plate and frame type heat exchangers in both the PTF (for example, PTF-PVP-HX-00002) and HLW (for example, HLW-HOP-HX-00002 and HLW-HOP-HX-00004) facilities.

This Engineering Specification and associated applicable change documentation will be placed in Appendix 7.7 of the WTP Permit.

**Leak Detection Rate Exception for 63 Penetration Seals in the LAW Facility**

There are 253 dangerous waste processing lines that penetrate a floor or wall in the LAW Facility. Pipe sleeves are incorporated in these penetrations, where required, to divert a potential leak of dangerous waste into secondary containment and associated leak detection device, or allow a leak to drain from the sleeve to support the daily visual inspection required by the WAC and Dangerous Waste Permit. However, under fire protection regulations, a number of these penetrations must be sealed to provide a fire stop, which could impact the ability to detect a leak within regulatory leak detection requirements if a leak should occur within one of those segments.

Of the 253 total pipe penetrations, an evaluation identified 63 penetration seals that could affect leak detection capability within the required timeframe set forth in WTP Permit Condition III.10.E.9.e.ii. Ecology is granting an exception to the required leak detection timeframe for these 63 penetration seals. Permit Condition III.10.E.9.e.ii and III.10.H.5.e.ii have been modified accordingly, and *Table III.10.E.Q Tank System Penetration Seal Locations* and *Table III.10.H.G LAW Plant Penetration Seal Locations* have been incorporated to document the specific penetrations seals that are exempt from the required leak detection rate.

#### 4.1 Incorporation of Class 1 and Class <sup>1</sup> Permit Modifications and Permit Equivalency Notices (PENs)

This proposed permit modification incorporates the Class 1 and Class <sup>1</sup> permit modifications, and PENs listed below. These were previously approved by Ecology in accordance with WAC 173-303-830(4)(a) and are listed here as a courtesy.

- **24590-HLW-PCN-ENV-13-005, Class 1 Modification** provides updated Piping and Instrumentation Diagrams (P&IDs) for the HLW Waste Concentrate Receipt Process System in Appendix 10.2.
- **24590-LAB-PCN-ENV-12-002, Class 1 Modification** provides updated General Arrangement drawings for the Analytical Laboratory in Appendix 11.4.
- **24590-LAW-PCN-ENV-11-008, Class 1 Modification** provides an updated LAW Facility General Arrangement Drawing in Appendix 9.4.
- **24590-LAW-PCN-ENV-12-002, Class 1 Modification** provides updated General Arrangement Drawings for the LAW Facility in Appendix 9.4.
- **24590-LAW-PCN-ENV-12-003, Class 1 Modification** provides updates to *Table III.10.H.B - LAW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains* and *Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems, Including Sumps, Bulges, Autosamplers, and Floor Drains* in permit conditions; and *Table C-9 – WTP Sumps, Leak Detection Boxes, and Floor Drains/Lines* in Chapter 4.
- **24590-HLW-PCN-ENV-11-007, Class <sup>1</sup> Modification** provides the updated Corrosion Evaluation for HLW Canister Decon Vessels to replace the corresponding Material Selection Data Sheet in Appendix 10.9.
- **24590-HLW-PCN-ENV-11-009, Class <sup>1</sup> Modification** provides updated P&IDs for the HLW Melter Process System in Appendix 10.2.
- **24590-HLW-PCN-ENV-12-002, Class <sup>1</sup> Modification** provides updated P&IDs for the HLW Melter Offgas Treatment Process System in Appendix 10.2.
- **24590-HLW-PCN-ENV-12-005, Class <sup>1</sup> Modification** provides updated HLW Corrosion Evaluations to replace corresponding Material Selection Data Sheets in Appendix 10.9.
- **24590-LAB-PCN-ENV-12-001, Class <sup>1</sup> Modification** provides the updated *System Logic Description for the Analytical Laboratory Radioactive Liquid Waste System*, 24590-LAB-PER-J-03-001, Revision 2, in Appendix 11.13.
- **24590-LAW-PCN-ENV-07-007, Class <sup>1</sup> Modification** provides the updated *IQRPE Structural Integrity Assessment Report for LAW LFP Ancillary Equipment* in Appendix 9.11.
- **24590-LAW-PCN-ENV-13-001, Class <sup>1</sup> Modification** provides the updated *IQRPE Structural Integrity Assessment Report for LAW LVP HEPA Filter Housings (LVP-HEPA-00001A/2A/3A and -00001B/2B)* in Appendix 9.11.
- **24590-PTF-PCN-ENV-09-001, Class <sup>1</sup> Modification** provides updated Mechanical Data Sheets for the PTF Cesium Nitric Acid Recovery Process System and removes one Mechanical Data Sheet for the Pulse Jet Ventilation System in Appendix 8.6.

- **24590-PTF-PCN-ENV-10-035, Class <sup>1</sup>1 Modification** provides updated Mechanical Data Sheets and Equipment Assembly Drawings for the PTF Ultrafiltration Feed Vessels in Appendix 8.6.
- **24590-PTF-PCN-ENV-12-003, Class <sup>1</sup>1 Modification** provides updated P&IDs for the PTF Cesium Nitric Acid Recovery Process System Vessels and Transfer Ejectors, Utility Rack, and Pulse Jet Mixers; the PTF Pulse Jet Ventilation System Utility Services Plant Wash Rack; and for the PTF Vessel Vent Process System High Efficiency Mist Eliminators in Appendix 8.2.
- **24590-PTF-PCN-ENV-12-004, Class <sup>1</sup>1 Modification** provides updated P&IDs for the PTF Treated LAW Evaporation System vessels, condensers, separator, reboilers, utility racks, and vessel pulse jet mixers in Appendix 8.2.
- **24590-PTF-PCN-ENV-12-006, Class <sup>1</sup>1 Modification** provides updated P&IDs for the PTF Treated LAW Concentrate Storage Process System and Waste Feed Receipt Process System in Appendix 8.2.
- **24590-PTF-PCN-ENV-12-007, Class <sup>1</sup>1 Modification** provides updated P&IDs for the PTF Cesium Ion Exchange Process System Vessel and Waste Feed Evaporation Process (FEP) System Vessels, Evaporator Feed Pump (FEP-PMP-00007A), Feed Vessel Bubbler, and the FEP Reboilers, Utility Services Racks, Pulse Jet Mixers, and Utility Services Plant Wash Rack in Appendix 8.2.
- **24590-PTF-PCN-ENV-12-008, Class <sup>1</sup>1 Modification** provides updated Mechanical Systems Data Sheets for the PTF Cesium Nitric Acid Recovery Process, Waste Feed Evaporation Process, and Treated LAW Evaporation Process Systems in Appendix 8.8.
- **24590-PTF-PCN-ENV-12-009, Class <sup>1</sup>1 Modification** provides updated P&IDs for the PTF In-Cell Handling System, Spent Resin and Dewatering Process System, and the Radioactive Liquid Waste Disposal (RLD) System. This modification adds two new drawings for the RLD System in Appendix 8.2.
- **24590-PTF-PCN-ENV-12-011, Class <sup>1</sup>1 Modification** provides updated P&IDs for the PTF Ultrafiltration Process System Pulse Pots and Permeate Collection Vessels and removes one P&ID for a Steam Rack in Appendix 8.2.
- **24590-PTF-PCN-ENV-12-013, Class <sup>1</sup>1 Modification** updates one PFD for the PTF RLD System and removes one PFD for the Cesium Ion Exchange Process System in Appendix 8.1; and updates P&IDs for the HLW Storage and Feed Blending Process System and removes one P&ID for the PTF Vessel Vent Process System in Appendix 8.2.
- **24590-WTP-PCN-ENV-11-010, Class <sup>1</sup>1 Modification** provides updated text and figures for secondary containment design details for floor and wall coatings in Section 4.2.4.4. and Figure 4A-59 in Chapter 4.
- **24590-WTP-PCN-ENV-12-004, Class <sup>1</sup>1 Modification** provides the updated *River Protection Project – Waste Treatment Plant Engineering Specification for Maintenance Decontamination Equipment*, 24590-WTP-3PS-HD00-T0001, Revision 4, in Appendix 7.7.
- **24590-WTP-PCN-ENV-12-008, Class <sup>1</sup>1 Modification** provides the updated *Engineering Specification for Nuclear Grade High Efficiency Particulate Air Filters (ASME AG-1 Section FK Filters)* in Appendix 7.7.

- **24590-LAB-PEN-ENV-13-0001**, PEN provides a source drawing 24590-LAB-M5-V17T-00029 to replace the equivalent permit version drawing 24590-LAB-M5-V17T-P0029 in Appendix 11.1.
- **24590-LAW-PEN-ENV-12-0001**, PEN provides the *IQRPE Structural Integrity Assessment Report for LAW LVP Activated Carbon Bed Adsorbers (LVP-ADBR-00001A/B)* with an updated document number to replace the equivalent report in Appendix 9.11.

## 4.2 Supplemental Design Information

Tables 1 and 2 list the design information included in this proposed permit modification and the proposed location in the WTP Permit. At issuance of the final WTP Permit, Ecology will specify where each drawing or report resides in the WTP Permit.

Paper copies of the page changes to the WTP Permit that result from this modification will be placed in the Administrative Record.

The letter issuing the final WTP Permit decision to the Permittees and Hanford contractors will include the current WTP Permit with the modifications on a DVD.

## 4.3 Identifying Changes in this Proposed Permit Modification

As the WTP TSD Unit is constructed, Ecology will modify the WTP Permit for many reasons, including to clarify text, add new conditions, delete existing conditions, correct errors, or add additional information. To communicate the changes, proposed permit modifications will include page changes showing all significant proposed changes to the WTP Permit. The text to be deleted will be struck-out with a single line, and the new text will be double-underlined. Only the text being changed in the current modification will be indicated by double-underlines and strikeouts.

Newly added documents and drawings are provided for review in this proposed permit modification. New document and drawing numbers and titles are shown in bold text in the affected appendix drawing lists.

When a WTP Permit modification is issued, “clean” pages incorporating permit modifications will be issued to the Permittees and placed in the Administrative Record. All double-underlines and strikeouts will be removed. Documents and drawings listed in the appendices will not be bolded and will be incorporated by reference only.

Ecology publication number 07-05-006, *Responsiveness Summary* (September 27, 2007), explains the reason for replacing permit version documents with source documents to which the WTP is constructed. Source documents are in a state of constant revision as design details are finalized and additional information is added to provide clarity and to correct typographical errors.

The Permittees use Document Change Notices (DCNs) to track changes not yet incorporated into source documents. In some cases, DCNs are issued at the time of Ecology’s review. These are not provided for public comment, but will appear in the next revision of the WTP Permit for review. Source documents have been replacing permit version documents since September 2007.

This page is intentionally left blank.

**Table 1 – Design Information Submitted by Permittees**

**Design Package No. LAW-026C, Rev. 0  
Miscellaneous Unit Subsystems for LAW Facility LVP System  
(LVP Exhausters)**

**For Incorporation into the WTP Permit**

**Table of Contents**

Engineering Document Title	Document Number	Revision	Permit Conditions	Included	Remarks
IQRPE Independent Assessment Report	IA-3009093-000/24590-CM-HC4-HXYG-00240-02-00009	00A	III.10.H.5.c.i	Y	For incorporation in Appendix 9.11
<b>Permit Drawings</b>					
General Arrangement Plan	24590-LAW-P1-P01T-00005	4	III.10.H.5.c.ii	N	In Appendix 9.4 (24590-LAW-P1-P01T-00005, Revision 4 provided in 24590-LAW-PCN-ENV-11-008)
PFD	24590-LAW-M5-V17T-00010	4	III.10.H.5.c.ii	Y	For incorporation in Appendix 9.1
PFD Change Notices	24590-LAW-M5N-V17T-00012	5		N	In Appendix 9.1
	24590-LAW-M5N-V17T-00015			Y	For incorporation in Appendix 9.1
	24590-LAW-M5N-V17T-00017			Y	For incorporation in Appendix 9.1
24590-LAW-M5N-V17T-00029	N		In Appendix 9.1		
PFD	24590-LAW-M5-V17T-00011	5		Y	For incorporation in Appendix 9.1
PFD Change Notices	24590-LAW-M5N-V17T-00012		N	In Appendix 9.1	
	24590-LAW-M5N-V17T-00019		N	In Appendix 9.1	
	24590-LAW-M5N-V17T-00023		N	In Appendix 9.1	
	24590-LAW-M5N-V17T-00029		N	In Appendix 9.1	
P&IDs	24590-LAW-M6-LVP-00001004	0	III.10.H.5.c.ii	N	In Appendix 9.2
	24590-LAW-M6-LVP-00001005	0		N	
	24590-LAW-M6-LVP-00001006	0		N	
<b>Mechanical Drawing</b>					
Exhausters	See Remarks	N/A	III.10.H.5.c.ii III.10.H.5.c.vi	N (see remarks)	See P&IDs 24590-LAW-M6-LVP-00001004, 00001005, and 00001006, for physical attributes. In Appendix 9.2 Vendor drawings incorporated into administrative record

Engineering Document Title	Document Number	Revision	Permit Conditions	Included	Remarks
<b>Engineering Specifications</b>					
Exhausters and Hoses	24590-LAW-3PS-MACS-T0001	2	III.10.H.5.c.ii III.10.H.5.c.iii III.10.H.5.c.vi	Y	In Appendix 9.7
Technical Change Notice	24590-QL-MRA-MACS-00007-T0005	N/A		Y	Submittal requirements for Baldor Motors
Supplier Deviation Disposition Request	24590-WTP-SDDR-MS-12-00039	N/A		Y	Minor deviations to the motor specification and clarification for spare terminals
Pressure Vessel Design and Fabrication	24590-WTP-3PS-MV00-T0001	4		N	In Appendix 7.7
Seismic Qualification Criteria for Pressure Vessels	24590-WTP-3PS-MV00-T0002	3		N	In Appendix 7.7
Positive Material Identification for Shop Fabrication	24590-WTP-3PS-G000-T0002	8		N	In Appendix 7.7
<b>Mechanical Data Sheets</b>					
Exhauster	24590-LAW-MAD-LVP-00006	9	III.10.H.5.c.ii III.10.H.5.c.vi	Y	For incorporation in Appendix 9.6
Underground Pipe Protection	Not applicable	-	III.10.H.5.c.iv	N	There are no underground pipes in the LAW Facility El. 3 feet and above
Corrosion Evaluation					
Melter Offgas Exhauster	24590-LAW-N1D-LVP-00003	3	III.10.H.5.c.iii III.10.H.5.c.v	Y	For incorporation in Appendix 9.9
<b>PER Documents</b>					
LAW Vitrification Offgas System Bypass Analysis	24590-LAW-PER-PR-03-001	2	III.10.H.5.c.ix	N	In Appendix 9.18
Installation of Tank Systems and Miscellaneous Treatment Unit Systems	24590-WTP-PER-CON-02-001	6	III.10.H.5.c.x	N	In Appendix 7.12
Secondary Containment Design	24590-WTP-PER-CSA-02-001	10	III.10.H.5.c.ii III.10.H.5.c.iii	N	In Appendix 7.5

**For Incorporation into the Administrative Record**

Engineering Document Title	Document Number	Revision	Permit Condition	Included	Remarks
Structural Support Calculations for Off Spec, Non-Standard or Field Fabricated Miscellaneous Treatment Subsystems	Not Applicable - See Remarks	-	III.10.H.5.c.iii	N	There are no Off Spec, Non-Standard, or Field Fabricated Miscellaneous Treatment Subsystems in the LAW Facility
System Description for LOP and LVP: LAW Melter Offgas	24590-LAW-3YD-LOP-00001	3	III.10.H.5.c.vii	N	In Administrative record - Incorporated in LAW-027
Material and Energy Balance	24590-WTP-RPT-PT-02-005	6	III.10.H.5.c.xi	N	In Administrative Record Office of River Protection letter 11-ESQ-224 dated 10/25/11, Submittal of Mass and Energy Balance Information (CCN 241137)
	24590-WTP-RPT-PET-10-022	0			
	24590-WTP-MRR-PET-10-010	0			
Toxic Vapors and Emissions from WTP Tank Systems and Miscellaneous Treatment Unit Systems	24590-WTP-PER-PR-03-002	3	III.10.H.5.c.xi	N	In Administrative Record (CCN 161097) Class <sup>1</sup> Modification to Administrative Record
Prevention of Hydrogen Accumulation in WTP Tank Systems and Miscellaneous Treatment Unit Systems	24590-WTP-PER-PR-03-001	1	III.10.H.5.c.xii	N	Previously provided with LAW-029, Revision 0 (CCN 067539) dated 8/26/2003, to document compliance with WTP Permit Condition. Note: Revisions to the WTP HPAV strategy are in progress and will require future re-submittal of this document.
Vendor Outline Dimensions of 42" Outlet Driven 4BOB	24590-QL-POA-MACS-00007-06-00008	00E	III.10.H.5.c.vi	Y	To be placed in Administrative Record  Incorporated in LAW-026C
Vendor Outline Dimensions of 42" Outlet Driven 4BOB	24590-QL-POA-MACS-00007-06-00018	00C	III.10.H.5.c.vi	Y	To be placed in Administrative Record  Incorporated in LAW-026C

**Table 2 – Design Information Submitted by Permittees**

**Permit Package No. BOF-001, Rev. 0  
Container Storage Area for Balance of Facilities  
(Failed Melter Storage Facility)**

**For Incorporation into the WTP Permit**

**Table of Contents**

<b>Engineering Document Title</b>	<b>Document Number</b>	<b>Revision</b>	<b>Permit Condition</b>	<b>Included</b>	<b>Remarks</b>
<b>Permit Design Drawings</b>					
General Arrangement Plan and Section	24590-BOF-P1-32-00001	2	III.10.D.10.b.i	Y	For incorporation in Appendix 12.4
Drawing Change Notice	24590-BOF-P1N-50-00009	N/A	III.10.D.10.b.i	Y	For incorporation in Appendix 12.4
Drawing Change Notice	24590-BOF-P1N-32-00001	N/A	III.10.D.10.b.i	Y	For incorporation in Appendix 12.4
Secondary Containment Design	24590-WTP-PER-CSA-02-001	10	III.10.D.10.b.i	N/A	The Failed Melter Facility is not designed with secondary containment. If liquids will be managed in the facility, they will be managed in portable spill containment buildings or spill pallets.
Material Selections for Building Secondary Containment/Leak Detection	24590-WTP-PER-M-02-001	3	III.10.D.10.b.i III.10.D.10.b.ii	N/A	The Failed Melter Facility is not designed with secondary containment. If liquids will be managed in the facility, they will be managed in portable spill containment buildings or spill pallets.
RPP-WTP Compliance with Uniform Building Code Seismic Design Requirements	24590-WTP-RPT-ST-01-001	2	III.10.D.10.b.i	N	Included in WTP Permit Chapter 4C - Supplement 1

Engineering Document Title	Document Number	Revision	Permit Condition	Included	Remarks
Ignitable or Reactive Waste Buffer Zone	N/A	-	III.10.D.10.b.iii	Y	<p>If ignitable or reactive secondary wastes are managed in the Failed Melter Storage Facility, secondary containment will be provided by portable secondary containment that meets the requirements of WAC 173-303-630.</p> <p>Design information provided on portable containment buildings provided in vendor cut sheets.</p>
Segregation of Incompatible Waste	N/A	-	III.10.D.10.b.iii	Y	<p>If incompatible secondary wastes are to be managed in the Failed Melter Storage Facility, separation will be provided by portable secondary containment that meets the requirements of WAC 173-303-630.</p> <p>Design information provided on portable spill pallet cut sheets.</p>
Update to Permit Table III.10.D.A, Container Storage/Containment Building Areas Description	N/A	-	III.10.C.2.e	Y	Update permit table provided for incorporation into the permit
Update to Permit Table III.10.D.B, Container Storage Area/Containment Building Systems	N/A	-	III.10.D.10.b.iv	Y	Update permit table provided for incorporation into the permit