



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

## Response to Comments

Modification of the *Hanford Facility  
Resource Conservation and Recovery Act  
Permit for the Treatment, Storage, and  
Disposal of Dangerous Waste, Part III,  
Operating Unit Group 10 (WA7890008967)  
Waste Treatment and Immobilization Plant  
October 24 – December 12, 2011*

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*Summary of a public comment period and responses to comments*

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## Publication and Contact Information

This publication is available on the Department of Ecology's website at <http://www.ecy.wa.gov/biblio/nwp.html>.

For more information contact:

Dan McDonald, Tank Waste Treatment Project Manager  
Nuclear Waste Program  
3100 Port of Benton Boulevard  
Richland, WA 99354

Phone: 509-372-7950

Hanford Cleanup Line: 800-321-2008

Email: [Hanford@ecy.wa.gov](mailto:Hanford@ecy.wa.gov)

Washington State Department of Ecology - [www.ecy.wa.gov](http://www.ecy.wa.gov)

- Headquarters, Lacey 360-407-6000
- Northwest Regional Office, Bellevue 425-649-7000
- Southwest Regional Office, Lacey 360-407-6300
- Central Regional Office, Yakima 509-575-2490
- Eastern Regional Office, Spokane 509-329-3400

Ecology publishes this document to meet the requirements of [Washington Administrative Code 173-303-840 \(9\)](#).

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# Response to Comments

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

October 24 – December 12, 2011

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

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# Introduction

The Washington State Department of Ecology's Nuclear Waste Program (NWP) manages dangerous waste within the state by writing permits to regulate its treatment, storage, and disposal. When a new permit or a significant modification (see [Washington Administrative Code \[WAC\] 173-303-830](#) for types of permit changes) to an existing permit is proposed, NWP holds a public comment period to allow the public to review the change and provide formal feedback. The Response to Comments is the last step before issuing the final permit, and its purpose is to:

- Specify which provisions, if any, of a permit will become effective upon issuance of the final permit, providing reasons for those changes.
- Describe and document public involvement actions.
- List and respond to all significant comments received during the public comment period and any related public hearings.

## **This Response to Comments is for:**

Comment period: Design Changes in the Pretreatment Facility (PTF), October 24 – December 12, 2011

Permit: *Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit Group 10 (WA7890008967), Waste Treatment and Immobilization Plant*

Original issuance date: September 27, 1994

Modification effective: January 12, 2012

To see more information related to the Hanford Site or nuclear waste in Washington, please visit our website: [www.ecy.wa.gov/programs/nwp](http://www.ecy.wa.gov/programs/nwp).

## Reasons for Issuing the Permit

NWP prepared a draft permit modification that incorporates new and modified design information for the *Hanford Facility RCRA Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, Part III, Operating Unit 10, Waste Treatment and Immobilization Plant (WTP)*, hereafter called the “WTP Permit.”

This permit modification is important because it allows WTP construction to continue. WTP is essential to cleaning up the 56 million gallons of highly radioactive and chemical waste currently being stored in underground storage tanks at the Hanford Site.

The modifications in this public comment period focused on PTF. PTF will prepare Hanford's tank waste for vitrification (immobilization in glass) by splitting the waste into low-activity (less radioactive) and high-level streams.

Many of the waste tanks in PTF use pulse jet mixers (PJMs) with no moving parts. This eliminates the need for maintenance. PJMs use compressed air to suspend solids in liquid waste. Solids collecting in tank bottoms can cause operational problems like clogs in suction pipes and, as they accumulate, the inability to withdraw even the liquid waste.

The changes, now incorporated into the WTP Permit, are the following four permit design packages that affect PTF.

**On-site Vessel Modification for Waste Feed Receipt Process (FRP) Vessels (FRP-VSL-00002A/B/C/D), Package PTF-009, Revision 2.** This permit design package affected four vessels, or tanks, that will receive dangerous radioactive and chemical waste. The design improved supports to the PJMs in the tanks. The package contains an assessment report signed by an independent, qualified, registered professional engineer (IQRPE). The report certifies the integrity of the four tanks during all stages of the work, including:

- Planning.
- Cutting an entry opening in each tank wall.
- Altering PJM and other supports.
- Closing the tanks when finished.

This permit package also contains revised mechanical data sheets and other documents to update the WTP Permit.

**Supplemental Permit Package for Ultrafiltration Process Vessel Alterations (UFP-VSL-00062A/B/C), Package PTF-040, Revision 1.** This permit design package affected three ultrafiltration tanks. These tanks will store liquid waste that has been filtered using semi-permeable tubes to remove solids. The alterations improved supports to the PJMs in these tanks.

The design package contains two assessment reports signed by an IQRPE. Two of the tanks (UFP-VSL-00062A and B) are assessed in one report. The reports certify the integrity of the tanks during all stages of the work, including:

- Planning.
- Cutting an entry opening in each tank wall.
- Altering PJM and other supports.
- Closing the tanks when finished.

This permit package also contains revised mechanical data sheets and other documents to update the WTP Permit.

**Miscellaneous Treatment Unit for PTF Pulse Jet Ventilation Demisters (PJV-DMST-00002A/B/C) at Elevation 56 ft., Package PTF-079b, Revision 0.** This permit design package includes the pulse jet ventilation system demisters on the 56-foot elevation in PTF.

The demisters control particulates and aerosols for the pulse jet ventilation off-gas system. The demisters use a mesh screen to reduce droplets and solids in the off-gas and extend the life of the downstream filters. (Off-gas is the airborne radioactive and hazardous byproduct of tank waste treatment.)

This package contains an assessment report signed by an IQRPE, equipment assembly drawings, a mechanical data sheet, a corrosion evaluation, and pending change documents.

**Cesium Ion Exchange Process (CXP) Tank System Permit Modifications, Package PTF-015, Revision 1.** This permit package includes:

- Removing tank CXP-VSL-00001 (Tank CXP-1).
- Repurposing tank CXP-VSL-00004 (Tank CXP-4).
- Changing the inputs to tank CXP-VSL-00005 (Tank CXP-5) so that it will no longer manage dangerous waste.

The removal of cesium-137, a radioactive isotope, is an important step in converting high-level waste (HLW) into low-activity waste (LAW). The CXP tank system feeds liquid waste to the ion exchange columns that remove cesium from the waste stream. The system uses reusable ion exchange beads. When the beads are saturated with cesium, the cesium is removed and processed with the HLW, and the beads are regenerated for reuse.

After testing the CXP tank system, Bechtel National, Inc. (BNI) decided to remove Tank CXP-1 because it has no waste mixing capabilities. Tests showed that solids could form in Tank CXP-1, and using it to process waste would likely cause operational problems. Tank CXP-4, which does have waste mixing capabilities, is repurposed to feed waste to the ion exchange columns. The change also will result in a simpler piping design, more efficient waste processing, fewer immobilized LAW containers, and overall lower costs.

Tank CXP-5 will provide demineralized water, caustic solutions, and standby nitric acid. These liquids will be used to flush the CXP system and regenerate the ion exchange beads that remove cesium.

This permit change removes the equipment assembly drawings, mechanical data sheets and corrosion evaluation sheets for tanks CXP-1 and CXP-5, as well as the piping and instrumentation diagrams (P&IDs) piping and instrumentation diagram for Tank CXP-5. It revises the CXP description and adds or revises several P&IDs and process flow diagrams.

Technical and regulatory details of the permit modification are provided in the Statement of Basis in Appendix A.

# Public Involvement Actions

NWP encouraged public comment on the draft WTP Permit modification during a 45-day public comment period held October 24 through December 12, 2011.

A public notice announcing the comment period was mailed to 800 interested members of the public. In addition, copies were distributed to members of the public at Hanford Advisory Board meetings. A public announcement legal classified advertisement was placed in the *Tri-City Herald* on October 25 and 30, 2011. (The public announcement was scheduled to run in the October 23, 2011, edition, but they overlooked it, which is why it ran after the start of the comment period.) A notice announcing the start of the comment period was sent to the [Hanford Information email list](#). The comment period was also posted as an event on Ecology's [Hanford Education & Outreach Facebook page](#).

The public information repositories located in Richland, Spokane, and Seattle, Washington, and Portland, Oregon, received the following:

- Public notice.
- Transmittal letter.
- Statement of Basis for the proposed WTP Permit Modification.
- Draft WTP Permit Modification.

The following information in Appendix A shows the public involvement actions taken in support of this comment period:

1. Statement of Basis.
2. Public notice (focus sheet).
3. Classified advertisement in the Tri-City Herald.
4. Notice sent to the Hanford Information email list.
5. Event posted on Ecology Hanford Education & Outreach Facebook page.
6. Ecology letter documenting the final WTP Permit decision.

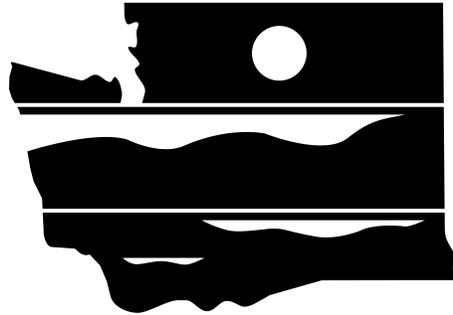
# Response to Comments

Ecology accepted comments from October 24 until December 12, 2011. No comments were received, and no members of the public requested a meeting.

# Appendix A

Public involvement documents supporting this comment period:

1. Statement of Basis.
2. Public notice (focus sheet).
3. Classified advertisement in the Tri-City Herald.
4. Notice sent to the Hanford Information email list.
5. Event posted on Ecology Hanford Education & Outreach Facebook page.
6. Ecology letter documenting the final WTP Permit decision.



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

## **Statement of Basis**

**For Modification of  
The Dangerous Waste Portion, Revision 8C, of the  
Resource Conservation and Recovery Act Permit  
For the Treatment, Storage, and Disposal of Dangerous Waste, Part III,  
Operating Unit 10 (WA7890008967),  
Waste Treatment and Immobilization Plant**

October 2011

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**Statement of Basis**  
**For Modification of the Dangerous Waste Portion, Revision 8C, of the**  
**Resource Conservation and Recovery Act Permit**  
**For the Treatment, Storage, and Disposal of Dangerous Waste, Part III,**  
**Operating Unit 10 (WA7890008967),**  
**Waste Treatment and Immobilization Plant**

**Permittees**

United States Department of Energy  
(Owner/Operator)  
Office of River Protection  
P.O. Box 450  
Richland, Washington 99352

Bechtel National, Inc.  
(Co-Operator)  
2535 Stevens Center Place  
Richland, Washington 99354

The Washington State Department of Ecology (Ecology) has developed this Statement of Basis in accordance with the requirements of Washington Administrative Code (WAC) 173-303-840(2)(f)(iv). Its purpose is to present information on Ecology's decision to modify Part III, Operating Unit 10, Waste Treatment and Immobilization Plant (WTP) of the Hanford Facility's Dangerous Waste Portion, Revision 8C, of the Resource Conservation and Recovery Act (RCRA) Permit for the Treatment, Storage, and Disposal (TSD) of Dangerous Waste, 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, and Balance of Facility (BOF). In addition, this modification incorporates format changes to the WTP Permit appendices and changes to supporting information. Ecology has elected to prepare a Statement of Basis pursuant to WAC 173-303-840(2)(f)(iv) rather than a Fact Sheet. A Statement of Basis was prepared for previous major WTP Permit modifications. This process is being followed for permit modifications to 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 Permit Background
- 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

Tables submitted by the Permittees for incorporation into the WTP Permit are at the end of this document.

## 1.0 Hanford Facility Permit Background

Ecology initially issued the WTP Permit for the Hanford facility in 1994. The WTP 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 TSD units at Hanford.

The WTP Permit is normally modified annually to incorporate newly permitted units; reflect Class 1, 2, and 3 modifications; and include minor changes in grammar, consistency, and presentation. 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 (DWP) issued by Ecology.

Approximately 50 TSD units at Hanford are operating or closing under RCRA final status standards.

Conditions of the WTP Permit are presented in six parts:

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

The WTP TSD Unit was added to the Unit-Specific Conditions for Final Status Operating Units (Part III) of the WTP 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 status standards.

## 2.0 The WTP Permitting Process

The permitting of the WTP TSD Unit is using a phased (or stepped) approach. The first phase was completed on September 25, 2002, with issuance of a final DWP allowing construction of the WTP LAW, PTF, HLW, LAB, and BOF facilities to commence and a compliance schedule for United States Department of Energy (USDOE) to provide additional detailed information to Ecology. The compliance schedule addresses submittal of information necessary for 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 DWP Application and then modifying the WTP Permit prior to the facility starting 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, the WTP TSD Unit will comply with all the applicable requirements of WAC 173-303 and, after receiving written permission from Ecology, can begin treatment and storage of dangerous and mixed waste.

The design submittals (second phase described above) 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 of the facility before construction begins. This process was adjusted for some design packages. If the process system is on more than one level, the design package can address components on more than one level. This will prevent the 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).

With each WTP facility consisting of multiple levels, the total number of design packages is large. Of the estimated 160 total design packages, approximately 30 remain to be incorporated into the WTP Permit.

The primary containment, secondary containment, and 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. Therefore, some design packages may consist mostly of references to information already provided.

Ecology is authorized, pursuant to WAC 173-303-830(4)(e), to grant Temporary Authorizations (TA) for the Permittees to start construction on a design package after Ecology approval but before the draft permit modification process is complete. A Permittee is allowed to request a TA to implement a modification prior to public notice and comment, pursuant to WAC 173-303-830(4)(e)(ii)(A).

To issue a TA, Ecology must find it meets the criteria as described in WAC 173-303-830(4)(e)(ii)(A) and WAC 173-303-830(4)(e)(iii). The term of a TA is limited to 180 days with the potential for Ecology approval of two terms, with a maximum combined duration of 360 days, provided that the modification could be classified as a Class 2 or 3 modification for the activity covered in the TA (WAC 173-303-830(4)(e)(iv)).

The purpose of a TA is to allow the timely implementation of a permit modification. Construction that takes place under a TA is at the Permittees' risk because public comment may require the Permittees to modify something that is already built. The submittal schedule developed by the Permittees will allow most design packages to undergo public comment and be incorporated into the WTP Permit prior to construction of those areas.

### **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 Chapter 173-303 of the WAC, regulate the management of dangerous waste in Washington State. In accordance with WAC 173-303-800, facilities that treat, store, and/or dispose of dangerous waste must obtain a permit for these activities.

As required by WAC 173-303-840(3)(d), draft permit modifications to the WTP Permit will have a 45-day public comment period. The public comment period for this proposed permit modification begins on October 24, 2011, and ends on December 12, 2011. All comments received during the public comment period will be considered and responded to before final decisions are made on the proposed modifications. Regulatory requirements for public notice and involvement on permit modifications are described in WAC 173-303-840(3) and (4).

Comments must be post-marked, received by e-mail, or hand-delivered no later than close of business (5:00 p.m. PST) December 12, 2011. Direct all written comments to:

Erika Holmes  
Washington State Department of Ecology  
3100 Port of Benton Blvd.  
Richland, Washington 99354  
E-mail address: [ehol461@ecy.wa.gov](mailto:ehol461@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 Ecology's decision includes substantial changes to the WTP Permit because of public comment, Ecology will initiate a new public comment period.

Ecology will provide a Responsiveness Summary and a notification of the final permit decision to the Permittees and to all who commented. Ecology's final permit decision may be appealed within 30 days after issuance of the final permit decision.

Copies of the WTP Permit for the Hanford facility, including the proposed permit modifications are available for review at the Hanford Public Information Repositories listed below. 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

### Portland

Portland State University  
Branford Price Millar Library  
1875 SW Park Ave  
Portland, Oregon 97201-3220  
(503) 725-4552  
Attn: Claudia Weston

### Richland

Public Reading Room  
2770 University Drive  
Consolidated Information Center, Rm. 101L  
Richland, Washington 99352  
(509) 372-7443  
Attn: Janice Pathree

### Spokane

Gonzaga University  
Foley Center  
East 502 Boone  
Spokane, Washington 99258-0001  
(509) 313-3834  
Attn: Linda Pierce

### Seattle

University of Washington Suzzallo Library  
Government Publication Division  
Seattle, Washington 98195  
(206) 543-9157  
Public Service: (206) 543-4664  
Attn: David Maack

This Statement of Basis and Focus Sheet for the proposed permit modification is also available online at [www.ecy.wa.gov/programs/nwp/commentperiods.htm](http://www.ecy.wa.gov/programs/nwp/commentperiods.htm). If special accommodations are needed for public comment, please contact Erika Holmes, Department of Ecology, at (509) 372-7880, 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 package are listed below. See Tables 1 through 4 for the entire list of the documents.

**Package PTF-040, Revision 1, *Supplemental Permit Package for UFP-VSL-00062A, UFP-VSL-00062B, and UFP-VSL-00062C Vessel Alterations*.** This permit design package affects three ultrafiltration tanks. These tanks store liquid waste that has been filtered using semi-permeable tubes to remove solids. The alterations will improve supports to the internal components in these tanks.

The design package contains two assessment reports signed by an independent, qualified, registered professional engineer (IQRPE). Two of the tanks (UFP-VSL-00062A and B) are assessed in one report. The reports certify the integrity of the tanks during all stages of the work, including:

- § Planning.
- § Cutting an entry opening in each tank wall.
- § Altering pulse jet mixers and other supports.
- § Closing the tanks when finished.

This permit package also contains revised mechanical data sheets and other documents to update the WTP Permit.

**Package PTF-079b, Revision 0, *Miscellaneous Treatment Unit for PTF Pulse Jet Ventilation Demisters (PJV-DMST-00002A/B/C) at Elevation 56 ft.*** This permit design package includes the pulse jet ventilation system demisters on the 56-foot elevation in PTF. The demisters control particulates and aerosols for the pulse jet ventilation off-gas system. The demisters use a mesh screen

to reduce droplets and solids in the off-gas and extend the life of the downstream filters. (*Off-gas* is the airborne radioactive and hazardous byproduct of tank waste treatment.)

This package contains an assessment report signed by an IQRPE, equipment assembly drawings, a mechanical data sheet, a corrosion evaluation, and pending change documents.

**Package PTF-009, Revision 2, *On-site Vessel Modification for FRP Vessels*.** This permit design package affects four vessels, or tanks, that will receive dangerous radioactive and chemical waste. The proposed design will improve supports to the internal components in the tanks.

The package contains an assessment report signed by an independent, qualified, registered professional engineer (IQRPE). The report certifies the integrity of the four tanks during all stages of the work, including:

- § Planning.
- § Cutting an entry opening in each tank wall.
- § Altering pulse jet mixers and other supports.
- § Closing the tanks when finished.

This permit package also contains revised mechanical data sheets and other documents to update the WTP Permit.

**Package PTF-015, Revision 1, *CXP Tank System Permit Modifications*.** This permit package includes:

- § Removing tank CXP-VSL-00001 (Tank CXP-1).
- § Repurposing tank CXP-VSL-00004 (Tank CXP-4).
- § Changing the inputs to tank CXP-VSL-00005 (Tank CXP-5) so that it will no longer manage dangerous waste.

The removal of cesium-137, a radioactive isotope, is an important step in converting high-level waste into low-activity waste. The CXP tank system feeds liquid waste to the ion exchange columns that remove cesium from the waste stream. The system uses reusable ion exchange beads. When the beads are saturated with cesium, the cesium is removed and processed with the high-level waste, and the beads are regenerated for reuse.

After testing the CXP tank system, BNI decided to remove Tank CXP-1. As a result of operating concerns, Bechtel National, Inc., found that solids could accumulate in CXP-1. Because the CXP system is designed for liquids without solids, the system will operate better by not using CXP-1. Tank CXP-4, which will allow more control of the waste temperature so that solids will not form, will be repurposed to feed waste to the ion exchange columns. The proposed change will also result in a simpler piping design, more efficient waste processing, fewer immobilized low-activity waste containers, and overall lower costs.

Tank CXP-5 will provide demineralized water, caustic solutions, and standby nitric acid. These liquids will be used to flush the CXP system and regenerate the ion exchange beads that remove cesium.

This permit change removes the equipment assembly drawings, mechanical data sheets and corrosion evaluation sheets for tanks CXP-1 and CXP-5, as well as the piping and instrumentation diagram for

Tank CXP-5. It revises the CXP description and adds or revises several piping and instrumentation diagrams (P&ID) and process flow diagrams.

NOTE: The co-Permittees applied for a temporary authorization to begin the proposed work on the CXP tank system during the public comment period per [Washington Administrative Code 173-303-830\(4\)\(e\)](#). Ecology approved the temporary authorization.

#### 4.1 Incorporation of Several Class 1 and Class <sup>1</sup>1 Permit Modifications

This proposed permit modification incorporates the Class 1 and Class <sup>1</sup>1 WTP Permit modifications 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-08-003, Class <sup>1</sup>1 Modification:** Updates the engineering specification and mechanical data sheets for the activated carbon bed adsorbers in Appendix 7.7 and 10.6.
- **24590-HLW-PCN-ENV-10-006, Class <sup>1</sup>1 Modification:** Updates the engineering specification and mechanical data sheets for the high efficiency particulate air filters in Appendices 7.7 and 10.6.
- **24590-LAW-PCN-ENV-10-003, Class <sup>1</sup>1 Modification:** Updates the P&IDs for the LAW Radioactive Liquid Waste Disposal System in Appendix 9.2.
- **24590-LAB-PCN-ENV-10-001, Class <sup>1</sup>1 Modification:** Updates the system logic description for the Analytical Laboratory Radioactive Liquid Waste Disposal System (RLD) in Appendix 11.3.
- **24590-LAB-PCN-ENV-10-002, Class <sup>1</sup>1 Modification:** Updates the flooding volume for the LAB Facility and renames the document DWP Liner Heights in the LAB Facility in Appendix 11.8.
- **24590-HLW-PCN-ENV-10-013, Class <sup>1</sup>1 Modification:** Updates the P&IDs for the HLW Concentrate Receipt Process System and HLW Melter Feed Process System in Appendix 10.2.
- **24590-LAW-PCN-ENV-10-002, Class <sup>1</sup>1 Modification:** Replaces permit specification 24590-WTP-3PS-MBTV-TP001 engineering specification for Thermal Catalytic Oxidizers/Reducers with 24590-LAW-3PS-MBTV-T0001 engineering specification for the LAW Thermal Catalytic Oxidizer/Reducer in Appendix 7.7.
- **24590-WTP-PCN-ENV-10-003, Class <sup>1</sup>1 Modification:** Replaces permit specification 24590-WTP-3PS-G000-TP002, Revision 4, engineering specification for Positive Material Identification with 24590-WTP-3PS-G000-T0002, Revision 8, engineering specification for Positive Material Identification for Shop Fabrication in Appendix 7.7.
- **24590-WTP-PCN-ENV-10-001, Class 1 Modification:** Replaces the materials for ancillary equipment 24590-WTP-PER-M-02-002, Revision 2 with Revision 3, in Appendix 7.9.
- **24590-HLW-PCN-ENV-08-004, Class <sup>1</sup>1 Modification:** Updates the mechanical datasheet 24590-HLW-MKD-HOP-00016, Revision 13, for the submerged bed scrubbers in Appendix 10.6.

- **24590-HLW-PCN-ENV-10-016, Class <sup>1</sup> Modification:** Updates the mechanical datasheet 24590-HLW-MED-PJV-00002 and 24590-HLW-MED-HOP-00013 in Appendix 10.6 as well as engineering specification 24590-HLW-3PS-MEE0-T0001 in Appendix 10.7.
- **24590-PTF-PCN-ENV-10-029, Class <sup>1</sup> Modification:** Updates general arrangement drawings for the PTF Elevation -45'-0", 0'-0", 28'-0", and 77'-0" in Appendix 8.4.
- **24590-PTF-PCN-ENV-10-031, Class <sup>1</sup> Modification:** Updates the mechanical data sheet 24590-PTF-MKD-PVP-P0002, Revision 2, and engineering specification 24590-PTF-3PS-MKAS-T0001, Revision 1, for the PTF Vessel Vent Caustic Scrubber in Appendices 8.6 and 8.7.
- **24590-HLW-PCN-ENV-10-011, Class <sup>1</sup> Modification:** Updates the Independent Qualified Registered Professional Engineer (IQRPE) Structural Assessment Report for High Level Waste Secondary Containment elevations (-) 21'-0", between 0'-0", and (-)21'-0" and 37'-0" to replace three secondary containment IQRPE reports currently found in Appendix 10.11.
- **24590-HLW-PCN-ENV-10-007, Class <sup>1</sup> Modification:** Submits two engineering specifications (24590-WTP-3PS-MACS-T0004 and 24590-WTP-3PS-MACS-T0005) and two mechanical data sheets (24590-HLW-MAD-HOP-00018 and 24590-HLW-MAD-HOP-00038) for the HLW Melter Offgas Treatment Process System Booster Fans and Stack Extraction Fans to replace the specifications currently located in Appendices 7.7 and 10.6.
- **24590-HLW-PCN-ENV-11-001, Class <sup>1</sup> Modification:** Submits equipment assembly drawings for Acidic Waste Vessel RLD-VSL-00007 and Plant Wash Drains Vessel RLD-VSL-00008 and a mechanical data sheet for RLD-VSL-00007 to replace the permitted drawings and data sheet currently found in Appendix 10.6.
- **24590-HLW-PCN-ENV-10-015, Class <sup>1</sup> Modification:** Submits equipment assembly drawing (24590-HLW-MV-HDH-00003) and mechanical data sheet (24590-HLW-MVD-HDH-00003) for Waste Neutralization Vessel HDH-VSL-00003 to replace the permitted drawing and data sheet currently found in Appendix 10.6.
- **24590-HLW-PCN-ENV-05-010, Class <sup>1</sup> Modification:** Submits mechanical data sheet 24590-HLW-MKD-HOP-00019 and engineering specification 24590-HLW-3PS-MBTV-T0002 for the HLW Melter Offgas Treatment Process System Thermal Catalytic Oxidizers/Reducers, (HOP-SKID-00005/7) to replace the permitted data sheet and specification currently located in Appendices 10.6 and 10.7.
- **24590-WTP-PCN-ENV-11-003, Class <sup>1</sup> Modification:** Submits a replacement for the WTP Interim Compliance Schedule included in Appendix 1. The proposed changes to the interim compliance dates and final compliance dates are based on the WTP Consent Decree milestones located in Appendix A, WTP Consent Decree Milestones, Schedule, Assumptions of Consent Decree No. 08-5085-FVS.
- **24590-WTP-PCN-ENV-11-004, Class 1 Modification:** Submits engineering specification 24590-WTP-3PS-PS02-T0003, "Field Fabrication and Installation of Piping," Rev. 9 to replace Rev. 8 currently found in Appendix 7.7.

- **24590-PTF-PCN-ENV-08-008, Class <sup>1</sup>1 Modification:** Updates mechanical data sheet 24590-PTF-MVD-PWD-00002, Rev. 8 and equipment assembly mechanical drawings 24590-PTF-MV-PWD-00010001, Rev. 0; 24590-PTF-MV-PWD-00010002, Rev. 0; and, 24590-PTF-MV-PWD-00010003, Rev. 0 for the PTF Plant Wash Vessel PWD-VSL-00044 to replace the corresponding permit documents in Appendix 8.6.
- **24590-PTF-PCN-ENV-10-032, Class <sup>1</sup>1 Modification:** Updates equipment assembly drawings for the PTF HLW Lag Storage Vessels HLP-VSL-00027A and HLP-VSL-00027B currently found in Appendix 8.6.
- **24590-PTF-PCN-ENV-10-033, Class <sup>1</sup>1 Modification:** Updates the equipment assembly drawings for the HLW Feed Blend Vessel HLP-VSL-00028 currently found in Appendix 8.6.
- **24590-PTF-PCN-ENV-10-034, Class <sup>1</sup>1 Modification:** Updates the equipment assembly drawings for the PTF HLW Feed Receipt Vessel HLP-VSL-00022 currently found in Appendix 8.6.
- **24590-WTP-PCN-ENV-11-002, Class 1 Modification:** Updates engineering specification 24590-WTP-3PS-MPC0-T0009 for Vessel-Mounted Vertical Transfer Pumps in the HLW. These specifications will be added to Appendix 10.7 and the outdated version will be deleted from Appendix 7.7.
- **24590-LAW-PCN-ENV-11-002, Class <sup>1</sup>1 Modification:** Updates the P&IDs for the Low-Activity Waste Primary Offgas Process System currently found in Appendix 9.2.
- **24590-PTF-PCN-ENV-08-006, Class <sup>1</sup>1 Modification:** Updates the PTF Mechanical Data Sheets for the HLW Feed Receipt Vessel HLP-VSL-00022, HLW Lag Storage Vessels HLP-VSL-00027A and HLP-VSL-00027B and HLW Feed Blend Vessel HLP-VSL-00028. The data sheets are submitted to replace the permitted data sheets currently in Appendix 8.6.
- **24590-PTF-PCN-ENV-11-005, Class <sup>1</sup>1 Modification:** Submits new PTF P&IDs to incorporate advanced HLW Lag Storage and Feed Blending Process (HLP) System design details into the permitted HLP System. These new documents will be added to Appendix 8.2.
- **24590-PTF-PCN-ENV-11-004, Class <sup>1</sup>1 Modification:** Updates PTF P&IDs for UFP-VSL-00001A and UFP-VSL-00001B. These changes incorporate M3 design input requirements for increased number, arrangement, and performance of pulse jet mixers. Additionally, new drawings are added to the permit for PSA utility racks for UFP-VSL-00001A pulse jet mixers using the same design as Vessel 1B. These documents will be revised and added to Appendix 8.2.

## 4.2 Supplemental Design Information

Tables 1 through 4 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 decision, Ecology will specify where each drawing or report resides in the WTP Permit. Paper copies of the page changes to the WTP Permit, as a result of this modification, will be placed in the Administrative Record. Duplicate sets of drawings will not be issued to the Permittees at issuance of the final permit decision to minimize the amount of paperwork, unless drawing changes are made as a result of public comment.

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.

At issuance of the WTP Permit modification, “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.

In Ecology publication number 07-05-006, *Responsiveness Summary* (September 27, 2007), Ecology explained 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. Changes not yet incorporated into source documents are tracked by the Permittees using Document Change Notices (DCNs). 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.

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**Table 1 – Design Information Submitted by Permittees for Incorporation into the WTP Permit**

**Permit Package PTF-040, Rev. 1  
Tank System for Pretreatment Facility  
Vessel UFP-VSL-00062A, UFP-VSL-00062B, and UFP-VSL-00062C**

**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>
IQRPE Structural Integrity Assessment Report for Alteration/Rework of PTF UFP Ultra Permeate Collection Vessel (UFP-VSL-00062C)	CCN 208819	00A	III.10.E.9.c.i	Y	
IQRPE Structural Integrity Assessment Report for Alteration/Rework of PTF UFP Ultra Permeate Collection Vessels (UFP-VSL-00062A/B)	CCN 208818	00A	III.10.E.9.c.i	Y	
Mechanical Systems Data Sheet for UFP-VSL-0062A	24590-PTF-MVD-UFP-00005	11	III.10.E.9.c.ii	Y	Replace 24590-PTF-MVD-UFP-P0005, Rev. 1 in Appendix 8.6 with 24590-PTF-MVD-UFP-00005, Rev. 11
Mechanical Systems Data Sheet for UFP-VSL-00062B	24590-PTF-MVD-UFP-00006	11	III.10.E.9.c.ii	Y	Replace 24590-PTF-MVD-UFP-P0006, Rev. 1 in Appendix 8.6 with 24590-PTF-MVD-UFP-00006, Rev. 11
Mechanical Systems Data Sheet for UFP-VSL-00062C	24590-PTF-MVD-UFP-00007	11	III.10.E.9.c.ii	Y	Replace 24590-PTF-MVD-UFP-P0007, Rev. 1 in Appendix 8.6 with 24590-PTF-MVD-UFP-00007, Rev. 11
Vendor Drawing Change Notice for UFP-VSL-00062A	24590-PTF-VDCN-MS-10-00007	NA	III.10.E.9.c.ii III.10.E.9.c.vi	Y	
Vendor Drawing Change Notice for UFP-VSL-00062B	24590-PTF-VDCN-MS-10-00008	NA	III.10.E.9.c.ii III.10.E.9.c.vi	Y	
Vendor Drawing Change Notice for UFP-VSL-00062C	24590-PTF-VDCN-MS-10-00009	NA	III.10.E.9.c.ii III.10.E.9.c.vi	Y	
Engineering Specification for Alteration and Repair of On-Site Stamped ASME Code Vessels and Boilers for Subcontract	24590-WTP-3PS-MVB2-T0002	0	III.10.E.9.c.ii	Y	
Specification Change Notice - Stiffening and Stabilizing the Openings of Access Opening Repair Vessels	24590-WTP-3PN-MVB2-00010	NA	III.10.E.9.c.ii	Y	
Specification Change Notice - Cutting Method for Access opening	24590-WTP-3PN-MVB2-00011	NA	III.10.E.9.c.ii	Y	

**For Incorporation into the Administrative Record**

<b>Engineering Document Title</b>	<b>Document Number</b>	<b>Revision</b>	<b>Permit Condition</b>	<b>Included</b>	<b>Remarks</b>
EFRT Issue M3 PJM Vessel Mixing Assessment, Volume 2- CNP-VSL-0003/4, CXP-VSL-00004, UFP-VSL-00062A/B/C, RDP-VSL-00002A/B/C	24590-WTP-RPT-ENG-08-021-02	0	III.10.E.9.c.ii	N	Document will be made available upon request
Pretreatment Vessel Heel Dilution/Cleanout Feasibility Study	24590-WTP-RPT-PET-10-013	0	III.10.E.9.c.ii	N	Document will be made available upon request

**Table 2 – Design Information Submitted by Permittees for Inclusion into the WTP Permit**

**Permit Package No. PTF-079b, Draft  
Miscellaneous Unit for Pretreatment Facility Pulse Jet Ventilation System at Elevation 56 feet  
(Demisters PJV-DMST-00002A/B/C)**

**Table of Contents**

<b>Engineering Document Title</b>	<b>Document Number</b>	<b>Rev.</b>	<b>Permit Condition</b>	<b>Included</b>	<b>Remarks</b>
IQRPE Independent Assessment Report	CCN 208820	00A	III.10.G.10.c.i	Y	
<b>Permit Drawings</b>					
General Arrangement Plan Pretreatment Facility General Arrangement Plan at El. 56'-0"	24590-PTF-P1-P01T-00003	4	III.10.G.10.c.ii	N	Included in Operating Group 10, Appendix 8.4
Process Flow Diagram Pretreatment RFD/PJM Exhaust (PJV) Systems PVP/PVV/PJV	24590-PTF-M5-V17T-00021002	2	III.10.G.10.c.ii	N	Included in Operating Group 10, Appendix 8.1
Piping & Instrumentation Diagram P&ID - PTF Pulse Jet Ventilation System Inlet Header to Demister Outlet	24590-PTF-M6-PJV-00002	3	III.10.G.10.c.ii	N	Included in Operating Group 10, Appendix 8.2
<b>Equipment Assembly Drawings</b>					
Equipment Assembly PTF Demister Vessel PJV-DMST-00002A/B/C Sheet 1 of 2	24590-PTF-MV-PJV-00002001 • 24590-PTF-MVN-PJV-00005 • 24590-PTF-MVN-PJV-00006 • 24590-PTF-MVN-PJV-00008 • 24590-WTP-SDDR-MS-09-00001 • 24590-WTP-SDDR-MS-10-00047	0	III.10.G.10.c.ii	Y	
Equipment Assembly PTF Demister Vessel PJV-DMST-00002A/B/C Sheet 2 of 2	24590-PTF-MV-PJV-00002002 • 24590-PTF-MVN-PJV-00007 • 24590-WTP-SDDR-MS-09-00001	0		Y	
<b>Specifications</b>					
Engineering Specification for Pressure Vessel Design and Fabrication	24590-WTP-3PS-MV00-T0001	4	III.10.G.10.c.ii III.10.G.10.c.iii	N	Included in Operating Group 10, Appendix 7.7
Engineering Specification for Seismic Qualification Criteria for Pressure Vessels	24590-WTP-3PS-MV00-T0002	3	III.10.G.10.c.ii III.10.G.10.c.iii	N	Included in Operating Group 10, Appendix 7.7
Engineering Specification for Pressure Vessel Fatigue Analysis	24590-WTP-3PS-MV00-T0003	3	III.10.G.10.c.ii III.10.G.10.c.iii	N	Included in Operating Group 10, Appendix 7.7

<b>Engineering Document Title</b>	<b>Document Number</b>	<b>Rev.</b>	<b>Permit Condition</b>	<b>Included</b>	<b>Remarks</b>
Engineering Specification for Positive Material Identification (PMI)	24590-WTP-3PS-G000-T0002	8	III.10.G.10.c.ii III.10.G.10.c.iii	N	Included in Operating Group 10, Appendix 7.7
Mechanical Data Sheet: Demister	24590-PTF-MVD-PJV-00004	0	III.10.G.10.c.ii	Y	
Secondary Containment Design	24590-WTP-PER-CSA-02-001	9	III.10.G.10.c.ii III.10.G.10.c.iii	N	Included in Operating Group 10, Appendix 7.5
Corrosion Protection for Buried Components	N/A	-	III.10.G.10.c.iv	N	Not applicable to the PTF PJV System
Corrosion Evaluation PJV-DMST-00002A/B/C (PTF) PJV Demister	24590-PTF-N1D-PJV-00003	0	III.10.G.10.c.v	Y	
Installation of Tank Systems and Miscellaneous Treatment Systems	24590-WTP-PER-CON-02-001	6	III.10.G.10.c.ix	N	Included in Operating Group 10, Appendix 7.12

### For Incorporation into the Administrative Record

Engineering Document Title	Document Number	Revision	Permit Condition	Included	Remarks
Structural Support Calculations for Off Specification, Non-Standard or Field Fabricated Tanks	N/A	-	III.10.G.10.c.iii	N	Not applicable to the PTF PJV Miscellaneous Unit Systems.
<b>System Description Documents</b>					
System Description for the PTF Pulse Jet Ventilation System (PJV)	24590-PTF-3YD-PJV-00001	0	III.10.G.10.c.vii	N	Document will be submitted once Part II of System Description is completed.
Prevention of Hydrogen Accumulation in WTP Tank Systems and Miscellaneous Treatment Unit Systems	24590-WTP-PER-PR-03-001	1	III.10.G.10.c.x	N	ORP Letter 03-ED-130 dated 8/26/2003 Transmitting LAW-29, Rev.0 to Ecology
Control of Toxic Vapors and Emissions from WTP Tank Systems and Miscellaneous Unit Systems	24590-WTP-PER-PR-03-002	3	III.10.G.10.c.xi	N	Incorporated into Administrative Record, CCN 178564, dated May 2, 2008
<b>Material and Energy Balance</b>					
Flowsheet Bases, Assumptions, and Requirements	24590-WTP-RPT-PT-02-005	5	III.10.G.10.c.viii	N	CCN 229439 "Submittal of Mass and Energy Balance Information".
SP3 Feed Vector and Organics for Steady State Flowsheet	24590-WTP-MRQ-PET-10-0025	0			
Steady -State Flowsheet (AES) SP3 Feed Vector and Organics Run Results	24590-WTP-MRR-PET-10-002	2			

**Table 3 – Design Information Submitted by Permittees for Inclusion into the WTP Permit**

**Permit Package PTF-015, Rev. 1  
Pretreatment Facility CXP Tank System  
Removal of Vessel CXP-VSL-00001 and Modification of the Cesium Ion Exchange System**

**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>
IQRPE Independent Assessment Reports	24590-CM-HC4-HXYG-00138-02-00033	00A	III.10.E.9.c.i	NA	Not applicable.
<b>Permit Drawings</b>					
General Arrangement Plans	24590-PTF-P1-P01T-00001	7	III.10.E.9.c.ii	N	Transmitted to Ecology in PCN 24590-PTF-PCN-ENV-10-029, approved 6/15/11, CCN 236233.
	24590-PTF-P1-P01T-00002	7			
Process Flow Diagrams	24590-PTF-M5-V17T-00012001	0	III.10.E.9.c.ii	Y	
	24590-PTF-M5-V17T-00012002	0			
Piping and Instrument Diagrams	24590-PTF-M6-CXP-00001002	1	III.10.E.9.c.ii	Y	Delete from DWP
	24590-PTF-M6-CXP-00001003	1		Y	
	24590-PTF-M6-CXP-00001004	1		Y	
	<del>24590-PTF-M6-CXP-00001005</del>	<del>0</del>		N	
	24590-PTF-M6-CXP-00001006	0		Y	
	24590-PTF-M6-CXP-00001007	0		Y	
	24590-PTF-M6-CXP-00002001	1		Y	
	24590-PTF-M6-CXP-00002002	1		Y	
	24590-PTF-M6-CXP-00003001	1		Y	
	24590-PTF-M6-CXP-00003002	1		Y	
	24590-PTF-M6-CXP-00005001	1		Y	
	24590-PTF-M6-CXP-00005002	1		Y	
	24590-PTF-M6-CXP-00005003	1		Y	
Equipment Assembly Drawings	<del>24590-PTF-MV-CXP-P0001</del>	NA	III.10.E.9.c.ii	N	Delete from permit.
	<del>24590-PTF-MV-CXP-P0003</del>		III.10.E.9.c.vi		
<b>Specifications</b>					
Pressure Vessel Design and Fabrication	24590-WTP-3PS-MV00-T0001	4	III.10.E.9.c.ii III.10.E.9.c.vi	N	Included in Appendix 7.7
Seismic Qualification Criteria for Pressure Vessels	24590-WTP-3PS-MV00-T0002	3	III.10.E.9.c.ii III.10.E.9.c.vi	N	Included in Appendix 7.7
Pressure Vessel Fatigue Analysis	24590-WTP-3PS-MV00-T0003	3	III.10.E.9.c.ii III.10.E.9.c.vi	N	Included in Appendix 7.7
Positive Material Identification	24590-WTP-3PS-G000-T0002	8	III.10.E.9.c.ii III.10.E.9.c.vi	N	Included in Appendix 7.9

Engineering Document Title	Document Number	Revision	Permit Condition	Included	Remarks
Mechanical Data Sheets	<del>24590 PTF MVD CXP P0007</del>	NA	III.10.E.9.c.ii	N	Delete from permit.
	<del>24590 PTF MVD CXP P00016</del>				
Secondary Containment Design	24590-WTP-PER-CSA-02-001	9	III.10.E.9.c.ii III.10.E.9.c.iii	N	Included in Appendix 7.5.
Corrosion Protection for Buried Components	N/A	-	III.10.E.9.c.iv	N	Not applicable
Corrosion Evaluation	<del>24590 PTF N1D CXP P0001</del>	NA	III.10.E.9.c.v	N	Delete from permit.
	<del>24590 PTF N1D CXP P0008</del>				
Installation of Tank Systems and Miscellaneous Treatment Systems	24590-WTP-PER-CON-02-001	6	III.10.E.9.c.ix	N	Included in Appendix 7.12
Completed Permit Tables for Primary Containment Sumps and Floor Drains	N/A	-	III.10.E.9.c.x	N	There are no primary containment sumps or floor drains in the CXP Tank Systems.
Chapter 4 Process Descriptions <i>Cesium Ion Exchange Process (CXP) System</i>	Section 4.1.2.5	NA	III.10.E.9.e.vi	Y	Chapter 4 - Text revised to describe process changes
<i>Cesium Resin Addition Process (CRP) System</i>	Section 4.1.2.7	NA	III.10.E.9.e.vi	Y	Chapter 4 - Text revised to describe process changes
<i>Pretreatment Facility Tanks/Vessels</i>	Table C-2	NA	III.10.E.9.e.vi	Y	Chapter 4 - Table contents' deleted and revised.
<i>Cesium Resin Addition Process System (CRP)</i>	Figure C1-11	NA	III.10.E.9.e.vi	Y	Chapter 4 - Figure revised.
Part III, Operating Units; Operating Unit 10, Waste Treatment and Immobilization Plant	Table III.10.E.A - Pretreatment Plant Tank Systems Description	NA	III.10.E.9.e.xii	Y	Chapter 4 - Permit table updated

**Table 4 – Design Information Submitted by Permittees for Inclusion into the WTP Permit**

**Permit Package PTF-009, Rev. 2  
Pretreatment Facility Waste Feed Receipt Process Tank System  
Vessel Alterations to FRP-VSL-00002A/B/C/D**

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<b>Engineering Document Title</b>	<b>Document Number</b>	<b>Revision</b>	<b>Permit Condition</b>	<b>Included</b>	<b>Remarks</b>
Focused IQRPE Report	CCN 208823		III.10.E.9.c.i	Y	
Mechanical Systems Data Sheet	24590-PTF-MVD-FRP-00005 24590-PTF-MVD-FRP-00006 24590-PTF-MVD-FRP-00007 24590-PTF-MVD-FRP-00008	12 12 12 12	III.10.E.9.c.ii	Y	Replace all listed Mechanical Data Sheets, Revision 11 currently in DWP with Revision 12 submitted with this package.
Drawings	24590-PTF-VDCN-MS-11-00003 24590-PTF-VDCN-MS-11-00004 24590-PTF-VDCN-MS-11-00005 24590-PTF-VDCN-MS-11-00006 24590-PTF-VDCN-MS-11-00007	NA	III.10.E.9.c.ii III.10.E.9.c.vi	Y	
Engineering Specification for Alteration and Repair of Site Stamped ASME Code Vessels and Boilers for Subcontract	24590-WTP-3PS-MVB2-T0002	0	III.10.E.9.c.ii	N	Submitted with package PTF-040 Rev. 1 (UFP-VSL-00062A/B/C)
Specification Change Notice - Stiffening and Stabilizing the Openings of Access Opening Repair Vessels	24590-WTP-3PN-MVB2-00010	NA	III.10.E.9.c.ii	N	Submitted with package PTF-040 Rev. 1 (UFP-VSL-00062A/B/C)
Specification Change Notice - Cutting Method for Access Opening	24590-WTP-3PN-MVB2-00011	NA	III.10.E.9.c.ii	N	Submitted with package PTF-040 Rev. 1 (UFP-VSL-00062A/B/C)

**For Incorporation into the Administrative Record**

<b>Engineering Document Title</b>	<b>Document Number</b>	<b>Revision</b>	<b>Permit Condition</b>	<b>Included</b>	<b>Remarks</b>
EFRT Issue M3 PJM Vessel Mixing Assessment, Volume 6 - FRP-VSL-00002A/B/C/D	24590-WTP-RPT-ENG-08-021-06	1	III.10.E.9.c.ii	N	Document available upon request.
Pretreatment Vessel Heel Dilution/Cleanout Feasibility Study	24590-WTP-RPT-PET-10-013	0	III.10.E.9.c.ii	N	Document available upon request.

# Design Changes in the Pretreatment Facility of the Waste Treatment Plant

The [Washington State Department of Ecology](#) is proposing a permit modification to the *Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste* for the Waste Treatment and Immobilization Plant (WTP). The proposed changes are located in Part III, Operating Unit 10. The co-permittees are the [U.S. Department of Energy Office of River Protection](#), P.O. Box 550, Richland, Washington, 99352 and [Bechtel National, Inc.](#) (BNI), 2435 Stevens Center Place, Richland, Washington, 99354.

This proposal is one of many changes to the original permit. It allows the co-permittees to continue construction while designing other parts of WTP.

We invite you to comment on this permit modification. The comment period begins October 24, 2011, and ends December 12, 2011.

## Background

The [Pretreatment Facility](#) (PTF) will prepare Hanford's tank waste for [vitrification](#) (immobilization in glass). PTF will split the waste into low-activity (less radioactive) and high-level streams.

Many of the waste tanks in PTF use pulse jet mixers with no moving parts. This eliminates the need for maintenance. Pulse jet mixer nozzles use compressed air to suspend solids in liquid waste. Solids collecting in tank bottoms can cause operational problems like clogs in suction pipes and, as they accumulate, the inability to withdraw even the liquid waste.

For more information about waste mixing issues at WTP, see our ECOconnect blog post from September 27, 2010: <http://ecologywa.blogspot.com/2010/09/waste-mixing-issues-in-hanfords-waste.html>.

## Four new design packages proposed

The proposed changes include the following four permit design packages that will affect PTF.

### WHY IT MATTERS

The proposed permit changes affect the [Pretreatment Facility](#) (PTF), which is part of the [Waste Treatment and Immobilization Plant](#) (WTP).

WTP will immobilize in glass dangerous radioactive and chemical wastes from the 177 aging underground tanks at [Hanford](#). This tank waste has polluted the groundwater that flows toward the Columbia River, so safely storing it is an important goal to help protect human health and the environment.

### PUBLIC COMMENT PERIOD

October 24 – December 12, 2011

### To Submit Comments

Send comments by e-mail (preferred), U.S. mail, or hand deliver them to:

Erika Holmes  
3100 Port of Benton Blvd.  
Richland, WA 99354  
[hanford@ecy.wa.gov](mailto:hanford@ecy.wa.gov)

### Public Hearing

A public hearing is not scheduled, but if there is enough interest, we will consider holding one. To request a hearing or for more information, contact:

Erika Holmes  
(509) 372-7880  
[hanford@ecy.wa.gov](mailto:hanford@ecy.wa.gov)

Or call the Hanford Cleanup Line at 1-800-321-2008.

### SPECIAL ACCOMMODATIONS

If you need this document in a format for the visually impaired, call the Nuclear Waste Program at 509-372-7950.

Persons with hearing loss, call 711 for Washington Relay Service. Persons with a speech disability, call 1-877-833-6341.

### **On-site Vessel Modification for Waste Feed Receipt Process (FRP) Vessels, Package PTF-009, Revision 2**

This permit design package affects four vessels, or tanks, that will receive dangerous radioactive and chemical waste. The proposed design will improve supports to the pulse jet mixers in the tanks.

The package contains an assessment report signed by an independent, qualified, registered professional engineer (IQRPE). The report certifies the integrity of the four tanks during all stages of the work, including:

- Planning.
- Cutting an entry opening in each tank wall.
- Altering pulse jet mixer and other supports.
- Closing the tanks when finished.

This permit package also contains revised mechanical data sheets and other documents to update the WTP Permit.

### **Supplemental Permit Package for Ultrafiltration Process Vessel Alterations (UFP-VSL-00062A/B/C), Package PTF-040, Revision 1**

This permit design package affects three ultrafiltration tanks. These tanks store liquid waste that has been filtered using semi-permeable tubes to remove solids. The alterations will improve supports to the pulse jet mixers in these tanks.

The design package contains two assessment reports signed by an IQRPE. Two of the tanks (UFP-VSL-00062A and B) are assessed in one report. The reports certify the integrity of the tanks during all stages of the work, including:

- Planning.
- Cutting an entry opening in each tank wall.
- Altering pulse jet mixer and other supports.
- Closing the tanks when finished.

This permit package also contains revised mechanical data sheets and other documents to update the WTP Permit.

### **Miscellaneous Treatment Unit for PTF Pulse Jet Ventilation Demisters (PJV-DMST-00002A/B/C) at Elevation 56 ft., Package PTF-079b, Revision 0**

This permit design package includes the pulse jet ventilation system demisters on the 56-foot elevation in PTF. The demisters control particulates and aerosols for the pulse jet ventilation off-gas system. The demisters use a mesh screen to reduce droplets and solids in the off-gas and extend the life of the downstream filters. (*Off-gas* is the airborne radioactive and hazardous byproduct of tank waste treatment.)

#### **TERMS TO KNOW**

##### **Dangerous Waste Permit (DWP):**

A State-issued permit allowing facilities to store, treat, and/or dispose of dangerous waste onsite.

##### **Pretreatment Facility (PTF):**

PTF separates tank waste into low-activity and high-level streams. PTF first concentrates liquid waste by removing excess water through evaporation. The concentrated mixture is then filtered using ultrafiltration to channel solids into the high-level waste stream. Finally, an ion exchange process separates the radioactive cesium from the low-activity portion for vitrification with the high-level waste.

##### **Resource Conservation & Recovery Act (RCRA):**

Law authorizing the U.S. Environmental Protection Agency (EPA) to control hazardous waste, including the generation, transportation, treatment, storage, and disposal of hazardous and other solid waste and waste in underground tanks. EPA delegated this authority to Washington State in 1986.

##### **Waste Treatment Plant (WTP):**

Facility to treat tank waste at the U.S. Department of Energy's Hanford Site. WTP has four facilities currently under construction: pretreatment (see "Pretreatment Facility" definition above), high-level waste vitrification, low-activity waste vitrification, and an analytical laboratory.

A second low-activity waste facility is needed to treat all the waste stored in Hanford's underground tanks by 2047, the legal deadline. For more information about this issue, see our ECOconnect blog posts from July 14, 2011:

<http://ecologywa.blogspot.com/2011/07/old-hanford-misconceptions-come-home-to.html>

and March 9, 2011:

<http://ecologywa.blogspot.com/2011/03/ecology-skeptical-of-alternate-waste.html>.

This package contains an assessment report signed by an IQRPE, equipment assembly drawings, a mechanical data sheet, a corrosion evaluation, and pending change documents.

### **Cesium Ion Exchange Process (CXP) Tank System Permit Modifications, Package PTF-015, Revision 1**

This permit package includes:

- Removing tank CXP-VSL-00001 (Tank CXP-1).
- Repurposing tank CXP-VSL-00004 (Tank CXP-4).
- Changing the inputs to tank CXP-VSL-00005 (Tank CXP-5) so that it will no longer manage dangerous waste.

The removal of cesium-137, a radioactive isotope, is an important step in converting high-level waste into low-activity waste. The CXP tank system feeds liquid waste to the ion exchange columns that remove cesium from the waste stream. The system uses reusable ion exchange beads. When the beads are saturated with cesium, the cesium is removed and processed with the high-level waste, and the beads are regenerated for reuse.

After testing the CXP tank system, BNI decided to remove Tank CXP-1 because it has no waste mixing capabilities. Tests showed that solids could form in Tank CXP-1 and using it to process waste would likely cause operational problems. Tank CXP-4, which does have waste mixing capabilities, will be repurposed to feed waste to the ion exchange columns. The proposed change will also result in a simpler piping design, more efficient waste processing, fewer immobilized low-activity waste containers, and overall lower costs.

Tank CXP-5 will provide demineralized water, caustic solutions, and standby nitric acid. These liquids will be used to flush the CXP system and regenerate the ion exchange beads that remove cesium.

This permit change removes the equipment assembly drawings, mechanical data sheets and corrosion evaluation sheets for tanks CXP-1 and CXP-5, as well as the piping and instrumentation diagram for Tank CXP-5. It revises the CXP description and adds or revises several piping and instrumentation diagrams and process flow diagrams.

**NOTE:** The co-permittees are applying for a temporary authorization to begin the proposed work on the CXP tank system during the public comment period per [Washington Administrative Code 173-303-830\(4\)\(e\)](#). They will be issuing an announcement with more information.

### **View the full proposal**

This is a summary of the proposed WTP Permit changes. The full proposal is available beginning October 24, 2011, on [Ecology's Nuclear Waste Program website \(www.ecy.wa.gov/programs/nwp/commentperiods.htm\)](http://www.ecy.wa.gov/programs/nwp/commentperiods.htm) or at one of Hanford's [public information repositories](#) (maps available at <http://bit.ly/aIEhHZ>):

Department of Energy Reading Room  
2710 University Drive  
Richland, WA 99354-1671

PSU Branford Price Millar Library  
1875 SW Park Avenue  
Portland, OR 97201-3220

University of WA Suzzallo Library  
PO Box 352900  
Seattle, WA 98195-2900

Gonzaga University Foley Center  
502 E Boone Avenue  
Spokane, WA 99258-1774



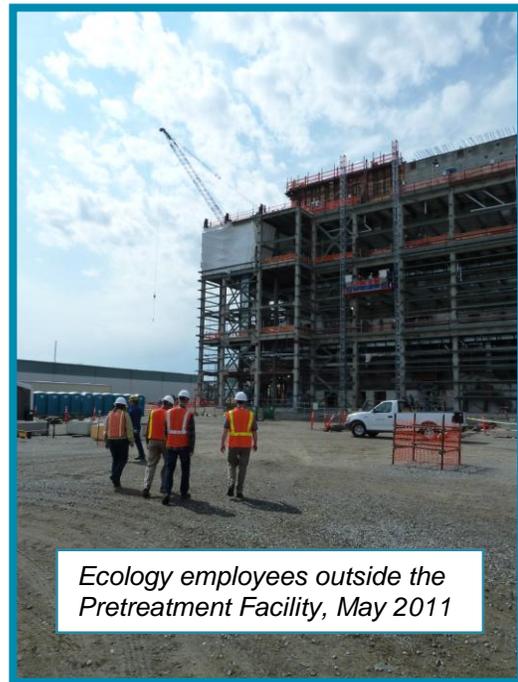
3100 Port of Benton Boulevard  
Richland, WA 99354

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## **Tell us what you think!**

**Public Comment Period  
October 24 –  
December 12, 2011**

On proposed design changes to  
the Pretreatment Facility at  
Hanford's Waste Treatment and  
Immobilization Plant



*Ecology employees outside the  
Pretreatment Facility, May 2011*

# Classified Legals

## PUBLIC NOTICE

The following measures will be submitted to voters on the November 8, 2011 General Election ballot:

## CONSTITUTIONAL AMENDMENTS

**Senate Joint Resolution 8205** - The legislature has proposed a constitutional amendment on repealing article VI, section 1A, of the Washington Constitution. This amendment would remove an inoperative provision from the state constitution regarding the length of time a voter must reside in Washington to vote for president and vice-president.

**Senate Joint Resolution 8206** - The legislature has proposed a constitutional amendment on the budget stabilization account maintained in the state treasury. This amendment would require the legislature to transfer additional moneys to the budget stabilization account in each fiscal biennium in which the state has received "extraordinary revenue growth," as defined, with certain limitations.

Find more information in the state Voters' Pamphlet, or online at [www.vote.wa.gov](http://www.vote.wa.gov). This notice is provided by the Office of the Secretary of State as required by law.  
#11-2926, 10/11, 10/18, 10/25/2011

November 8, 2011, 2:00 P.M., and then be publicly opened and read aloud in the Frost Building Main Conference Room.

Upon request, each firm, company and/or corporation shall receive a CD containing a PDF of all contract documents and plans. To order, call 509-585-4247 or pick up at 1010 E. Chemical Drive, Kennewick, WA.

This project is for the removal and replacement of 4,039 HPS City street lights with induction lights.

All bid proposals shall be accompanied by a bid proposal deposit in cash, certified check, cashier's check or surety bond in an amount equal to five percent (5%) of the amount of such bid proposal. Should the successful bidder fail to enter into such contract and furnish a satisfactory performance bond within the time stated in the specifications, the bid proposal deposit shall be forfeited to the City of Kennewick.

The City of Kennewick reserves the right to waive any informalities or to reject any or all bids.

For questions or additional information, please call 509-585-4247.

Peter M. Beaudry  
Executive Director of  
Municipal Services  
#11-2965, 10/18,  
10/25/2011

## INVITATION TO BID

The City of Kennewick will receive sealed bids for Contract #1105-11, "Kennewick Street Light Replacements Phase 2 City Street Light Pole Mounted", at the Dan Frost Municipal Services Building, 1010 E. Chemical Drive, Kennewick, WA 99336, until

**The Washington State Department of Ecology Announces a 45-Day Public Comment Period for Modifications to the Waste Treatment and Immobilization Plant Permit**

October 24 through December 12, 2011

The Washington State Department of Ecology is proposing a permit modification to the Hanford Facility, Resource Conservation and Recovery Act (RCRA) Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste for the Waste Treatment and Immobilization Plant (WTP). The proposed changes are located in Part III, Operating Unit 10. These proposed modifications are some of several revisions to the original permit. The co-permittees are the U.S. Department of Energy Office of River Protection, P.O. Box 550, Richland, Washington, 99352 and Bechtel National Inc., 2435 Stevens Center Place, Richland, Washington 99354.

A 45-day public comment period is scheduled to begin October 24 and end December 12, 2011.

## Why It Matters

WTP will be capable of treating 56 million gallons of dangerous radioactive and chemical wastes from the 177 aging underground tanks at Hanford. Treating the waste will reduce the risk posed to human health and the environment.

## Four New Design Packages Proposed

The proposed changes include the following four permit design packages that will affect the Pretreatment Facility (PTF). PTF will be the first step in vitrifying (immobilizing in glass) Hanford's tank waste. The facility will remove solids from the waste and split it into low-activity (less radioactive) and high-level waste streams.

**On-site Vessel Modification for Waste Feed Receipt Process (FRP-VSL-00002A, FRP-VSL-00002B, FRP-VSL-00002C, FRP-VSL-00002D) Vessels, Package PTF-009, Revision 2.**

This permit design package affects four vessels, or tanks, that will receive dangerous radioactive and chemical waste. The proposed design will improve supports to the pulse jet mixers and other components of these tanks.

**Supplemental Permit Package for Ultrafiltration Process Vessel Alterations (UFP-VSL-00062A, UFP-VSL-00062B, and UFP-VSL-00062C), Package PTF-040, Revision 1.**

This permit design package affects three ultrafiltration tanks. These tanks store liquid waste that has been filtered using semi-permeable tubes to remove solids. The alterations will improve supports to the pulse jet mixers and other components of these tanks.

## Miscellaneous

**Treatment Unit for PTF Pulse Jet Ventilation Demisters (PJV-DMST-00002A/B/C) at Elevation 56 ft., Package PTF-079b, Revision 0.**

This permit design package affects the pulse jet ventilation system demisters on the 56-foot elevation in PTF. The demisters control particulates and aerosols for the pulse jet ventilation off gas system. The demisters use a mesh screen to reduce droplets and solids in the off-gas and extend the life of the downstream filters. (Off-gas is an airborne radioactive and hazardous byproduct of tank waste treatment.)

**Cesium Ion Exchange**

**Process (CXP) Tank System Permit Modifications Package PTF-015, Revision 1.** This permit package affects three tanks in the CXP system. The removal of cesium-137, a radioactive isotope, is an important step in converting high-level tank waste into low-activity waste. The CXP tank system feeds liquid waste to the ion exchange columns that remove cesium from the waste stream. This permit package includes:

- o Removing tank CXP-VSL-00001.
- o Repurposing tank CXP-VSL-00004.
- o Changing the inputs to tank CXP-VSL-00005 so that it will no longer manage dangerous waste.

**NOTE:** The permittees are applying for a temporary authorization to begin the proposed work on the CXP tank system during the public comment period per Washington Administrative Code 173-303-830(4)(e). They will be issuing an announcement with more details.

The above description is a brief summary of the proposed modification. To review the proposed modification in detail beginning October 24, 2011, visit the Washington State Department of Ecology website, or visit one of the Information Repositories or Administrative Records.

Your views and concerns are important to us. For more information on the upcoming public comment period, please contact Erika Holmes at (509) 372-7880, or call the toll-free Hanford Cleanup Line at 1-800-321-2008.  
#11-3008, 10/25, 10/30/2011

**To Place Your Legal Announcement, Call 582-1560**

**From:** Holmes, Erika (ECY) [<mailto:EHOL461@ECY.WA.GOV>]

**Sent:** Thursday, September 22, 2011 6:05 PM

**To:** [HANFORD-INFO@LISTSERV.WA.GOV](mailto:HANFORD-INFO@LISTSERV.WA.GOV)

**Subject:** Upcoming Public Comment Period: Design Changes in the Pretreatment Facility of Hanford's Waste Treatment Plant

## **The Washington State Department of Ecology Announces a 45-Day Public Comment Period for Modifications to the Waste Treatment and Immobilization Plant Permit**

**October 24 through December 12, 2011**

The [Washington State Department of Ecology](#) is proposing a permit modification to the *Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit, Dangerous Waste Portion for the Treatment, Storage, and Disposal of Dangerous Waste for the Waste Treatment and Immobilization Plant (WTP)*. The proposed changes are located in Part III, Operating Unit 10. These proposed modifications are some of several revisions to the original permit. The co-permittees are the [U.S. Department of Energy Office of River Protection](#), P.O. Box 550, Richland, Washington, 99352 and Bechtel National Inc., 2435 Stevens Center Place, Richland, Washington 99354.

A 45-day public comment period is scheduled to begin October 24 and end December 12, 2011.

### **Why It Matters**

WTP will be capable of treating 56 million gallons of dangerous radioactive and chemical wastes from the 177 aging underground tanks at [Hanford](#). Treating the waste will reduce the risk posed to human health and the environment.

### **Four New Design Packages Proposed**

The proposed changes include the following four permit design packages that will affect the [Pretreatment Facility](#) (PTF). PTF will be the first step in [vitrifying](#) (immobilizing in glass) Hanford's tank waste. The facility will remove solids from the waste and split it into low-activity (less radioactive) and high-level waste streams.

- ***On-site Vessel Modification for Waste Feed Receipt Process (FRP-VSL-00002A, FRP-VSL-00002B, FRP-VSL-00002C, FRP-VSL-00002D) Vessels, Package PTF-009, Revision 2.*** This permit design package affects four vessels, or tanks, that will receive dangerous radioactive and chemical waste. The proposed design will improve supports to the pulse jet mixers and other components of these tanks.
- ***Supplemental Permit Package for Ultrafiltration Process Vessel Alterations (UFP-VSL-00062A, UFP-VSL-00062B, and UFP-VSL-00062C), Package PTF-040, Revision 1.*** This permit design package affects three ultrafiltration tanks. These tanks store liquid waste that has been filtered using semi-permeable tubes to remove solids. The alterations will improve supports to the pulse jet mixers and other components of these tanks.
- ***Miscellaneous Treatment Unit for PTF Pulse Jet Ventilation Demisters (PJV-DMST-00002A/B/C) at Elevation 56 ft., Package PTF-079b, Revision 0.*** This permit design package affects the pulse jet ventilation system demisters on the 56-foot elevation in

PTF. The demisters control particulates and aerosols for the pulse jet ventilation off gas system. The demisters use a mesh screen to reduce droplets and solids in the off-gas and extend the life of the downstream filters. (*Off-gas* is an airborne radioactive and hazardous byproduct of tank waste treatment.)

- **Cesium Ion Exchange Process (CXP) Tank System Permit Modifications Package PTF-015, Revision 1.** This permit package affects three tanks in the CXP system. The removal of cesium-137, a radioactive isotope, is an important step in converting high-level tank waste into low-activity waste. The CXP tank system feeds liquid waste to the ion exchange columns that remove cesium from the waste stream. This permit package includes:
  - Removing tank CXP-VSL-00001.
  - Repurposing tank CXP-VSL-00004.
  - Changing the inputs to tank CXP-VSL-00005 so that it will no longer manage dangerous waste.

**NOTE:** The co-permittees are applying for a temporary authorization to begin the proposed work on the CXP tank system during the public comment period per [Washington Administrative Code 173-303-830\(4\)\(e\)](#). They will be issuing an announcement with more details.

The above description is a brief summary of the proposed modification. To review the proposed modification in detail beginning October 24, 2011, visit the [Washington State Department of Ecology website](#), or visit one of the [Information Repositories or Administrative Records](#).

Your views and concerns are important to us. For more information on the upcoming public comment period, please contact [Erika Holmes](#) at (509) 372-7880, or call the toll-free Hanford Cleanup Line at 1-800-321-2008.

Public comment: Design changes in Hanford's Waste Treatment Plant - Microsoft Internet Explorer provided by The Nuclear Waste P

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### Public comment: Design changes in Hanford's Waste Treatment Plant

Public Event · By Ecology's Hanford Education & Outreach Network

Monday, October 24, 2011 at 8:00am until Monday, December 12, 2011 at 5:00pm

http://www.ecy.wa.gov/programs/nwp/commentperiods.htm

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February 13, 2012

12-NWP-0004

Mr. Scott Samuelson, Manager  
United States Department of Energy  
Office of River Protection  
P.O. Box 450, MSIN: H6-60  
Richland, Washington 99352

Mr. Frank Armijo, President  
Mission Support Alliance, LLC  
2490 Garlick Boulevard, MSIN: H5-20  
Richland, Washington 99354

Mr. Matthew McCormick, Manager  
United States Department of Energy  
Richland Operations Office  
P.O. Box 550, MSIN: A7-50  
Richland, Washington 99352

Mr. Michael Schlender, Associate Director  
Pacific Northwest National Laboratory  
P.O. Box 999, MSIN: K1-46  
Richland, Washington 99352

Mr. Frank Russo, Project Director  
Bechtel National, Inc.  
2435 Stevens Center Place, MSIN: H4-02  
Richland, Washington 99354

Mr. John Lehew, President  
CH2M HILL Plateau Remediation Company  
P.O. Box 1600, MSIN: H7-30  
Richland, Washington 99352

Ms. Carol Johnson, President  
Washington Closure Hanford, LLC  
2620 Fermi Avenue, MSIN: H4-24  
Richland, Washington 99354

Mr. Michael Johnson, Acting President  
Washington River Protection Solutions, LLC  
P.O. Box 850 MSIN: H6-63  
Richland, Washington 99352

Re: Final Permit Modification on the October 24 through December 12, 2011, Comment Period for 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 10, Waste Treatment and Immobilization Plant, WA7890008967*

Dear Madam and Gentlemen:

This letter issues the Department of Ecology's (Ecology) final permit decision to incorporate the permit modifications into Part III, Operating Unit 10 Waste Treatment and Immobilization Plant (WTP Permit) of the *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, WA7890008967*. In accordance with Washington Administrative Code (WAC) 173-303-840(8)(b)(ii). This WTP Permit was effective January 12, 2012.

We did not receive comments during the public comment period. A *Response to Comments* document is enclosed, which outlines the public involvement process taken in support of the public comment period (Ecology Publication: 12-05-001) as required by WAC 173-303-840(9). The *Response to Comments* document is available on the Ecology website at <http://www.ecy.wa.gov/biblio/nwp.html>.

The final permit modification package consists of the responsiveness summary, statement of basis, and the final WTP Permit. The electronic (DVD) and paper copy of the final WTP Permit is the official and enforceable version. A paper copy of the WTP Permit is provided to the USDOE Administrative Record, 2440 Stevens, Drive, Richland, Washington. DVD copies are provided to the Permittees.

This modification to the WTP Permit consists of the following design packages:

**Package PTF-040, Revision 1, Supplemental Permit Package for UFP-VSL-00062A, UFP-VSL-00062B, and UFP-VSL-00062C Vessel Alterations.** This permit design package affects three ultrafiltration vessels (tanks). These tanks store liquid waste that has been filtered using semi-permeable tubes to remove solids. The alterations will improve internal components to the pulse jet mixers (PJM) in these tanks.

The design package contains two assessment reports signed by an independent, qualified, registered professional engineer (IQRPE). UFP-VSL-00062A and UFP-VSL-00062B are assessed in one report. The reports certify the integrity of the tanks during all stages of the work, including:

- Planning.
- Cutting an entry opening in each tank wall.
- Altering PJM and other supports.
- Closing the tanks when finished.

This permit package also contains revised mechanical data sheets and other documents to update the WTP Permit.

**Package PTF-079b, Revision 0, Miscellaneous Treatment Unit for PTF Pulse Jet Ventilation Demisters (PJV-DMST-00002A/B/C) at Elevation 56 ft.** This permit design package includes the pulse jet ventilation system demisters on the 56-foot elevation in the Pretreatment Facility (PTF). The demisters control particulates and aerosols for the pulse jet ventilation off-gas system. The demisters use a mesh screen to reduce droplets and solids in the off-gas and extend the life of the downstream filters. (*Off-gas* is the airborne radioactive and hazardous byproduct of tank waste treatment.)

This package contains an assessment report signed by an IQRPE, equipment assembly drawings, a mechanical data sheet, a corrosion evaluation, and pending change documents.

**Package PTF-009, Revision 2, *On-site Vessel (Tank) Modification for FRP Vessels.***

This permit design package affects four tanks that will receive dangerous radioactive and chemical waste. The changes will improve supports to the internal components in the tanks.

The package contains an assessment report signed by an IQRPE. The report certifies the integrity of the four tanks during all stages of the work, including:

- Planning.
- Cutting an entry opening in each tank wall.
- Altering PJM and other supports.
- Closing the tanks when finished.

This permit package also contains revised mechanical data sheets and other documents to update the WTP Permit.

**Package PTF-015, Revision 1, *CXP Vessel (Tank) System Permit Modifications.***

- Removing tank CXP-VSL-00001 (Tank CXP-1).
- Repurposing tank CXP-VSL-00004 (Tank CXP-4).
- Changing the inputs to tank CXP-VSL-00005 (Tank CXP-5) so it will no longer manage dangerous waste.

The removal of cesium-137, a radioactive isotope, is an important step in converting high-level waste (HLW) into low-activity waste (LAW). The Cesium Ion Exchange Process (CXP) tank system feeds liquid waste to the ion exchange columns that remove cesium from the waste stream. The system uses reusable ion exchange beads. When the beads are saturated with cesium, the cesium is removed and processed with the HLW, and the beads are regenerated for reuse.

After testing the CXP tank system, Bechtel National, Inc. (BNI) decided to remove Tank CXP-1. Because of operating concerns, BNI tested the CXP tank system and found that solids could accumulate in Tank CXP-1. Since the CXP system is designed for liquids without solids, the system will operate better by not using Tank CXP-1. Tank CXP-4, which will allow more control of the waste temperature so that solids will not form, will be repurposed to feed waste to the ion exchange columns. The change will also result in a simpler piping design, more efficient waste processing, fewer immobilized LAW containers, and overall lower costs.

Tank CXP-5 will provide demineralized water, caustic solutions, and standby nitric acid. These liquids will be used to flush the CXP system and regenerate the ion exchange beads that remove cesium.

Package PTF-015 removes the equipment assembly drawings, mechanical data sheets, and corrosion evaluation sheets for tanks CXP-1 and CXP-5, as well as the piping and instrumentation diagrams (P&IDs) for Tank CXP-5. It revises the CXP description and adds or revises several P&IDs and process flow diagrams.

A Temporary Authorization was approved on October 17, 2011, to remove tank CXP-VSL-00001 during the public comment period per WAC 173-303-830(4)(e).

### **Class 1 Modifications**

In addition, since the draft WTP Permit was available for public comment on October 24 through December 12, 2011, per WAC 173-303-830(4)(a)(i) and (ii), Ecology administratively incorporated several Class 1 permit modifications into this final WTP Permit. As a courtesy, the modifications are listed below. Quarterly notification of all Class 1 permit modifications is provided to the facility mailing list in accordance with Permit Condition I.C.3.

- 24590-HLW-PCN-ENV-10-014, Class 1 Modification updates a corrosion evaluation for the Activated Carbon Adsorber in Appendix 10.9.
- 24590-HLW-PCN-ENV-10-005, Class <sup>1</sup> Modification submits the mechanical data sheet 24590-HLW-MVD-ENV-HDH-00006 for the HLW Canister Decon Vessel 1 and 2 in Appendix 10.6.
- 24590-HLW-PCN-ENV-11-003, Class 1 Modification provides updated mechanical data sheets (24590-HLW-M0D-HMP-0001/0002) and engineering specification (24590-HLW-3PS-AE00-T0001) for the HLW Melters 1 and 2 in Appendices 10.6 and 10.7
- 24590-HLW-PCN-ENV-11-005, Class 1 Modification provides updated P&IDs for HLW Canister Decontamination Handling System in Appendix 10.2.
- 24590-LAB-PCN-ENV-11-001, Class <sup>1</sup> Modification submits updated P&IDs for the Laboratory Radioactive Liquid Waste Disposal (RLD) System in Appendix 11.2. The five permit P&IDs are being replaced with 13 source P&IDs. The increase in the number of drawings submitted results from converting the source drawings into two or more drawings to provide a clearer representation of the RLD systems, including additional details on instrumentation and logic controls.
- 24590-PTF-PCN-ENV-11-001, Class <sup>1</sup> Modification submits the mechanical data sheet for the Waste Feed Evaporator Condensate Vessel FEP-VSL-00005 (24590-PTF-MVD-FEP-00003) and the engineering specification for Forced Circulation Vacuum Evaporator System (24590-PTF-3PS-MEVV-T0001) to replace the permitted documents in Appendices 8.6 and 8.7.
- 24590-PTF-PCN-ENV-11-004, Class <sup>1</sup> Modification updates PTF P&IDs for UFP-VSL-00001A and UFP-VSL-00001B in Appendix 8.2. These changes incorporate M3 design input requirements for increased number, arrangement, and performance of PJMs. In addition, the 8000 Revision 0 series drawings are removed from the WTP Permit.

Mr. Scott Samuelson, et al.  
February 13, 2012  
Page 5

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- 24590-WTP-PCN-ENV-11-007, Class 1 Modification updates engineering specification 24590-WTP-3PS-AFPS-T0006, Field Applied Special Protective Coatings for Secondary Containment Areas in Appendix 7.7.
- 24590-WTP-PCN-ENV-11-008, Class <sup>1</sup> Modification updates 24590-WTP-PER-CSA-02-001, Secondary Containment Design, with Revision 10 in Appendix 7.5.

If there are any questions, contact Annette Carlson at 509-372-7897.

Sincerely,



Jane A. Hedges  
Program Manager  
Nuclear Waste Program

asc:jc  
Enclosures

cc electronic w/o enc:

Helen Brownell, EPA  
Dennis Faulk, EPA  
Paul Harrington, USDOE  
Lori Huffman, USDOE  
Tony McKarns, USDOE  
Gae Neath, USDOE  
Delmar Noyes, USDOE  
Don Sommer, USDOE  
Donna Busche, BNI  
Barry Curn, BNI  
Barbara Dubiel, BNI  
Brad Erlandson, BNI  
Sandi Murdock, BNI  
Walter Remsen, BNI  
Dan Robertson, BNI  
Jan Schneider, BNI  
Gail Laws, WDOH

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Dave Bartus, EPA  
Barry Curn, BNI  
Susan Leckband, HAB  
Jon Perry, MSA  
Ken Niles, ODOE  
Stuart Harris, CTUIR  
Gabriel Bohnee, NPT  
Russell Jim, YN  
Administrative Record:  
Waste Treatment Plant (TSD #H-0-8)  
Environmental Portal  
EPA Region 10 Correspondence Control  
EPA Region 10 Hanford Office  
Hanford Operating Record General File  
USDOE-ORP Correspondence Control  
USDOE-RL Correspondence Control

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Administrative Record: Waste Treatment Plant (TSD #H-0-8)  
BNI Correspondence Control