

**Class 3 Modification  
Request to Modify the Hanford Facility Resource  
Conservation and Recovery Act Permit, Part III,  
Chapter 10, Waste Treatment and Immobilization  
Plant**

**Responsiveness Summary**



**Department of Ecology  
Nuclear Waste Program  
3100 Port of Benton Blvd.  
Richland, WA 99354**

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## **RESPONSIVENESS SUMMARY**

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Nuclear Waste Program

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## Introduction

On March 29, 2004, the U.S. Department of Energy (USDOE) Office of River Protection (ORP) and Bechtel National Inc. (BNI), the Permittees, submitted a Class 2 permit modification request for the Waste Treatment and Immobilization Plant (WTP) Unit. The proposed permit modification request:

- Deleted one melter from the Low-Activity Waste (LAW) facility design.
- Added one melter to the High-Level Waste (HLW) facility design.
- Deleted the technetium ion exchange process system from the Pretreatment Facility (PT) facility design.
- Revised the Part A Permit Application.
- Revised Chapters 4.0 and 6.0.

The permit modification followed the process prescribed in the Washington Administrative Code (WAC) 173-303-830(4)(b) for Class 2 modifications at the request of the Permittees. A 60-day public comment period began on March 31, 2004, and ended on June 1, 2004. At the close of the public comment period, Ecology received significant comments. As a result, pursuant to WAC 173-303-830(4)(b)(vi)(A)(III)(AA), Ecology elected to require the modification follow the Class 3 modification procedures contained in WAC 173-303-830(4)(c). The 60-day public comment period for the Class 3 modification was completed during the Class 2 modification process, so Ecology proceeded directly into the WAC 173-303-840 process. Ecology prepared a draft permit that:

- Deleted one melter from the LAW facility design.
- Added one melter to the HLW facility design.
- Added flooding volume calculations and sump data submitted in PT facility design package PTF-065.
- Added detailed HLW melter design information submitted in Permit Design Packages HLW-018 and HLW-019.
- Denied deletion of the technetium ion exchange process system from the PT facility design.
- Denied the Part A Permit Application.
- Added several new permit conditions.
- Incorporated several class 1 and <sup>1</sup>1 changes to update existing portions of the permit.
- Included several editorial revisions and format changes.

The Washington State Department of Ecology requested public comment on the draft permit for the WTP Unit permit during a 45-day public comment period held October 9 through November 27, 2006. On November 6, 2006, we received a request to extend the comment period; the comment period was extended to January 5, 2007.

This responsiveness summary addresses comments we received during the public comment period from one Tribal Government, two governmental organizations, and three public citizens.

The comments focused on two main issues:

- Deletion of one LAW melter from the LAW vitrification facility design.
- Retention of the technetium ion exchange process system in the PT facility design.

Excerpts of the comments received and Ecology’s responses are below. Complete copies of the comments are in Attachment 1 of this Responsiveness Summary.

When Ecology prepared the final permit, we incorporated the following changes:

- Deleted one melter from the Low Activity Waste facility design, but added Permit Condition III.10.I.1.a.xxiii. which requires the Permittees to retain the ability to install the third melter if necessary. Added one melter to the High Level Waste (HLW) facility design.
- Deleted the technetium ion exchange process system from the PT facility design.
- Added Permit Condition III.10.E.2.e. which requires the Permittees to HLWIT any high level fraction of mixed waste (LAW feed, supplemental treatment waste feed, and/or secondary waste streams) which exhibits the characteristic of corrosivity (D002) and/or toxicity for metals (D004 – D011).
- Added flooding volume calculations and sump data submitted in Pre-treatment (PT) facility design package PTF-065.
- Added detailed HLW melter design information submitted in permit design packages HLW-018 and HLW-019 and added instruments to Permit Table III.10.J.C.
- Added Permit Condition III.10.C.15.a.i which requires submittal of design information for specific Mechanical Handling Systems.
- Removed the Radioactive Waste Handling System (RWH) from the Critical System List in Appendix 2.0
- Added Permit Condition III.10.E.2.d. which limits design, fabrication, and installation of WTP tanks containing pulse jet mixers.
- Added Permit Condition III.10.C.2m. which requires USDOE to ensure all waste streams generated at the WTP will not contribute to an exceedence of environmental standards.
- Denied the Part A Permit Application.
- Established an agreement between Ecology and the Permittees to eliminate the use of phantom in all Permit documents within one year of the effective date of this Permit.
- Incorporated several Class 1 and <sup>1</sup>1 modifications to existing portions of the permit.
- Made several editorial corrections and format changes.

Since the draft permit was put out for public comment on October 9, 2006, per WAC 173-303-830(4)(a)(i) and (ii), Ecology has approved the following Class 1 and Class <sup>1</sup>1 Permit modifications which have been administratively incorporated into this final permit.

PCN Number and Description
Class '1 Permit Modification 24590-WTP-PCN-ENV-06-007, adds Tank System and Miscellaneous Unit System Piping Weld Nondestructive Examination Requirements (24590-WTP-PER-M-06-001, Rev 0) to the Hanford Tank WTP Common Installation Plans. This modification was delivered to Ecology offices on 10/05/2006 under letter #ORP 06-ESQ-138.

<p>Class '1 Permit Modification 24590-LAW-PCN-ENV-05-002, updates the Process and Instrumentation Diagram (P&amp;ID) for the Low-Activity Waste Radioactive Liquid Waste Disposal System C3/C5 Floor Drains Collection (24590-LAW-M6-RLD-P0003). This modification was delivered to Ecology offices on 11/01/2006 under letter #ORP 06-ESQ-155.</p>
<p>Class 1 Permit Modification 24590-HLW-PCN-ENV-06-009, updates Engineering Specification 24590-HLW-3PS-MQR0-TP002, for the High-Level Waste Canister Decontamination Handling Canister Rinse Bogie. This modification was delivered to Ecology offices on 11/14/06 under letter #ORP 06-ESQ-154</p>
<p>Class 1 Permit Modification 24590-HLW-PCN-ENV-06-024, update four Room and Equipment Lists (El. -21' ft, 0' ft, 37' ft, and 58' ft) for the High-Level Waste Facility. This modification was delivered to Ecology offices on 2/16/07 under letter #ORP 07-ESQ-015.</p>
<p>Class 1 Permit Modification 24590-HLW-PCN-ENV-06-016, to update HLW equipment assembly drawing 24590-HLW-M0-HSH-P0072, HLW Vitrification System HSH Design Proposal Drawing Decontamination Tank. This modification was delivered to Ecology offices on 2/23/07 under letter #ORP 07-ESQ-010.</p>
<p>Class 1 Permit Modification 24590-PTF-PCN-ENV-06-012, updates the Mechanical Data Sheet for the Pretreatment Facility Vessel Vent Caustic Scrubber (PVP-SCB-00002). This modification was delivered to Ecology offices on 4/19/07 under letter #ORP 07-ESQ-058.</p>
<p>Class 1 Modification 24590-HLW-PCN-ENV-06-010, updates the Engineering Specification for Vessel-Mounted Vertical Transfer Pumps – HLW Facility (24590-WTP-3PS-MPC0-TP009). This modification was delivered to Ecology offices on 5/8/07 under letter #ORP 07-ESQ-065.</p>
<p>Class 1 prime Permit modification 24590-WTP-PCN-ENV-07-001 establishes a date for submittal of a progress report in accordance with Permit Condition III.10.C.2.h. This modification was delivered to Ecology offices on 4/16/07 under letter #ORP 07-ESQ-047.</p>
<p>Class 1 Modification 24590-PTF-PCN-ENV-06-016, updates the Engineering Specification (24590-PTF-3PS-MKAS-TP001) for the PTF Vessel Vent Caustic Scrubber (PVP-SCB-00002). This modification was delivered to Ecology offices on 7/11/07 under letter #ORP 07-ESQ-106.</p>
<p>Class 1 Modification 24590-PTF-PCN-ENV-06-018, updates the Mechanical Data Sheets for the PTF Waste Feed Vessels (24590-PTF-MV-FRP-VSL-00002A/B/C/D). This modification was delivered to Ecology offices on 7/17/07 under letter #ORP 07-ESQ-108.</p>
<p>Class '1 Modification 24590-HLW-PCN-ENV-06-025, updates engineering drawing No. 24590-HLW-MO-HSH-P0075, "High-Level Waste Vitrification System HSH Melter Caves 1 &amp; 2 Process Flow Diagram Design Proposal Drawing." This modification was delivered to Ecology offices on 7/23/07 under letter #ORP 07-ESQ-111.</p>
<p>Class '1 Modification 24590-LAW-PCN-ENV-06-007, updates document No. 24590-LAW-PER-PR-03-001, "LAW Vitrification Offgas System Bypass Analysis." This modification was delivered to Ecology offices on 7/30/07 under letter #ORP 07-ESQ-112.</p>
<p>Class 1 Modification 24590-LAW-PCN-ENV-06-004, updates the Low-Activity Waste Vitrification Building General Arrangement Plans. This modification was delivered to Ecology Offices on 8/9/07 under letter #ORP 07-ESQ-127.</p>
<p>Class 1 Modification 24590-LAW-PCN-ENV-06-014, updates the process flow diagram for Low-Activity Waste Vitrification Secondary Offgas Treatment, 24590-LAW-M5-V17T-P0011. This modification was delivered to Ecology offices on 8/9/07 under letter #ORP 07-ESQ-129.</p>
<p>Class 1 Modification 24590-HLW-PCN-ENV-07-001, updates Mechanical Data Sheets (24590-HLW-MVD-HOP-P0015 and 24590-HLW-MVD-HOP-P0016) for the High-Level Waste Facility Activated Carbon Adsorbers (HOP-ADBR-00001A/B and HOP-ADBR-00002A/B). This modification was delivered to Ecology offices on 8/20/07 under letter #ORP 07-ESQ-128.</p>
<p>Class 1 Modification 24590-LAW-PCN-ENV-07-001, updates the Piping and Instrumentation Diagrams (24590-LAW-M6-LFP-P0001 and 24590-LAW-M6-LFP-P0003) for the Low-Activity Waste Melter Feed Process System Melter 1 and 2 Feed Preparation, and Feed Vessels (LFP-VSL-00001/2/3/4). This letter was delivered to Ecology offices on 8/20/07 under letter #ORP 07-ESQ-130.</p>
<p>Class '1 Modification 24590-LAW-PCN-ENV-07-003, updates the Low-Activity Waste (LAW) Vitrification Building Piping and Instrumentation Diagrams for the LAW Primary Offgas Process System Melter 1 and LAW Primary Offgas Process System Melter 2. This modification was delivered to Ecology offices on 8/21/07 under letter #ORP 07-ESQ-132.</p>

Class 1 Modification 24590-LAW-PCN-ENV-07-002, updates the Low-Activity Waste (LAW) Vitrification Building Piping and Instrumentation Diagrams for the LAW Primary Offgas Process System Concentrate Receipt Vessel LCP-VSL-00001, and LAW Primary Offgas Process System Concentrate Receipt Vessel LCP-VSL-00002. This modification was delivered to Ecology offices on 8/21/07 under letter #ORP 07-ESQ-131.
Class 1 Modification 24590-PTF-PCN-ENV-07-005, updates the PTF General Arrangement Plan at the 77' elevation. This modification was delivered to Ecology offices on 8/22/07 under letter #ORP 07-ESQ-136.
Class 1 Modification 24590-LAW-PCN-ENV-07-005, updates the Process Flow Diagram (PDF) for Low-Activity Waste (LAW) Ammonia and Secondary Offgas System (24590-LAW-M5-V17T-P0010). This modification was delivered to Ecology offices on 8/23/07 under letter #ORP 07-ESQ-133.
Class 1 Modification 24590-LAW-PCN-ENV-06-012, updates the Independent Qualified Registered Professional Engineer (IQRPE) Report for the Low-Activity Waste Feed Process (LFP) system Melter Feed Prep Vessels (LFP-VSL-00001/3) and Melter Feed Vessels (LFP-VSL-00002/4) and their appurtenances, located in cells L-0123/L-0124 respectively. This modification was delivered to Ecology offices on 8/23/07 under letter #ORP 07-ESQ-140.

One of the major purposes of this permit modification is to incorporate a new WTP melter configuration of two HLW melters and two LAW melters into the facility design. For ease of reference, Ecology will refer to this permit modification as the 2+2 Permit Mod.

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## Responsiveness Summary

### Comment 1:

George & Avone Williamson  
Richland, WA  
Submitted via e-mail

Please consider the following comments in your plans for the future capability and operation of the vit plant at Hanford. These comments are based on the fact that this is a very expensive and several decades long undertaking:

1. The number of high level and low activity waste melters needs to be based upon an integrated effort to complete the mission considering melter capacity, expected maintenance requirements, total operating efficiency, and the ability of the site infrastructure to supply waste feed to the vit plant. Rigorous queuing studies must be performed to fully answer this question.
2. Plans must be made to provide the capability to remove Tc 99 from the low activity waste prior to near surface disposal on the Hanford site. The Tc 99 is the most troublesome component for the long term performance of the low activity waste due to the long half-life. Why spend all the money to vitrify this waste stream if the most troublesome component (Tc 99) remains on the site after expensive treatment and disposal?
3. I understand that studies are underway to determine if more double shell tanks need to be built since the overall mission schedule has slipped so badly. If it is determined that more tanks

are needed, consider integrating the additional storage capability into the queuing studies for the overall operation of the vit plant. Remember that the mission is to clean up the site to a desired level, not just store waste in tanks as has been done in the past.

## **Ecology's Response:**

### **Removal of LAW melter and addition of HLW melter**

Ecology agrees. An integrated effort is essential to completing tank waste treatment. The cornerstone of this effort is completing the WTP facility in order to meet Tri-Party Agreement (TPA) Milestone M-062-10, which requires treatment of 10% of the tank waste by mass and 25% of the tank waste by activity by 2018. Based on this milestone, the WTP melters and support systems have been designed to support a throughput rate of 30 Metric tons of glass per day (MTG/day). The decision to reduce the number of LAW vitrification melters from three to two is based on three key factors. First, through research and development BNI has found that the addition of bubblers to the melters resulted in a 50% increase in throughput. As part of this permit modification, USDOE submitted documentation demonstrating the LAW melters could now consistently achieve a throughput rate of at least 15 MTG/day/melter when operating, achieving a total throughput rate of 30 MTG/day. Second, the LAW vitrification facility support systems (the canister handling system and the heat removal system) are only designed to support a throughput rate of 30 MTG/day. And third, by eliminating one of the three LAW melters, the USDOE will be able to divert the allotted resources to a second HLW melter, which will double the HLW vitrification facility throughput.

Retaining the third LAW melter will not result in an increase of overall LAW glass production, because the design limitations of the LAW support systems will allow only two melters to be operated at the same time. Construction of the LAW vitrification facility is too far along to accommodate the design changes necessary to support a throughput rate of 45 MTG/day in a timely and cost effective way. On the other hand, expediting the treatment of HLW will increase protection for human health and the environment by placing HLW in a stable waste form for deep geologic disposal sooner than anticipated. In addition, with two HLW melters, all the HLW can now be processed within the design life of the facility.

As for the remaining tank waste, substantially more LAW treatment capacity (an additional 60 metric tons per day) will still be needed. Ecology is currently working with USDOE to select either a suitable supplemental treatment technology or build a second LAW vitrification facility that is needed to complete the mission.

The Hanford Facility continues to look at ways to optimize waste treatment through tank sequencing. Deciding which tanks to retrieve first is a complex action based on multiple variables associated with the tank waste, and infrastructure issues with providing the waste feed. The latest information on tank sequencing can be found in the USDOE/ORP document *Single-Shell Tank Retrieval Selection and Sequence*, RPP-21216, Revision 1-B.

### **Removal of Technetium from LAW**

Ecology agrees. Technetium-99 (Tc-99) is a fission product generated in Hanford production reactors. It is a low energy beta emitter with a half life of 211,100 years. The total quantity of

Tc-99 produced at Hanford is estimated to be 33,500 Ci. The total quantity of Tc-99 remaining in underground storage tanks is estimated between 27,000 to 30,000 Ci after accounting for Tc-99 transferred to Fernald Ohio (with uranium oxide), transfers to cribs, and past leaks. According to the Code of Federal Regulations (CFR) Title 10 Part 72 Section 3 “High-level radioactive waste or HLW means: (1) The highly radioactive material resulting from the reprocessing of spent nuclear fuel, including liquid waste produced directly in reprocessing and any solid material derived from such liquid waste that contains fission products in sufficient concentrations; and (2) other highly radioactive material that the Commission, consistent with existing law, determines by rule requires permanent isolation.” Using the first portion of this definition, the Tc-99, Strontium-90 (Sr-90), Cesium-137 (Cs-137), and a host of other radioactive fission products in Hanford’s single-shell tank (SST) and double-shell tanks (DST) qualify as HLW. The Land Disposal Restrictions (LDRs) promulgated in 40 CFR 268.40, Treatment Standards, and incorporated into Washington’s Dangerous Waste Regulations, WAC 173-303-140(2)(a), specify that mixed radioactive high-level wastes carrying waste codes D002, D004, D005, D006, D007, D008, D009, D010, or D011 generated during the reprocessing of fuel rods must be treated using high-level vitrification (HLVIT). HLVIT is defined in 40 CFR 268.42 as “Vitrification of high-level mixed radioactive wastes in units in compliance with all applicable radioactive protection requirements under control of the Nuclear Regulatory Commission.” In accordance with these regulatory requirements USDOE is required to comply with LDR treatment requirements for all DST and SST tank waste and any resulting secondary waste streams which contain high level waste constituents and designate for characteristic metals, prior to disposal. Even if USDOE does not intend to dispose of the waste forms at Hanford and instead intends to store the wastes in lieu of disposal, treatment to the LDR standard is required to comply with the prohibition on storing LDR waste WAC 173-303-140(2)(a) (incorporating 40 C.F.R. § 268.50).

The WTP has processes in place to separate Sr-90 and Cs-137 and actinides in the PT facility and divert these radionuclides to the HLW facility for immobilization and eventual disposal in a deep geologic repository. According to information the Permittees provided, without Tc-99 separation, only about 1% of the Tc-99 will be shipped to a deep geologic repository. USDOE has not demonstrated that it can comply with environmental laws and regulations for the remaining 99% of Tc-99 that will be disposed near surface, presumably at the Hanford Facility.<sup>1</sup> According to information the Permittees provided, without Tc-99 separation and with a supplemental LAW facility, about 1% of the Tc-99 ends up in HLW glass, 30% in LAW glass, 69% in a yet to be determined waste form (i.e., secondary waste streams and a supplemental treatment glass form).

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<sup>1</sup> The 2001 Waste Treatment Plant [24590-WTP-DWPA-ENV-01-001, Rev. 1] permit application contains the following text: “Secondary waste streams (e.g., radioactive and dangerous solid waste, nonradioactive and nondangerous liquid effluents, and radioactive and dangerous liquid effluents) will be characterized and recycled into the treatment process, transported to permitted TSD facilities located on the Hanford Site, or transported offsite, as appropriate.” To date, Ecology is unaware of any offsite location(s) under consideration for receipt of this waste. In addition, the permit modification application for Hanford’s Integrated Disposal Facility (IDF) contains the following description: “The primary mission of the IDF will be to dispose of waste generated on the Hanford Site with the exception of TRU and CERCLA waste. This includes vitrified ILAW from the RPP-WTP, mixed waste generated through waste operations. ...alternative ILAW forms, and low-activity waste and high-level waste melters.”

Ecology has accepted that low activity waste vitrification in WTP meets the LDR HLVT treatment requirement. However, before disposal, secondary waste streams and supplemental treatment glass forms must also meet the LDR standards listed in 40 CFR 268.40. Ecology contends that if the secondary waste streams contain high level radioactive waste fission products and continue to designate for D002, D004, D005, D006, D007, D008, D009, D010, or D011, the LDR HLVT treatment standard applies. In addition, any supplemental treatment technology used to treat LAW must be determined to be equivalent to LDR HLVT. To date, USDOE has not demonstrated that the secondary waste forms and supplemental technologies meet the HLVT standard. Retaining the capacity to separate Tc-99 and isolate it in an HLVT waste form is therefore appropriate to ensure that all WTP waste streams can be either disposed of or stored at Hanford in compliance with LDR requirements.

In addition, WAC 173-303-395(2) requires: "In receiving, storing, handling, treating, processing, or disposing of dangerous wastes, the owner/operator must design, maintain, and operate his dangerous waste facility in compliance with all applicable federal, state, and local laws and regulations." Based on current information, USDOE cannot show that disposing of WTP-related mixed waste forms at the Hanford Facility will comply with all applicable legal requirements. This raises the concern that USDOE may produce mixed waste forms that either violate environmental laws if disposed of, or cannot be disposed of (and will become orphan mixed wastes) because they would violate such laws.

10 CFR 61.55 – Licensing Requirements for Land Disposal of Radioactive Waste establishes criteria for classification of radioactive waste as Class A, Class B, or Class C. Hanford SST and DST HLW must be classified by using both the long-lived and short-lived radionuclides. The estimated concentration of radionuclides per cubic meter will be evaluated in a Performance Assessment (PA) for the Integrated Disposal Facility (IDF). A National Environmental Policy Act (NEPA) analysis for disposal of the HLW stream will also be evaluated in the Tank Closure & Waste Management Environmental Impact Statement (TC&WM EIS). USDOE has not yet completed either document. Until Ecology can review the performance assessment (PA) and the TC&WM EIS and evaluate the assumptions used for estimating environmental impacts, it cannot be assumed that USDOE will be able to meet the applicable concentration standards required for land disposal of radioactive waste in a near-surface disposal facility. A near-surface disposal facility is defined as "a land disposal facility in which radioactive waste is disposed of in or within the upper 30 meters of the earth's surface."

Other applicable regulations include 40 CFR 141.66(d) – *MCL for beta particle and photon radioactivity*. The Drinking Water Standard maximum contaminant level (MCL) for Tc-99 is 900 pCi/L and is equivalent to 4 mrem (calculated as Critical Organ Dose) per year in drinking water (Hanford Site Groundwater Monitoring Report [PNNL-15670]). However, if two or more radionuclides are present, the sum of their annual dose equivalent to the total body or to any organ shall not exceed 4 mrem/year critical organ dose. Tc-99 is a very mobile isotope in the soil and groundwater and it has an extremely long half-life (211,100 years). As the Hanford facility operator, USDOE must consider the fate of Tc-99 disposed of at the on-site land disposal units, such as the IDF, after the liner has failed. USDOE has not yet completed an analysis of whether Tc-99 in WTP-related waste forms will leach from the waste forms, leach from the IDF,

enter the groundwater, and exceed regulatory groundwater quality standards. Until the results of disposal of all Immobilized Low Activity Waste (ILAW) glass from WTP or supplemental technologies and secondary waste forms are analyzed in the PA and the Risk Budget Tool for the IDF, their acceptability for near surface disposal cannot be decided.

Based on the facts above, Ecology believes it is in everyone's best interest for USDOE to remove as much of the HLW radionuclide inventory from the LAW streams as possible. However, we will not impose the condition proposed in the draft permit that would have restricted Tc-99 removal, if required, to the PT facility. It is not in the best interest of Hanford cleanup to significantly impact the budget or construction schedule for the PT facility. In addition, it would not be protective of human health and the environment to delay the treatment of HLW. However, in order to ensure compliance with LDR treatment standards and avoid violating other environmental laws (which could affect the fate of certain dangerous waste), and unless and until demonstrated otherwise, USDOE does need to preserve the capability of removing additional high level radioactive waste fission products from the WTP waste streams to be disposed of or stored on-site. Ecology is including the following permit condition with the understanding that it may be necessary to separate additional high level radioactive waste fission products from the LAW feed, supplemental treatment waste feed, or potentially from the secondary waste streams, so that more of the high-level radioactive waste fission products may be incorporated into what are today clearly recognized as legally compliant waste forms for disposal in a deep geological repository.

III.10.E.2.e. The Permittees will HLWIT any high level fraction of mixed waste which exhibits the characteristics of corrosivity (D002) and/or toxicity for metals (D004-D011). This ability will be maintained until: the Permittees have demonstrated they can meet all applicable LDR standards for supplemental technologies and all WTP secondary waste streams.

Ecology's approval for disposal of ILAW from supplemental treatment, and secondary wastes from WTP and supplemental treatment, will require demonstration by the Permittees that:

- The waste forms, including secondary waste streams produced by the selected supplemental treatment will perform as well as or better than the waste forms produced from the LAW facility.
- Ecology approves scientifically defensible documentation showing the distribution of high level radioactive waste fission products and characteristic metals (D004-D011) within the mass balance of the WTP, the supplemental treatment, and secondary waste streams meet all LDR standards.

This requirement is consistent with TPA Milestone M-62-08, which requires USDOE to provide Ecology all supplemental treatment technology waste form performance data compared with borosilicate glass.

#### **Need for additional DSTs**

Ecology agrees with the notion that our mission is to clean up the site and not just store waste.

Although this decision is not part of this permit modification, Ecology is working with the USDOE to determine if and when it is necessary to build any new tanks to support the overall tank waste storage and treatment missions, and to ensure protection of human health and the environment.

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## **Comment 2:**

ALLYN BOLT  
1019 S. IRBY ST.  
KENNEWICK, WASHINGTON 99338  
Comments received at November 9<sup>th</sup> Public Hearing

The reduction of the LAW vitrification facility from 3 to 2 melters reduces the capability of the facility. No documentation has been submitted that support the capability of follow-on LAW Vit capability (Milestone M-62-08 was not delivered by DOE unilateral decision. Until the information in TPA M-62-08 is developed and published there is inadequate technical support in reducing the LAW vitrification facility from 3 to 2 melters. In fact the proposed Supplemental Treatment of Bulk Vitrification may increase the quantities of Tc-99 and I-129 routed to the Effluent Treatment Facility and IDF. The increased Tc-99 emissions may require the addition of Tc removal back into the Pretreatment Facility.

### My Comment

The permit modification should be limited to increasing the HLW Vit facility from 1 to 2 melters. The permit issue of reducing the LAW melters from 3 to 2 should be tabled and addressed when the Milestone M-62-08 documentation is issued for review. This appears to be in 2010-2011 time frame.

## **Ecology Response:**

On March, 21, 2005, Ecology approved the Hanford Federal Facility Agreement and Consent Order (HFFACO) Change Control Form, extending the due date for Milestone M-062-08 from January 30, 2005 to June 30, 2006. Milestone M-062-08 requires submittal of Hanford tank waste supplemental treatment technologies report, draft Hanford tank waste treatment baseline, and draft negotiations agreement in principle.

According to the milestone, USDOE “will submit a supplemental treatment technologies report that describes the technical, financial, and contractual alternatives which in combination with the WTP and any required additional LAW vitrification facilities, are needed to treat all of Hanford’s tank wastes. The report will identify and describe viable path(s) forward to complete treatment of all tank wastes by 12/31/2028. The report shall apply the same selection criteria to all options and include the 2<sup>nd</sup> LAW vitrification facility as an option. The report will include: The results of all waste form performance data (compared against the performance of borosilicate glass) for all the treatment technologies being considered; adequate performance data to make decisions as to the acceptability of any proposed waste form for the waste being

considered; and description of the considered treatment technologies (including size, throughput, technical viability, and life cycle cost estimates).”

USDOE has not submitted the Hanford tank waste supplemental treatment technologies report and therefore has missed the milestone. Ecology is separately evaluating its enforcement options related to this missed milestone. New TPA requirements for this information have not been created and USDOE has cut funding for this project. USDOE will not have necessary information to write the report until the Demonstration Bulk Vitrification System (DBVS) is complete, now planned for 2011; however, funding is tenuous at this point. DBVS test information will be critical for USDOE and Ecology to evaluate the fate of future alternative treatment technologies. However, it does not preclude changing the current melter configuration, reducing the number of LAW melters from 3 to 2, and increasing the number of HLW melters from 1 to 2. As explained in the response to Comment 1, the throughput capacity of the LAW facility is not limited by the melter production rate; it is limited by other support systems such as the canister handling system and heat removal system. In addition, we are requiring the USDOE to retain the ability to install the third LAW melter until they can demonstrate an ILAW production rate of 30 MTG/day and an average of about 7,700 MTG (~1,280 containers) per year, at a 70% per year plant availability.

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### **Comment 3:**

Richard I Smith, P.E.  
Submitted via e-mail

First, let me say that I fully support the installation of the second HLW melter. This additional capacity is needed to achieve immobilization of the high-level tank wastes in a timely manner, thus permitting earlier retrieval and disposition of the wastes from the single-shell tanks, which currently present an on-going threat to the soil and groundwater beneath the tanks. However, deletion of the third melter planned for the LAW treatment facility would be a major mistake, for the reasons discussed below.

The current LAW facility design is flawed in that the heat removal capability is much too small, and limits the throughput capacity of the LAW facility to about 45 metric tons of glass (MtG) per operating day. While it appears that the cooling capacity could be increased sufficiently to permit three melters operating simultaneously to produce around 67 MtG/d, there is no evidence available that shows DOE/ORP has taken any steps to achieve that level of performance. With that higher throughput capacity, the LAW immobilization mission (using borosilicate glass) could be completed in about 23 years, without any supplemental treatment systems. Even operating 3 borosilicate melters that produce only 45 MtG/d, with the operating efficiency possible with 3 melters (about 92%), would shorten the operating lifetime of the facility needed to immobilize the inventory of LAW materials to about 35 years (assuming no supplemental treatment). If the glass former material were changed from borosilicate to iron phosphate, calculations indicate that the mission lifetime, for the 3-melter facility operating at about 67

MtG/d to immobilize the LAW inventory, could be reduced to about 20 years or less, without any supplemental treatment system.

I strongly oppose the deletion of the third LAW melter from the current LAW facility. The permit should require that the third melter be installed prior to facility startup, and that the current cooling capacity of the pouring caves be increased sufficiently to handle a daily facility throughput in the range of 67 MtG/d, thus providing a LAW facility that could very likely satisfy the LAW immobilization needs within the desired 20-year mission lifetime without any supplemental treatment facilities.

### **Ecology Response:**

We appreciate the interest you have expressed in evaluation of treatment technologies, the effort invested in developing life-cycle cost estimates for operation of the LAW facility under the 2 and 3 melter scenarios, and using borosilicate versus iron phosphate glass.

As explained in the response to Comment 1, USDOE has submitted documentation stating that glass melting rates are higher than previously estimated. However, evaluation of the LAW vitrification facility systems indicates that the canister handling line, pour cave ventilation, molten glass physical properties, and the availability of on-site electrical power will limit facility glass production. Based on current design information, a third LAW melter in the LAW vitrification facility design will not increase glass production capacity of the overall WTP.

It was not a part of this permit modification to evaluate the bulk vitrification system's treatment performance and financial viability relative to building a second 3-melter LAW facility, improving the performance of the current LAW facility by installing the third melter, or changing the glass form from borosilicate to iron phosphate.

In accordance with WAC 173-303-830(3) when a permit is modified, Ecology only reopens the conditions subject to modification. We will not address these comments in this responsiveness summary.

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### **Comment 4:**

Oregon Department of Energy  
625 Marion Street NE  
Salem, OR 97301-3737

We agree with and support DOE's proposal to add a second high-level waste melter. We disagree with and recommend you disapprove DOE's recommendation to reduce from three to two the number of low-activity waste melters. We strongly recommend that the Waste Treatment Plant be built to support the maximum sustainable production.

DOE argues that the heat withdrawal capability of the building is marginal or may be

exceeded by running three melters. If true, additional heat removal ability should be added. If additional heat removal is not possible, the addition of a third melter line allows the plant to continue seamless operation of two melters while the third is being replaced or serviced. Should any of the melters develop serious problems, the plant capacity is much less likely to be impacted if three melters are installed from the outset.

Ecology has been clear in stating the need for technetium removal from the waste. We strongly agree. Accordingly, we recommend that in the follow-on permit modifications that Ecology should retain the ability to pre-treat the wastes to remove a variety of nuclides, including technetium. It is vital that such materials be minimized in disposal at Hanford and that pre-treatment direct these wastes to the high-level waste fraction to the greatest degree possible.

## **Ecology Response:**

### **Removal of LAW melter and addition of HLW melter**

As explained in the response to Comment 1, USDOE has submitted documentation stating that the LAW vitrification facility support systems such as the container handling line and pour cave ventilation; the molten glass physical properties; and the availability of on-site electrical power will limit facility glass production. The ventilation system in the LAW facility is sized for 30 MTG/day production rate. Air is chilled and introduced into the melter rooms and the storage areas for cooling and into the container handling areas to keep the building internal wall temperature below the design maximum of 104° F. Excessive heat loads are known to damage concrete and could lead to a deterioration of the structural integrity of the building's walls and floor. While the system can handle a peak production rate of 45 metric tons per day, it is not designed to sustain this rate. The limiting factors in the ventilation system are ventilation duct size and high efficiency particulate air (HEPA) filter flow capacity.

The container handling and ventilation problems can be mitigated. However, there is not enough space in the existing LAW facility to add another container handling line or to add more HEPA filter housings. BNI designed and sized the LAW facility to hold the equipment needed to produce the contracted design production rate of 30 metric tons of glass per day. The changes needed to mitigate the container handling and ventilation sizing problems would require an expansion of the footprint of the LAW facility and considerable redesign work. The cost could be substantial. The proposed change in melter configuration (two LAW melters and two HLW melters) would still allow BNI to meet the contract requirement to deliver 30 metric tons of LAW glass per day, and would provide enough capacity to process all the HLW waste within the design life of the facility. Substantially more LAW treatment capacity (an additional 60 metric tons per day) will still be needed.

In the event that two LAW melters do not meet the combined production rate of 30 metric tons of glass per day, Ecology has added Permit Condition III.10.I.1.a.xxiii, requiring the Permittees to retain capability to install the third melter before or after hot startup.

However, the installation of a third melter would be a significant undertaking. The Permittees have estimated that installation of a third melter would impact both LAW and Balance of

Facilities (BOF) and take up to two years. During that time, the facility would be shut down and unable to process LAW feed.

Installation of a third melter would require significant design changes, procurements, and construction activities in addition to the modification of already installed systems. Installation would affect the third LAW melter process system and the third melter process cell. This includes the LAW concentrate receipt vessel, the LAW melter feed vessel and melter feed preparation vessel, the wet electrostatic precipitator, the submerged bed scrubber (SBS), and the SBS condensate vessel. Installation of a third melter would also require changes to the glass former system, the automatic sampling system, the C3 ventilation system, miscellaneous gas distribution system, and the LAW Container Pour Handling System and the LAW Melter Handling System.

Lesser modifications include the LAW Secondary Offgas/Vessel Vent Process System, the C5 ventilation system, plant chilled water system, instrument air, Radioactive Liquid Waste Disposal System, LAW Melter Equipment Support Handling System, and the uninterruptible, low, and medium voltage power supply systems. If the production from all three melters is limited to 30 MTG/day, changes to the LAW finishing line are not expected. A rough estimated cost for the installation of the third melter at today's dollars is \$350 million. These costs do not include the indirect costs associated with the shutdown of the WTP facility and loss of glass production during that time.

In contrast, we also asked the Permittees how long it would take for a melter change out, in the event of a failed or spent melter. A melter has an average operating life of 5 years. When one melter is spent or fails, it takes about 6 months to change out. Melter change out does not shut down the facility for most of the outage period. It reduces throughput to 50% (1 of 2 melters operating) and is anticipated to occur 6 months out of every 5 years. In the meantime, if one of the melters fails, a replacement melter is kept on-site to expedite change outs.

### **Removal of Technetium from LAW**

As explained in the response to Comment 1, Ecology believes it is in everyone's best interest for USDOE to remove as much of the HLW radionuclide inventory from the LAW streams as possible.

However, we will not impose the condition proposed in the draft permit that would have restricted Tc-99 removal, if required, to the PT facility. It is not in the best interest of Hanford cleanup to significantly impact the budget or construction schedule for the PT facility. In addition, it would not be protective of human health and the environment to delay the treatment of HLW. However, in order to ensure compliance with LDR treatment standards and avoid violating other environmental laws (which could affect the fate of certain dangerous waste), and unless and until demonstrated otherwise, USDOE does need to preserve the capability of removing additional high level radioactive waste fission products from the WTP waste streams to be disposed of or stored on-site. Ecology is including the following permit condition with the understanding that it may be necessary to separate additional high level radioactive waste fission products from the LAW feed, supplemental treatment waste feed, or potentially from the secondary waste streams so that more of the high level radioactive waste fission products may be

incorporated into what are today clearly recognized as legally compliant waste forms for disposal in a deep geological repository.

III.10.E.2.e. The Permittees will HLWIT any high level fraction of mixed waste which exhibits the characteristics of corrosivity (D002) and/or toxicity for metals (D004-D011). This ability will be maintained until: the Permittees have demonstrated they can meet all applicable LDR standards for supplemental technologies and all WTP secondary waste streams.

Ecology is not proposing any permit conditions about the removal of radionuclides from the WTP waste feeds. But we will require and enforce compliance with applicable LDR treatment standards and compliance with other environmental protection laws and regulations.

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### **Comment 5:**

Nez Perce  
Environmental Restoration & Waste Management  
PO Box 365  
Lapwai, ID 83540-0365

The Nez Perce Tribe Environmental Restoration and Waste Management program (ERWM) concurs with Ecology's decision to eliminate one Low Activity Waste (LAW) melter and add one High Level Waste (HLW) melter to the current design of the Waste Treatment Plant (WTP). This configuration of 2 X 2 increases capacity to handle HLW on a more timely basis.

In addition, ERWM is pleased to note the concern for LAW capacity emphasized in this permit. ERWM supports Ecology efforts to secure capability for a third LAW in this original design, should it prove necessary to production of treated glass waste in order to meet the first milestone (25% waste by radioactivity, and 10% by mass currently by 2018).

Because it is not clear that effective supplemental technologies dealing with low activity waste will be developed in a reasonable time frame, the ERWM is pleased to see that Ecology is maintaining, as their baseline, the additional vitrification plant for the remainder of the LAW.

ERWM provided comment for the *Class 2 Modification of the Dangerous Waste Permit for the Waste Treatment and Immobilization Plant* in a letter to Ecology and DOE on May 26, 2004. In short, it described ERWM concern about the DOE modification to eliminate the technetium ion exchange system from the Pretreatment Facility. Therefore, ERWM appreciates both the denial of the permittees' request to remove Tc treatment from the building design, and the discussion supporting that denial. This important step to ensure keeping the Tc-99 portion of the Legacy Waste out of the aquifer is highly significant to Nez Perce people. As ERWM has shared with Ecology before, water is held highly sacred by the Nez Perce.

## **Ecology Response:**

Ecology appreciates the supportive comments provided by the Nez Perce Tribe. The final WTP Permit will eliminate one LAW melter and add one HLW melter. As explained in the response to Comment 1, Ecology believes it is in everyone's best interest for USDOE to remove as much of the HLW radionuclide inventory from the LAW streams as possible.

However, we will not impose the condition proposed in the draft permit that would have restricted Tc-99 removal, if required, to the PT facility. It is not in the best interest of Hanford cleanup to significantly impact the budget or construction schedule for the PT facility. In addition, it would not be protective of human health and the environment to delay the treatment of HLW. However, in order to ensure compliance with LDR treatment standards and avoid violating other environmental laws (which could affect the fate of certain dangerous waste), and unless and until demonstrated otherwise, USDOE does need to preserve the capability of removing additional high level radioactive waste fission products from the WTP waste streams to be disposed of or stored on-site. Ecology is including the following permit condition with the understanding that it may be necessary to separate additional high level radioactive waste fission products from the LAW feed, supplemental treatment waste feed, or potentially from the secondary waste streams so that more of the high level radioactive waste fission products may be incorporated into what are today clearly recognized as legally compliant waste forms for disposal in a deep geological repository.

III.10.E.2.e. The Permittees will HLWIT any high level fraction of mixed waste which exhibits the characteristics of corrosivity (D002) and/or toxicity for metals (D004-D011). This ability will be maintained until: the Permittees have demonstrated they can meet all applicable LDR standards for supplemental technologies and all WTP secondary waste streams.

Ecology is not proposing any permit conditions about the removal of radionuclides from the WTP waste feeds. But we will require and enforce compliance with applicable LDR treatment standards and compliance with other environmental protection laws and regulations.

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## **Comment 6:**

United States Department of Energy  
Office of River Protection  
PO Box 450, MS H6-60  
Richland, WA 99352

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

We are concerned that the additional requirements being imposed by Ecology will impact scheduled completion of the project without improving public health and safety, advancing Hanford Site clean-up, or protecting the environment. Additionally, we believe Ecology has exceeded the scope of the Dangerous Waste Regulations by requiring the project to maintain specific capabilities, and obtain Ecology approval of specific design elements not covered by environmental regulations. These concerns are elaborated in our other comments.

In March 2004, a permit modification request was submitted to Ecology that proposed to:

- Change the facility configuration to 2 LAW and 2 HLW melter
- Remove the Technetium Ion Exchange System from the Pretreatment Facility
- Update information in the permit text based on engineering information that had been submitted and approved by Ecology to satisfy the compliance schedule.

The content and scope of the permit modification request was discussed with Ecology before the request was submitted, and Ecology was provided an opportunity to review the draft permit modification request and provide informal comments. These informal comments were resolved prior to formal submittal of the permit modification request.

Given our history of engagement, the number of approved documents, the access given to Ecology, and the dialogue we have sought to maintain, Ecology's proposed requirements to maintain capability to install the third LAW melter, maintain capability to install the Technetium Ion Exchange system, require the permitting of utility systems and mechanical handling systems, and require fabrication of six vessels to be stopped are unnecessary and appear to be without regulatory foundation in Chapter 70.105 RCW and Chapter 173-303 WAC.

### **Ecology Response:**

Ecology agrees that the Permittees have provided Ecology forthright access to facilities and WTP documentation. However, WAC 173-303-815(2)(b)(i) requires each permit to include permit conditions necessary to achieve compliance with the Hazardous Waste Management Act chapter 70.105 Revised Code of Washington (RCW), WAC 173-303, and Resource Conservation and Recovery Act (RCRA) Subtitle C. In satisfying this provision, the director may incorporate applicable requirements directly into the permit or establish other permit conditions that are based in WAC 173-303. We address each of the specific objections cited in Comment 6 below.

#### Capability to install the third LAW melter

As a TPA signatory, USDOE has agreed to undertake all actions required by the terms and conditions in the HFFACO. Milestone M-062-10 requires USDOE to "achieve sustained throughput of pretreatment, low-activity waste vitrification and high-level waste vitrification processes, and demonstrate WTP treatment complex availability to complete treatment of no less than 10% of the tank waste by mass and 25% of the tank waste by activity by December 2018." In order to attain this treatment capacity there are certain glass production rates which must be met. The ability to install a third melter provides Ecology with some assurance that the Permittees will be able to comply with these capacity requirements.

Technetium ion exchange system

As explained in the response to Comment 1, Ecology believes it is in everyone's best interest for USDOE to remove as much of the HLW radionuclide inventory from the LAW streams as possible.

However, we will not impose the condition proposed in the draft permit that would have restricted Tc-99 removal, if required, to the PT facility. It is not in the best interest of Hanford cleanup to significantly impact the budget or construction schedule for the PT facility. In addition, it would not be protective of human health and the environment to delay the treatment of HLW. However, in order to ensure compliance with LDR treatment standards and avoid violating other environmental laws (which could affect the fate of certain dangerous waste), and unless and until demonstrated otherwise, USDOE does need to preserve the capability of removing additional high level radioactive waste fission products from the WTP waste streams to be disposed of or stored on-site. Ecology is including the following permit condition with the understanding that it may be necessary to separate additional high level radioactive waste fission products from the LAW feed, supplemental treatment waste feed, or potentially from the secondary waste streams so that more of the high level radioactive waste fission products may be incorporated into what are today clearly recognized as legally compliant waste forms for disposal in a deep geological repository.

- III.10.E.2.e. The Permittees will HLWIT any high level fraction of mixed waste which exhibits the characteristics of corrosivity (D002) and/or toxicity for metals (D004-D011). This ability will be maintained until: the Permittees have demonstrated they can meet all applicable LDR standards for supplemental technologies and all WTP secondary waste streams.

Ecology is not proposing any permit conditions about the removal of radionuclides from the WTP waste feeds. But we will require and enforce compliance with applicable LDR treatment standards and compliance with other environmental protection laws and regulations.

Permitting utility and mechanical handling systems

According to WAC 173-303-800(2) "The owner/operator of a dangerous waste facility that transfers, treats, stores, or disposes (TSD) or recycles dangerous waste must, when required by this chapter, obtain a permit in accordance with WAC 173-303-800 through 173-303-840 covering the active life, closure period, ground water protection compliance period....." WAC 173-303-800(8) requires that each permit issued under this chapter will contain terms and conditions as the department determines necessary to protect human health and the environment. In addition, WAC 173-303-283 contains general performance standards for dangerous waste facilities, and states that they "must be used to determine whether more stringent facility standards should be applied than those spelled out in WAC 173-303-280, 173-303-290 through 173-303-400 and 173-303-600 through 173-303-692." According to WAC 173-303-810(9) the Permittees must furnish to the department, within a reasonable time, any information which it may request to determine whether cause exists for modifying, revoking and reissuing, or terminating a permit, or to determine compliance with a permit. Ecology has asked for

additional Process and Instrumentation Diagrams (P&IDs) that depict instrumentation and equipment that are important and/or essential to the function and operation of critical systems. We do not propose including P&IDs for what are typically considered 'utilities' defined in Webster's Dictionary as a useful service. Examples include the chilled water system, domestic (potable) water system, fire protection water system, lighting electrical system, low voltage electrical system, plant service air system, and raw water system. We have also requested the Permittees include design information for cranes that lift and transport filled ILAW containers and IHLW canisters. We have requested this information to maintain configuration management control in the permit for selected critical system design information.

#### Vessel fabrication hold

Ecology has the authority to withhold approval to install tank systems if the structural integrity assessment, prepared by the Independent Qualified Registered Professional Engineer (IQRPE), is inadequate or incomplete (WAC 173-303-640(3)(a)). We also have the authority to require provision of adequate erosion-corrosion protection to ensure the integrity of the tank system (WAC 173-303-640(3)(g)). In July 2004, we issued a Notice of Non-Compliance to the Permittees for deleting wear plates on the bottom of the waste feed receipt vessels without first obtaining a permit modification. (Wear plates were included in the design of several WTP vessels with pulse jet mixers (PJMs) to prevent erosion of the vessel bottom directly below them.) In September 2004, to accommodate potential design changes to installed vessels, Ecology required that the Permittees maintain access to black cells until issues relating to adequacy of erosion allowance were resolved. Discussions on these issues continued through early 2006. In June 2006, we requested that the Permittees either increase wear allowance by a factor of four in all vessels with PJMs, or conduct facility-specific erosion testing to support the existing design basis, and inform Ecology of their decision by August 2006. At the same time, we imposed an installation hold on the six vessels for which the factor of four increase in wear allowance would have required design changes, and required submittal and approval of revised structural integrity assessments for those vessels before installation. The Permittees requested delaying that decision until the end of February 2007. To preclude potential rework that might bias the Permittees' decision, Ecology then imposed a hold on fabrication and assembly of the six vessels that would have required thicker wear plates as a result of the factor of four increase in wear allowance. Since then Ecology has twice approved selected fabrication activities that would not affect installation of wear plates in those vessels. In February 2007, the Permittees informed Ecology of their decision to perform facility-specific testing, and to revise design of wear allowance features, if required, when the erosion wear test results become available. As stated in our letter that imposed the fabrication and assembly hold, once Ecology and the Permittees agree on design criteria for erosion and updated structural integrity assessments for the six vessels, the hold will be lifted. Refer also to Ecology's response to Comment 15 for additional information on this issue.

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### **Comment 7:**

Please delete these permit conditions and the Ecology-added changes to Attachment 51 Appendix 10.1 and 10.2 or provide a basis from Chapter 173-303 WAC, specifically WAC 173-303-815(2)(b).

The draft permit contains a number of proposed permit conditions identified below:

- Introduction of a new class of regulated unit, support systems (III.10.C.15)
- Requirement to stop fabrication of six vessels prior to the point of compliance, installation in the WTP (III.10.E.2.d)
- Requirement to retain the capability to install the Technetium Ion Exchange System (III.10.E.2.e)
- Modification of engineering drawings to incorporate utilities and support systems that do not manage dangerous waste after they were stamped by a Registered Professional Engineer and certified by the Permittees as true, accurate, and complete (Attachment 51, Appendices 10.1, 10.2)

Ecology identifies on page 17 of the Statement of Basis the need to add 45 new drawings to the permit.

These proposed requirements do not incrementally increase protection of the environment or worker and public safety, and could result in schedule delays.

### **Ecology Response:**

To minimize the length of this responsiveness summary, we will not repeat responses to like comments. For detailed responses to similar comments in other parts of this summary please refer to the following responses:

- Introduction of a new class of regulated unit – Response to Comments 12 and 13.
- Requirement to stop fabrication of six vessels – Response to Comment 15.
- Capability to install the Technetium Ion Exchange System – Response to Comment 1.
- Modification of engineering drawings – Response to Comment 11.

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### **Comment 8:**

Tc-99 is a radionuclide regulated by the Federal Atomic Energy Act of 1954, and is not regulated under the authority of the Dangerous Waste Permit and Chapter 70.105 RCW:

- Please delete the proposed permit condition and associated information related to Technetium ion exchange system in the permit text and tables.
- Please approve the permit modification request to remove the Technetium Ion Exchange System from the WTP Permit.

## **Ecology Response:**

As explained in the response to Comment 1, Ecology believes it is in everyone's best interest for USDOE to remove as much of the HLW radionuclide inventory from the LAW streams as possible.

However, we will not impose the condition proposed in the draft permit that would have restricted Tc-99 removal, if required, to the PT facility. It is not in the best interest of Hanford cleanup to significantly impact the budget or construction schedule for the PT facility. In addition, it would not be protective of human health and the environment to delay the treatment of HLW. However, in order to ensure compliance with LDR treatment standards and avoid violating other environmental laws (which could affect the fate of certain dangerous waste), and unless and until demonstrated otherwise, USDOE does need to preserve the capability of removing additional high level radioactive waste fission products from the WTP waste streams to be disposed of or stored on-site. Ecology is including the following permit condition with the understanding that it may be necessary to separate additional high level radioactive waste fission products from the LAW feed, supplemental treatment waste feed, or potentially from the secondary waste streams so that more of the high level radioactive waste fission products may be incorporated into what are today clearly recognized as legally compliant waste forms for disposal in a deep geological repository.

III.10.E.2.e. The Permittees will HLWIT any high level fraction of mixed waste which exhibits the characteristics of corrosivity (D002) and/or toxicity for metals (D004-D011). This ability will be maintained until: the Permittees have demonstrated they can meet all applicable LDR standards for supplemental technologies and all WTP secondary waste streams.

Ecology is not proposing any permit conditions about the removal of radionuclides from the WTP waste feeds. But we will require and enforce compliance with applicable LDR treatment standards and compliance with other environmental protection laws and regulations.

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## **Comment 9:**

Please delete the proposed permit condition requiring the capability to install the Technetium ion exchange system because:

- Ecology does not have regulatory jurisdiction over Tc-99,
- Tc-99 is bound in the ILAW and IHLW and will not adversely impact Hanford groundwater,
- The LAW glass produced in the WTP will meet the Integrated Disposal Facility waste acceptance criteria,
- There is no justification for Ecology to regulate the WTP for matters that pertain to the Integrated Disposal Facility, and

Installation of the system is neither technically nor economically practicable

### **Ecology Response:**

As explained in the response to Comment 1, Ecology believes it is in everyone's best interest for USDOE to remove as much of the HLW radionuclide inventory from the LAW streams as possible.

However, we will not impose the condition proposed in the draft permit that would have restricted Tc-99 removal, if required, to the PT facility. It is not in the best interest of Hanford cleanup to significantly impact the budget or construction schedule for the PT facility. In addition, it would not be protective of human health and the environment to delay the treatment of HLW. However, in order to ensure compliance with LDR treatment standards and avoid violating other environmental laws (which could affect the fate of certain dangerous waste), and unless and until demonstrated otherwise, USDOE does need to preserve the capability of removing additional high level radioactive waste fission products from the WTP waste streams to be disposed of or stored on-site. Ecology is including the following permit condition with the understanding that it may be necessary to separate additional high level radioactive waste fission products from the LAW feed, supplemental treatment waste feed, or potentially from the secondary waste streams so that more of the high level radioactive waste fission products may be incorporated into what are today clearly recognized as legally compliant waste forms for disposal in a deep geological repository.

III.10.E.2.e. The Permittees will HLWIT any high level fraction of mixed waste which exhibits the characteristics of corrosivity (D002) and/or toxicity for metals (D004-D011). This ability will be maintained until: the Permittees have demonstrated they can meet all applicable LDR standards for supplemental technologies and all WTP secondary waste streams.

Ecology is not proposing any permit conditions about the removal of radionuclides from the WTP waste feeds. But we will require and enforce compliance with applicable LDR treatment standards and compliance with other environmental protection laws and regulations.

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### **Comment 10:**

Please revise this condition to read:

“III.10.I.1.a.xxiii. The existing LAW building will retain capability to install the third melter before or after hot start-up. No permanent systems, structures, or components shall be installed in the melter cell, pour cave or wet process cell for the third melter that would preclude future installation of the third melter.

## **Ecology Response:**

Ecology agrees with the suggested changes for Permit Condition III.10.I.1.a.xxiii. Compliance with this permit condition will be determined by the following criteria which were proposed by the Permittees and modified by Ecology:

- The foundation for the third melter pour cave carousel will be installed.
- Embedments in the -21 foot level basemat will be installed.
- Embedments in the -21 foot level walls for the installation of equipment, piping and liners supporting the installation of the third melter will be installed.
- Piping/cable penetrations in the -21 foot level walls to support future installation of piping and wiring will be installed.
- No equipment will be installed in the third melter process cell that will eliminate the ability to install the process vessels for the third melter.
- The common pipeline sizes will be sized for a peak glass throughput rate of 30 MTG/day.
- The pumps and heat exchangers (e.g., chilled water, process water) will be designed to support a peak throughput of 30 MTG/day.
- Secondary offgas piping and equipment will be sized to support a peak glass throughput rate of 30 MTG/day.
- General electrical capacity and configuration will support a 30 MTG/day peak glass throughput rate.
- Process cell sumps will be installed.
- The structure for the third melter foundation will be installed in the +3 foot level floor.

The following embedments will be installed:

- Embedments in the +3 foot level floor except the melter rail anchor bolts and floor grillage.
- Embedments in the +3 foot level walls for the installation of equipment, piping and liners supporting the installation of the third melter systems.
- Embedments for the special melter pulleys.

The following floor and wall penetrations will be installed:

- The cable tray penetrations for the third melter.
- The melter buss duct penetration.

The wall grillage in the third melter process cell will not be installed; embedments will be installed at a later date.

The melter import rails and the process vessel rings are not required to be installed, but the +3 foot floor and walls must retain the ability for future installation of the melter rails and process vessel rings.

We have added Permit Condition III.10.I.1.a.xxiii, essentially as stated above, to retain capability to install the third melter before or after hot startup, if two LAW melters do not meet the

combined production rate of 30 MTG/day. We are requiring USDOE to retain the ability to install the third LAW melter until they can demonstrate an ILAW production rate of 30 MTG/day and an average of about 7,700 MTG (~1,280 containers) per year, which can be achieved at a 70% plant availability.

We are requiring that the Permittees keep the capability to install a third LAW melter. What does that really mean? Ecology queried the Permittees to answer this question. They responded that, in general, this means the space for the melter is available, engineering features already installed remain in place, and nothing is being done in this reserved space to preclude future installation of a third melter. If the production of LAW glass falls short of the 30 MTG/day expected throughput, USDOE would likely commission a feasibility study to determine the best means of increasing production. Options would include installation of a third melter, increasing production at planned supplemental treatment facilities, or both.

The installation of a third melter would be a significant undertaking. A detailed description is provided in the response to Comment 4.

Although the constraints associated with the addition of a third melter in the LAW facility are extensive, Ecology is requiring the Permittees maintain the capability to install a third LAW melter. Ecology is pleased that the Permittees are staging a replacement melter on-site and it can be installed without major and long-term impacts to LAW production.

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### **Comment 11:**

Please remove the proposed permit changes that would incorporate drawings that have been added and/or edited by Ecology into the permit. The Permittees could find no regulatory requirements supporting the permitting of utilities in a Dangerous Waste Permit in the following provisions of the WAC:

- Final facility permits (WAC 173-303-806)
- Establishing permit conditions (WAC 173-303-815(2))
- Environmental performance standards (WAC 173-303-680(2))
- Procedures for decision making (WAC 173-303-840(2)(b)):

### **Ecology Response:**

Ecology agrees with the request to remove the drawings that we have edited. We are agreeing with this request because of the resolution to Comment 21. The Permittees have agreed to stop using ghosting on permit drawings and to submit source drawings for incorporation into the permit. Once source drawings are submitted there will no longer be any need for bubbles to indicate the regulatory status of equipment. We will address permitted equipment in: permit conditions, equipment lists, permit inspection tables, narrative text, or some combination.

The Permittees submitted these drawings as part of HLW melter packages HLW-018 and HLW-019. Since these drawings will eventually be replaced with source drawings, Ecology will

incorporate the drawings as submitted (including ghosting). However, based on implementation of the resolution to Comment 21, the purpose of the ghosting on these drawings is to indicate items that do not require IQRPE assessment of design, or installation inspections by a qualified installation inspector, in accordance with the Dangerous Waste Permit and/or WAC requirements. Bold lines and ghosting are not being used to indicate the regulatory status of equipment. Please see the response to Comment 21 for more detail on the use of source drawings.

In the draft permit, we added five melter assembly drawings to meet Permit condition III.10.J.5.c.ii., which requires submittal of HLW melter mechanical drawings. The Permittees did not provide these drawings in the design package submittal. The five drawings Ecology selected to fulfill this Permit condition were: HLW Melter Assembly Drawing WTP-M-21951-3, Sheets 8, 9, 10, and 11, Revisions 3, and HLW Melter Assembly Drawing WTP-M-21951-1, Sheet 5, Revision 3. The Permittees indicated that these are vendor drawings and they should not be incorporated into the Permit. We have added Compliance Schedule Item 41, which provides the Permittees time to prepare and submit mechanical drawings showing physical attributes and overall dimensions of the HLW melters, for incorporation into the permit.

In addition, we included two P&IDs, *HLW Melter 1 System Film Cooler Utilities* 24590-HLW-M6-HMP-00012 and *HLW Melter 2 System Film Cooler Utilities* 24590-HLW-M6-HMP-20012. These P&IDs show the piping configuration, instrumentation, pressure and flow signals, and control valves for instrument air and demineralized water supply lines to the film coolers of each HLW melter. The operation of these air and water supply lines is essential to proper operation of the HLW melter offgas treatment systems.

Based on the resolution to Comment 21, we will not include these drawings in this permit modification, we have chosen to add Compliance Schedule Item 41 requiring the Permittees to submit these source drawings twelve months after the effective date of this permit modification.

41.	Submit the following source drawings to complete HLW melter permit packages HLW-018 and HLW-019: <ul style="list-style-type: none"> <li>▪ P&amp;ID <i>HLW Melter 1 System Film Cooler Utilities</i>, 24590-HLW-M6-HMP-00012,</li> <li>▪ P&amp;ID <i>HLW Melter 2 System Film Cooler Utilities</i>, 24590-HLW-M6-HMP-20012,</li> <li>▪ HLW Melter Mechanical Drawings showing the melter physical attributes and overall dimensions.</li> </ul>	Within 1 year of the effective date of the 2+2 permit modification (exact date will be inserted during next modification)
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**Comment 12:**

Please delete permit condition III.10.C.15, Table III.10.C.A, and Compliance Schedule Items 36 through 39 for support systems and mechanical handling systems. The Permittees could find no regulatory basis in WAC 173-303-806(4) or WAC 173-303-815(2) that requires permitting of

support systems such as mechanical handling systems. Including support systems, such as mechanical handling systems, in the Permit is inconsistent with Ecology's historical permitting approach.

### **Ecology Response:**

The permit defines a critical system as "those specific portions of a TSD unit's structure, or equipment, whose failure could lead to the release of dangerous waste into the environment, and/or systems which include processes which treat, transfer, store, or dispose of regulated wastes." In accordance with Permit Condition III.10.C.9, the Permittees cannot make changes to systems identified as critical without Ecology's review, and if necessary, a Permit change. The LAW Container Export Handling System (LEH), LAW Melter Handling System (LMH), and HLW Canister Export Handling System (HEH) systems are identified as critical systems in the WTP Permit. The Radioactive Waste Handling (RWH) system has not been included in the permit as a critical system because it only transfers generator waste (see response to Comment 13). However, all of these systems transfer containers of dangerous waste within the WTP. These mechanical handling systems are one-of-a-kind pieces of equipment built into the WTP facility. They are essential to the transfer of regulated waste. The WTP Permit does not address any information needs for mechanical handling systems, so we are adding the following Permit condition and compliance schedule items.

- III.10.C.15.a.i. The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., in accordance with the Compliance Schedule, as specified in Operating Unit 10, Appendix 1.0 of this Permit, engineering information as specified below, for incorporation into Attachment 51, Appendices 9.6, 9.10, 10.6, and 10.10 of this Permit, or into the Administrative Record where noted.
- A. System Descriptions for each Mechanical Handling system identified in Permit Table III.10.C.A, for incorporation into the Administrative Record (Compliance Schedule Item 36).
  - B. Mechanical Handling Diagrams and Mechanical Handling Data Sheets for the following pieces of equipment (Compliance Schedule Item 37):
    - a. HDH-CRN-00005
    - b. HEH-CRN-00003
    - c. HPH-CRN-00001
    - d. HPH-CRN-00002
    - e. HSH-CRN-00001
    - f. HSH-CRN-00014
    - g. LEH-CRN-00003
    - h. LPH-CRN-00002
    - i. HEH-CRN-00001
  - C. Permit condition III.10.C.15.a. does not require:
    - a. Additional submittals beyond those described in permit condition III.10.C.15.a.
    - b. IQRPE reports for equipment identified in III.10.C.15.a.i (B).
    - c. Installation inspections for equipment identified in III.10.C.15.a.i (B).
    - d. Other inspection, verification, operability, maintenance, or records management beyond that which is specified elsewhere in this permit, for

equipment identified in III.10.C.15.a.i (B), or by conditions III.10.C.15.a.ii and III.10.C.15.a.iii.

III.10.C.15.a.ii. The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to initial receipt of dangerous waste and/or mixed waste in the WTP Unit, engineering information as identified below for incorporation into Attachment 51, Appendices 9.13, 9.18, 10.13, and 10.18 of this Permit.

- A. Equipment instrument logic narrative description related to safe operation of equipment covered by III.10.C.15.a.i.B, including but not limited to allowed travel path for bridge and trolley, upper and lower hook travel limits, two-blocking prevention, hook load limits, wire rope misreeling, and overspeed protection (Compliance Schedule Item 38).
- B. Descriptions of operational procedures demonstrating appropriate controls and practices are in place to ensure equipment covered by III.10.C.15.a.i.B. will be operated in a safe and reliable manner that will not result in damage to regulated tank systems, miscellaneous unit systems, or canisters of vitrified waste (Compliance Schedule Item 39).

III.10.C.15.a.iii. Prior to initial receipt of dangerous waste and/or mixed waste in the WTP Unit, the Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, the following for incorporation into Attachment 51, Chapter 4.0: Updated Narrative Description and figures for all Mechanical Handling Systems identified in Permit Table III.10.C.A., to include but not limited to travel path, fail safe conditions, fail safe logic control, safety features and controls that minimize the potential for release of dangerous/mixed waste during normal operations, and lifting and/or load capabilities of each crane specified in III.10.C.15.a.i.B.

Tables III.10.C.A – Mechanical Handling Systems		
Pretreatment Building		
	Pretreatment Filter Cave Handling System	PFH
	Pretreatment In-Cell Handling System	PIH
	Radioactive Solid Waste Handling System	RWH
Low-Activity Waste Building		
	Radioactive Solid Waste Handling System	RWH
	LAW Melter Equipment Support Handling System	LSH
	LAW Container Pour Handling System	LPH
	LAW Container Finishing Handling System	LFH
	LAW Melter Handling System	LMH
	LAW Canister Export Handling System	LEH
High-Level Waste Building		
	HLW Melter Cave Support Handling System	HSH
	HLW Canister Export Handling System	HEH

	HLW Filter Cave Handling System	HFH
	HLW Canister Pour Handling System	HPH
	HLW Canister Decontamination Handling System	HDH
	HLW Melter Handling System	HMH
	Radioactive Solid Waste Handling System	RWH

**Comment 13:**

Please remove systems that perform generator functions, such as the Radioactive Solid Waste Handling (RWH) from Table III.10.C.A and list of critical systems because such systems do not treat, store, or dispose of dangerous waste for longer than 90 days.

Please remove the HLW Melter Cave Support Handling (HSH) system from Table III.10.C.A and remove HSH-CRN-00001 and HSH-CRN-00014 from permit condition III.10.C.15.a.i.B because these perform generator functions and are not associated with treatment, storage, or disposal of dangerous waste.

**Ecology Response:**

After evaluation of the *System Description for WTP System RWH Radioactive Solid Waste Handling*, 24590-WTP-3YD-RWH-00001, Revision 0., Ecology agrees with the Permittee. The RWH system performs generator functions which are regulated under WAC 173-303-170 through 230. However, Ecology believes the title of the system *RWH – Radioactive Waste Handling* is misrepresentative. The RWH system will be managing mixed waste. The RWH system will be removed from the critical system list, however, it will remain in Table III.10.C.A because it is a mechanical handling system.

The primary functions of the HSH system are to provide remote maintenance within the two HLW facility melter caves, facilitate recovery of equipment located in the melter caves, receive and transfer replacement components into and from the crane maintenance area, support removal and replacement of spent and failed melters, support decontamination of equipment and components prior to export from the melter cave, and transfer packaged secondary waste to the RWH system. These functions are all either non-regulated maintenance activities or are regulated as waste generator activities. However, in an off-normal condition the Melter Cave Main Cranes (HSH-CRN-00001 and HSH-CRN-00014) perform the additional function of lifting and moving filled IHLW canisters to support recovery from malfunction or failure of the HLW Canister Pour Handling (HPH) system. The basis upon which the other cranes identified in III.10.C.15.a.i.B were selected also applies to the HLW Melter Cave 1 and 2 Main Cranes. Therefore the HSH system will remain on Table III.10.C.A and the critical systems list, and HSH-CRN-00001 and HSH-CRN-00014 will remain in permit condition III.10.C.15.a.i.B.

## **Comment 14:**

### **Comment 14A**

Please retain the 14 indicated instruments associated with detecting potential releases of dangerous waste from the melter to the melter cave, and remove the remaining 28 instruments from the HLW melter instruments table (Table III.10.J.C). Instruments remaining monitor:

- Plenum pressure  
Melter 1: PDT-0139A, PDI-0139A, PDI-0139, PDT-0139B  
Melter 2: PDT-2139A, PDI-2139A, PDT-2139B, PDI-2139B
- Glass pool level/density  
Melter 1: LT-0131, LI-0131 and DT-0132, DI-0132  
Melter 2: LT-2131, LI-2131 and DT-2132, DI-2132
- Plenum temperature (thermocouples)  
Melter 1: TE-0920A, TT-0920A, TI-0920A, TE-0920B, TI-0920B, TE-0920C, TT-0921A, TI-0920C, TE-920D, TI-0920D  
Melter 2: TE-2920A, TT-2920A, TI-2920A, TE-2920B, TI-2920B, TE-0920C, TT-0921A, TI-0920C, TE-2920D, TI-2920D

### **Comment 14B**

Please add a footnote to the HLW melter instruments table indicating redundant instruments, and require the operation of only one instrument of each type at any one time. (See table below indicating the redundant instruments.)

### **Comment 14C**

Please delete the Melter 1 and 2 East and West Canister Level instruments (East Melter 1: LT-0820, LI-0820A, LI-0820B and Melter 2: LT-2816, LI-2816A, LI-2816B; West Melter 2: LT-2820, LI-2820A, LI-2820B and Melter 2: LT-2816, LI-2816A, LI-2816B) because these instruments are not designed to monitor leaks of dangerous waste from the HLW melter, and are not associated with melter performance. (See table below.)

### **Comment 14D**

Delete the Melter 1 and 2 refractory temperature instruments (Melter 1: TE-0337, TT-0037, TI-0337, TE-0338, TI-0338, TE-0339, TI-0339, TE-0341, TI-0341, TE-0342, TT-0342, TI-0342, TE-0343, TI-0343, TE-0344, TI-0344, TE-0345, TI-0345, TE-0346, TI-0346; Melter 2: TE-2337, TT-2337, TI-2337, TE-2338, TI-2338, TE-2339, TI-2339, TE-2340, TI-2340, TE-2341, TI-2341, TE-2342, TT-2342, TI-2342, TE-2343, TI-2343, TE-2344, TI-2344, TE-2345, TI-2345, TE-2346, TI-2346) because these instruments are not designed to monitor leaks of dangerous waste from the melter and are not associated with melter performance. (See table below.)

### **Comment 14E**

Delete the Melter 1 and 2 shell leak detection instruments (Melter 1: LT-0144, LI-0144 and Melter 2: LT-2144, LI-2144) because these instruments are not associated with dangerous waste leak detection or monitoring.

Proposed Changes to Table III.10.J.C

P&ID	Monitoring or Control Parameter	Instrument or Control Device Tag No.
Melter 1		
24590-HLW-M6-HMP-P0013	Melter 1 shell leak detection	LT 0144, LI 0144
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 45 <sup>o</sup>	TE 0337, TT 0037, TI 0337
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 33 <sup>o</sup>	TE 0338, TI 0338
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 21 <sup>o</sup>	TE 0339, TI 0339
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 9 <sup>o</sup>	TE 0340, TI 0340
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 3 <sup>o</sup>	TE 0341, TI 0341
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 45 <sup>o</sup>	TE 0342, TT 0342, TI 0342
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 33 <sup>o</sup>	TE 0343, TI 0343
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 21 <sup>o</sup>	TE 0344, TI 0344
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 9 <sup>o</sup>	TE 0345, TI 0345
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 3 <sup>o</sup>	TE 0346, TI 0346
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 62 <sup>o</sup>	TE-0920A, TT-0920A, TI-0920A*
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 59 <sup>o</sup>	TE-0920B, TI-0920B*
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 62 <sup>o</sup>	TE-0920C, TT-0921A, TI-0920C*
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 59 <sup>o</sup>	TE-920D, TI-0920D*
24590-HLW-M6-HMP-P0004	Melter 1 plenum average temperature	TY 0920, TI 0920
24590-HLW-M6-HMP-P0013	Melter 1 glass pool density	DT-0132, DI-0132
24590-HLW-M6-HMP-P0013	Melter 1 glass pool level	LT-0131, LI-0131
24590-HLW-M6-HMP-P0013	Melter 1 plenum pressure	PDT-0139A, PDI-0139A* PDI-0139B, PDT-0139B* PDY-0139A
24590-HLW-M6-HMP-P0008	Melter 1 West canister level	LT 0816, LI 0816A, LI 0816B
24590-HLW-M6-HMP-P0008	Melter 1 East canister level	LT 0820, LI 0820A, LI 0820B
Melter 2		
24590-HLW-M6-HMP-P20013	Melter 2 shell leak detection	LT 2144, LI 2144
24590-HLW-M6-HMP-P20003	Melter 2 refractory temperature, East wall, 45 <sup>o</sup>	TE 2337, TT 2337, TI 2337
24590-HLW-M6-HMP-P20003	Melter 2 refractory temperature, East wall, 33 <sup>o</sup>	TE 2338, TI 2338
24590-HLW-M6-HMP-P20003	Melter 2 refractory temperature, East wall, 21 <sup>o</sup>	TE 2339, TI 2339
24590-HLW-M6-HMP-P20003	Melter 2 refractory temperature, East wall, 9 <sup>o</sup>	TE 2340, TI 2340

24590-HLW-M6-HMP-P20003	Melter 2 refractory temperature, East wall, 3 <sup>rd</sup>	TE 2341, TI 2341
24590-HLW-M6-HMP-P20014	Melter 2 refractory temperature, West wall, 4 <sup>th</sup>	TE 2342, TT 2342, TI 2342
24590-HLW-M6-HMP-P20014	Melter 2 refractory temperature, West wall, 3 <sup>rd</sup>	TE 2343, TI 2343
24590-HLW-M6-HMP-P20014	Melter 2 refractory temperature, West wall, 2 <sup>nd</sup>	TE 2344, TI 2344
24590-HLW-M6-HMP-P20014	Melter 2 refractory temperature, West wall, 9 <sup>th</sup>	TE 2345, TI 2345
24590-HLW-M6-HMP-P20014	Melter 2 refractory temperature, West wall, 3 <sup>rd</sup>	TE 2346, TI 2346
24590-HLW-M6-HMP-P20004	Melter 2 plenum temperature, 62 <sup>nd</sup>	TE-2920A, TT-2920A, TI-2920A*
24590-HLW-M6-HMP-P20004	Melter 2 plenum temperature, 59 <sup>th</sup>	TE-2920B, TI-2920B*
24590-HLW-M6-HMP-P20004	Melter 2 plenum temperature, 62 <sup>nd</sup>	TE-2920C, TI-2920C*
24590-HLW-M6-HMP-P20004	Melter 2 plenum temperature, 59 <sup>th</sup>	TE-2920D, TI-2920D*
24590-HLW-M6-HMP-P20004	Melter 2 plenum average temperature	TY 2920, TI 2920
24590-HLW-M6-HMP-P20013	Melter 2 glass pool density	DT-2132, DI-2132
24590-HLW-M6-HMP-P20013	Melter 2 glass pool level	LT-2131, LI-2131
24590-HLW-M6-HMP-P20013	Melter 2 plenum pressure	PDT-2139A, PDI-2139A* PDT-2139B, PDI-2139B* <del>PDY-2139A</del>
24590-HLW-M6-HMP-P20008	Melter 2 West canister level	LT 2816, LI 2816A, LI 2816B
24590-HLW-M6-HMP-P20008	Melter 2 East canister level	LT 2820, LI 2820A, LI 2820B

\* Footnote: These instruments are redundant. Only one instrument is required to function when the HLW melter is receiving feed.

## Ecology's Response

14A. Ecology agrees. The plenum pressure, glass pool level/density, and plenum temperature instruments will be retained in the HLW Vitrification System Process and Leak Detection System Instruments and Parameters table. We will delete the software providing the "relay/compute" function for plenum pressure (instrument tag numbers PDY-0139A and PDY-2139A) and the plenum average temperature calculation (TY/TI-0920 and TY/TI-2920) from the table.

14B. Ecology agrees in principle. However it is the set of linked instruments, not the individual instruments in a set, that are redundant. Table II.10.J.C will be revised to identify the redundant sets of linked instruments that must function together, including a footnote to indicate that only one of the redundant sets for each melter is required to be functioning when the HLW melter is receiving feed. For example, the entry for Melter 1 plenum pressure would be: PDI 0139A + PDT 0139A, or PDI 0139B + PDT 0139B\*. The entry for Melter 1 plenum temperature, 62<sup>nd</sup> would be: TE 0920A + TT 0920A + TI 0920A, or TE 0920C + TT 0921A + TI 0921F\*. The asterisked footnote will state that these sets of instruments are duplicates, and only one instrument set is required to operate

during waste feed operations. When two redundant instruments are provided the asterisked note will state that these instruments are duplicates and only one instrument is required to operate during waste feed operations.

- 14C. Ecology disagrees. We will not delete the Melter 1 and 2 East and West Canister Level instruments from Table III.10.J.C. The HLW Vitrification System has been permitted as a miscellaneous unit due to the unique design and function of the melters. To ensure the system meets miscellaneous unit performance standards in WAC 173-303-680, we have applied applicable regulations to melter systems from other sections of the Dangerous Waste Regulations. Instrumentation controlling overfilling is clearly regulated for these systems. Since the plant's inception, we have had descriptions of canister level monitoring and overfill prevention as they pertain to the melter glass pouring system. We have included several permit conditions within the WTP Permit that apply to waste overfilling during operations (Permit Conditions III.10.J.1.a.xvii., III.10.C.5.c.iv., and III.10.J.5.e.). The permit condition language comes from tank system regulations in WAC 173-303-640. It was written before the majority of design information was available, so the language is not tailored to melter systems. Our intent is to prevent overfilling from the melter pour spout to the canisters during glass pour operations.

In your comments you state the HLW canisters are regulated under the container regulations in WAC 173-303-630, and that the container regulations do not require overfill protection. While this is true for typical containers, the container regulations were never written with melter pouring operations in mind. We have altered requirements for canisters on several occasions within the WTP permit to meet the unique design and function of the melter system. For example, we have permitted container storage spacing at 4 to 16 inches (regulatory requirement is 30 inches) to accommodate the unique situation of the HLW Vitrification System. Due to the radioactivity and remote handling of the immobilized waste containers, regulatory requirements for labeling containers are not reasonable, so we have permitted an alternate method. The container regulations do not perfectly fit the melter system, and we must make adjustments to adequately permit the system.

As discussed above, information describing canister level monitoring and prevention of overfilling has been submitted and included as a part of the WTP permit. According to Operating Unit 10, Chapter 4.0 of the Waste Treatment Plant permit, a level detection system will be in place that will "monitor the molten glass level within the HLW canister and prevent canister overfilling." Section 4.4.3.2, Canister Filling, of the System Description for HLW Melter Process System (24590-HLW-3YD-HMP-00001) states:

"A secondary "hard-wired" system shall be used to back up the primary system and automatically shut down the fill before the overflow limit is reached. The primary level detection system is a thermal imaging system that provides continuous level monitoring over the entire canister. In the event that the primary thermal imaging system malfunctions, the backup discrete point radiation system would prevent a canister overfill. This system is designed only to detect a discrete high glass level, producing a contact closure when the high level is sensed. When the high level has been reached, the

system will automatically shut down the melter gas lift which, in turn, will stop the glass pour.”

Permit Conditions III.10.J.1.a.i. and ii. require the HLW Vitrification System to be constructed in accordance with Operating Unit 10, Chapter 4.0. Once operation begin, Permit Condition III.10.J.1.c. requires the Permittees to operate the HLW Vitrification System in accordance with Operating Unit 10, Chapter 4.0.

In discussions with BNI, we learned that control logic design, preventing canister overfilling as described in Figure FD 17, Melter Discharge Monitoring, in the software functional specification for the HLW Melter Process System (24590-HLW-3PS-HMP-T0001, Revision A), is not finished. The software functional specification shows a signal from infrared camera level transmitters that would close the air lift valves to shut down the pour, and prevent canister overfilling.

We will keep the Melter 1 and 2 East and West Canister Level instruments in permit table III.10.J.C until the Permittees have submitted the design for an acceptable system to monitor the molten glass level within the HLW canister and prevent canister overfilling.

14D. Ecology agrees and will not include refractory temperature instruments in Table III.10.J.C. It is correct that the Melter 1 and 2 refractory temperature instruments (thermocouples) do not provide leak detection of dangerous wastes. However, the refractory provides a critical barrier that protects the melter shell. Cooling panels that control the thermal profile within the refractory are critical to that function, as discussed in the HLW Melter Life Report, REP-WTP-21004, Revision 0:

“The HLW melter includes cooling panels to control the thermal profile within the refractory. Cooling panels that surround the glass pool refractory package (glass tank) cool external surfaces to limit the depth to which glass can penetrate outward through refractory joints.” (Section 3.1.6.3.1)

“Failure to supply cooling water flow to the cooling panels could cause them to not meet their 5-year operating life requirement. The loss of cooling water flow, if long enough in duration, would eventually cause the cooling panel to exceed the code allowed operating temperatures and may lead to elevated stress levels and corrosion rates.” (Section 3.1.6.3.2)

In discussions with BNI, we learned that the change in temperature ( $\Delta T$ ) of the cooling water inlet and outlet and cooling water flow rate would be better indicators of refractory cooling functionality. Ecology believes refractory temperature measurement is also important for assessing potential refractory failure. Therefore we will add the following permit conditions addressing the need to maintain a functional cooling system for the HLW melters, and also the ability to detect impending refractory failure.

III.10.K.1.d.iv. The Permittees shall calibrate, inspect, and maintain or replace the following cooling water flow and temperature instruments: (Melter 1: FT/FI-0306, FT/FI-

0316, FT/FI-0321, FT/FI-0326, FT/FI-0336, TE/TT/TI-0352; Melter 2: FT/FI-2306, FT/FI-2316, FT/FI-2321, FT/FI-2326, FT/FI-2336) in accordance with manufacturer's recommendations, or as specified in this permit or otherwise agreed to by Ecology.

III.10.K.1.d.v. The Permittees shall maintain operating and calibration/maintenance records for Ecology's inspection for the following cooling water flow and temperature instruments (Melter 1: FT/FI-0306, FT/FI-0316, FT/FI-0321, FT/FI-0326, FT/FI-0336, TE/TT/TI-0352; Melter 2: FT/FI-2306, FT/FI-2316, FT/FI-2321, FT/FI-2326, FT/FI-2336).

III.10.K.1.d.vi. The Permittees shall maintain refractory thermocouple temperature data for Ecology inspection.

- 14E. Ecology agrees. Leak detection in the annulus between the melter shell and cooling panels would provide another method to verify whether cooling panels have failed. However, the addition of a permit condition addressing the need to maintain refractory cooling, as discussed in the response to 14D, will replace the need to include the melter shell level detection in Table III.10.J.C. We will remove the melter shell level detection instruments from the table.

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### **Comment 15:**

Please delete the proposed permit condition requiring installation of wear plates on six vessels. The Permittees could find no regulatory or permit condition supporting the proposed condition.

### **Ecology's Response**

Ecology's discussion with the Permittees about the erosion/corrosion in tanks with pulse jet mixers has been going on for more than three years. On July 1, 2004, we sent the Permittees a Notice of Non-Compliance on Erosion/Corrosion in Tanks with Pulse Jet Mixers at the Waste Treatment Plant. In that letter we stated "Contrary to recommendations in *RPP-WTP Slurry Wear Evaluation: Literature Review*, cited in Waste Treatment Plant Black Cell Design Adequacy Oversight Report, no research or testing activities specific to WTP conditions have apparently been planned or budgeted to validate wear assumptions." We sent a second letter to the Permittees on September 8, 2004, which stated, "Ecology strongly recommends conducting WTP-specific laboratory testing for erosion-corrosion on tank components exposed to slurry jets from PJM operation. The purpose of this would be to reduce uncertainty and provide a strong technical basis for BNI's erosion estimates." On June 20, 2005, the USDOE transmitted to Ecology results of BNI review of scientific literature and its application to erosion estimates for WTP vessels with PJMs. The letter and attached analyses concluded that the wear allowance design margin was adequate to support a 40-year operational life. Ecology remained unsatisfied that BNI's erosion estimates adequately accounted for experimental and operational

uncertainties. On June 28, 2006, we offered the Permittees a choice of two options to resolve the issue:

- Option 1: Increase wear allowance by a factor of 4 (four) times the required vessel erosion allowance reported in the BNI calculation of record. Based on then current information, this would have required addition of wear plates in 3 (three) installed vessels where none had been provided, and increased wear plate thickness in 6 (six) vessels that were still in fabrication.
- Option 2: Conduct facility-specific erosion testing to validate the existing design basis.

In either case, updated structural integrity assessments by an IQRPE would be required to be submitted and approved by Ecology prior to installation of the six vessels listed below with insufficient wear allowance for application of criteria under Option 1:

- HLW Feed Receipt Vessel, HLP-VSL-00022.
- HLW Lag Storage Vessels, HLP-VSL-00027A/B.
- HLW Feed Blend Vessel, HLP-VSL-00028.
- Ultrafiltration Feed Vessels, UFP-VSL-00002A/B.

Ecology's June 28, 2006, letter requested a decision from the Permittees by August 1, 2006, identifying which of the two options they had chosen to resolve the wear allowance issue. On August 3, 2006, the Permittees requested an extension to February 28, 2007, in part because they were still in the process of finalizing activities to address the same issue on vessel erosion that had been raised by the External Flow Sheet Review Team. In a letter dated September 28, 2006, Ecology approved the requested extension, but placed a hold on fabrication and assembly of the six vessels and their internal components until Ecology and the Permittees agreed on design criteria and Ecology had approved updated IQRPE reports for the six vessels.

Since that time, we have authorized installation of external cooling jackets in selected waste treatment plant vessels, and limited fabrication and assembly of vessels with PJMs as long as the authorized activities do not affect future installation of wear plates on the inside of the vessels and the authorized activities will not be affected if wear plates must be added at a future date. On February 28, 2007, USDOE informed Ecology the Permittees had chosen to conduct facility-specific testing (Option 2). On March 29, 2007, we responded with a letter to the Permittees to remind them that "prior to installation of any remaining vessels with PJMs, Ecology will need to approve updated Independent Qualified Registered Professional Engineer reports that consider wear allowance." We also notified the Permittees that the six vessels listed above, and the following five additional vessels would be affected by this constraint.

- Acidic Waste Vessel, RLD-VSL-00007.
- Plant Wash and Drains Vessel, RLD-VSL-00008.
- Plant Wash Vessel, PWD-VSL-00044.
- Ultrafiltration Feed Preparation Vessels, UFP-VSL-00001A and UFP-VSL-00001B.

In addition, we requested a copy of the test plan and waste slurry simulant recipe for review and comment as soon as they were available. Since then we have reviewed and commented on the erosion test specification, test plan, and slurry stimulant recipe, and have held discussions with the Permittees to resolve our comments. Ecology has been pleased that the planned erosion testing is designed to simulate as closely as is practical actual plant conditions. Our primary concern has been and continues to be provision of adequate wear allowance in vessel design to account for uncertainty and variability in waste properties, plant conditions, and the effect of those on wear rates.

Based on the long history of this issue and recent developments we have revised the proposed draft permit condition as follows:

- III.10.E.2.d. The Permittees will maintain construction access to the internal portions of installed tanks with pulse jet mixers until Ecology has provided written approval of the tank system designs for wear allowance pursuant to WAC 173-303-640(3)(a).
- III.10.E.2.d.i. The Permittees will not install the following tanks in the WTP Unit until Ecology has provided written approval of the tank system designs for wear allowance pursuant to WAC 173-303-640(3)(a):
- Plant Wash Vessel, PWD-VSL-00044.
  - Acidic Waste Vessel, RLD-VSL-00007.
  - Plant Wash and Drains Vessel, RLD-VSL-00008.
  - HLW Feed Receipt Vessel, HLP-VSL-00022.
  - HLW Lag Storage Vessels, HLP-VSL-00027A and HLP-VSL-00027B.
  - HLW Feed Blend Vessel, HLP-VSL-00028.
  - Ultrafiltration Feed Preparation Vessels, UFP-VSL-00001A and UFP-VSL-00001B.
  - Ultrafiltration Feed Vessels, UFP-VSL-00002A and UFP-VSL-00002B.
- III.10.E.2.d.ii. Except where exempted in writing by Ecology on the basis that wear allowance provisions will not be affected, fabrication and assembly of the following tanks and their internal components will be suspended until Ecology has provided written approval of the tank system designs for wear allowance pursuant to WAC 173-303-640(3)(a).
- HLW Feed Receipt Vessel, HLP-VSL-00022.
  - HLW Lag Storage Vessels, HLP-VSL-00027A and HLP-VSL-00027B.
  - HLW Feed Blend Vessel, HLP-VSL-00028.
  - Ultrafiltration Feed Vessels, UFP-VSL-00002A and UFP-VSL-00002B.
-

## **Comment 16:**

Please revise the language in Section 3.0, page 6 of 31, that may lead a reader to believe that Class 1 and Class <sup>1</sup>1 modifications were open for public review and comment. Suggested text: “In addition, this draft permit includes the addition of detailed design information for the HLW melters submitted in Permit Design Packages HLW-018 and HLW-019, flooding volume calculations and sump data submitted in the PT building design package PTF-065, and several new permit conditions. Ecology also approved several Class 1 and Class <sup>1</sup>1 Permit modifications in accordance with WAC 173-303-830, and they have been administratively incorporated into the permit.”

## **Ecology’s Response**

Ecology acknowledges that the text in the Statement of Basis may cause confusion about the public’s ability to comment on the Class 1 and Class <sup>1</sup>1 modifications. Per WAC 173-303-830(4)(a)(i) and (ii), Class 1 and Class <sup>1</sup>1 permit modifications are minor modifications that are implemented upon proper documentation and notification, and in the case of Class <sup>1</sup>1 modifications are approved by the Director and do not require public review. We issued the Statement of Basis in accordance with WAC 173-303-840(2)(f) and prepared it specifically for the October 5, 2006, draft permit. The Statement of Basis described the background of the conditions of the draft permit and the reasons for them. We do not revise the Statement of Basis. However, we will ensure that all future Statement of Bases clearly indicate that Class 1 and Class <sup>1</sup>1 Permit modifications are not open for public comment and have been administratively incorporated into the permit.

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## **Comment 17:**

Please delete Condition III.10.C.2.m because it makes the WTP responsible for matters that are properly within the IDF operator’s responsibilities. According to Chapter 173-303 WAC, the WTP is not responsible for the design, construction, permitting, operation, or performance of another treatment, storage, or disposal facility.

## **Ecology’s Response**

Ecology agrees. The WTP is not responsible for proper IDF operation. However, the USDOE is the owner/operator of the Hanford Facility, and as such is responsible for the proper treatment, storage, and disposal of all waste therein.

In accordance with WAC 173-303-815(2), Ecology “must include permit conditions necessary to achieve compliance with the Hazardous Waste Management Act chapter 70.105 RCW, this chapter and RCRA Subtitle C.” Permit conditions must contain terms and conditions necessary to protect human health and the environment. WAC 173-303-283 provides performance standards for all dangerous waste management facilities permitted under WAC 173-303-800

through 840. These general performance standards must be used to determine whether more stringent facility standards should be applied. They also require the owner/operator to operate a dangerous waste facility to prevent the degradation of groundwater quality. Therefore, until the USDOE submits technically defensible modeling showing that on-site disposal of primary and secondary waste from the WTP, Supplemental Treatment, or a second LAW vitrification facility will not violate federal and state drinking water standards, we will maintain the following permit condition in the WTP Permit.

III.10.C.2.m The Facility Owner shall ensure all waste streams generated at the WTP, when combined with the related impacts from other waste forms disposed of on the Hanford Facility, will not contribute to an exceedence of environmental standards promulgated in federal and state environmental laws and regulations if disposed of, or intended to be disposed of, at the Hanford Facility.

There are a variety of alternatives under consideration for treating the large volume of low activity waste that cannot be processed through the existing LAW facility in the time frame required. Characteristics of secondary waste streams and impacts on secondary waste disposal facilities for these alternatives are not well understood. We want to ensure that any of the waste forms resulting from tank waste treatment will meet exposure and groundwater performance criteria. Therefore, when we reissue the Hanford Facility RCRA/Hazardous Waste Management Act Permit, we will add a similar permit condition to other applicable unit-specific permits.

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### **Comment 18:**

Please approve the Part A Permit Application:

- The approach to calculating tank storage and treatment capacity is consistent with the approach used in the original application and approved by Ecology
- Content, assumptions, and calculation methods were discussed with Ecology at length before submitting the Part A Application

No regulatory basis was provided justifying rejection of the Part A.

### **Ecology's Response**

Ecology disagrees. In accordance with WAC 173-303-803(3)(i), the Permittees must describe the processes to be used for treating, storing, and disposing of dangerous waste, and the design capacity of these items. In addition, WAC 173-303-282(2)(a)(iv) requires owners or operators proposing a significant expansion, defined as "a single or cumulative increase of greater than twenty-five percent of the process design capacity as described in the facility's original Part A permit application," to file a notice of intent with Ecology. The draft Part A Permit Application proposed the following changes in the WTP capacity:

- Increased the total treatment capacity of the WTP facility by 35%.
- Increased the treatment capacity for vitrification by 7%.

- Reduced container storage capacity by 1,480,000 gallons.
- Increased tank storage capacity by 965,000 gallons.
- Added 170,000 gallons/day of containment building storage capacity.

The Permittees have not requested a WTP expansion under WAC 173-303-282, and Ecology does not believe it is the Permittees intention to expand the WTP; therefore we are denying the Part A Permit Application until these capacity discrepancies can be resolved. We encourage the Permittees to contact us for technical assistance, to prepare a revised Part A Permit Application, and submit the revised application for approval before the upcoming Hanford Facility RCRA Permit reissuance.

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### **Comment 19:**

The process description in Attachment 51, Chapter 4 represents the WTP as it existed in March 2004. This text, in some cases, may slightly deviate from the Ecology-approved design media incorporated into the Permit since then. Consequently, consistent with Permit Conditions III.10.D.10.c.i, III.10.E.9.e.vi, III.10.F.7.d.ii, III.10.G.10.e.vi, III.10.H.5.e.vi, III.10.J.5.e.vi, the Chapter 4 Narrative Descriptions will be updated prior to initial receipt of dangerous waste in the WTP Unit.

### **Ecology's Response**

Ecology agrees. Due to the design/construct process used for the WTP, we continuously modify the Hanford Facility RCRA Permit, Part III, Chapter 10. We encourage the Permittees to submit applicable Attachment 51, Chapter 4 updates for approval and incorporation before each Class 2 or Class 3 permit modification.

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### **Comment 20:**

Revise the compliance schedule item to be consistent with other compliance schedule items, i.e., do not identify in the compliance schedule item a need to commit to meeting ASME B31.3 for DWP-permitted piping. Please revise this compliance schedule item to read:

*Submit WTP permit version of Pipe Stress Design Criteria Including "Pipe Stress Criteria" and "Span Method Criteria", 24590-WTP-PER-PS-05-001".*

Revise the compliance schedule date to July 31, 2007 for submitting *Pipe Stress Design Criteria including "Pipe Stress Criteria" and "Span Method Criteria" (24590-WTP-PER-PS-05-001).*

## Ecology's Response

Ecology agrees. It is not necessary to include the reference to ASME B31.3 in the compliance schedule item, because it is already cited elsewhere in the Permit. ASME B31.3 Process Piping code is used in design and construction of WTP piping systems. It is cited in *Installation of Tank Systems and Miscellaneous Unit Systems*, which is included in Appendix 7.12 of the Dangerous Waste Permit, and in *Piping Material Class Description*, which is included in Appendix 4 of the Dangerous Waste Permit. We have removed the reference to ASME B31.3 in the compliance schedule item. Due to the extended public comment period, time required responding to comments, time it has taken to prepare this responsiveness summary, and resolution of the Comment 21, we will change the compliance schedule date to 60 days after the effective date of the 2+2 permit modification so that the Permittees can submit the source document (24590-WTP-DC-PS-01-001).

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### Comment 21:

The following comment is proposed for discussion with Ecology as an alternate comment regarding submittal of design documents for incorporation into the permit:

Requirements in the compliance schedule (III.10.E.9.b.ii, III.10.E.9.c.ii, III.10.E.9.d.ii, III.10.F.7.c.i, III.10.G.10.b.ii, III.10.G.10.c.ii, III.10.G.10.d.ii, III.10.H.5.b.ii, III.10.H.5.c.ii, III.10.H.5.d.ii, III.10.J.5.b.ii, III.10.J.5.c.ii, III.10.J.5.d.ii) require submittal of engineering documentation for incorporation into the Permit. When required by these permit conditions, source design drawings, mechanical data sheets, material selection data sheets, and specifications shall be submitted and will have the following characteristics:

- Certified in accordance with WAC 173-303-810(13).
- Certification by a registered professional engineer (i.e., stamping) in accordance with WAC 173-303-806(4)(a) is not required.
- Systems, structures, and components in contact with dangerous waste or providing secondary containment functions require structural integrity assessments (IQRPE reports) in accordance with Permit Conditions III.10.E.9.b.i, III.10.E.9.c.i, III.10.E.9.d.i, III.10.G.10.b.i, III.10.G.10.c.i, III.10.G.10.d.i, III.10.H.5.b.i, III.10.H.5.c.i, III.10.H.5.d.i, III.10.J.5.b.i, III.10.J.5.c.i, III.10.J.5.d.i, and WAC 173-303-640(3)(a).
  - Plant items requiring structural integrity assessments (IQRPE reports) are identified in Permit Tables III.10.E.A, III.10.E.B, III.10.E.C, III.10.E.D, III.10.G.A, III.10.G.A.i, III.10.H.A, III.10.I.A, III.10.J.A, and III.10.K.A.
- Systems, structures, and components in contact with dangerous waste or providing secondary containment functions require installation inspections in accordance with Permit Conditions III.10.E.3.a, III.10.G.3.a, III.10.H.1.a.x, III.10.J.1.a.x, and WAC 173-303-640(3)(c).

- Plant items requiring installation inspection are identified in Permit Tables III.10.E.A, III.10.E.B, III.10.E.C, III.10.E.D, III.10.G.A, III.10.G.A.i, III.10.H.A, III.10.I.A, III.10.J.A, and III.10.K.A.
- Permitted instruments are identified in Permit Tables III.10.E.E, III.10.E.F, III.10.E.G, III.10.E.H, III.10.G.C, III.10.H.C, III.10.I.C, III.10.J.C, and III.10.K.C. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from these tables in accordance with Permit Conditions III.10.E.9.e.ix, III.10.J.5.e.x, III.10.H.5.e.x,
- Any change document prepared for these source design documents will be supplied to Ecology in accordance with Permit Condition III.10.C.9.h.
- Plant items associated with directly managing waste and requiring periodic inspection are identified in the inspection schedules of Attachment 51, Chapter 6.0 of this Permit in accordance with Permit Condition III.10.C.5.c.
- Inspection and maintenance of utility systems, support systems, and mechanical handling systems not in direct contact with dangerous waste is at the discretion of the Permittees. Functionality of utility and support systems depicted in these source design documents is required in accordance with Permit Condition I.E.7 and WAC 173-303-810(6).

## **Ecology's Response**

The Dangerous Waste Regulations WAC 173-303 requires the following certifications. Each of these requirements has been included in a permit condition in the WTP Dangerous Waste Permit. In addition to these WAC requirements for tanks, the WTP Dangerous Waste Permit requires miscellaneous units to have comparable certifications. Containment buildings also have some certifications, but not to the extent of tank systems and miscellaneous units. However, many of the WTP containment buildings are serving as secondary containment for tank, miscellaneous unit or associated ancillary equipment. In this instance, the more stringent regulations are applied, and the containment building would require the same certifications as a tank or miscellaneous unit system secondary containment area.

- WAC 173-303-640(3)(a) and WAC 173-303-806(4)(c)(i) requires owners or operators of new tank systems or components to obtain a written assessment as to the structural integrity and suitability of each tank system, that is reviewed and certified by an IQRPE (Permit Conditions III.10.E.9.b.i., III.10.E.9.c.i., III.10.E.9.d.i., III.10.G.10.b.i., III.10.G.10.c.i., III.10.G.10.d.i., III.10.H.5.b.i., III.10.H.5.c.i., III.10.H.5.d.i., III.10.J.5.b.i., III.10.J.5.c.i., and III.10.J.5.d.i.).
- WAC 173-303-640(3)(c) requires an independent, qualified installation inspector or an IQRPE to inspect the system prior to covering, enclosing, or placing a new tank system or component in use (Permit Conditions III.10.E.3.a., III.10.G.3.a., III.10.H.1.a.iv., and III.10.J.1.a.iv.).
- WAC 173-303-640(3)(h) requires the owner or operator to obtain and keep on file at the facility a written statements by those persons required to certify the design and supervise

the installation of the tank system, that attest the tank system was properly designed and installed. These written statements must also include the certification statement as required in WAC 173-303-810. (Permit Conditions III.10.E.3.f., III.10.E.3.g., III.10.G.3.f., III.10.G.3.g., III.10.H.1.a.ix., III.10.H.1.a.x., III.10.J.1.a.ix. and III.10.J.1.a.x.)

- WAC 173-303-640(7)(f) requires owners/operators that have made extensive repairs to obtain a certification by an IQRPE before the tank system is returned to service (Permit Conditions III.10.E.5.i.v., III.10.G.5.j.v., III.10.H.1.a.xxiii.E., III.10.I.1.a.xvii.E., III.10.J.1.a.xxiii.E., III.10.K.1.a.xvii.E.).
- WAC 173-303-806(4)(a) requires that information submitted to the department in the Part B should be signed in accordance with requirement in WAC 173-303-810(2), and that certain technical data, such as design drawings and specifications, and engineering studies must be certified by a registered professional engineer. (Permit Conditions III.10.E.9.a., III.10.F.7.a., III.10.G.10.a., III.10.H.5.a., and III.10.J.5.a.)
- WAC 173-303-810(12) requires that all applications, reports, or information submitted to the department must be signed and certified. (Permit Conditions III.10.E.1.d., III.10.F.1.d., III.10.G.1.d., III.10.H.1.a.iii., III.10.I.1.a.iv., III.10.J.1.a.iii., and III.10.K.1.a.iv.)
- WAC 173-303-810(13)(b) requires both the owner and operator to certify the permit application.
- WAC 173-303-810(14)(a)(i) requires the Permittee to submit a letter signed by the Permittee and a registered professional engineer stating that the facility has been constructed or modified in compliance with the permit before the Permittee can treat, store, or dispose of dangerous waste in the new or modified portion of the facility (Permit Condition III.10.C.2.a.).

(Note: In certifying construction or modification, the IQRPE is responsible only for certifying those portions of the facility which are identified in chapter 173-303 WAC as specifically requiring certification by an independent registered professional engineer.)

Ecology met with the Permittees many times to discuss the regulatory requirements contained in WAC 173-303-806(4)(a) and how they are implemented in the WTP permitting process.

Currently, the Permittees change any portion of project documents (source documents) that they believe is not permitted so that it is shown in phantom. They use the remaining information to generate a permit version of the source document. A registered professional engineer (RPE) stamps the resulting document. This procedure has been developed by the Permittee to comply with the following WAC citation:

“WAC 173-303-806(4)(a).....Information required in Part B must be submitted to the department and signed in accordance with requirements in WAC 173-303-810(12). Certain technical data such as design drawings and specifications, and engineering studies must be certified by a registered professional engineer.”

The Permittees have made the interpretation that everything submitted for incorporation into the permit must be stamped by an RPE. This time consuming process has resulted in permit drawings which are out of date compared to source documents, regulated instruments and equipment which are shown in phantom, ambiguity over the regulatory status of some instruments/equipment and systems, and reduced legibility. Ecology does not agree that everything submitted for incorporation into the permit must be stamped. The regulations specify “certain” technical data, design drawing, specifications, and engineering studies must be certified.

Under the alternate approach, the Permittee will submit ‘source’ documents without an RPE stamp or certification. At the completion of construction, the Permittees will submit a certified letter in accordance with permit condition III.10.C.2.a and WAC 173-303-810(14)(a)(i) stating that the facility has been constructed or modified in compliance with the permit. This letter will include as attachments a *Report for WTP Construction as Permitted* and a *Report of Accuracy for WTP As-Built Drawings*. Both of these reports will be certified by an RPE. The *Report of Accuracy for WTP As-Built Drawings* will contain information to comply with permit condition III.10.C.9.g.

Since the Permittees now have administrative procedures in place for the use of phantom in documents submitted for incorporation into the permit, they will need to make significant changes to their processes. To allow time to revise procedures and incorporate the alternative, we have agreed to implement the alternative approach over the next nine months, not to exceed one year after issuance of the 2+2 Permit modification. During the transition period, BNI may submit design packages and Permit Change Notices (PCN) to Ecology using either approach. The existing permitting process will be used to identify permitted equipment and components requiring IQRPE assessments or installation inspection. This process will be used until alternative procedures are established to convey this information to field engineers and inspectors. The phantom note on each drawing submitted during the transition period will read “The portions of this drawing shown in phantom do not require IQRPE assessment of design or installation inspection by a qualified installation inspector, in accordance with DWP or WAC requirements.” At the end of the transition period, documents submitted for incorporation in to the WTP permit will not include any phantom portions and this note will not be included.

In accordance with WAC 173-303-830(3)(a) Ecology will periodically review the WTP Permit and send the Permittees notification when a permit drawing containing phantom portions should be replaced. Until all permit drawings are replaced with source drawings, any use of phantom in the WTP Permit indicates equipment/instruments or systems that do not require IQRPE assessment of design or installation inspection by a qualified installation inspector. Regulatory status of equipment/instruments or systems is not indicated by phantom.

Construction activities will proceed in accordance with approved permit documents and associated change documents (e.g., Document Change Notices (DCN), Specification Change Notices (SCN), Field Change Notices (FCN), etc.) sent to Ecology per permit condition III.10.C.9.h. Construction of equipment/instruments or support systems indicated by phantom will continue as defined on engineering source drawings.

Incorporation of source documents into the permit will allow Ecology to maintain configuration control of the regulated components in each critical system. Specific requirements for regulated components in source documents will be addressed in permit tables, permit text (e.g., Chapter 6, inspection plans), a permit condition, descriptive text in Chapter 4, or some combination.

We believe implementation of this alternative approach will lead to a more clearly written permit earlier in the permitting process. Rather than deferring the population of permit tables until “prior to initial receipt of dangerous and/or mixed waste in the WTP Unit,” the permit tables will be populated as each Permit modification is processed.

At the end of the transition period, during review of permit change notices, we will disposition our comments on source documents with a formal action tracking item or a design change notice, as necessary, to incorporate the comment into the design. If a design change is required, the document or drawing will be revised in accordance with BNI engineering procedures. Approved design change notices that have not yet been incorporated into the source document will be referenced in permit packages or PCNs for information, but will not be incorporated into the permit. As source documents are revised in accordance with BNI’s internal process, a PCN incorporating the revised source document will be submitted to Ecology.

The Permittees will continue to submit approved design change documents (e.g., DCNs, SCNs, FCNs, etc.) and non-conformance reports electronically to Ecology in the weekly “milk-run” in accordance with existing permit conditions, and we will identify any changes requiring permit modifications and any necessary construction holds pursuant to permit conditions III.10.C.9.d. The Permittees will continue to alert us to any change documents that are considered important enough to require a record of our approval before construction or installation.

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## **Comment 22:**

The Permittees provided several editorial comments and recommended improvements to the organization of the Permit.

## **Ecology’s Response:**

Several formatting changes were made to the permit tables in an effort to make them easier to read and navigate. The tables were also checked for errors. As a result, numerous changes were made, as detailed below:

### **General Changes**

The tables were checked to ensure individual equipment is only listed in one section of the Permit. Duplicate equipment listings were deleted. Tanks previously listed and cross-referenced in the miscellaneous unit sections (III.10.G through III.10.K) have been removed from those sections. They are now listed only in the tank systems section (III.10.E). Tanks were originally cross-referenced in the miscellaneous unit sections to avoid confusion over what portion of the system was a tank system vs. a miscellaneous unit system. However, we have found that rather than clarifying, the cross-referencing is confusing and decided to remove it.

The LAW and HLW Vitrification Systems each have two identical sets of tables. They each have a set of tables in the short term operations sections (III.10.H for LAW and III.10.J for HLW) that are identical to their corresponding tables in the long term operations sections (III.10.I for LAW and III.10.K for HLW). Maintaining two identical sets of tables in both the short term and long term vitrification system sections of the permit has created problems with consistency. As a result, we have decided to remove the identical information from the long-term tables (Permit Tables III.10.I.A-F and III.10.K.A-F), and include footnotes that delay completing these tables to prior to initiating long-term operations. The footnotes also reference the reader to the appropriate short-term tables (III.10.H.A-F and III.10.J.A-F) for the most current equipment description.

Two new footnotes were added; one indicating any dimensions listed are based on permitted design, with actual dimensions varying plus or minus (TBD). The Permittees will provide the variance at a later date. This footnote was added to allow for small variances in the field during construction. A second footnote was added identifying that system description documents are maintained in the Administrative Record, and are listed in the Permit for information only.

### **Specific Changes**

#### Permit Tables III.10.E.G and III.10.E.N

Three sumps and their leak detection instrumentation (RWH-SUMP-00001/5/6) have been deleted from Permit Tables III.10.E.G – “HLW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters” and III.10.E.N – “HLW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges and Floor Drains.” These sumps and their instrumentation are part of a formerly regulated containment building (Drum Transfer Tunnel Containment Building – Room H-B015). The Drum Transfer Tunnel Containment Building was removed from the Permit through a Class 2 permit modification (24590-HLW-PCN-ENV-0903-002) that was approved January 13, 2004.

#### Permit Table III.10.E.J

Two bulges were added (CRP-BULGE-00001 and CXP-BULGE-00004) to Permit Table III.10.E.J – “Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges and Floor Drains”. These bulges currently exist on permitted design drawings, but were inadvertently omitted.

#### Permit Tables III.10.F.B-D

Eight primary sumps were added to Permit Table III.10.F. B – “Containment Building Primary Containment Sump Systems.” Sumps previously listed in Permit Table III.10.F.C – “Containment Building Secondary Containment Systems Including Sumps and Floor Drains,” were relocated. Instrumentation previously located in Permit Table III.10.F.D – “Containment Building Leak Detection System Instrumentation and Parameters” was either relocated or deleted.

- Four of the sumps that were added, (PWD-SUMP-00034/35 and HPH-SUMP-00001/5), were previously listed incorrectly in Permit Table III.10.F.C. The associated sump instrumentation (previously listed in Permit Table III.10.F.D) has been deleted because the sumps are now functioning as part of containment building primary containment.
- The four sumps that were added (HMH-SUMP-00002/3 and HPH-SUMP-00003/4) were not previously listed in the Permit, but have always been a physical part of the permitted containment building.
- The remaining sumps and instrumentation previously listed in Permit Tables III.10.F.C and III.10.F.D have been relocated to the appropriate tank system secondary containment and instrumentation tables.

The Permittees are not permitted to manage liquid dangerous waste or mixed waste liquids in these containment buildings, because they are serving as primary containment.

#### Permit Table III.10.G.A.i

A vessel vent scrubbing liquid cooler (PVP-HX-00002) was added to the table as part of the Pretreatment Vessel Vent Process System (PVP). This equipment exists on current permitted design drawings but was inadvertently omitted from the tables.

Information and equipment associated with the Treated LAW Evaporation Process System (TLP) was deleted. This information was incorrectly placed in this table, and already exists in Permit Table III.10.G.A – “Pretreatment Plant Miscellaneous Unit Systems.”

#### Permit Table III.10.J.C

Changes to Permit Table III.10.J.C were made based on Ecology Response to Comment 14.

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## **Summary of Public Involvement Actions**

Ecology held a public hearing on Thursday, November 9, 2006, at the Nuclear Waste Program office in Richland. Approximately 18 people attended the meeting. One person provided testimony at the public hearing. We mailed a public notice announcing the comment period to approximately 900 highly interested members of the public. A public announcement legal classified advertisement was placed in the Tri-City Herald on November 8, 2006. We also mailed and published in the Tri-City Herald a notice when we extended the comment period to January 5, 2007. We announced the public comment period and hearing in a number of meetings

with stakeholders and in the Hanford Update, a quarterly publication. The public information repositories received:

- Public notice
- Transmittal letter
- Responsiveness Summary for the Proposed Class 2 Modification request and supporting documentation
- Statement of Basis for the proposed Class 3 Permit Modification
- Draft Permit Modification and supporting documentation

## **Attachments**

1. Comment letters
2. Public Announcement Classified Ad
3. Public Notice
4. Ecology letters documenting permit decision

## **Attachment 1 - Comment letters**

**Becker-Khaleel, Brenda**

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**From:** George & Avone Williamson [geoavone@charter.net]  
**Sent:** Tuesday, November 07, 2006 9:39 AM  
**To:** Becker-Khaleel, Brenda  
**Subject:** Vitrification Plant Comments

Please consider the following comments in your plans for the future capability and operation of the vit plant at Hanford. These comments are based on the fact that this is a very expensive and several decades long undertaking:

1. The number of high level and low activity waste melters needs to be based upon an integrated effort to complete the mission considering melter capacity, expected maintenance requirements, total operating efficiency, and the ability of the site infrastructure to supply waste feed to the vit plant. Rigorous queueing studies must be performed to fully answer this question.
2. Plans must be made to provide the capability to remove Tc 99 from the low activity waste prior to near surface disposal on the Hanford site. The Tc 99 is the most troublesome component for the long term performance of the low activity waste due to the long half-life. Why spend all the money to vitrify this waste stream if the most troublesome component (Tc 99) remains on the site after expensive treatment and disposal?
3. I understand that studies are underway to determine if more double shell tanks need to be built since the overall mission schedule has slipped so badly. If it is determined that more tanks are needed, consider integrating the additional storage capability into the queueing studies for the overall operation of the vit plant. Remember that the mission is to clean up the site to a desired level, not just store waste in tanks as has been done in the past.

I would appreciate feedback as to what will be done with these comments.

George Williamson  
Richland, WA

**Comments on the Proposed WTP Permit Modifications  
to delete one LAW melter and add one HLW melter**

Richard I Smith, P.E.

First, let me say that I fully support the installation of the second HLW melter. This additional capacity is needed to achieve immobilization of the high-level tank wastes in a timely manner, thus permitting earlier retrieval and disposition of the wastes from the single-shell tanks, which currently present an on-going threat to the soil and groundwater beneath the tanks. However, deletion of the third melter planned for the LAW treatment facility would be a major mistake, for the reasons discussed below.

The current LAW facility design is flawed in that the heat removal capability is much too small, and limits the throughput capacity of the LAW facility to about 45 metric tons of glass (MtG) per operating day. While it appears that the cooling capacity could be increased sufficiently to permit three melters operating simultaneously to produce around 67 MtG/d, there is no evidence available that shows DOE/ORP has taken any steps to achieve that level of performance. With that higher throughput capacity, the LAW immobilization mission (using borosilicate glass) could be completed in about 23 years, without any supplemental treatment systems. Even operating 3 borosilicate melters that produce only 45 MtG/d, with the operating efficiency possible with 3 melters (about 92%), would shorten the operating lifetime of the facility needed to immobilize the inventory of LAW materials to about 35 years (assuming no supplemental treatment). If the glass former material were changed from borosilicate to iron phosphate, calculations indicate that the mission lifetime, for the 3-melter facility operating at about 67 MtG/d to immobilize the LAW inventory, could be reduced to about 20 years or less, without any supplemental treatment systems.

Speaking of supplemental treatment for LAW: it appears in retrospect that when DOE/ORP discovered the planned borosilicate LAW facility would be unable to immobilize the projected LAW inventory within the planned 20-year window, they chose to give up on improving the LAW facility and put all of their bets on some "to be developed" supplemental treatment system. Because the LAW facility could not meet the mission requirements, they chose to improve the HLW facility instead by adding a second melter, in order to better meet the HLW mission planning window. Also, by trading the third melter in LAW for the second melter in HLW, they may have avoided significant contract change orders and cost charges against the WTP complex. Or, as DOE/ORP has stated on numerous occasions, "The cost of the trade-off was about a wash", without providing any evidence to support that statement. The development effort for the selected supplemental treatment process (bulk vitrification) has been plagued with difficulties, and that process, which was once touted as cheap and easy, has been shown really to be expensive and difficult, projected to produce large volumes of secondary waste streams for which there is currently no defined process for treatment, and producing a product that may well be unacceptable for disposal in the IDF. To date, DOE/ORP has chosen not to divulge any information regarding the projected capital cost and annual operating costs for the proposed bulk

vitrification system. Thus, the bulk vitrification system's treatment performance and financial viability relative to a) building a second 3-melter LAW facility, or b) improving the performance of the current LAW facility by installing the third melter and/or changing the working glass from borosilicate to iron phosphate, has not been made public. The capital investment in bulk vitrification facilities with adequate processing capacity to meet the mission requirements is suspected to be about equivalent to building a second 3-melter LAW facility (around \$1 billion or more). Projected annual operating costs for a bulk vitrification system, including treatment of its secondary waste streams, have not yet been made public. Until these kinds of analyses have been performed and made public, there is no justifiable basis for deleting the third melter from the LAW facility.

Because DOE/ORP has so far failed to provide any life-cycle cost estimates for operation of the LAW facility under the 2 and 3 melter scenarios, and for using borosilicate or iron phosphate glass, I have developed estimates for these possible scenarios, using ORP-documented data (see the attached spreadsheet). The results of those spreadsheet analyses are summarized in the table below.

Operating Scenarios	Nameplate Capacity (MtG/d)	Total Operating Efficiency (%)	Total MtG to Complete	Years of Operation	Life-Cycle Opn. Costs Escalated at 3%/yr (MS)
BaseVBSi 2-melter	45	0.76	520,830	41.72	5,390
BaseVBSi 3-melter	45	0.92	520,830	34.47	5,105
Imp. VBSi 3-melter	67.5	0.92	520,830	22.98	3,303
Base FeP 2-melter	45	0.76	338,140	27.09	2,720
Base FeP 3-melter	51.7	0.92	338,140	19.48	2,365
Impr. FeP 3-melter	67.5	0.92	338,140	14.92	1,883
VBSi (2 + 3 melter)	45 + 67.5	0.76, 0.92	520,830	14.82	2,304
FeP (2 + 3 melter)	45 + 67.5	0.76, 0.92	338,140	9.62	1,847

These calculations, which do not include consideration of the capital cost of the LAW facility, show that there is a potential reduction of about \$285 million in the escalated (at 3%/yr) life-cycle operating cost for going from a 2-melter LAW facility to a 3-melter LAW facility (using borosilicate glass), due to shortening the operating lifetime from about 42 years to about 35 years. Additional capital costs for installing the third melter before facility startup have been suggested to be in the range of \$75 - \$100 million, and in the \$200- \$300 million range if installed after facility startup. The capital cost of either of these choices is less than the projected savings in operating costs available with 3 melters. Clearly, the third melter should be installed before facility startup.

The potential escalated life-cycle operating cost savings for changing from borosilicate to iron phosphate glass in a 2-melter system is calculated to be about \$2.67 billion, and is about \$1.42 billion for a 3-melter system. The estimates I have seen for qualifying iron phosphate glass for use in the LAW facility are in the \$100 - \$200 million range, very much less than the projected operating cost savings calculated to be achieved if iron phosphate glass were used in the melters.

If the borosilicate LAW system were to consist of an unimproved 2-melter 1<sup>st</sup> facility plus an improved 3-melter 2<sup>nd</sup> facility, operating simultaneously, the mission lifetime would be about 15 years, with an estimated lifecycle operating cost of about \$3.09 billion.

If the iron phosphate LAW system were to consist of an unimproved 2-melter 1<sup>st</sup> facility plus an improved 3-melter 2<sup>nd</sup> facility, operating simultaneously, the mission lifetime would be less than 10 years, with an estimated lifecycle operating cost of about \$1.85 billion.

The calculations for the (2+3) melter systems assume the 1<sup>st</sup> and 2<sup>nd</sup> LAW facilities startup at the same time. A more likely scenario would be for the 2<sup>nd</sup> facility to startup about 5 years after the 1<sup>st</sup> facility, which would result in a total operating lifetime of about 18 years for the 1<sup>st</sup> facility, about 13 years for the 2<sup>nd</sup> facility, and a total LAW operating life-cycle cost of about \$3.35 billion for the borosilicate system. The results for the iron phosphate system would be about 13 years for the 1<sup>st</sup> facility, about 8 years for the 2<sup>nd</sup> facility, and a total LAW life-cycle operating cost of about \$2.06 billion.

As shown in the table, a facility operating lifetime within the desired 20-year mission window would be possible using the iron phosphate glass in a 3-melter system, without having to build any supplemental treatment facilities. Similarly, if the LAW facility cooling capability were improved to permit producing about 67 MtG/d, the processing lifetime would be about 23 years for a 3-melter borosilicate facility, and about 15 years for a 3-melter iron phosphate facility, without having to build any supplemental treatment facilities. Thus, reducing the processing capability of the LAW facility to 2 melters will guarantee that large capital expenditures (probably well in excess of \$1 billion) for additional LAW treatment capability will be required to achieve the desired 20-year treatment mission goal. With the current fixed level of annual funding for the WTP complex, having to build another capital facility up front could delay completion of the total complex by at least several years, further delaying the schedule for emptying the waste tanks and immobilizing that waste for final disposition..

With potential operating cost savings in the \$2 to 4 billion range arising from the shortened operating mission lifetimes for the LAW facility, I find it amazing and financially irresponsible that DOE/ORP: a) has not been pushing hard to install the third melter in the LAW facility, and b) has refused all recommendations to honestly evaluate the potential benefits of using iron phosphate glass in the LAW melters.

For all of the reasons discussed above, I strongly oppose the deletion of the third LAW melter from the current LAW facility.

The permit should require that the third melter be installed prior to facility startup, and that the current cooling capacity of the pouring caves be increased sufficiently to handle a daily facility throughput in the range of 67 MtG/d, thus providing a LAW facility that could very likely satisfy the LAW immobilization needs within the desired 20-year mission lifetime without any supplemental treatment facilities.



Calculations of Compounded Life-Cycle Operating Costs for the LAW Facility

Escalation	Compounded (3%/Yr)	Summed Escalation	Annual Operating Costs for each scenario (from sheet 1)									
			BSI (2)	VBSI (2)	VBSI (3)	Imp VBSI (3)	FeP (2)	FeP (3)	Imp FeP (3)	B(2+3)	E(2+3)	
1	1.000000	1.000000	66.48	86.50	101.90	101.90	66.48	91.09	101.90	168.38	168.38	168.38
2	2.030000	2.030000	134.96	175.60	206.86	134.96	184.91	206.86	341.81	341.81	341.81	341.81
3	3.090900	3.090900	205.48	267.37	314.97	205.48	281.54	314.97	520.45	520.45	520.45	520.45
4	4.183627	4.183627	278.12	361.89	426.33	278.12	381.08	426.33	704.44	704.44	704.44	704.44
5	5.309136	5.309136	352.94	459.25	541.02	352.94	483.60	541.02	893.96	893.96	893.96	893.96
6	6.468410	6.468410	430.00	559.53	659.15	430.00	589.15	659.15	1,089.16	1,089.16	1,089.16	1,089.16
7	7.662462	7.662462	509.38	662.81	780.83	509.38	697.96	780.83	1,290.21	1,290.21	1,290.21	1,290.21
8	8.992336	8.992336	591.14	769.20	906.16	591.14	809.98	906.16	1,497.30	1,497.30	1,497.30	1,497.30
9	10.15911	10.15911	675.35	878.78	1,035.25	675.35	925.37	1,035.25	1,710.60	1,710.60	1,710.60	1,710.60
10	11.46388	11.46388	762.09	991.64	1,188.21	762.09	1,044.22	1,188.21	1,930.30	1,930.30	1,930.30	1,930.30
11	12.80780	12.80780	851.43	1,107.89	1,305.16	851.43	1,166.63	1,305.16	2,156.59	2,156.59	2,156.59	2,156.59
12	14.19203	14.19203	943.45	1,227.63	1,446.21	943.45	1,292.72	1,446.21	2,389.66	2,389.66	2,389.66	2,389.66
13	15.61779	15.61779	1,036.23	1,350.96	1,591.50	1,036.23	1,422.59	1,591.50	2,629.74	2,629.74	2,629.74	2,629.74
14	17.08632	17.08632	1,135.86	1,477.99	1,741.15	1,135.86	1,566.36	1,741.15	2,877.01	2,877.01	2,877.01	2,877.01
15	18.59881	18.59881	1,236.41	1,608.83	1,895.29	1,236.41	1,694.13	1,895.29	3,131.70	3,131.70	3,131.70	3,131.70
16	20.15688	20.15688	1,339.98	1,743.60	2,054.05	1,339.98	1,836.05	2,054.05	3,393.05	3,393.05	3,393.05	3,393.05
17	21.76159	21.76159	1,446.66	1,882.41	2,217.58	1,446.66	1,982.22	2,217.58	3,660.51	3,660.51	3,660.51	3,660.51
18	23.41444	23.41444	1,556.53	2,025.38	2,386.01	1,556.53	2,132.77	2,386.01	3,934.85	3,934.85	3,934.85	3,934.85
19	25.11687	25.11687	1,669.71	2,172.65	2,559.49	1,669.71	2,287.84	2,559.49	4,215.56	4,215.56	4,215.56	4,215.56
20	26.87037	26.87037	1,786.28	2,324.33	2,738.18	1,786.28	2,447.56	2,738.18	4,502.22	4,502.22	4,502.22	4,502.22
21	28.67649	28.67649	1,906.34	2,480.56	2,922.23	1,906.34	2,612.33	2,922.23	4,794.44	4,794.44	4,794.44	4,794.44
22	30.53678	30.53678	2,030.01	2,641.46	3,111.80	2,030.01	2,781.39	3,111.80	5,091.81	5,091.81	5,091.81	5,091.81
23	32.45288	32.45288	2,157.39	2,807.22	3,307.05	2,157.39	2,959.59	3,307.05	5,394.85	5,394.85	5,394.85	5,394.85
24	34.42647	34.42647	2,288.59	2,977.94	3,500.15	2,288.59	3,142.72	3,500.15	5,703.22	5,703.22	5,703.22	5,703.22
25	36.45926	36.45926	2,423.72	3,153.78	3,700.15	2,423.72	3,331.51	3,700.15	6,026.51	6,026.51	6,026.51	6,026.51
26	38.55304	38.55304	2,562.91	3,334.90	3,900.15	2,562.91	3,527.44	3,900.15	6,364.44	6,364.44	6,364.44	6,364.44
27	40.70963	40.70963	2,706.27	3,521.44	4,100.15	2,706.27	3,728.84	4,100.15	6,716.56	6,716.56	6,716.56	6,716.56
28	42.93092	42.93092	2,853.94	3,713.59	4,300.15	2,853.94	3,955.94	4,300.15	7,083.56	7,083.56	7,083.56	7,083.56
29	45.21885	45.21885	3,006.04	3,911.59	4,500.15	3,006.04	4,188.84	4,500.15	7,466.00	7,466.00	7,466.00	7,466.00
30	47.57542	47.57542	3,162.69	4,115.34	4,700.15	3,162.69	4,387.33	4,700.15	7,863.56	7,863.56	7,863.56	7,863.56
31	50.00268	50.00268	3,324.05	4,325.31	4,900.15	3,324.05	4,591.33	4,900.15	8,276.00	8,276.00	8,276.00	8,276.00
32	52.50276	52.50276	3,490.25	4,541.57	5,100.15	3,490.25	4,800.33	5,100.15	8,703.00	8,703.00	8,703.00	8,703.00
33	55.07764	55.07764	3,661.44	4,764.32	5,300.15	3,661.44	5,015.33	5,300.15	9,144.00	9,144.00	9,144.00	9,144.00
34	57.73018	57.73018	3,837.76	4,993.75	5,500.15	3,837.76	5,235.33	5,500.15	9,600.00	9,600.00	9,600.00	9,600.00
35	60.46208	60.46208	4,019.37	5,230.06	5,700.15	4,019.37	5,470.33	5,700.15	10,070.00	10,070.00	10,070.00	10,070.00
36	63.27594	63.27594	4,206.43	5,473.51	5,900.15	4,206.43	5,715.33	5,900.15	10,554.00	10,554.00	10,554.00	10,554.00
37	66.17422	66.17422	4,399.10	5,725.81	6,100.15	4,399.10	5,970.33	6,100.15	11,052.00	11,052.00	11,052.00	11,052.00
38	69.15945	69.15945	4,597.55	6,000.15	6,300.15	4,597.55	6,245.33	6,300.15	11,564.00	11,564.00	11,564.00	11,564.00
39	72.23423	72.23423	4,801.95	6,294.31	6,500.15	4,801.95	6,540.33	6,500.15	12,090.00	12,090.00	12,090.00	12,090.00
40	75.40126	75.40126	5,012.49	6,600.15	6,700.15	5,012.49	6,845.33	6,700.15	12,630.00	12,630.00	12,630.00	12,630.00
41	78.66330	78.66330	5,229.34	6,918.33	6,900.15	5,229.34	7,100.33	6,900.15	13,184.00	13,184.00	13,184.00	13,184.00
42	3.3598989	3.3598989	5,462.70	7,248.33	7,100.15	5,462.70	7,355.33	7,100.15	13,752.00	13,752.00	13,752.00	13,752.00
			5,390.16			5,390.16						
			at 41.72 yrs			at 41.72 yrs						

**WASTE TREATMENT PLANT PERMIT MODIFICATIONS - HEARING**  
RICHLAND, WASHINGTON - NOVEMBER 9, 2006

**Public Comment:** Please use this form to provide written public comment on the proposed changes for Hanford's Waste Treatment Plant permit. Ecology will respond to all comments in the Responsiveness Summary.

The reduction of the LAW vitrification facility from 3 to 2 melters reduces the capability of the facility. No documentation has been submitted that support the capability of follow-on LAW vit capability (Milestone M-62-08 was not delivered by DOE unilateral decision. Until the information in <sup>TPA</sup> M-62-08 is developed and published there is inadequate technical support in reducing the LAW vitrification facility from 3 to 2 melters. In fact the proposed Supplemental Treatment of Bulk Vitrification may increase the quantities of Te-99 and I-129 routed to the ~~EFF~~ Effluent Treatment Facility and IDF. The increased Te-99 emissions may require the addition of Te removal back into the Pretreatment Facility.

*My comment*

The permit <sup>modification</sup> should be limited to increasing the HLW vit facility from 1 to 2 melters. The permit issue of reducing the LAW melter from 3 to 2 should be tabled and addressed when the Milestone M-62-08 documentation is issued for review. This appears to be in 2010-2011 time frame.

**Provide your name and address/email if you would like a response and a copy of the Responsiveness Summary**

Name Allen Boldt Address/email: a.boldt@verizon.net  
(Please Print)



**Oregon**  
Theodore R. Kulongoski, Governor

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Department of Ecology  
NWP - Richland

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DEPARTMENT OF  
ENERGY

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FAX: (503) 373-7806  
www.energy.state.or.us

January 3, 2007

Ms. Brenda Becker-Khaleel  
Department of Ecology  
3100 Port of Benton Blvd.  
Richland, Washington 99354

Subject: Waste Treatment Plant 2+2 permit modification

Dear Ms. Khaleel,

Oregon appreciates the opportunity to comment on the permit modification.

The original plan for the Waste Treatment Plant facilities was to build in two phases. The first phase facilities would treat approximately 10-20 percent of the waste (the precise percentage varied through many iterations, and under different measures), and was to serve as a pilot for the full-scale facility which was to treat the remainder of the waste.

DOE revised its plans and the current plant is the only facility planned. With escalating costs and schedule delays, we believe this is likely. We are not encouraged by the results to date for the Bulk Vitrification or other alternative processes to deal with much of the tank waste to meet Tri-Party Agreement milestones. We expect that DOE will ultimately need to build a second low activity vitrification facility to have any hope of processing the tank wastes before the single shell tanks suffer a catastrophic failure.

We agree with and support DOE's proposal to add a second high-level waste melter. We disagree with and recommend you disapprove DOE's recommendation to reduce from three to two the number of low-activity waste melters. We strongly recommend that the Waste Treatment Plant be built to support the maximum sustainable production.

DOE argues that the heat withdrawal capability of the building is marginal or may be exceeded by running three melters. If true, additional heat removal ability should be added. If additional heat removal is not possible, the addition of a third melter line allows the plant to continue seamless operation of two melters while the third is being replaced or serviced.

Should any of the melters develop serious problems, the plant capacity is much less likely to be impacted if three melters are installed from the outset.

The Waste Treatment Plant and related facilities are complex and technically challenging. With any project of this size and complexity, there are always difficulties. It is important

R. Becker-Khaleel

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that the plant design allow for as much flexibility as possible to deal with these issues as they arise. Ecology has been clear in stating the need for technetium removal from the waste. We strongly agree. Accordingly, we recommend that in the follow-on permit modifications that Ecology should retain the ability to pre-treat the wastes to remove a variety of nuclides, including technetium. It is vital that such materials be minimized in disposal at Hanford and that pre-treatment direct these wastes to the high-level waste fraction to the greatest degree possible.

If you have questions regarding our comments, or would like more details, please contact Dirk Dunning at (503) 378-3187.

Sincerely,



Ken Niles  
Assistant Director

CC: Roy Schepens, U.S. Department of Energy  
Shirley Olinger, U.S. Department of Energy  
Dennis Faulk, U.S. Environmental Protection Agency  
Jane Hedges, Washington Department of Ecology  
Sandra Lilligren, Nez Perce Tribe  
Wade Rigsbee, Yakima Nation  
Ted Repasky, Confederated Tribes of the Umatilla Indian Reservation



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Department of Ecology  
NWP - Richland

*Nez Perce*

ENVIRONMENTAL RESTORATION & WASTE MANAGEMENT  
P.O. BOX 365 • LAPWAI, IDAHO 83540-0365 • (208) 843-7375 / FAX: 843-7378

January 4, 2007

WY  
BY  
FOR

Brenda Becker-Khaleel  
Washington State Dept. of Ecology  
3100 Port of Benton Blvd.  
Richland, WA 99354

Re: *Class 3 Modification of the Dangerous Waste Permit for the Waste Treatment and Immobilization Plant: 2 + 2 Melter Configuration*

Dear Ms. Becker-Khaleel:

This letter is in support of decisions the Washington Department of Ecology (Ecology) is making regarding the modifications to the abovementioned permit.

The Nez Perce Tribe retains reserved treaty rights in the Mid-Columbia region under the Treaty of 1855 with the United States Government. These rights have been recognized and affirmed through subsequent Federal and State actions. These actions protect Nez Perce rights to utilize our usual and accustomed resources and resource areas, including those in the Hanford Reach of the Columbia River. Accordingly, the Nez Perce Tribe Environmental Restoration and Waste Management program (ERWM) has support from the U.S. Department of Energy (DOE) to participate in and monitor relevant DOE activities. We believe that most of what occurs at Hanford is relevant to reserved treaty rights, and therefore we maintain involvement in waste management issues.

Specifically, ERWM concurs with Ecology's decision to eliminate one Low Activity Waste (LAW) melter and add one High Level Waste (HLW) melter to the current design of the Waste Treatment Plant (WTP). This configuration of 2 X 2 increases capacity to handle HLW on a more timely basis.

In addition, ERWM is pleased to note the concern for LAW capacity emphasized in this permit. ERWM supports Ecology efforts to secure capability for a third LAW in this original design, should it prove necessary to production of treated glass waste in order to meet the first milestone (25% waste by radioactivity, and 10% by mass currently by 2018).

Because it is not clear that effective supplemental technologies dealing with low activity waste will be developed in a reasonable time frame, the ERWM is pleased to see that Ecology is maintaining, as their baseline, the additional vitrification plant for the remainder of the LAW.

ERWM provided comment for the *Class 2 Modification of the Dangerous Waste Permit for the Waste Treatment and Immobilization Plant* in a letter to Ecology and DOE on May 26, 2004. In short, it described ERWM concern about the DOE modification to eliminate the technetium ion exchange system from the Pretreatment Facility. Therefore, ERWM appreciates both the denial of the permittees' request to remove technetium treatment from the building design, and the discussion supporting that denial. This important step to ensure keeping the technetium-99 portion of the Legacy Waste out of the aquifer is highly significant to Nez Perce people. As ERWM has shared with Ecology before, water is held highly sacred by the Nez Perce.

As ERWM noted in the May 2004 letter, it is precisely because technetium-99 is a long-term contributor to groundwater contamination, and because of the uncertainty regarding the capability of alternative treatments to stabilize the isotope effectively, that the ERWM cannot support removal of the ion exchange system from the pretreatment process.

Thank you for your diligent efforts to protect the ground and surface waters of the Hanford Site.

Sincerely,



Gabriel Bohnee  
Director

Cc: Keith Klein, DOE-RL  
Kevin Clarke, DOE-RL  
Jane Hedges, Ecology  
Ken Niles, OEE  
Russell Jim, YN  
Stuart Harris, CTUIR  
Nick Ceto, EPA

U.S. Department of Energy



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Department of Ecology  
NWP - Richland

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

Dear Ms. Hedges:

COMMENTS ON THE DRAFT WASTE TREATMENT AND IMMOBILIZATION PLANT  
(WTP) DANGEROUS WASTE PERMIT: 2+2 MELTER CONFIGURATION PERMIT  
MODIFICATION

Reference: Ecology letter from J. A. Hedges to R. J. Schepens, ORP; K. A. Klein, RL; and  
W. S. Elkins, BNI, "Draft Waste Treatment and Immobilization Plant (WTP)  
Dangerous Waste Permit," dated October 4, 2006.

Thank you for the opportunity to comment on the draft 2+2 Melter Configuration Permit  
Modification. Comments on the proposed permit modification are provided in Attachment 1.  
Attachment 2 provides recommended improvements to the permit which have been shared with  
your staff. Supporting materials to our comments are provided in Attachment 3.

In March 2004, the U.S. Department of Energy, Office of River Protection (ORP) and Bechtel  
National, Inc. (BNI) submitted a permit modification to the Washington State Department of  
Ecology (Ecology) that proposed to:

- Change the facility configuration to two Low-Activity Waste (LAW) and two High-Level  
Waste (HLW) melters (2+2 configuration);
- Remove the Technetium (Tc99) Ion Exchange System from the Pretreatment Facility; and
- Update engineering information in the permit that had been submitted previously to satisfy  
the compliance schedule and approved by Ecology.

Ecology's draft permit (Reference) contained a number of Ecology-initiated changes, including:

- Addition of HLW drawings to the permit that were not submitted by the permittees;
- Addition of permit requirements for support systems that transfer waste containers  
(e.g. cranes);

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- Addition of permit requirements for utilities (e.g., steam and cooling water);
- A requirement to stop fabrication on six vessels; and
- Requirements to maintain the capability to install the third LAW melter and the Technetium Ion Exchange System.

ORP and BNI are concerned that the changes proposed by Ecology to retain the capability to add a third melter, to restore the Tc-99 ion exchange system into the Pretreatment Facility, to stop fabrication on six vessels, and to permit mechanical handling systems and other support systems (e.g., utilities) will not result in significantly greater protection of human health and the environment, but would likely impact the project's schedule because of the changes that would be necessary to current plans in order to comply with the proposed permit conditions.

Relative to the 2+2 melter configuration, ORP and BNI conducted extensive discussions with Ecology, including a technical meeting on March 31, 2003, to explain the basis for the proposed change. The change from three to two LAW melters was based on vendor tests showing that an approximate 50% increase in LAW throughput per melter could be achieved. The two enhanced LAW melters will be capable of achieving the same net throughput as the three LAW melters of the initial design. Given that the LAW Vitrification Facility design could only accommodate two of the higher capacity LAW melters, the addition of a third melter would be expensive and serve no value (it was pointed out that a third melter held in standby would deteriorate in the WTP environment). ORP, therefore, agreed to reserve space for the third LAW melter as a contingency, but not to actually install a third melter at plant startup. ORP's basic objection to Ecology's proposed language is the ambiguity regarding actions necessary by ORP to reserve third melter space. ORP has, therefore, recommended permit language to clarify currently ambiguous points in the draft language.

Relative to Tc-99 ion exchange, ORP demonstrated through performance assessments that Tc-99 does not present a groundwater issue for LAW glass produced in the WTP. In fact, if Tc-99 ion exchange were included in pretreatment, it is unclear that sufficient justification would then exist to vitrify the LAW.

Ecology states that its Tc-99 concern is focused on Tc-99 pathways that may exist for non-WTP supplemental LAW treatment alternatives under consideration in the Tank Closure and Waste Management (TC & WM) Environmental Impact Statement (EIS). ORP recommends that the Tc-99 ion exchange language be removed from the WTP permit since WTP LAW vitrified wastes do not require Tc-99 ion exchange to meet applicable standards. If the TC & WM EIS Record of Decision (ROD) leads to the selection of a supplemental LAW immobilization technology that requires Tc-99 removal to meet applicable standards, then ORP will include Tc-99 as a pretreatment for the technology. That Tc-99 pretreatment need not and would not take place within the Pretreatment Facility. Accordingly, ORP requests that Ecology remove Tc-99 ion exchange from the WTP Permit with the understanding that such ion exchange can be

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included, if necessary to meet applicable standards, as part of the pretreatment of waste feed to the supplemental LAW immobilization ultimately selected in the TC & WM EIS ROD.

We look forward to having an opportunity to discuss our comments with you, and to completing the task of designing, constructing, and commissioning the WTP.

If you have any questions, please contact me, or your staff may contact Lori A. Huffman, Office of Environmental Safety and Quality, (509) 376-0104, or Brad G. Erlandson, BNI, (509) 371-3826.

  
Roy J. Schepens, Manager  
Office of River Protection

  
W. S. Elkins, Project Director  
Bechtel National, Inc.

ESQ:LAH

Attachments (3)

cc w/attachs:

C. M. Albert, BNI  
J. M. Atwood, BNI  
W. S. Elkins, BNI  
B. G. Erlandson, BNI  
P. A. Fisher, BNI  
D. A. Klein, BNI  
J. Cox, CTUIR  
S. Harris, CTUIR  
M. Anderson-Moore, Ecology  
B. Becker-Khaleel, Ecology  
L. J. Cusack, Ecology  
S. L. Dahl, Ecology  
G. P. Davis, Ecology

J. Manning, Ecology  
D. Bartus, EPA Region 10  
S. A. Thompson, FHI  
S. L. Leckband, HAB  
G. Bohnee, NPT  
K. Niles, Oregon Energy  
P. Garcia, RL  
A. C. McKarns, RL  
P. E. Peistrup, WGI  
R. Jim, YN  
Administrative Record (WTP H-0-8)  
BNI Correspondence  
Environmental Portal, LMSI

**GENERAL COMMENT**

Topic: *General*

- Condition No:
- III.10.C.15
  - III.10.E.2.d
  - III.10.E.2.e
  - III.10.I.1.a.xxiii.
  - Attachment 51, Appendices 10.1, 10.2
- 

Comment  
(00A):

The Waste Treatment and Immobilization Plant (WTP) is being designed and constructed and will operate to address the radioactive legacy of the Cold War. Design and construction is being performed in compliance with State Dangerous Waste Regulations and environmental permit requirements to reduce the possibility of threats to the public, the environment, and the Columbia River. In addition to meeting these requirements, potential impacts associated with emissions from the facility must meet strict criteria for human health and ecological risks.

We are concerned that the additional requirements being imposed by Ecology will impact scheduled completion of the project without improving public health and safety, advancing Hanford Site clean-up, or protecting the environment. Additionally, we believe Ecology has exceeded the scope of the Dangerous Waste Regulations by requiring the project to maintain specific capabilities, and obtain Ecology approval of specific design elements not covered by environmental regulations. These concerns are elaborated in our other comments.

In September 2002, the WTP embarked with Ecology on an important permitting process when the Department issued the Dangerous Waste Permit. Besides including requirements for facility operations, the Permit included a compliance schedule to provide additional engineering information to Ecology. Since the Permit was issued, detailed information has been developed and submitted consistent with Permit requirements and has been approved by Ecology. In addition to the information in the original application, the Permit now contains:

- 41 Process Flow Diagrams
- 184 Piping and Instrumentation Diagrams
- 36 General Arrangement Drawings
- 43 Equipment Assembly Drawings
- 35 Specifications
- 79 Reports issued by an Independent, Registered, Qualified Professional Engineer
- 87 Material Selection Data Sheets
- 163 Mechanical Data Sheets
- 55 other permit documents.

Furthermore, nearly 1300 design and field changes have been provided to Ecology in accordance with Permit requirements. Ecology staff and management also receive the Office of River Protection WTP daily report, and routinely attend the Project's meetings on technical, cost, and schedule matters.

Consistent with early agreements made with Ecology, we have provided unencumbered access to Project facilities. Many accommodations have been made to ensure Ecology has the information needed to monitor the progress of the Project:

- Around-the-clock electronic access to the Project's electronic library of over 215,000 drawings and documents from Ecology offices
- A turn-around office with computer access to the WTP three-dimensional design model at the WTP offices
- A turn-around office with computer at the WTP construction site
- Unescorted access to the WTP offices
- Unescorted access to the WTP construction site
- Unescorted access to WTP staff, supervisors, and management to discuss and resolve issues.

Additionally, the Permittees have worked to communicate with Ecology through over 100 "DWP Integration" meetings as well as numerous informal meetings to discuss and resolve issues.

In March 2004, a permit modification request was submitted to Ecology that proposed to:

- Change the facility configuration to 2 LAW and 2 HLW melters
- Remove the Technetium Ion Exchange System from the Pretreatment Facility
- Update information in the permit text based on engineering information that had been submitted and approved by Ecology to satisfy the compliance schedule.

The content and scope of the permit modification request was discussed with Ecology before the request was submitted, and Ecology was provided an opportunity to review the draft permit modification request and provide informal comments. These informal comments were resolved prior to formal submittal of the permit modification request

Given our history of engagement, the number of approved documents, the access given to Ecology, and the dialogue we have sought to maintain, Ecology's proposed requirements to maintain capability to install the third LAW melter, maintain capability to install the Technetium Ion Exchange system, require the permitting of utility systems and mechanical handling systems, and require fabrication of six vessels to be stopped are unnecessary and appear to be without regulatory foundation in Chapter 70.105 RCW and

Chapter 173-303 WAC.

- reference(s):
- WTP Dangerous Waste Permit
  - Chapter 173-303 WAC
  - Chapter 70.105 RCW

**COMMENT #1**

Topic: *General*

- Condition No:
- III.10.C.15
  - III.10.E.2.d
  - III.10.E.2.e
  - Attachment 51, Appendices 10.1, 10.2

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Comment (1): Please delete these permit conditions and the Ecology-added changes to Attachment 51 Appendix 10.1 and 10.2 or provide a basis from Chapter 173-303 WAC, specifically WAC 173-303-815(2)(b).

Basis (1): The draft permit contains a number of proposed permit conditions identified below:

- Introduction of a new class of regulated unit, support systems (III.10.C.15)
- Requirement to stop fabrication of six vessels prior to the point of compliance, installation in the WTP (III.10.E.2.d)
- Requirement to retain the capability to install the Technetium Ion Exchange System (III.10.E.2.e)
- Modification of engineering drawings to incorporate utilities and support systems that do not manage dangerous waste after they were stamped by a Registered Professional Engineer and certified by the Permittees as true, accurate, and complete (Attachment 51, Appendices 10.1, 10.2)

Ecology identifies on page 17 of the Statement of Basis the need to add 45 new drawings to the permit.

These proposed requirements do not incrementally increase protection of the

environment or worker and public safety, and could result in schedule delays.

When establishing permit conditions, the Department must follow the requirements established in WAC 173-303-815(2), “Establishing Permit Conditions.” The Permittees could find no regulatory citation supporting the addition of these proposed permit conditions and the additions to Attachment 51.

**WAC 173-303-815(2)(b)(i)**

This regulation states:

*“Each permit must include permit conditions necessary to achieve compliance with the Hazardous Waste Management Act chapter 70.105 RCW, [Chapter 173-303 WAC] and RCRA subtitle C. In satisfying this provision, the director may incorporate applicable requirements of this chapter directly into the permit or establish other permit conditions that are based on this chapter.” (Emphasis added.)*

The Permittees could find no justification in this rule that supports creating a new class of regulated unit, stopping fabrication prior to the point of compliance, retaining capability to install equipment, and modification of drawings after they were submitted to the Department. Ecology has not provided a regulatory basis for these proposed permit conditions based on Chapter 173-303 WAC.

**WAC 173-303-815(2)(b)(ii)**

This regulation states:

*“Each permit issued under this chapter must contain terms and conditions as the director determines necessary to protect human health and the environment.”*

The new requirements proposed by Ecology are not necessary to protect human health and the environment, and the Permittees could find no justification from this rule that supports the new requirements. Ecology has not demonstrated that these proposed permit conditions are based on Chapter 173-303 WAC.

**WAC 173-303-815(2)(b)(iii)**

This regulation identifies criteria for an applicable permit requirement, and states in part:

*“For a state-issued permit, an applicable requirement is a state statutory or regulatory requirement that takes effect prior to final administrative disposition of a permit.”*

The Permittees could find no state statutory or regulatory requirement that justifies the new requirements. Ecology has not demonstrated that these proposed permit conditions are based on Chapter 173-303 WAC.

reference(s):           • WAC 173-303-815(2)(b)

**COMMENT #2**

Topic:                *Technetium Ion Exchange (1)*

Condition No:   III.10.C.17

Condition Text:   III.10.C.17. The existing PT facility will retain the capability to install the Technetium Ion Exchange Process System (TXP). This includes adequate provision of space for all related TXP equipment, vessels and evaporator systems, and placement of floor embedments and wall penetrations. This capability will be maintained until a suitable supplemental treatment technology or second LAW vitrification facility has been selected by the permittees and approved by Ecology.

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Comment (2):   Tc-99 is a radionuclide regulated by the Federal Atomic Energy Act of 1954, and is not regulated under the authority of the Dangerous Waste Permit and Chapter 70.105 RCW:

- Please delete the proposed permit condition and associated information related to Technetium ion exchange system in the permit text and tables.
- Please approve the permit modification request to remove the Technetium Ion Exchange System from the WTP Permit.

Basis (2):        The following summarizes the basis for this comment:

- Tc-99 is a radionuclide regulated by the Federal Atomic Energy Act of 1954 (AEA), as Ecology states in its *Statement of Basis* and permit Condition III.10.A.
- Under Washington statute, “The Department of Ecology may regulate all hazardous wastes, including those composed of both radioactive and

hazardous components, **to the extent it is not preempted by federal law.**” (70.105.109 Revised Code of Washington [RCW]) (Emphasis added).

Federal law (the AEA) regulates Tc-99 as a radiation hazard and provides the Department of Energy authority to preempt Ecology’s authority to regulate it. Although Ecology regulates mixed waste, the technetium ion exchange process is not designed to treat or render less hazardous the dangerous waste constituents in the tank waste. Without regulatory jurisdiction over Tc-99, the Permittees could find no basis in law for denying removal of the technetium ion exchange system or requiring the capability to install it.

- Under WAC 173-303-815(2)(b)(v), Ecology must incorporate permit conditions expressly or by reference. However, because Ecology does not have jurisdiction over radionuclides according to Washington law, Ecology has not demonstrated a regulatory basis under Washington code for Condition III.10.C.17.

This summary is elaborated below:

Ecology does not regulate radionuclides under Chapter 173-303 WAC. The Permittees could find no regulatory justification to retain the capability to install the technetium ion exchange system because Tc-99 is a radionuclide and, as Ecology acknowledges in its *Statement of Basis*, the Department’s regulatory authority does not extend to radionuclides. Ecology defines the Department’s authority in permit Condition III.10.A:

*“Where information regarding treatment, management, and disposal of the radioactive source, byproduct material, and/or special nuclear components of mixed waste (as defined by the Atomic Energy Act of 1954, as amended) has been incorporated into this permit, it is not incorporated for the purpose of regulating the radiation hazards of such components under the authority of this permit and chapter 70.105 RCW. In the event of any conflict between Permit Condition III.10.A and any statement relating to the regulation of source, special nuclear, and byproduct material contained in portions of the permit application that are incorporated into this permit, Permit Condition III.10.A will prevail.”*

Tc-99 presents a radiation hazard that is regulated by the AEA, it is not dangerous waste as defined by state rule, and it is therefore exempt from the Dangerous Waste Regulations. The initial purpose of the technetium ion exchange system was to provide the capability to remove Tc-99 from the LAW feed stream as an AEA potential mitigation measure and was not designed to

treat dangerous waste constituents, characteristics or criteria regulated under Chapter 173-303 WAC.

Because the Technetium removal system is described in the existing permit, and a proper modification request submitted to remove it, this design change constitutes an alteration to the original permit and therefore cause exists for Ecology to modify the permit under WAC 173-303-830(3)(a)(i) *Permit Changes*. Furthermore, leaving technetium ion exchange information in the permit, when the systems and equipment do not exist, is confusing given the new permit condition that says WTP must retain the capability to install the equipment.

The Permittees also note that, aside from Ecology lacking regulatory jurisdiction over Tc-99 removal, Ecology's basis for denying the request is not based on a WTP-related matter. For example, in the Statement of Basis Ecology denied removal of the Technetium Ion Exchange System "...until a suitable supplemental treatment technology or second LAW vitrification facility has been selected by USDOE and approved by Ecology." The modification requested by the Permittees is strictly limited to the WTP and not any future waste treatment facility.

The Permittees note that Tc-99 removal is not required for vitrified LAW relative to DOE's AEA authority because:

- a. The LAW will be well below 10 CFR 61.55 Class C concentration limits for all radionuclides including Tc-99;
- b. Tc-99 associated with WTP secondary wastes will meet all applicable regulatory standards for waste disposal;
- c. Tc-99 releases from vitrified LAW meet all applicable regulatory standards for waste disposal.

While unrelated to the WTP permit, we also note that if a supplemental LAW immobilization technology were to be selected via the Tank Closure & Waste Management Environmental Impact Statement Record of Decision that did warrant Tc-99 removal consistent with DOE's AEA authority (a situation that is not anticipated), DOE would provide for Tc-99 removal outside the WTP Pretreatment facility for several reasons. First, Tc-99 removal need not occur in the Pretreatment facility. Second, it is no longer technically or economically practical to remove Tc-99 inside the Pretreatment Facility due to the state of construction. Third, Tc-99 is not a fully developed process technology and additional research and technology development would be required to develop a technetium ion exchange system that would function effectively with Hanford tank waste. We believe that such a system would likely occupy more space than was provided in the 2003 design.

Given that Ecology's rationale in the Statement of Basis for this permit condition is not valid relative to the WTP permit at hand, is not within

Ecology's regulatory authority, and is not needed for compliance with Washington Dangerous Waste Performance Standards under WAC 173-303-283(3), the Permittees' request to remove the technetium system should be approved.

- reference(s):
- Chapter 70.105 RCW
  - Department of Ecology WTP Statement of Basis
  - DOE letter 04-ED-068, "Additional Information to Support Class 2 Permit Modification for the Waste Treatment and Immobilization Plant (WTP)," dated August 4, 2004.
  - Federal Atomic Energy Act of 1954 (AEA)
  - Chapter 173-303 WAC
  - WAC 173-303-040
  - WAC 173-303-283
  - WAC 173-303-283(3)
  - WAC 173-303-400(2)
  - WAC 173-303-600(3)
  - WAC 173-303-815(2)(b)(v)
  - WAC 173-303-830(3)(a)(i)

**COMMENT #3**

Topic: *Technetium Ion Exchange (2)*

Condition No: III.10.C.17

Condition Text: III.10.C.17. The existing PT facility will retain the capability to install the Technetium Ion Exchange Process System (TXP). This includes adequate provision of space for all related TXP equipment, vessels and evaporator systems, and placement of floor embedments and wall penetrations. This capability will be maintained until a suitable supplemental treatment technology or second LAW vitrification facility has been selected by the permittees and approved by Ecology.

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- Comment (3): Please delete the proposed permit condition requiring the capability to install the Technetium ion exchange system because:
- Ecology does not have regulatory jurisdiction over Tc-99,
  - Tc-99 is bound in the ILAW and IHLW and will not adversely impact Hanford groundwater,
  - The LAW glass produced in the WTP will meet the Integrated Disposal Facility waste acceptance criteria,

- There is no justification for Ecology to regulate the WTP for matters that pertain to the Integrated Disposal Facility, and
- Installation of the system is neither technically nor economically practicable

Basis (3): In its *Statement of Basis*, Ecology stated:

*“The fate of Tc-99 is a major concern for Ecology. As a radionuclide subject to regulation under the Atomic Energy Act, Tc-99 is not specifically regulated under the Dangerous Waste Regulations in WAC 173-303. Tc-99 has a significant potential to impact the ground water and is a constituent addressed in the Federal safe drinking water standards. For this reason, the Tc-99 must be disposed in a waste form with long term-stability (thousands of years).”*

Analyses provided by the Permittee to Ecology on August 4, 2004 (DOE letter 04-ED-068) shows that 97% of the Tc-99 entering the vitrification process will be incorporated into the LAW glass and 2.2% will be incorporated into the HLW glass. The text of Ecology’s permit condition and the *Statement of Basis* indicates the Department is concerned about the efficacy of a supplemental LAW technology to immobilize Tc-99. Even if Ecology had authority to regulate Tc-99 (which it does not), concerns about groundwater protection from Tc-99 that may be released from wastes disposed of in the Integrated Disposal Facility should be addressed in the waste acceptance criteria for that facility. Concerns regarding hazardous materials would similarly be addressed in the disposal facility permit as described in the Chapter 173-303 WAC, and not the WTP permit.

Waste shipped from the WTP to other facilities for treatment, storage or disposal must meet strict Waste Acceptance Criteria at those facilities in accordance with Permit Condition III.10.C.2.d and WAC 173-303-141(1). It is not technically or economically practical to remove Technetium inside the Pretreatment Facility. Installing the system at this time or later would require additional research and technology and a redesign of the ion exchange system. The redesigned system would occupy more space than was provided in the 2003 design. The bases for removing the system from the design included: class C radioactive limits would not be exceeded even if all of the Tc-99 was incorporated into the LAW glass; with process recycles it is expected that 99.9% of the Technetium could be incorporated into the glass; Tc-99 would not enter the ground water at a rate that would cause the ground water limits to be exceeded; and Tc ion exchange can be added to a future supplemental LAW treatment facility if it is necessary.

In addition, permit condition III.10.E.2.e is not defined in sufficient detail to enable the Permittees to demonstrate compliance. The lack of detail places the Permittees at risk of *ad hoc* regulatory interpretations and regulatory enforcement actions.

- reference(s):
- DOE letter 04-ED-068, “Additional Information to Support Class 2 Permit Modification for the Waste Treatment and Immobilization Plant (WTP),” dated August 4, 2004.

**COMMENT #4**

Topic: *Maintain Capability to Install a Third LAW Melter*

Condition No: III.10.I.1.a.xxiii

Condition Text: The existing LAW building will retain capability to install the third melter before or after hot start-up. No melter support vessels or support systems should be deleted from the “process cell design” that could preclude later melter installation.

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Comment (4): Please revise this condition to read:

“III.10.I.1.a.xxiii. The existing LAW building will retain capability to install the third melter before or after hot start-up. No permanent systems, structures, or components shall be installed in the melter cell, pour cave or wet process cell for the third melter that would preclude future installation of the third melter.

Compliance with the following requirements constitutes compliance with this permit condition:

- The foundation for the third melter pour cave carousel will be installed;
- Embedments in the -21 foot level basemat will be installed;
- Embedments in the -21 foot level walls for the installation of equipment, piping and liners supporting the installation of the third melter will be installed;
- Piping/cable penetrations in the -21 foot level walls to support future installation of piping and wiring will be installed;
- No equipment will be installed in the third melter process cell that will eliminate the ability to install the process vessels for the third melter;

- The common pipeline sizes will be for three-melter service with a peak glass throughput rate of 10mt/day/per melter; however, the pumps and heat exchangers will be based on two melters with a peak throughput of 15 mt/day;
- Secondary offgas piping and equipment (with the exception of exhausters) will be sized to support three melters with a peak glass throughput rate of 10mt/day/per melter. The blowers will be sized for two melters with a peak throughput of 15 mt/day;
- General electrical capacity and configuration will support 3 melters with a 10mt/day/per peak glass throughput rate per melter;
- The structure for the third melter foundation will be installed in the +3 foot level floor;
- The following embedments will be installed:
  - Embedments in the +3 foot level floor except the melter rail anchor bolts and floor grillage;
  - Embedments in the +3 foot level walls for the installation of equipment, piping and liners supporting the installation of the third melter systems;
  - Embedments for the special melter pulleys;
  - Process cell sumps;
- The following floor and wall penetrations will be installed:
  - The cable tray penetrations for the third melter;
  - The melter buss duct penetration;
- The wall grillage in the third melter process cell will not be installed;
- The melter import rails and the process equipment tank rings are not required to be installed, but the +3 foot floor must retain the ability for future installation of the melter rails and process equipment tank rings.”

If melter throughput fell short of expectations, the permittees would determine the best approach to obtain the required LAW immobilization capability. Options would likely include: fixing the problem resulting in melter throughput below expectations within LAW Vitrification; providing the increased LAW immobilization capability in an Alternative LAW Facility; or outfitting the third LAW vitrification melter line. Disrupting operation to perform equipment installation and performing construction and equipment installation in a radioactively contaminated facility would clearly factor into the decision process. Any future modifications to the third process cell or third

melter cell will not be completed until the permittees determine that a third melter should be installed for operational reasons and take appropriate actions through the permit process.

Basis (4): In the June 29, 2004 letter from Ecology to the DOE-ORP, Ecology judged that the 2+2 permit modification was complete. As allowed by WAC 173-303-840(b), Ecology requested supplemental information to complete the evaluation of the modification request. DOE-ORP submitted this response on August 4, 2004 (DOE letter 04-ED-068). The information contained in the August 4, 2004 ORP letter to Ecology outlined the commitments by ORP to maintain the ability to install a third LAW melter. Based on the consideration to minimize the project cost for the redundant systems not essential for safety, the above-mentioned capabilities have been provided in the current design and installation, to retain capability for installation of the 3<sup>rd</sup> melter.

It is important to note that implementation of Ecology's permit condition as written will result in significant schedule delays for LAW construction, and the estimated cost for the engineering design drawings, procurement of embeds and other equipment for the third melter cell and third melter process cell described above is approximately \$150 million. Because the intent of the proposed permit condition can be interpreted to require the installation of process cell equipment before or after start-up, this ROM estimate is based on the installation of in-cell vessels and equipment.

reference(s):

- June 29, 2004, Letter from M.A. Wilson to R.J. Schepens and J. Henschel, *Waste Treatment and Immobilization Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification*.
- August 4, 2004, Letter from R.J. Schepens to M.A. Wilson, *Additional Information to Support Class 2 Permit Modification for the Waste Treatment and Immobilization Plant (WTP)* (ORP letter #04-ED-068).

#### COMMENT #5

Topic: ***HIGH LEVEL WASTE BUILDING PROCESS FLOW DIAGRAMS, PIPING AND INSTRUMENTATION DIAGRAMS AND MECHANICAL DRAWINGS***

Condition No: Attachment 51 - Appendices 10.1, 10.2, 10.6

Proposed Permit Changes: Ecology proposes to incorporate into the permit (Attachment 51, Appendices 10.1, 10.2, and 10.6) an additional seven "source" drawings and 20 permit drawings edited by the Department. In the Statement of Basis, Ecology indicates that an additional 45 WTP engineering drawings will need to be incorporated into the permit. The proposed permit changes would incorporate design details into the permit for utilities and support services associated with operation of permitted equipment.

Comment (5): Please remove the proposed permit changes that would incorporate drawings that have been added and/or edited by Ecology into the permit. The Permittees could find no regulatory requirements supporting the permitting of utilities in a Dangerous Waste Permit in the following provisions of the WAC:

- Final facility permits (WAC 173-303-806)
- Establishing permit conditions (WAC 173-303-815(2))
- Environmental performance standards (WAC 173-303-680(2))
- Procedures for decision making (WAC 173-303-840(2)(b)):

However, the Permittees would be happy to provide additional documentation for incorporation into the Administrative Record.

Basis (5): The changes proposed by Ecology include the following:

1. Addition of two “source” Piping and Instrumentation Diagrams (P&IDs):
  - 24590-HLW-M6-00012, *Melter 1 Film Cooler Utilities*
  - 24590-HLW-M6-20012, *Melter 2 Film Cooler Utilities*
2. Ecology’s edited drawings (adding a note and bubbles): the 18 permit P&IDs and two Process Flow Diagrams (PFDs); replace these drawings with the drawings submitted by the Permittees with the HLW melter design package. The Ecology added note states:

*“The portions of this drawing designating the seismic category and quality class, and portions enclosed in “bubbles” labeled “NR” (Not Regulated) are considered non-permit affecting and are not subject to regulatory requirements of the WAC code or the dangerous waste permit to the extent that those portions do not impact dangerous waste areas/operations.”*

3. Five mechanical drawings developed by the WTP vendor:
  - WTP-M-21951-1, *HLW Melter Assembly, HLW Melter Envelope*
  - WTP-M-21951-1, *HLW Melter Assembly, Isometric View*
  - WTP-M-21951-1, *HLW Melter Assembly, Plan View*
  - WTP-M-21951-1, *HLW Melter Assembly, Section B-B*
  - WTP-M-21951-1, *HLW Melter Assembly, Section C-C*
4. The future addition of 45 P&IDs showing utilities and support services, as indicated per Statement of Basis, page 17.

The Permittees could find no justification for the submittal of design details and drawings for utilities and support services and their subsequent permitting under Chapter 173-303 WAC:

- 1. WAC 173-303-806, Final Facility Permits.** WAC 173-303-806(4) identifies the content for a Part B dangerous waste permit application. This information is required by Ecology to determine compliance with final facility standards for management of dangerous waste. This same information is described in Ecology Publication 95-402, *Dangerous Waste Permit Application Requirements*. Detailed design information, such as P&IDs, for utilities and support services is not required by WAC 173-303-806. The drawings added by Ecology to the permit have not been submitted to the Department in the Part B application and, consequently, have not been certified by the Permittees, as required by WAC 173-303-810(13).
- 2. WAC 173-303-815(2), Establishing Permit Conditions.** WAC 173-303-815(2)(b)(i) requires each permit to include conditions necessary to achieve compliance with the Hazardous Waste Management Act (Chapter 70.105 RCW), Chapter 173-303 WAC, and RCRA Subtitle C. In satisfying this provision, the director may incorporate applicable requirements of Chapter 173-303 WAC directly into the permit or establish other permit conditions that are based on this chapter. WAC 173-303-815(2) (b)(ii) requires each permit issued under this chapter to contain terms and conditions the director determines necessary to protect human health and the environment. Permitting steam, cooling water, or other utility support services is not required to protect human health or the environment. The facility is designed and will be operated in accordance with the Dangerous Waste Regulations.

Additionally, WAC 173-303-815(2)(b)(v) requires all permit conditions to be incorporated either expressly or by reference. Ecology has not provided a regulatory basis describing the rationale for permitting utility systems, has not provided clarification in the Permit regarding what elements of the utility systems are permitted, and has not developed an administrative process the Department would use to approve designs of utilities and support services which do not treat, store, or dispose of dangerous waste.

- 3. WAC 173-303-680(2), Environmental Performance Standards.** WAC 173-303-680(2) requires Permits for miscellaneous units to contain terms and provisions to protect human health and the environment, including but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to releases. In the Statement of Basis, Ecology cites WAC 173-303-680(2) for adding melter support services

and utilities to the permit, and explains that the Department can request additional information that is necessary to evaluate compliance with the environmental performance standards of WAC 173-303-680(2). This additional information has already been addressed in Chapter 4, Process Information, Chapter 7, Contingency Plan, and other permit documents.

4. **WAC 173-303-840, Procedures for Decision Making.** WAC 173-303-840(1)(b) describes the administrative procedures for Ecology to follow when requesting additional information that is necessary to clarify or supplement previously submitted material. The Permittees did not receive a formal request to provide additional melter drawings to clarify or supplement the HLW melter design package that was submitted to Ecology. Addition of drawings not submitted by the Permittees seems inconsistent with WAC 173-303-840(1)(b).
5. **WAC 173-303-810, General Permit Conditions and Permit Condition I.E.7.** WAC 173-303-810(6) and Permit Condition I.E.7 require proper operation and maintenance of all systems used to achieve compliance with the conditions of the permit. WAC 173-303-810(6) and Permit Condition I.E.7 do not require the Permittees to include design details relative to utilities and support services.
6. **Permit Condition III.10.J.5.e.ix.** excludes process monitors and instrumentation for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) from the tables of permitted instrumentation. Given this permit condition, the Permittees could find no justification for permitting utility systems proposed in the draft Permit.
7. **Resource Conservation and Recovery Act (RCRA), 40 Code of Federal Regulation (CFR) Part 264.** The Permittees could find no requirement in 40 CFR Part 264 for the permitting of utility services at a treatment, storage, and disposal facility (TSDF). These regulations cover the hazardous waste management by a TSDF and containment structures, but not the utilities which provide service to the TSDF. If a utility system is itself managing hazardous waste, it would be subject to RCRA for any applicable waste management activities.

Discussion: 1.0 Background

The Permittees would like to offer a balanced discussion of “ghosting” to complement Ecology’s description of “ghosting” in the Statement of Basis. In the Statement of Basis, Ecology explains that the Permittees have not followed

Ecology's guidance provided in the September 27, 2005 letter on "ghosting" of engineering drawings. "Ghosting" has been used on drawings submitted by the Permittees and approved by Ecology since the inception of the Permit to identify non-permitted portions of the facility design in a lighter font than the permitted portions of the facility. Utilities and support systems have been ghosted since the first permit package was submitted to Ecology in late 2002.

In the Statement of Basis, Ecology states the effect of the proposed permit changes "...is to maintain design configuration control in the Permit for regulated systems and equipment, by requiring Permit modifications whenever design of those portions is modified." The Permittees do not believe Ecology has the authority under Chapter 173-303 WAC or 40 CFR Part 264 to permit design details for utilities and support services that do not treat, store, or dispose dangerous waste.

The Permittees acknowledge that certain design aspects of utility systems and support services may be appropriate for Ecology review to clarify understanding of the operational approach for the permitted dangerous waste management units. This information already exists in Attachment 51, Chapter 4 and has been approved by Ecology. An update to this information is required prior to the initial receipt of dangerous waste by Permit Conditions III.10.E.9.e.vi, III.10.J.5.d.vi, and others.

The Discussion below provides background of the WTP permitting process, summarizes the proposed permit changes, and describes the Permittees' position on this subject.

### 1.1 WTP Permitting Process

The process for obtaining a Dangerous Waste Permit (DWP) is to submit a permit application to Ecology containing the information required by WAC 173-303-806, Final Facility Permits. Ecology then issues a permit prior to the start of construction. In the case of the Waste Treatment and Immobilization Plant (WTP), Ecology agreed to a phased permitting approach in order to expedite WTP construction and ultimately treatment of Hanford tank waste. Bechtel National Inc. (BNI) and the United States Department of Energy Office of River Protection (ORP) submitted a DWP application using the best design information available. Ecology, ORP, and BNI conducted detailed reviews of the initial DWP permit application during 2000 and 2001 to assure the application would meet the Dangerous Waste Regulations. The draft permit prepared by Ecology was reviewed in the same manner. Ecology issued the WTP DWP in September 2002 with conditions, including a Compliance Schedule requiring submittal of additional information for incorporation into the permit.

The permit conditions (e.g., Permit Condition III.10.E.9.c.) require submittal

of engineering documents and drawings for specifically identified equipment that manages dangerous waste. To ensure that Ecology received the design information the Department needed to permit the facility, the parties met and agreed on the types of drawings and other documents needed for the permitting, as well as a process for identifying which equipment was permitted. The process agreed upon was that before submitting engineering information for the permit, the Permittees used a bold font on design drawings (such as Piping and Instrumentation Drawings (P&IDs) and General Arrangement Drawings) to show the equipment to be permitted. These drawings were informally reviewed by Ecology, comments incorporated, and a meeting held to ensure all parties agreed on the permitted equipment. In deciding the permitted equipment, the fundamental criteria were the function of equipment and whether it was in contact with dangerous waste.

### 1.2 “Ghosting” on Permit Drawings

After the permitted equipment was identified, drawings were created which “ghosted” non-permitted equipment (i.e., shown in phantom) and the permitted equipment was bolded. A Professional Engineer (PE) stamped these permit drawings pursuant to WAC 173-303-806(4)(a). For each permitted system, an Independent Qualified Registered Professional Engineer (IQRPE) reviewed the design and wrote an integrity assessment report testifying that the equipment would not “collapse, rupture or fail,” consistent with WAC 173-303-640(3)(a). The IQRPE report, the permit drawings and other permitting documents were assembled into “packages” and submitted to Ecology for each tank and miscellaneous unit system identified in the DWP that manages dangerous waste.

Ecology formally reviewed the packages and periodically opened groups of packages for public review and comment. After the public review, assuming there were no comments, Ecology issued an approval letter to the Permittees authorizing construction of the equipment addressed in the package, and incorporated the documents and drawings into the permit.

Ecology, ORP and BNI have used the above-described process since September 2002, and have permitted roughly 100 of 130 planned permit packages. The equipment that would be included in the permit was determined and a costed schedule developed based on this process. Engineering, Commissioning, and Training (C&T) also forecasted their costs and schedule based on the equipment and systems identified in the permit and the permitting process described above. The established process was workable, predictable, and it allowed construction to proceed with building the WTP.

The WTP permit packages approved by Ecology and incorporated into the permit contain hundreds of engineering drawings including over 180 P&IDs

showing in phantom (i.e., “ghosted”) the non-permitted components (e.g., demineralized water lines, steam systems, instrument air lines, plant chilled water system, etc.) supporting operations of the permitted dangerous waste management units. The WTP drawings include a note developed with and approved by Ecology indicating “ghosted” components were non-permit affecting and not regulated by the WAC to the extent that they do not impact dangerous waste areas/operations consistent with WAC 173-303-810(6).

### 1.3 HLW Melter Design Package

The Permittees submitted the HLW melter permit packages (HLW-018 and HLW-019) on June 16, 2006, to meet the Compliance Schedule date of June 18, 2006. Components of the HLW melter permit package that are “ghosted” include support services, such as demineralized water piping, instrument air piping, and instruments generally associated with the support systems.

During the informal review of the draft HLW melter permit packages, Ecology provided comments requesting that more P&IDs be added to the permit. The Permittees complied with one exception - two P&IDs, representing the Film Cooler Utilities for Melter 1 and 2, were not included in the final HLW melter packages submitted to Ecology because these drawings address only utility systems, not waste management systems.

During the informal review, Ecology also requested that the utilities and support services be identified as permitted (i.e., “bolded) because, as the Department explained, these systems are important to the melter operations. When the Permittees requested the regulatory basis for incorporating drawings with design details for utilities and support services into the dangerous waste permit, Ecology’s answer was that there are regulatory provisions allowing the Department to request more information. The Permittees believe that requesting additional information to support a permitting process is very different than permitting these systems.

On August 10, 2006, the Permittees received a letter from Ecology acknowledging receipt of the HLW melter permit packages and stating that the provided design information did not meet the Department’s expectations. However, Ecology stated that the HLW melter permit packages would be incorporated into the permit along with additional drawings the Department believes are important to the melter operations. The letter did not request, as required by WAC 173-303-840(1)(b), that additional information be submitted to supplement the information already provided to Ecology. Instead, the Department informally obtained the WTP drawings from the Permittees’ electronic library, and placed them in the draft permit for public review without the Permittees’ certification.

## 2.0 Ecology Proposed Permit Changes

Ecology has decided that including drawings for utilities and support services in the permit is appropriate and necessary to ensure proper operation of regulated equipment. In the Statement of Basis, Ecology indicates that operation of the water and air supply lines is essential to operations of the HLW melter. Information regarding operations of the WTP utilities and support services has already been provided in Chapter 4, Process Information, of the permit. The Permittees do not agree with Ecology that design details for utilities and support services must be incorporated into the permit, since the utility and support services are required to function properly in accord with permit Condition I.E.7 and WAC 173-303-810(6). The Permittees believe that the proposed WTP permit was not developed in accordance with the permitting process described in Dangerous Waste Regulations.

### **3.0 The Permittees' Position**

The Permittees could not find a regulatory basis to require permitting of utility and support services such as water, steam or air that do not manage dangerous waste. It would appear that Ecology is proposing to expand the boundaries of the WTP permit and the RCRA regulations, without a rule making process pursuant to Chapter 34.05 RCW, Part III. Ecology's approach appears inconsistent with Chapter 173-303 WAC and contradicts the Department's *2007 - 2009 Strategic Plan*, page 14, which describes changes Ecology has implemented to ensure that the permit decisions are clear and the permitting process is predictable.

#### **3.1 The proposed permit changes are not consistent with WAC 173-303-806, Final Facility Permit.**

Incorporating design details associated with support services into the dangerous waste permit is not necessary to protect human health or the environment nor is it required under WAC 173-303-806, Final Facility Permit. WAC 173-303-806(4) identifies the content for a Part B dangerous waste permit application that is required to determine compliance with standards applicable to dangerous waste management units. This same information is described in Ecology Publication 95-402, *Dangerous Waste Permit Application Requirements* and in Permit Condition III.10.J.5.c. for the HLW facility miscellaneous units. Detailed design information (e.g., P&IDs) for utilities and support services is not required by Chapter 173-303 WAC or Ecology's guidance document *Dangerous Waste Permit Application Requirements* (Ecology publication 95-402).

To the extent utilities and support services are needed for proper operation of a permitted equipment, component or activity (e.g., steam ejectors used to remove dangerous waste from a vessel or sump), operability is addressed in

documents already contained in the permit. The permit contains many design documents (e.g., equipment specifications) that describe design elements that are required to assure proper functioning of permitted equipment. Chapter 4, Process Description, contains information on how the WTP utility systems operate to support permitted dangerous waste management activities. The content of the WTP DWP is directly related to compliance with WAC 173-303-806(4), Contents of Part B. These regulations do not require submittal of design documents for systems or equipment that do not manage dangerous waste (e.g., steam, cooling water systems, etc.).

### **3.2 The proposed permit changes are not consistent with WAC 173-303-815(2), Establishing Permit Conditions.**

WAC 173-303-815(2)(b)(i) requires each permit to include conditions necessary to achieve compliance with the Hazardous Waste Management Act (Chapter 70.105 RCW), Chapter 173-303 WAC, and RCRA Subtitle C. In satisfying this provision, the director may incorporate applicable requirements of this chapter directly into the permit or establish other permit conditions that are based on this chapter. WAC 173-303-815(2)(b)(ii) requires each permit issued under this chapter to contain terms and conditions the director determines necessary to protect human health and the environment. The Statement of Basis did not provide this rationale.

Including design details for steam, cooling water, or other utility support services in the Dangerous Waste Permit is not required to protect human health or the environment. The facility is designed and will be operated in accordance with the Dangerous Waste Regulations.

WAC 173-303-815(2)(b)(v) requires all permit conditions to be incorporated either expressly or by reference. Ecology's mark-up of HLW drawings, expectation that future packages will be consistent with the mark-up, and statements in the Statement of Basis indicating an additional 45 drawings will be incorporated into the Permit are not consistent with WAC 173-303-815(2)(b)(v). The Permittees could find no regulatory requirements or permit conditions addressing the permitting of utilities and support services which do not treat, store, or dispose of dangerous waste.

### **3.3 The proposed permit changes are not required under WAC 173-303-680(2), Environmental Performance Standards.**

In the Statement of Basis, Ecology cites WAC 173-303-680(2), Environmental Performance Standards, as the basis for adding to the DWP melter utilities and support services to the Permit. The Department explains that additional information can be requested that is necessary to evaluate compliance with the environmental performance standards of WAC 173-303-680(2).

WAC 173-303-680(2) states:

*“Permits for miscellaneous units are to contain such terms and provisions as necessary to protect human health and the environment, including but not limited to, as appropriate, design and operating requirements, detection and monitoring requirements, and requirements for responses to release of dangerous waste or dangerous waste constituents from the unit.”*

Operating requirements for the permitted dangerous waste units and responses to potential releases have already been addressed in permit conditions and Chapter 4, Process Information, Chapter 7, Contingency Plan, and other permit documents.

The Permittees found no regulatory support for permit conditions requiring that the HLW melter system support services and utilities be permitted and found no basis for the proposition that these conditions are protective of human health and the environment.

### **3.4 The proposed permit changes are not consistent with Permit Condition III.10.J.5.e.ix.**

Permit Condition III.10.J.5.e.ix. states:

*“...Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this condition.”*

Including the WTP design drawings for utilities and support services that manage water, air, or steam, do not manage dangerous waste, have no direct contact with dangerous waste, and when they fail to operate would not cause releases of dangerous waste to the environment in the permit, is not consistent with this permit condition.

### **3.5 The proposed permit changes are not consistent with WAC 173-303-840(1)(b), Procedures for Decision Making.**

WAC 173-303-840(1)(b), Procedures for Decision Making, describes the administrative procedures Ecology must follow when requesting additional information that is necessary to clarify or supplement previously submitted material. Ecology did not follow this process and did not formally request that additional drawings be submitted to clarify or supplement the submitted information. Instead, the Department informally obtained design drawings, including vendor-developed mechanical drawings, from the WTP electronic

library and incorporated these documents into the permit. This approach is clearly inconsistent with the administrative process in WAC 173-303-840.

### **3.6 The proposed permit changes are not consistent with WAC 173-303-810, General Permit Conditions and Permit Condition I.E.7**

WAC 173-303-810(6) and Permit Condition I.E.7 require proper operation and maintenance of all systems used to achieve compliance with the conditions of the permit. As described in WAC 173-303-810(6), proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities, or similar systems, only when necessary to achieve compliance with the conditions of the permit. It does not require detailed design documentation and drawings of utilities and support services be provided for incorporation into the permit. Permitting utilities and support services is not consistent with WAC 173-303-810(6) and Permit Condition I.E.7.

### **4.0 Clarification from Environmental Protection Agency (EPA) Office of Solid Waste**

The Permittees contacted the Environmental Protection Agency (EPA) Office of Solid Waste for clarification, asking whether the RCRA regulations contain requirements for utilities and support services associated with operations at treatment, storage, and disposal facilities. In the responses provided, EPA indicated that utilities and support services are not included within the scope of RCRA. The State of Washington has not enacted rules that are more stringent than the federal rule in this area. The question to EPA concerning regulation of utilities and support services, along with the EPA response, is given below:

Question Reference #060202-000033

Customer (Brad Erlandson) - 02/02/2006 05:47 PM

Are utilities (e.g., electricity, steam, cooling water) that support TSD permitted processes (e.g., removing waste with a steam ejector from a tank or sump, cooling for process off-gas treatment systems) regulated? Can you provide applicable code references or other guidance documents?

Response (OSW-CC) - 02/03/2006 04:14 PM

Mr. Erlandson,

There are no specific Resource Conservation and Recovery Act

(RCRA) regulations for utilities providing services to a treatment, storage, and disposal facility (TSDF). The TSDF regulations, found in 40 CFR Part 264 and Part 265, typically cover the hazardous waste management by a TSDF and containment structures, but not the utilities which provide service to the TSDF. If a utility is itself managing hazardous waste, it would be subject to RCRA for any applicable waste management activities.

The TSDF regulations may be found at the following URL:

<http://www.epa.gov/epacfr40/chapt-I.info/chi-toc.htm>

This guidance represents clarification of the Federal regulations. Since most States are authorized to implement the Federal regulations, allowing them to be more stringent or broader in scope than the Federal requirements, you should contact your state environmental agency for guidance on how your structures may be regulated. State Web sites are located at the following URL:

<http://www.epa.gov/epaoswer/osw/comments.htm>

We hope that this information is helpful to you.

The RCRA authorization provides Ecology the regulatory authority to enforce proper treatment and storage of dangerous waste, including proper operation of plant systems required for compliance with the permit and Chapter 173-303 WAC. However, this authority does not extend to design configuration control for non-permitted support services and utility equipment.

## **5.0 Examples Of The WTP Support Services That Ecology Would Incorporate Into The Dangerous Waste Permit**

Below are two examples of support services that Ecology proposes to incorporate into the DWP.

### **5.1 Steam Supply For Ejectors**

Steam ejectors are used to move process liquids designated as dangerous waste from vessels or sumps at the WTP. Steam ejectors operate by means of suction lift created by high-pressure steam accelerating through a nozzle. The steam ejectors are permitted equipment under the DWP since they transfer dangerous waste. However, consistent with WAC 173-303-806, the steam supply system used to operate them is not permitted. The steam supplied to the steam ejectors is not a dangerous waste, does not contact dangerous waste and failure of the steam supply system will not impact human health or protection of the environment.

The steam ejector engineering specification and associated discussion in Chapter 4 has been reviewed and approved by Ecology and is included in the DWP to provide information on how this utility system operates. The steam supply is adequately described in the permit already, and its function is regulated through permit condition I.E.7 and WAC 173-303-810(6). It is unnecessary to propose the steam supply for permitting to ensure proper operation of the ejector.

## **5.2 Air Supply to Bubblers**

Bubblers are tubes inserted into the melters that inject a steady stream of air into the melter pool. During the melter design, BNI's research and development program confirmed that the throughput of the melter could be increased by adding more bubblers. The bubblers do not affect the quality of glass produced within the facility, but do have a significant impact on melter throughput. The dangerous waste regulations for treatment, storage, and disposal facilities do not contain requirements for facility throughput, except when there is a potential for production rates to adversely impact human health and the environment. For example, risk assessment results in excess of standards could lead to operating restrictions on a plant to ensure risk limits are not exceeded during operations.

ORP, BNI and Ecology agreed to permit the bubbler hardware, e.g., the tubes, because they contact waste in the melter pool. Apparently, to assure that the facility is able to produce IHLW at the required throughput, Ecology has decided that it is necessary to permit the air supply to the bubblers. Permitting the air supply to the bubblers does not guarantee a particular facility throughput, nor does it affect the quality of the glass that is produced within the facility.

- reference(s):
- 40 CFR Part 264 and 265
  - Ecology Publication 95-402, Dangerous Waste Permit Application Requirements
  - Permit Condition I.E.7
  - Permit Condition III.10.E.9.c
  - Permit Condition III.10.J.5.c
  - Permit Condition III.10.J.5.c.vi
  - Permit Condition III.10.J.5.e.ix
  - RCRA Subtitle C
  - Revised Code of Washington (RCW) Chapter 70.105, Hazardous Waste Management Act
  - WAC 173-303-680(2), Environmental Performance Standards
  - WAC 173-303-806, Final Facility Permits
  - WAC 173-303-810, General Permit Conditions

- WAC 173-303-815(2), Establishing Permit Conditions
- WAC 173-303-840(b), Procedures for Decision Making

**COMMENT #6**

Topic: *Support Systems*

Condition No: III.10.C.15

Condition Text: III.10.C.15.a.i. The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., in accordance with the Compliance Schedule, as specified in Operating Unit 10, Appendix 1.0 of this Permit, engineering information as specified below, for incorporation into Attachment 51, Appendices 9.6, 9.10, 10.6, and 10.10 of this Permit, or into the Administrative Record where noted.

A. System Descriptions for each Mechanical Handling system identified in Permit Table III.10.C.A, for incorporation into the Administrative Record (Compliance Schedule Item 36).

B. Mechanical Handling Diagrams and Mechanical Handling Data Sheets for the following pieces of equipment (Compliance Schedule Item 37):

- |                  |                  |
|------------------|------------------|
| a. HDH-CRN-00005 | f. HSH-CRN-00014 |
| b. HEH-CRN-00003 | g. LEH-CRN-00003 |
| c. HPH-CRN-00001 | h. LPH-CRN-00002 |
| d. HPH-CRN-00002 | i. HEH-CRN-00001 |
| e. HSH-CRN-00001 |                  |

III.10.C.15.a.ii. The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to initial receipt of dangerous waste and/or mixed waste in the WTP Unit, engineering information as identified below for incorporation into Attachment 51, Appendices 9.13, 9.18, 10.13, and 10.18 of this Permit.

A. Equipment instrument logic narrative description related to safe operation of equipment covered by III.10.C.15.a.i.B, including but not limited to allowed travel path for bridge and trolley, upper and lower hook travel limits, two-blocking prevention, hook load limits, wire rope misreeling, and overspeed protection.

B. Descriptions of operational procedures and inspection schedules demonstrating appropriate controls and practices are in place to ensure

equipment covered by III.10.C.15.a.i.B will be operated in a safe and reliable manner that will not result in damage to regulated tank systems, miscellaneous unit systems, or canisters of vitrified waste.

III.10.C.15.a.iii. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittee will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following for incorporation into Attachment 51, Chapter 4.0: updated Narrative Description and figures for all Mechanical Handling Systems identified in Permit Table III.10.C.A., to include but not limited to travel path, fail safe conditions, fail safe logic control, safety features and controls that minimize the potential for release of dangerous/mixed waste during normal operations, and lifting and/or load capabilities of each crane specified in III.10.C.15.a.i.B.

<b>Tables III.10.C.A – Mechanical Handling Systems</b>		
<b>Pretreatment Building</b>		
	Pretreatment Filter Cave Handling System	PFH
	Pretreatment In-Cell Handling System	PIH
	Radioactive Solid Waste Handling System	RWH
<b>Low-Activity Waste Building</b>		
	Radioactive Solid Waste Handling System	RWH
	LAW Melter Equipment Support Handling System	LSH
	LAW Container Pour Handling System	LPH
	LAW Container Finishing Handling System	LFH
	LAW Melter Handling System	LMH
	LAW Canister Export Handling System	LEH
<b>High-Level Waste Building</b>		
	HLW Melter Cave Support Handling System	HSH
	HLW Canister Export Handling System	HEH
	HLW Filter Cave Handling System	HFH
	HLW Canister Pour Handling System	HPH
	HLW Canister Decontamination Handling System	HDH
	HLW Melter Handling System	HMH
	Radioactive Solid Waste Handling System	RWH

Comment (6): Please delete permit condition III.10.C.15, Table III.10.C.A, and Compliance Schedule Items 36 through 39 for support systems and mechanical handling systems. The Permittees could find no regulatory basis in WAC 173-303-

806(4) or WAC 173-303-815(2) that requires permitting of support systems such as mechanical handling systems. Including support systems, such as mechanical handling systems, in the Permit is inconsistent with Ecology's historical permitting approach.

Basis (6):

**1. There is no regulatory basis in WAC 173-303-806(4) that requires permitting of support systems such as mechanical handling systems.**

WAC 173-303-806(4) identifies the content for a Part B dangerous waste permit application. This information is required by Ecology to determine compliance with final facility standards for management of dangerous waste. This same information is described in Ecology Publication 95-402, *Dangerous Waste Permit Application Requirements*. Detailed design information, such as P&IDs, for utilities and support systems is not required by WAC 173-303-806 to be included in a Dangerous Waste Permit.

**2. Establishing permit conditions for support systems is inconsistent with the requirements of WAC 173-303-815(2).**

The inclusion of mechanical handling systems into the permit is inconsistent with the requirements of WAC 173-303-815(2), specifically WAC 173-303-815(2)(b)(i) or (ii). This new permit condition does not provide a basis identifying the regulatory requirements.

WAC 173-303-815(2)(b)(i) requires each permit to include conditions necessary to achieve compliance with the Hazardous Waste Management Act (Chapter 70.105 RCW), Chapter 173-303 WAC and RCRA Subtitle C. In satisfying this provision, the director may incorporate applicable requirements of this chapter directly into the permit or establish other permit conditions that are based on this chapter. WAC 173-303-815(2)(b)(ii) requires each permit issued under this chapter to contain terms and conditions the director determines necessary to protect human health and the environment.

The Permittees could find no justification in WAC 173-303-815(2)(b)(ii) that would link permitting support systems with protection of human health and the environment. The value associated with implementing permit conditions that do not increase protection to human health and the environment, and are not driven by the Dangerous Waste Regulations, is questionable.

The addition of permit conditions requiring submittal of design information for support systems is equivalent to establishing a new class of waste management unit (e.g., those that transfer waste containers). By

adding a new waste management unit currently not addressed in Chapter 173-303 WAC to the WTP permit, the Permittees believe Ecology has performed a rule making inconsistent with the rule making process described in Chapter 34.05, Part III RCW.

**3. Including support systems, such as mechanical handling systems, in the Permit is inconsistent with Ecology's existing permitting approach.**

Ecology, ORP, and BNI conducted detailed reviews of the initial DWP application during 2000 and 2001 to ensure the application would meet the standards of WAC 173-303-806(4) and Ecology publication 95-402, *Dangerous Waste Permit Application Requirements*. The draft permit prepared by Ecology was reviewed in the same manner. The initial permit submittal (DOE letter 01-EMD-038) included a checklist documenting where in the permit each requirement was addressed. Ecology issued a Notice of Deficiency (NOD) on the WTP permit application, and ORP and BNI followed with responses to resolve the deficiencies. Ecology did not identify any NODs associated with the descriptions of mechanical handling systems contained in the application. Therefore, no compliance schedule items were developed.

Following resolution of the NOD, Ecology acknowledged that the submittal addressed all of the requirements for a permit application, but not in sufficient detail to call the application complete (Washington Department of Ecology letter dated February 6, 2002). The Permittees developed a demonstration pursuant to WAC-173-303-806(4)(a) documenting why not all of the detailed information was available (DOE letter 02-EMD-009). Ecology accepted the demonstration and then developed a compliance schedule for inclusion in the permit that addressed the additional information needs (Attachment 51, Appendix 1). The compliance schedule did not include design information for mechanical handling or other support systems.

On March 29, 2004, the Permittees submitted the 2+2 permit modification (DOE letter 04-ED-024). Ecology judged the modification complete, and stated that only specific details still needed to be included as allowed under WAC 173-303-840(1)(b) (Ecology letter dated June 29, 2004). WAC 173-303-840(1)(b) allows the Department to request clarification of permit content, but not to require new information. Information related to mechanical handling systems was not part of the specific details still needed as identified in Ecology's June 29, 2004 letter. A discussion of how support systems facilitate plant operations is provided in Attachment 51, Chapter 4, Process Description.

The Permittees do not believe permitting support systems is required by

regulations or supported by the approved permitting process utilized since the Permit's inception. Further, the Permittees believe the WTP is in full compliance with the Dangerous Waste Regulations and permit without this new permit condition. The Permittees believe Ecology did not identify design deliverables for mechanical handling systems during initial permit negotiations because there are no specific requirements identified in the regulations or guidance documents.

**4. The mechanical handling systems (cranes) identified in permit condition III.10.C.15.a do not transfer waste; they move waste containers.**

Ecology's statement of basis for regulating mechanical handling systems (specifically cranes) refers to the definition of a critical system in the Hanford Site-Wide RCRA Permit. This definition includes 1) systems that transfer waste, and 2) equipment whose failure could lead to the release of dangerous waste into the environment:

*"A critical system is defined in Part 1 of the Hanford Facility's Dangerous Waste portion of the RCRA Permit, as applied to determining whether a Permit modification is required, means those specific portions of a TSD unit's structure, or equipment, whose failure could lead to the release of dangerous waste into the environment, and/or systems which include processes which treat, transfer, store, or dispose of regulated wastes."*

And, for the addition of mechanical handling systems, Ecology writes in Section 4.4 of the Statement of Basis:

*"The RWH, LEH, LMH, and HEH systems are used to transfer containers of dangerous waste from one part of the WTP to another. Mobile transfer equipment, such as forklifts or dollies, is not usually included in a RCRA Permit as regulated equipment. However, the mechanical handling systems listed above are stationary systems built into the WTP facility, all of which are essential to the transfer of regulated waste within the facility. The portion of the Permit for Operating Unit 10 does not currently address any information needs for mechanical handling systems; therefore, Ecology is proposing addition of the following Permit condition and associated compliance schedule items."*

- a. The Permittees believe there is a difference in the definition of a critical system between systems that move waste containers and those that transfer waste (e.g., pipe). The federal regulations do not refer to the movement of waste containers as transferring waste. The only

discussion on the transfer of waste in the Code of Federal Regulations pertains to 40 CFR 264.1084(j), 264.1085(e)(1), 265.1085(j), and 265.1086(e)(1). These sections pertain only to the transfer of waste between tanks or surface impoundments, in the context of controlling air pollutant emissions.

Cranes used to move dangerous waste containers are equivalent to a hand truck or forklift used at other facilities, which are not regulated. The Ecology Statement of Basis argues for the permitting of cranes since they are permanently installed systems in the facility and are not mobile such as forklifts and dollies. However, a permanently installed system is inherently safer to the environment to operate as it can only be used in the areas it is designed for.

Ecology's new interpretation of the term "critical system" makes it difficult to distinguish between types of mechanical handling equipment. The new interpretation of critical system does not distinguish between mobile transfer equipment and stationary transfer equipment as discussed in the statement of basis. However, the Statement of Basis clearly indicates that forklifts and dollies are not permitted. We submit that the definition of "processes that ... transfer ... dangerous waste" in the definition properly refers to bulk transfer mechanisms, e.g., pipelines, and not to container transfer mechanisms such as forklifts and cranes.

- b. A canister falling within the HLW or LAW facilities will not result in a breach of the structure or a release of contamination to the public. BNI performed an analysis to estimate the damage that could result if a canister is dropped while it is being transported within the HLW facility. A similar analysis has been performed for the LAW facility. The analyses showed that the HLW and LAW structures remained in place after the bounding load drops and retained their integrity. These analyses show that failure of cranes does not result in a release of dangerous waste to the environment. In addition, a sealed HLW thin wall canister was subject to a seven-meter drop test to meet repository acceptance criteria. Following the drop, the thin wall canister passed a gas test that showed there were no leaks.

Even if the HLW calculation had shown that the canister breached the containment, the C5 ventilation system is designed to maintain a negative pressure with respect to the adjacent space. This ensures that under normal and abnormal conditions contamination should not be spread from the C5 space into the C3 space. The cascaded ventilation system is designed to flow from the C3 system into the C5 system. However, any potential crane drops resulting in the breach of a canister or release of other dangerous waste (e.g., canister drop onto a

dangerous waste pipe) could be handled as part of contingency and emergency procedures in accordance with WAC 173-303-350 and Attachment 51, Chapter 7, Contingency Plan, of the Permit, as appropriate.

In addition, the cranes identified in permit condition III.10.C.15.a.i (B) are in areas that are permitted as containment buildings with the exception of HEH-CRN-00001. Containment buildings allow the handling of open containers while protecting human health and the environment. HEH-CRN-00001 is the truck bay crane used to load canisters onto the truck for transport out of the facility. This HEH crane is located in room H-0130 (loading area), which is permitted as a container (i.e., drum) storage area. Prior to the canister being lifted by this crane, the lid is welded on, and the canister is decontaminated, placed into a shielded cask, and the cask lid is bolted down. The canister cask is approved for use by the U.S. Department of Transportation and is rated to withstand drops from HEH-CRN-00001.

**5. The definition of “critical systems” was developed to support the permit modification process, not to drive inclusion of additional design information in a permit.**

The definition of a critical system as it was created in the Hanford Site Dangerous Waste Permit is as follows:

*“The term "Critical Systems" as applied to determining whether a Permit modification is required, means those specific portions of a TSD unit’s structure, or equipment, whose failure could lead to the release of dangerous waste into the environment, and/or systems which include processes which treat, transfer, store, or dispose of regulated wastes. A list identifying the critical systems of a specific TSD unit may be developed and included in Part III, V, and/or VI of this Permit. In developing a critical system list, or in the absence of a critical system list, WAC 173-303-830 Modifications shall be considered.”*

The term “critical system” was developed to support the permit modification process. The term is used to identify which portions of the permitted design should be subject to the permit modification process if changes are required during construction or modification activities. It was not intended to drive the identification of systems for which additional design information is required to be submitted and incorporated into the permit. The definition of “critical system” does not expand the information

required to be included in a Dangerous Waste Permit Application identified in WAC 173-303-806. (See Ecology's Initial Responsiveness Summary for the Hanford RCRA Permit, 2/2/94, page 205.) It is not appropriate to use the definition of a critical system to create new permitting deliverables that do not increase protection of human health and the environment.

**6. Inquiry with the U.S. Environmental Protection Agency (EPA) indicates the Agency does not regulate mechanical handling equipment under RCRA.**

An inquiry with the EPA indicates the Agency does not regulate mechanical handling equipment under RCRA. The State of Washington has not enacted rules that are more stringent than the federal rule in this area. The BNI question to EPA concerning the regulation of mechanical handling equipment, along with the EPA response, is given below:

“Question Reference #060202-000031

Customer (Brad Erlandson) - 02/02/2006 05:19 PM

Under what circumstances might a container handling device (e.g., crane, dolly, forklift, cart) at a TSD be regulated? What about the device (e.g. design, function) would be regulated? Can you provide applicable code references or other guidance documents?

Response (OSW-CC) - 02/03/2006 04:12 PM

Mr. Erlandson,

There are no specific Resource Conservation and Recovery Act (RCRA) regulations for container handling devices at a treatment, storage, and disposal facility (TSDF). The TSDF regulations, found in 40 CFR Part 264 and Part 265, typically cover the hazardous waste containment structures themselves (containers, tanks, surface impoundments, waste piles, landfills, etc), but not the equipment used to manipulate these containment structures.

The TSDF regulations may be found at the following URL:

<http://www.epa.gov/epacfr40/chapt-I.info/chi-toc.htm>

This guidance represents clarification of the Federal regulations. Since most States are authorized to implement the Federal regulations, allowing them to be more stringent or broader in scope than the Federal requirements, you should contact your state environmental

agency for guidance on how your structures may be regulated. State Web sites are located at the following URL:

<http://www.epa.gov/epaoswer/osw/comments.htm>

You may also consider contacting the OSHA Compliance at (301) 515-6796, or at the following URL: <http://www.osha.gov/>

We hope that this information is helpful to you.”

As discussed previously, the Permittees do not believe mechanical handling equipment is subject to regulation under RCRA or the Dangerous Waste Regulations, except as identified in WAC 173-303-810(6) as an auxiliary system necessary to achieve compliance with the conditions of the permit and permit condition I.E.7. However, discussions/descriptions of how mechanical handling systems support permitted activities are already included in Chapter 4. There are no objections to submitting system descriptions for incorporation into the administrative record when requested by Ecology as supplemental information.

**7. Permitting mechanical handling equipment (Ecology review and approval of crane documentation) does not enhance protection of human health and the environment.**

The safe design and operation of mechanical handling equipment is addressed under nuclear safety processes used at the WTP. This comprehensive process addresses nuclear and process safety, engineering and design, radiation protection, and quality that result in systems that are designed, fabricated, and operated in a manner that will provide the necessary protection for the worker, the public, and the environment.

**8. It is not appropriate for Ecology to regulate the WTP differently than other Hanford RCRA regulated facilities.**

There does not seem to be consistency across the Hanford Site with Ecology’s interpretation and use of the term “critical system” to regulate mechanical handling systems. Mechanical handling systems are not identified as critical systems for the Integrated Disposal Facility (IDF) or the draft permitting materials for the Canister Storage Building.

While the permittees do not believe that permitting mechanical handling systems is necessary to achieve compliance with the Dangerous Waste Regulations or protect human health and the environment, the following proposed revision to Ecology’s draft permit language is submitted should Ecology decline to delete the referenced conditions:

Revise permit condition III.10.C.15.a.i to read: "The Permittees will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., in accordance with the Compliance Schedule, as specified in Operating Unit 10, Appendix 1.0 of this Permit, engineering information as specified below, for incorporation into Attachment 51, Appendices 9.6, 9.10, 10.6, and 10.10 of this Permit, or into the Administrative Record where noted.

A. System Descriptions for each Mechanical Handling system identified in Permit Table III.10.C.A, for incorporation into the Administrative Record (Compliance Schedule Item 36).

B. Mechanical Handling Diagrams and Mechanical Handling Data Sheets for the following pieces of equipment (Compliance Schedule Item 37):

- a. HDH-CRN-00005
- b. HEH-CRN-00003
- c. HPH-CRN-00001
- d. HPH-CRN-00002
- e. HSH-CRN-00001
- f. HSH-CRN-00014
- g. LEH-CRN-00003
- h. LPH-CRN-00002
- i. HEH-CRN-00001

C. The following are excluded from this permit condition:

- a. Additional submittals beyond those described in permit condition III.10.C.15.a.i;
- b. IQRPE reports for equipment identified in III.10.C.15.a.i (B);
- c. Installation inspections for equipment identified in III.10.C.15.a.i (B); and
- d. Other inspection, verification, operability, maintenance, or records management beyond that which is included in the permit for equipment identified in III.10.C.15.a.i (B), or by conditions III.10.C.15.a.ii and III.10.C.15.a.iii.

In addition, please delete "and inspection schedules" from permit condition III.10.C.15.a.ii.B, so that condition III.10.C.15.a.ii.B reads:

"B. Descriptions of operational procedures demonstrating appropriate controls and practices are in place to ensure equipment covered by III.10.C.15.a.i.B will be operated in a safe and reliable manner that will not result in damage to regulated tank systems, miscellaneous unit systems, or canisters of vitrified waste."

reference(s):

- 40 CFR Part 264
- Attachment 51, Appendix 1
- Attachment 51, Chapter 4
- Chapter 34.05 RCW
- Chapter 70.105 RCW
- DOE letter 01-EMD-038
- DOE letter 02-EMD-009
- DOE letter 04-ED-024

- Ecology publication 95-402, *Dangerous Waste Permit Application Requirements*
- RCRA subtitle C
- WAC 173-303-350
- WAC 173-303-806
- WAC 173-303-810 (6)
- WAC 173-303-815(2)
- WAC 173-303-815(2) (b)(i)
- WAC 173-303-830
- WAC 173-303-840(b)
- Washington Department of Ecology letter, *Waste Treatment and Immobilization and Treatment Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification*, dated June 29, 2004
- Washington Department of Ecology letter, *Waste Treatment Plant (WTP) Dangerous Waste Permit Application (DWPA)*, dated February 6, 2002
- 40 CFR 264.1084(j), 264.1085(e)(1), 265.1085(j), and 265.1086(e)(1)
- Attachment 51, Chapter 7, Contingency Plan
- Ecology's Initial Responsiveness Summary for the Hanford RCRA Permit, dated February 2, 1994, page 205

**COMMENT #7**

Topic: *Mechanical Handling Systems*

- Condition No:
- Table III.10.C.A
  - III.10.C.15.a.i
  - Attachment 51, Appendix 2

Condition Text:

**Critical System List**

<b>Mnemonic System Locator</b>	<b>System Name</b>
<b>Pretreatment Systems</b>	
CNP	Cesium Nitric Acid Recovery Process System
CXP	Cesium Ion Exchange Process System
FEP	Waste Feed Evaporation Process System
FRP	Waste Feed Receipt Process System
HLP	HLW Lag Storage and Feed Blending Process System
PFH	Pretreatment Filter Cave Handling System
PIH	Pretreatment In-Cell Handling System
PJV	Pulse Jet Ventilation System

PVP	Pretreatment Vessel Vent Process System
PVV	Process Vessel Vent System
PWD	Plant Wash and Disposal System
RDP	Spent Resin and Dewatering Process System
RLD	Radioactive Liquid Waste Disposal System
RWH	Radioactive Solid Waste Handling System
TCP	Treated LAW Concentrate Storage Process System
TEP	Technetium Eluant Recovery Process System
TLP	Treated LAW Evaporation Process System
TXP	Technetium Ion Exchange Process System
UFP	Ultrafiltration Process System
<b>Low-Activity Waste Systems</b>	
LCP	LAW Concentrate Receipt Process System
LEH	LAW Canister Export Handling System
LFH	LAW Container Finishing Handling System
LFP	LAW Melter Feed Process System
LMH	LAW Melter Handling System
LMP	LAW Melter Process System
LOP	LAW Primary Offgas Process System
LPH	LAW Container Pour Handling System
LSH	LAW Melter Equipment Support Handling System
LVP	LAW Secondary Offgas/Vessel Vent Process System
RLD	Radioactive Liquid Waste Disposal System
RWH	Radioactive Solid Waste Handling System
<b>High-Level Waste Systems</b>	
HCP	HLW Concentrate Receipt Process System
HDH	HLW Canister Decontamination Handling System
HEH	HLW Canister Export Handling System
HFH	HLW Filter Cave Handling System
HFP	HLW Melter Feed Process System
HMH	HLW Melter Handling System
HMP	HLW Melter Process System
HOP	Melter Offgas Treatment Process System
HPH	HLW Canister Pour Handling System
HSH	HLW Melter Cave Support Handling System
PJV	Pulse-Jet Ventilation System
PVV	Process Vessel Vent System
RLD	Radioactive Liquid Waste Disposal System
RWH	Radioactive Solid Waste Handling System
<b>Analytical Laboratory Systems</b>	

RLD	Radioactive Liquid Waste Disposal System
RWH	Radioactive Solid Waste Handling System
<b>Balance of Facilities Systems</b>	
CPE	Cathodic Protection Electrical System
RLD	Radioactive Liquid Waste Disposal System
RWH	Radioactive Solid Waste Handling System

Comment (7A): Please remove systems that perform generator functions, such as the Radioactive Solid Waste Handling (RWH) from Table III.10.C.A and list of critical systems because such systems do not treat, store, or dispose of dangerous waste for longer than 90 days.

Basis (7A): The purpose of the RWH system is to package, remove, and transport radioactive solid waste from the WTP facilities to the Department of Energy for disposal. The RWH systems for each facility are a new point of generation and will accumulate waste for less than 90 days in accordance with 40 CFR 262.34 and WAC 173-303-200. Less-than-90-day accumulation areas are not required to be permitted. In addition, Washington State Department of Ecology agreed to remove the RWH system from the critical systems list in a meeting between BNI, DOE, and Ecology on August 22, 2005.

The RWH systems do not treat waste. The definition of “treatment” in WAC 173-303-040 is:

*“The physical, chemical, or biological processing of dangerous waste to make such wastes non-dangerous or less dangerous, safer for transport, amenable for energy or material resource recovery, amenable for storage, or reduced in volume, with the exception of compacting, repackaging, and sorting as allowed under WAC 173-303-400(2) and 173-303-600(3).”*

- reference(s):
- 40 CFR 262.34
  - WAC 173-303-040
  - WAC 173-303-200

Comment (7B): Please remove the HLW Melter Cave Support Handling (HSH) system from Table III.10.C.A and remove HSH-CRN-00001 and HSH-CRN-00014 from permit condition III.10.C.15.a.i.B because these perform generator functions

and are not associated with treatment, storage, or disposal of dangerous waste.

Basis (7B): The purpose of the HLW HSH system is to perform or enable the lifecycle handling of remote equipment within the melter cave and its associated decontamination and maintenance areas. The HLW HSH system consists of two distinct elements: a mechanical handling element, and a tank system element.

The HSH system is considered a new point of generation and the mechanical handling portion of HSH would be regulated as a less-than-90-day accumulation area in accordance with 40 CFR 262.34 and WAC 173-303-200. The secondary waste associated with mechanical handling activities is still regulated; it just does not require a permit.

The mechanical handling element of the HSH system does not treat waste. The definition of “treatment” in WAC 173-303-040 is:

*“The physical, chemical, or biological processing of dangerous waste to make such wastes non-dangerous or less dangerous, safer for transport, amenable for energy or material resource recovery, amenable for storage, or reduced in volume, with the exception of compacting, repackaging, and sorting as allowed under WAC 173-303-400(2) and 173-303-600(3).”*

The tank system element of the HSH system is permitted pursuant to Permit Condition III.10.E to allow storage of secondary dangerous waste for greater than 90 days. Because the HSH tank systems are permitted pursuant to Permit Condition III.10.E, it is appropriate to keep HSH on the list of critical systems.

reference(s):

- 40 CFR 262.34
- WAC 173-303-040
- WAC 173-303-200

#### COMMENT #8

Topic: *HLW Vitrification System Process and Leak Detection System Instruments and Parameters*

Condition No: Table III.10.J.C.

Proposed Permit Table Changes: Ecology proposed to include 42 instruments (21 for each melter) in the *HLW Vitrification System Process and Leak Detection System Instruments and Parameters* table.

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Comment 8A): Please retain the 14 indicated instruments associated with detecting potential releases of dangerous waste from the melter to the melter cave, and remove the remaining 28 instruments from the HLW melter instruments table (Table III.10.J.C). Instruments remaining monitor:

- Plenum pressure  
Melter 1: PDT-0139A, PDI-0139A, PDI-0139, PDT-0139B  
Melter 2: PDT-2139A, PDI-2139A, PDT-2139B, PDI-2139B
- Glass pool level/density  
Melter 1: LT-0131, LI-0131 and DT-0132, DI-0132  
Melter 2: LT-2131, LI-2131 and DT-2132, DI-2132
- Plenum temperature (thermocouples)  
Melter 1: TE-0920A, TT-0920A, TI-0920A, TE-0920B, TI-0920B, TE-0920C, TT-0921A, TI-0920C, TE-920D, TI-0920D  
Melter 2: TE-2920A, TT-2920A, TI-2920A, TE-2920B, TI-2920B, TE-0920C, TT-0921A, TI-0920C, TE-2920D, TI-2920D

Basis (8A): This basis provides rationale for retaining the plenum pressure, glass pool level/density, and plenum temperature instruments in the Table III.10.J.C.

Plenum Pressure, Instrument tag numbers:

Melter 1: PDT-0139A, PDI-0139A, PDI-0139, PDT-0139B  
Melter 2: PDT-2139A, PDI-2139A, PDT-2139B, PDI-2139B

The melter plenum is maintained at a nearly constant vacuum to contain gases (vapors, aerosols, and particulates) released during slurry feeding. The melter offgas is drawn into the HLW offgas process system (HOP). The HOP system maintains the plenum in a vacuum relative to its exterior environment, the HLW melter cave. Melter plenum vacuum is monitored and controlled to prevent melter pressurization and potential release of dangerous waste, such as aerosols, into the melter cave.

During normal operations, the off-gas system will maintain a melter plenum vacuum of approximately negative 5 inches of water column relative to the C5 melter cave. Plenum pressure instruments detect increases in pressure in the melter plenum (low plenum vacuum) and provide an actuating signal to stop feed to the melter, discharge of glass, and injection of air to the film cooler. Unacceptable low plenum vacuum is alarmed with control interlocks and feeding the melter is secured. There are redundant plenum pressure taps with independent pressure transmitters to ensure continuing melter operations while one of the instruments is being repaired/replaced.

Instrument tag numbers PDY-0139A and PDY-2139A should be deleted from the HLW

melter instruments table because they do not indicate physical conditions in the melter; they are part of the software providing "Relay/Compute" function (see strikeouts in the table below).

Glass pool level/density, Instrument tag numbers:

Melter 1: LT-0131, LI-0131 and DT-0132, DI-0132

Melter 2: LT-2131, LI-2131 and DT-2132, DI-2132

Glass pool level and density detectors are installed in the 6-inch port at the center of the melter lid. The density instrument is used to compensate the level detector in order to obtain the level measurement; the plenum pressure instrument is used as a reference to determine glass pool level. Loss of glass pool level/density instruments would be detected by erratic or no signal from the associated pressure transmitters. The control system will alarm the operator and terminate melter feed when the high-high melter level switch is activated.

It is intended that routine replacement of the glass pool thermocouples will be performed while the melter is processing feed. Failure of the melter pool level/density measurement capability (e.g., thermowells) would require stopping feed and idling the melter (only long enough to perform the actual remote handling of components out of and into the melter) to repair/replace the failed equipment. The glass pool control/monitoring thermowells will be remotely replaceable with the melter idling.

Plenum temperature (thermocouples), Instrument tag numbers:

Melter 1: TE-0920A, TT-0920A, TI-0920A, TE-0920B, TI-0920B, TE-0920C, TT-0921A, TI-0920C, TE-920D, TI-0920D

Melter 2: TE-2920A, TT-2920A, TI-2920A, TE-2920B, TI-2920B, TE-0920C, TT-0921A, TI-0920C, TE-2920D, TI-2920D

Plenum temperature is measured to determine whether the melter is over-fed or under-fed. While receiving the feed, the melter plenum temperature is controlled within the range of 400°C to 600°C by adjusting the rate of feed addition to the melter. Feed and plenum temperature adjustments are not part of the control loop. Operators monitor the plenum temperature and manually adjust feed rate.

Plenum temperature is measured by four thermocouples (two each in two thermowells) that are averaged to provide a calculated plenum temperature used as a reference for feed control. A minimum of one direct plenum temperature measurement is necessary to control the feed rate; the calculated average is an operational tool that is not required to properly control the feed rate. The average temperature is provided by software, not a direct measurement. The average calculation should be deleted from the permit table (see strikeouts in the table below).

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Comment  
(8B):

Please add a footnote to the HLW melter instruments table indicating redundant instruments, and require the operation of only one instrument of each type at any one time. (See table below indicating the redundant instruments.)

Basis (8B): Plenum pressure, Instrument tag numbers:  
Melter 1 - PDT-0139A, PDI-0139A, PDI-0139, PDT-0139B  
Melter 2 - PDT-2139A, PDI-2139A, PDT-2139B, PDI-2139B

Each melter has two redundant plenum pressure instruments: one of two instruments must function when the melter is receiving the feed. It is reasonable to include in the permit a requirement for one of two plenum pressure instruments to be functional when the HLW melter is receiving the feed.

Plenum thermocouples), Instrument tag numbers:  
Melter 1 - TE-0920A, TT-0920A, TI-0920A, TE-0920B, TI-0920B, TE-0920C, TT-0921A, TI-0920C, TE-920D, TI-0920D  
Melter 2 - TE-2920A, TT-2920A, TI-2920A, TE-2920B, TI-2920B, TE-0920C, TT-0921A, TI-0920C, TE-2920D, TI-2920D

Each melter has four plenum temperature thermocouples, which send signals to calculate the average plenum temperature. The calculated average value provides operational information used to adjust the feed rates. A minimum of one plenum temperature measurement is necessary to adjust the feed. Failure of any single thermocouple does not inhibit operation and control of the HLW melters. Since the thermocouples require periodic replacement, the melter is designed with redundant instruments to ensure continued glass production without maintenance interruptions for replacement of the plenum thermocouples. It is reasonable to include in the permit a requirement for one of four plenum thermocouples to be functional when the HLW melter is receiving the feed.

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Comment (8C): Please delete the Melter 1 and 2 East and West Canister Level instruments (East Melter 1: LT-0820, LI-0820A, LI-0820B and Melter 2: LT-2816, LI-2816A, LI-2816B; West Melter 2: LT-2820, LI-2820A, LI-2820B and Melter 2: LT-2816, LI-2816A, LI-2816B) because these instruments are not designed to monitor leaks of dangerous waste from the HLW melter, and are not associated with melter performance. (See table below.)

Basis (8C): The Immobilized HLW (IHLW) canister level instruments are not designed to monitor leaks of dangerous waste from the HLW melter and do not impact melter performance. The HLW facility is equipped with the canister level instruments to comply with the Waste Product Acceptance System Requirements Document (WASRD) Specification 4.2.3.1, *Specific Criteria for High-Level Waste*, which states that canister fill height shall be equivalent to at least 87% of the volume of the empty canister. The WASRD defines the requirements for acceptance of the IHLW glass canisters in the geologic

repository.

The IHLW canisters will be managed in accordance with WAC 173-303-630, Use and Management of Containers. Container level measurement instrumentation is not required under WAC 173-303-630. Operations procedures and practices for management of dangerous waste containers will be provided in accordance with Permit Conditions III.10.J.5.e and III.10.D.10.c.

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Comment (8D): Delete the Melter 1 and 2 refractory temperature instruments (Melter 1: TE-0337, TT-0037, TI-0337, TE-0338, TI-0338, TE-0339, TI-0339, TE-0341, TI-0341, TE-0342, TT-0342, TI-0342, TE-0343, TI-0343, TE-0344, TI-0344, TE-0345, TI-0345, TE-0346, TI-0346; Melter 2: TE-2337, TT-2337, TI-2337, TE-2338, TI-2338, TE-2339, TI-2339, TE-2340, TI-2340, TE-2341, TI-2341, TE-2342, TT-2342, TI-2342, TE-2343, TI-2343, TE-2344, TI-2344, TE-2345, TI-2345, TE-2346, TI-2346) because these instruments are not designed to monitor leaks of dangerous waste from the melter and are not associated with melter performance. (See table below.)

BASIS (8D): The refractory temperature instruments (thermocouples) are not designed to monitor leaks of dangerous waste from the HLW melter and do not impact melter performance. The refractory thermocouples are useful to collect data during operations that could be used to enhance future melter design. They are placed behind the glass contact refractory and cast into the refractory of the discharge wall. They have questionable value for either operational troubleshooting or process control because they monitor a very small area of the melter and the area they do monitor is not representative of the bulk of the inner melter surface area. Failure will not impact glass quality or off gas emissions. It is intended that the refractory monitoring thermocouple replacement be performed without having to idle the melter.

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Comment (8E): Delete the Melter 1 and 2 shell leak detection instruments (Melter 1: LT-0144, LI-0144 and Melter 2: LT-2144, LI-2144) because these instruments are not associated with dangerous waste leak detection or monitoring.

BASIS (8E): The melter shell level detection instruments are not associated with dangerous waste leak detection or monitoring. The leak detector monitors the presence of water in the annulus between the melter shell and cooling panels. The instruments will not distinguish between a water leak and condensation that could form in this space. It will be an alarmed but not an interlocked signal.

With an alarm, a review of the condition is required to determine the source and the volume of the water while melter operation continues. A drain prevents a buildup of liquids. The leak detector is an operational troubleshooting tool not used for process control. Failure will not impact glass quality or off gas emissions.

Proposed  
Changes to  
Table  
III.10.J.C:

P&ID	Monitoring or Control Parameter	Instrument or Control Device Tag No.
Melter 1		
24590-HLW-M6-HMP-P0013	Melter 1 shell leak detection	LT-0144, LI-0144
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 45 <sup>22</sup>	TE-0337, TT-0037, TI-0337
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 33 <sup>22</sup>	TE-0338, TI-0338
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 21 <sup>22</sup>	TE-0339, TI-0339
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 9 <sup>22</sup>	TE-0340, TI-0340
24590-HLW-M6-HMP-P0003	Melter 1 refractory temperature, East wall, 3 <sup>22</sup>	TE-0341, TI-0341
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 45 <sup>22</sup>	TE-0342, TT-0342, TI-0342
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 33 <sup>22</sup>	TE-0343, TI-0343
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 21 <sup>22</sup>	TE-0344, TI-0344
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 9 <sup>22</sup>	TE-0345, TI-0345
24590-HLW-M6-HMP-P0014	Melter 1 refractory temperature, West wall, 3 <sup>22</sup>	TE-0346, TI-0346
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 62 <sup>22</sup>	TE-0920A, TT-0920A, TI-0920A*
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 59 <sup>22</sup>	TE-0920B, TI-0920B*
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 62 <sup>22</sup>	TE-0920C, TT-0921A, TI-0920C*
24590-HLW-M6-HMP-P0004	Melter 1 plenum temperature, 59 <sup>22</sup>	TE-920D, TI-0920D*
24590-HLW-M6-HMP-P0004	Melter 1 plenum average temperature	TY-0920, TI-0920
24590-HLW-M6-HMP-P0013	Melter 1 glass pool density	DT-0132, DI-0132
24590-HLW-M6-HMP-P0013	Melter 1 glass pool level	LT-0131, LI-0131
24590-HLW-M6-HMP-P0013	Melter 1 plenum pressure	PDT-0139A, PDI-0139A* PDI-0139B, PDT-0139B* PDY-0139A
24590-HLW-M6-HMP-P0008	Melter 1 West canister level	LT-0816, LI-0816A, LI-0816B
24590-HLW-M6-HMP-P0008	Melter 1 East canister level	LT-0820, LI-0820A, LI-0820B
Melter 2		
24590-HLW-M6-HMP-P20013	Melter 2 shell leak detection	LT-2144, LI-2144

24590 HLW M6-HMP P20003	Melter 2 refractory temperature, East wall, 45"	TE 2337, TT 2337, TI 2337
24590 HLW M6-HMP P20003	Melter 2 refractory temperature, East wall, 33"	TE 2338, TI 2338
24590 HLW M6-HMP P20003	Melter 2 refractory temperature, East wall, 21"	TE 2339, TI 2339
24590 HLW M6-HMP P20003	Melter 2 refractory temperature, East wall, 9"	TE 2340, TI 2340
24590 HLW M6-HMP P20003	Melter 2 refractory temperature, East wall, 3"	TE 2341, TI 2341
24590 HLW M6-HMP P20014	Melter 2 refractory temperature, West wall, 45"	TE 2342, TT 2342, TI 2342
24590 HLW M6-HMP P20014	Melter 2 refractory temperature, West wall, 33"	TE 2343, TI 2343
24590 HLW M6-HMP P20014	Melter 2 refractory temperature, West wall, 21"	TE 2344, TI 2344
24590 HLW M6-HMP P20014	Melter 2 refractory temperature, West wall, 9"	TE 2345, TI 2345
24590 HLW M6-HMP P20014	Melter 2 refractory temperature, West wall, 3"	TE 2346, TI 2346
24590-HLW-M6-HMP-P20004	Melter 2 plenum temperature, 62"	TE-2920A, TT-2920A, TI-2920A*
24590-HLW-M6-HMP-P20004	Melter 2 plenum temperature, 59"	TE-2920B, TI-2920B*
24590-HLW-M6-HMP-P20004	Melter 2 plenum temperature, 62"	TE-2920C, TI-2920C*
24590-HLW-M6-HMP-P20004	Melter 2 plenum temperature, 59"	TE-2920D, TI-2920D*
24590 HLW M6-HMP P20004	Melter 2 plenum average temperature	TY 2920, TI 2920
24590-HLW-M6-HMP-P20013	Melter 2 glass pool density	DT-2132, DI-2132
24590-HLW-M6-HMP-P20013	Melter 2 glass pool level	LT-2131, LI-2131
24590-HLW-M6-HMP-P20013	Melter 2 plenum pressure	PDT-2139A, PDI-2139A* PDT-2139B, PDI-2139B* PDY-2139A
24590 HLW M6-HMP P20008	Melter 2 West canister level	LT 2816, LI 2816A, LI 2816B
24590 HLW M6-HMP P20008	Melter 2 East canister level	LT 2820, LI 2820A, LI 2820B

\* Footnote: These instruments are redundant. Only one instrument is required to function when the HLW melter is receiving feed.

- reference(s):
- Permit Condition III.10.J.5.f.
  - Waste Acceptance System Requirements Document (WASRD), January 2002, USDOE - Office of Civilian Radioactive Waste Management Division

**COMMENT #9**

Topic: *WEAR PLATES IN PRETREATMENT FACILITY VESSELS*

Condition No: III.10.E.2.d

Proposed Permit Changes: III.10.E.2.d. Fabrication and assembly of vessels HLP-VSL-00022, HLP-VSL-00027A, HLP-00027B, HLP-VSL-00028, UFP-VSL-00002A, UPF-VSL-00002B, and their internal components will be suspended until Ecology has provided written approval of the revised structural integrity assessment reports addressing adequacy of erosion allowance for those vessels.

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Comment (9): Please delete the proposed permit condition requiring installation of wear plates on six vessels. The Permittees could find no regulatory or permit condition supporting the proposed condition.

Basis (9): By letter to the Permittees dated April 22, 2004, Ecology approved construction of the HLP and UFP tank systems. After receiving Ecology's initial approval, the Permittees engaged independent experts to reevaluate whether the wear plates are designed sufficiently for erosion protection; this evaluation is in progress. The Permittees explained this situation to Ecology in a letter dated August 3, 2006. Ecology responded in their letter of September 28, 2006, stating that fabrication must stop until Ecology approves the design in writing.

**The point of compliance is installation.** Per WAC 173-303-640(3)(a) and permit condition III.10.E.9.c, the Permittees must submit a report from an independent, qualified, registered professional engineer (IQRPE) attesting to the structural integrity of each vessel. The permit condition stipulates that Ecology's requirements will be satisfied prior to installation, not fabrication. Ecology has not provided cause or regulatory basis for stopping fabrication.

The current permitting process requires that an IQRPE report based on final design be submitted to Ecology prior to installation. Ecology has not received the final design IQRPE report. If the design is reviewed by an IQRPE and shown to have sufficient structural integrity and is "acceptable for the storing and treating of dangerous waste" (WAC 173-303-640(3)(a)), then Ecology's requirements have been met. Ecology's approval is based on the IQRPE certification, as stated in WAC 173-303-640(3)(a):

"...This assessment (which will be used by the department to review and approve or disapprove the acceptability of the tank system design at facilities which are pursuing or have obtained a final state permit)...."

**Stopping fabrication may create additional project delays.** Stopping fabrication of these vessels is not only inconsistent with the permitting process but may create delays with the vendors. Compliance with this condition interferes with the forward progress that is possible on these vessels while still maintaining the ability to install different erosion protection if needed.

A major challenge for the Project, and one that affects these vessels, has been finding vendors that meet the stringent nuclear quality construction standards. These standards require that the vendor use highly specialized and qualified teams to build these vessels. The Permittees' goal is to have the vendor continue work on these vessels where possible without affecting the ability to change the erosion protection. Should the vendor be required to stop fabricating these vessels, these teams may be let go or reassigned to work other jobs. It is expected to take a number of extra weeks or even months to restart fabrication if the vendor's teams are disbanded.

Ecology agreed on October 17, 2006 the work could continue on the vessels provided the work did not affect the vendor's ability to install or change wear plates or the cooling jackets. This issue is best resolved by continuing to include Ecology in the decision process.

Ecology restrictions on fabricating these vessels do not provide any more protection of human health and environment than existing permit conditions, as required by WAC 173-303-815(2)(b)(ii). No written regulatory basis has been provided to the Permittees justifying the inclusion of this condition in the Permit.

In conclusion, the Permittees understand Ecology's concerns about the erosion protection in Pretreatment Facility vessels using Pulse Jet Mixers (PJM). The Permittees are actively verifying that the expected wear due to erosion is less than the thickness of the designed wear plates for vessels HLP-VSL-00022, HLP-VSL-00027A, HLP-VSL-00027B, HLP-VSL-00028, UFP-VSL-00002A, and UFP-VVSL-00002B. We expect to provide Ecology with the results of the verification by February 28, 2007.

- reference(s):
- Ecology letter dated April 22, 2004, "Completion of the April 2004 Modification of the Waste Treatment and Immobilization Plant Dangerous Waste Permit
  - Ecology letter dated September 28, 2006, "Fabrication and Assembly Hold on Vessels with Pulse Jet Mixers (PJMs Waste Acceptance System Requirements
  - ORP letter dated August 3, 2006 (06-WTP-106), "Wear Allowances and Integrity Assessment for Waste Treatment and Immobilization Plant (WTP) Vessels with Pulse Jet Mixers
  - Permit Condition III.10.E.9.d
  - WAC 173-303-640(3)(a)
  - WAC 173-303-815(2)(b)(ii)

**COMMENT #10**

Topic: *Statement of basis – section 3.0 procedures for reaching a final decision on the draft modification, page 6 of 31*  
section: Statement of Basis, Section 3.0, page 6 of 31

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Comment (10): Please revise the language in Section 3.0, page 6 of 31, that may lead a reader to believe that Class 1 and Class <sup>1</sup>1 modifications were open for public review and comment. Suggested text:  
“In addition, this draft permit includes the addition of detailed design information for the HLW melters submitted in Permit Design Packages HLW-018 and HLW-019, flooding volume calculations and sump data submitted in the PT building design package PTF-065, and several new permit conditions. Ecology also approved several Class 1 and Class <sup>1</sup>1 Permit modifications in accordance with WAC 173-303-830, and they have been administratively incorporated into the permit.”

Basis (10): Per WAC 173-303-830 (4)(a)(i) and (ii), Class 1 and Class <sup>1</sup>1 permit modifications are minor modifications that are implemented upon proper documentation and notification, and in the case of Class <sup>1</sup>1 modifications are approved by the Director and do not require public review. This comment is consistent with the text in Section 4.0 of the Statement of Basis which states that these Class 1 and Class <sup>1</sup>1 modifications have been incorporated into the permit.

reference(s):

- WAC 173-303-830 (4)(a)(i) and (ii)
- WAC 173-303-830 (4)(b)(vi)(A)(III)(AA)
- WAC 173-303-830 (4)(c)
- WAC 173-303-840 (2)

**COMMENT #11**

Topic: IDF Waste Acceptance Criteria

Condition No: III.10.C.2.m.

Condition Text: III.10.C.2.m. Waste streams generated at the WTP, when combined with the related impacts from other waste forms disposed of in IDF, will not cause an exceedance of the requirements dictated in the IDF’s permit waste acceptance criteria.

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Comment (11): Please delete Condition III.10.C.2.m because it makes the WTP responsible for matters that are properly within the IDF operator’s responsibilities. According

to Chapter 173-303 WAC, the WTP is not responsible for the design, construction, permitting, operation, or performance of another treatment, storage, or disposal facility.

Basis (11): WTP will meet Integrated Disposal Facility (IDF) waste acceptance criteria as required by permit condition III.10.C.2.d and WAC 173-303-141.

*Dangerous and/or mixed waste may be transferred from the WTP TSD unit to a permitted TSD only, in accordance with the receiving TSD unit's waste acceptance criteria. ( III.10.C.2.d.)*

*A person may offer a designated dangerous waste only to a TSD facility which is operating either: Under a permit issued pursuant to the requirements of this chapter; or, if the TSD facility is located outside of this state, under interim status or a permit issued by United States EPA under 40 CFR Part 270, or under interim status or permit issued by another state which has been authorized by United States EPA pursuant to 40 CFR Part 271. (WAC 173-303-141(1))*

The WTP Project permittees are not responsible for the design, construction, permitting, operation, or performance of the Integrated Disposal Facility. While DOE will ensure that waste forms produced by the WTP will meet the IDF WAC, it is not the responsibility of WTP designers or managers to conduct IDF performance assessments to ensure that all wastes disposed of in the IDF, regardless of source, will meet applicable standards. That is the responsibility of the IDF operator/permittee. While DOE is the overall owner of both facilities, it should be clear within permit space what each facility permittee/operator is responsible for. The proposed Ecology language confuses those responsibilities in a manner that cannot and should not be addressed within the WTP Project. Moreover, the IDF permit already contains this requirement as part of the "WTP ILAW Waste Acceptance Criteria" permit condition (IDF unit specific permit condition III.11.I.2.a.ii)

reference(s):

- Chapter 173-303 WAC
- IDF permit condition III.11.I.2.a.ii

#### COMMENT #12

Topic: *Part A Permit Application*

Condition No: N/A

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Comment (12): Please approve the Part A Permit Application:

- The approach to calculating tank storage and treatment capacity is consistent with the approach used in the original application and approved by Ecology
- Content, assumptions, and calculation methods were discussed with Ecology at length before submitting the Part A Application

- No regulatory basis was provided justifying rejection of the Part A.

Basis (12): Section 4.6 of the Statement of Basis describes Ecology's denial of the revised Part A Permit Application. The Part A Permit Application was updated to remove the Technetium Ion Exchange System, change the melter configuration in the WTP to 2 LAW and 2 HLW melters, and update storage and treatment capacities based on current design information.

Consistent with the Part A Application currently in the Permit, the revised Part A was developed using conservative assumptions on plant processing rates and vessel volumes. This was done with Ecology's concurrence to ensure that the Plant's capacity was bounded and would not be out of compliance until the Part A Permit Application was submitted again pursuant to Condition III.10.C.2.i. The content, assumptions, and calculation methods were discussed at length with Ecology during preparation of the Part A Application (beginning in April 2003) and are consistent with the methods used in the currently approved Part A Application.

Ecology's letter of June 29, 2004 stated: "The proposed modification application is judged complete." Additional information regarding the Technetium removal system and the third LAW melter was requested by Ecology pursuant to WAC 173-303-840(1)(b). No additional information regarding the Part A Application was requested by the Department.

Rejection of the Part A Application would cause a significant disconnect between the Part A and Part B Applications: (e.g., Chapter 4 tables are consistent with the revised Part A Application.) Finally, the Part A will be updated in accordance with Permit Condition III.10.C.2.i.

reference(s):

- Statement of Basis
- Washington Department of Ecology letter, *Waste Treatment and Immobilization and Treatment Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification*, dated June 29, 2004

### COMMENT #13

Topic: *Attachment 51, Chapter 4 - Process Information*

Condition No: *Attachment 51, Chapter 4 - Process Information*

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Comment (13): The process description in Attachment 51, Chapter 4 represents the WTP as it existed in March 2004. This text, in some cases, may slightly deviate from the Ecology-approved design media incorporated into the Permit since then.

Consequently, consistent with Permit Conditions III.10.D.10.c.i, III.10.E.9.e.vi, III.10.F.7.d.ii, III.10.G.10.e.vi, III.10.H.5.e.vi, III.10.J.5.e.vi, the Chapter 4 Narrative Descriptions will be updated prior to initial receipt of dangerous waste in the WTP Unit.

reference(s):           • WAC 173-303-806

#### COMMENT #14

Topic:                 *ATTACHMENT 51, APPENDIX 1 - , COMPLIANCE SCHEDULE*

Condition No:       Attachment 51

Condition Text:       Submit WTP permit version of *Pipe Stress Design Criteria Including “Pipe Stress Criteria” and “Span Method Criteria”*, 24590-WTP-DC-PS-01-001, including a commitment to meet ASME B31.3 for DWP regulated piping.

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Comment (14A):       Revise the compliance schedule item to be consistent with other compliance schedule items, i.e., do not identify in the compliance schedule item a need to commit to meeting ASME B31.3 for DWP-permitted piping. Please revise this compliance schedule item to read:

*Submit WTP permit version of Pipe Stress Design Criteria Including “Pipe Stress Criteria” and “Span Method Criteria”, 24590-WTP-PER-PS-05-001”.*

Basis (14A):       The recommended numbering and wording in the comment is consistent with other compliance schedule items. The commitment to meet ASME B31.3 is already contained in the permit in Chapter 4, Section 4.2.2.1.1, Design Requirements, under the heading Piping and Pipe Support Design, on page 51-4-201. Further, the text of the source and permit versions of the Pipe Stress Design Criteria document describes compliance with various applicable codes and standards.

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Comment (14B):       Revise the compliance schedule date to July 31, 2007 for submitting *Pipe Stress Design Criteria including “Pipe Stress Criteria” and “Span Method Criteria”* (24590-WTP-PER-PS-05-001).

Basis (14B): July 31, 2007 is a more realistic date to transmit the document, given needed time for the development, review, and approval.

Reference(s):

- 24590-WTP-PER-PS-05-001, *Pipe Stress Criteria including "Pipe Stress Criteria" and "Span Method Criteria"*

**ALTERNATE**

Topic: *Alternate Condition Regarding Submittal of Design Documents for Incorporation into the Permit*

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Alternate (3): The following comment is proposed for discussion with Ecology as an alternate comment regarding submittal of design documents for incorporation into the permit:

Requirements in the compliance schedule (III.10.E.9.b.ii, III.10.E.9.c.ii, III.10.E.9.d.ii, III.10.F.7.c.i, III.10.G.10.b.ii, III.10.G.10.c.ii, III.10.G.10.d.ii, III.10.H.5.b.ii, III.10.H.5.c.ii, III.10.H.5.d.ii, III.10.J.5.b.ii, III.10.J.5.c.ii, III.10.J.5.d.ii) require submittal of engineering documentation for incorporation into the Permit. When required by these permit conditions, source design drawings, mechanical data sheets, material selection data sheets, and specifications shall be submitted and will have the following characteristics:

- Certified in accordance with WAC 173-303-810(13).
- Certification by a registered professional engineer (i.e., stamping) in accordance with WAC 173-303-806(4)(a) is not required.
- Systems, structures, and components in contact with dangerous waste or providing secondary containment functions require structural integrity assessments (IQRPE reports) in accordance with Permit Conditions III.10.E.9.b.i, III.10.E.9.c.i, III.10.E.9.d.i, III.10.G.10.b.i, III.10.G.10.c.i, III.10.G.10.d.i, III.10.H.5.b.i, III.10.H.5.c.i, III.10.H.5.d.i, III.10.J.5.b.i, III.10.J.5.c.i, III.10.J.5.d.i, and WAC 173-303-640(3)(a).
  - Plant items requiring structural integrity assessments (IQRPE reports) are identified in Permit Tables III.10.E.A, III.10.E.B, III.10.E.C, III.10.E.D, III.10.G.A, III.10.G.A.i, III.10.H.A, III.10.I.A, III.10.J.A, and III.10.K.A.
- Systems, structures, and components in contact with dangerous waste or providing secondary containment functions require installation inspections in accordance with Permit Conditions III.10.E.3.a, III.10.G.3.a, III.10.H.1.a.x, III.10.J.1.a.x, and WAC 173-303-640(3)(c).
  - Plant items requiring installation inspection are identified in

Permit Tables III.10.E.A, III.10.E.B, III.10.E.C, III.10.E.D, III.10.G.A, III.10.G.A.i, III.10.H.A, III.10.I.A, III.10.J.A, and III.10.K.A.

- Permitted instruments are identified in Permit Tables III.10.E.E, III.10.E.F, III.10.E.G, III.10.E.H, III.10.G.C, III.10.H.C, III.10.I.C, III.10.J.C, and III.10.K.C. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from these tables in accordance with Permit Conditions III.10.E.9.e.ix, III.10.J.5.e.x, III.10.H.5.e.x,
- Any change document prepared for these source design documents will be supplied to Ecology in accordance with Permit Condition III.10.C.9.h.
- Plant items associated with directly managing waste and requiring periodic inspection are identified in the inspection schedules of Attachment 51, Chapter 6.0 of this Permit in accordance with Permit Condition III.10.C.5.c.
- Inspection and maintenance of utility systems, support systems, and mechanical handling systems not in direct contact with dangerous waste is at the discretion of the Permittees. Functionality of utility and support systems depicted in these source design documents is required in accordance with Permit Condition I.E.7 and WAC 173-303-810(6).

#### RECOMMENDED IMPROVEMENTS

Improvement  
(01):

**Global Comment** (initially found in Appendix 6A):

The use of ILAW canisters vs. ILAW containers is inconsistent throughout the permit. The correct verbiage is ILAW container. However, a note can be added to the front matter of the permit identifying that any references to an ILAW canister is the same as an ILAW container.

Improvement  
(02):

**Condition III.10.A, Operating Unit 10, Titles for Chapters 5, 9, and 10:**

The draft permit reads as follows for the titles to chapter 5, 9, and 10:

- Chapter 5.0, Groundwater Monitoring (Reserved)
- Chapter 9.0, Corrective Action (Reserved)

- Chapter 10.0, Waste Minimization Certification (Reserved)

This format implies these sections are applicable to the WTP, but will be added at a later date. This is not the case. WTP will be closed in accordance with permit requirements; ground water monitoring will not be required. The unit specific chapter for corrective action is not needed; this is covered at the site wide level. The unit specific chapter for waste minimization is not needed; this is covered at the site wide level. Either the titles should be removed so only “(Reserved)” is shown or “Reserved” should be replaced with “Not Applicable.”

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Improvement  
(03):

**Table III.10.C.A, Mechanical Handling Systems:**

Table III.10.C.A. identifies all the mechanical handling systems of interest for each facility. Therefore these systems should be removed from the list of critical systems in Attachment 51, Appendix 2. Having systems identified in two separate areas of the permit causes confusion and inconsistencies.

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Improvement  
(04):

**Table III.10.D.A, Page 29, Items 2, 3, and 4, Container Storage/Containment Building Areas Description:**

Based on the permit modification Table 4.2, the Container Storage room sizes should be corrected as follows:

- HLW Canister Storage Cave - 21,735 ft<sup>3</sup>
- HLW East Corridor El. 0 (HC-0108/9/10) - 41,480 ft<sup>3</sup>
- HLW Loading Area (H-0130) - 21,280 ft<sup>3</sup>

Please make following corrections to Pretreatment Facility:

- Add P-0335A Decon Chamber
  - Correct P-0121A to read “Spent Resin Dewatering”
  - Correct P0335 to read “Pretreatment Filter Cave Room”
-

Improvement  
(05):

**Table III.10.E.A, Cesium Nitric Acid Recovery Process (CNP):**

The column *Engineering Description* includes four specifications that do not belong in this table. Please remove the following drawings:

- 24590-PTF-3PS-MEVV-T0001 - Source specification not submitted for permit
- 24590-PTF-3PS-MEVV-T0002 - Source specification not submitted for permit
- 24590-PTF-3PS-MEVV-TP001 - Specification for Forced Circulation Vacuum Evaporator for the equipment FEP-SEP-00001A/B. This is an FEP miscellaneous unit system while this table is for *Pretreatment Plant Tank Systems Description* and this row of the table is for the CNP system.
- 24590-PTF-3PS-MEVV-TP002 - Specification for Cesium Nitric Acid Recovery Forced Circulation Vacuum Evaporator System, which is a miscellaneous unit system, therefore this specification does not belong in this table.

Improvement  
(06):

**Table III.10.E.A., Pretreatment Plant Tank Systems Description:**

To avoid duplication and inconsistencies with other facilities' tables, please revise Table III.10.E.A, to:

- Retain information consistent with the Dangerous Waste Permit Application Table 4-3
- Remove information that belongs in other unit tables, such as Miscellaneous Treatment Unit Table III.10.G.A.

Improvement  
(07):

**Table III.10.E.A., Pretreatment Plant Tank Systems Description:**

Please make the following changes documents/drawings:

Dangerous and/or Mixed Waste Tank	Engineering Description (Drawing Nos., Specifications	Total Volume
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<b>Systems Name</b>	<b>Nos., etc.). 24590-PTF-:</b>	
<b>Waste Feed Receipt Process System</b>  FRP-VSL-0002A FRP-VSL-0002B FRP-VSL-0002C FRP-VSL-0002D	<ul style="list-style-type: none"> <li>• DELETE M6-FRP-P0003 (Ancillary)</li> <li>• DELETE P1-P01T-P0002 (Ancillary)</li> </ul>	
<b>Waste Feed Evaporation Process System</b>  FEP-VSL-00005 FEP-VSL-00017A FEP-VSL-00017B	<ul style="list-style-type: none"> <li>• DELETE M6-FEP-P0002 (miscellaneous unit system)</li> <li>• DELETE M6-FEP-P0004 (miscellaneous unit system)</li> <li>• DELETE M6-FEP-P0005 (miscellaneous unit system)</li> </ul>	FEP-VSL-00017A = 85,496  FEP-VSL-00017B = 85,496
<b>Ultrafiltration Process System</b>  UFP-FILT-00001A UFP-FILT-00001B UFP-FILT-00002A UFP-FILT-00002B UFP-FILT-00003A UFP-FILT-00003B UFP-VSL-00001A UFP-VSL-00001B UFP-VSL-00002A UFP-VSL-00002B UFP-VSL-00062A UFP-VSL-00062B UFP-VSL-00062C	<ul style="list-style-type: none"> <li>• DELETE M6-UFP-P0013 (Ancillary)</li> <li>• DELETE M6-UFP-P0016 (Ancillary)</li> <li>• DELETE M6-UFP-P0017 (Ancillary)</li> <li>• ADD M6-UFP-P00021</li> <li>• ADD M6-UFP-P00022</li> <li>• DELETE PER-CON-02-001 (redundant - see Appendix 7.12)</li> </ul>	
<b>HLW Lag Storage and Feed Blending Process System</b>  HLP-VSL-00022 HLP-VSL-00027A HLP-VSL-00027B HLP-VSL-00028	<ul style="list-style-type: none"> <li>• DELETE M6-HLP-P0010 (Ancillary)</li> <li>• DELETE PER-CON-02-001 (redundant - see Appendix 7.12)</li> </ul>	

<p><b>Cesium Ion Exchange Process System</b></p> <p>           CXP-IXC-00001            CXP-IXC-00002            CXP-IXC-00003            CXP-IXC-00004            CXP-VSL-00001            CXP-VSL-00004            CXP-VSL-00005            CXP-VSL-00026A            CXP-VSL-00026B            CXP-VSL-00026C         </p>		<p>CXP-VSL-00005 = 1141</p> <p>CXP-VSL-00026A = 39,000</p> <p>CXP-VSL-00026B = 39,000</p> <p>CXP-VSL-00026C = 39,000</p>
<p><b>Cesium Nitric Acid Recovery Process System</b></p> <p>           CNP-VSL-00001            CNP-VSL-00003            CNP-VSL-00004         </p>	<ul style="list-style-type: none"> <li>• DELETE 24590-PTF-3PS-MEVV-T0001 (Source drawing)             <ul style="list-style-type: none"> <li>▫ 24590-PTF-3PS-MEVV-T0002 - Source drawing not submitted for permit</li> <li>▫ 24590-PTF-3PS-MEVV-TP001 - Specification for Forced Circulation Vacuum Evaporator for the equipment FEP-SEP-00001A/B. This is an FEP miscellaneous unit system while this table is for <i>Pretreatment Plant Tank Systems Description</i> and this row of the table is for the CNP system.</li> <li>▫ 24590-PTF-3PS-MEVV-TP002 - Specification for Cesium Nitric Acid Recovery Forced Circulation Vacuum Evaporator System, which is a miscellaneous unit system, therefore this</li> </ul> </li> </ul>	<p>CNP-VSL-00003 = 21,570</p>

	<p style="text-align: center;">specification does not belong in this table.</p> <ul style="list-style-type: none"> <li>• DELETE 3PS-MEVV-T0002 - Source drawing</li> <li>• DELETE -3PS-MEVV-TP001 (miscellaneous unit system)</li> <li>• DELETE - 3PS-MEVV-TP002 (miscellaneous unit system)</li> <li>• DELETE - M6-CNP-P0008 (miscellaneous unit system)</li> <li>• DELETE - M6-CNP-P0010 (miscellaneous unit system)</li> </ul>	
<p><b>Technetium Ion Exchange Process System (TXP)</b></p> <p>and</p> <p><b>Technetium Eluant Recovery Process System (TEP)</b></p>	<ul style="list-style-type: none"> <li>• Please delete this equipment from the table. Because this equipment does not exist in the current design it is misleading and confusing to list nonexistent equipment as permitted.</li> <li>• If a Technetium removal process is added to the Pretreatment Facility in the future, then the proper equipment should be included when this Permit is modified.</li> </ul>	
<p><b>Treated LAW Concentrate Storage</b></p> <p>TCP-VSL-00001</p>	<ul style="list-style-type: none"> <li>• ADD 24590-PTF-M5-V17T-P0006</li> <li>• DELETE - 24590-PTF-MVD-TCP-00001. (Source document that has been cancelled.)</li> </ul>	
<p><b>Treated LAW Evaporation Process System</b></p>	<ul style="list-style-type: none"> <li>• CORRECT document I.D. to 24590-PTF-MEVV-TP001</li> </ul>	

TLP-VSL-00002 TLP-VSL-00009A TLP-VSL-00009B	<ul style="list-style-type: none"> <li>• DELETE PER-CON-02-001 (redundant - see Appendix 7.12)</li> </ul>	
<b>Spent Resin and Dewatering Process System</b>  RDP-VSL-00002A RDP-VSL-00002B RDP-VSL-00002C RDP-VSL-00004	<ul style="list-style-type: none"> <li>• ADD MVD-RDP-P0008</li> <li>• DELETE M6-RLD-P0002 (Ancillary)</li> <li>• DELETE M6-RLD-P0003 (Ancillary)</li> <li>• DELETE M6-RLD-P0004 (Ancillary)</li> <li>• DELETE PER-CON-02-001 (redundant - see Appendix 7.12)</li> </ul>	RDP-VSL-00002A = 15,230  RDP-VSL-00002B = 15,230  RDP-VSL-00002C = 15,230  RED-VSL-00004 = 101
<b>Pretreatment Plant Wash and Disposal System</b>  PWD-VSL-00015 PWD-VSL-00016 PWD-VSL-00033 PWD-VSL-00043 PWD-VSL-00044 PWD-VSL-00046	<ul style="list-style-type: none"> <li>• DELETE (Ancillary): <ul style="list-style-type: none"> <li>▫ M6-PWD-P0001</li> <li>▫ M6-PWD-P0005</li> <li>▫ M6-PWD-P0006</li> <li>▫ M6-PWD-P0007</li> <li>▫ M6-PWD-P0008</li> <li>▫ M6-PWD-P0009</li> <li>▫ M6-PWD-P0010</li> <li>▫ M6-PWD-P0011</li> <li>▫ M6-PWD-P0012</li> <li>▫ M6-PWD-P0014</li> <li>▫ M6-PWD-P0033</li> <li>▫ M6-PWD-P0044</li> <li>▫ M6-PWD-P0050</li> <li>▫ M6-PWD-P0051</li> <li>▫ M6-PWD-P0057</li> <li>▫ M6-PWD-P0058</li> </ul> </li> </ul>	
<b>Pretreatment Vessel Vent Process</b>  PVP-VSL-00001	<ul style="list-style-type: none"> <li>• DELETE M5-V17T-P0021004</li> <li>• DELETED M6-PVP-P0002 (Ancillary)</li> <li>• DELETE M6-PVP-P0009 (Ancillary)</li> </ul>	

<b>Pulse-jet Ventilation System</b> PJV-VSL-00002	<ul style="list-style-type: none"> <li>• DELETE (Ancillary)           <ul style="list-style-type: none"> <li>▫ M6-PJV-P0001</li> <li>▫ M6-PJV-P0004</li> </ul> </li> </ul>	
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Improvement (08):

**Table III.10.E.A, Spent Resin and Dewatering Process System (RDP):**

Please add to the *Engineering Description* column, RDP row, the Process Data Sheet 24590-PTF-MVD-RDP-P0008.

Improvement (09):

**Table III.10.E.A., Treated LAW Concentrate Storage process System (TCP):**

- Please add the Process Flow Diagram 24590-PTF-M5-V17T-P0006 to the *Engineering Description* column in TCP row.
- Please delete from the *Engineering Description* column, TCP row, the Process Data Sheet 24590-PTF-MVD-TCP-00001. This document is a source document that has been cancelled and was never submitted for the permit.

Improvement (10):

**Table III.10.E.A., Technetium Ion Exchange Process System (TXP) and Technetium Eluant Recovery Process System (TEP):**

As discussed elsewhere in our set of comments, please delete this equipment from the table.

Improvement (11):

**Table III.10.E.B., LAW Vitrification Plant Tank System Descriptions (Beginning on page 60 of 293):**

- Please delete the reference to Figure 4A-20 from the Narrative Description Column on page 60. This figure has been deleted and superceded by the LAW Process Flow Diagrams 24590-LAW-M5-V17T-P0001 and 24590-LAW-M5-V17T-P0002 in Attachment 51.
- Please delete the reference to Figure 4A-23 from the Narrative Description Column on page 61. This figure has been deleted and

superseded by the LAW Process Flow Diagrams 24590-LAW-M5-V17T-P0010 and 24590-LAW-M5-V17T-P0011 in Attachment 51

- Please delete the reference to Figure 4A-2 from the Narrative Description Column on page 62. The LAW system is not referenced on this figure, it is a PT figure.

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Improvement  
(12):

**Table III.10.E.C., HLW Vitrification Plant Tank Systems Description**

- General comment: Please delete System Descriptions from this table (3rd column, all documents starting as 24590-3YD-) because all HLW System Descriptions have been submitted for the DWP Administrative Record as required by Permit Condition III.10.E.9.c.vii.
- Row 2, Vessels HFP-VSL-00001/5, 3rd column: Delete -M6-HFP-P0002 because this P&ID does not include vessels HFP-VSL-00001/5
- Row 4, Vessels HOP-VSL-00903/HOP-VSL-00904: Change the vessels name to Melter 1 and Melter 2 SBS Condensate Receiver Vessel
- Row 5, Vessel HDH-VSL-00001, 3rd column, last item: Change the vessel name to Canister Rinse Vessel; change the engineering specification to 24590-HLW-3PS-MQR0-TP002
- Row 7, Vessel HDH-VSL-00003, 5th column: Correct the vessel volume to the previous value of 5315 gallons, per Mechanical Data Sheet 24590-HLW-MVD-HDH-P0003, Rev.2.

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Improvement  
(13):

**Table III.10.E.D., Analytical Laboratory Tank System Descriptions (On page 70 of 293, Hot Cell Drain Collection Vessel (RLD-VSL-00165), Engineering Description column.):**

- Please change the maximum capacity of RLD-VSL-00164 back to 3180 gallons. This is consistent with Table 4-6 and with the Mechanical Data Sheet for this vessel: 24590-LAB-MVD-RLD-P0164.
- Please delete the reference to Figure 4A-1 and 4A-2, from this table. The LAB is not referenced on this figure.
- Please delete the reference to Figure 4A-115 from this table. This figure

has been deleted from the permit.

- Please retain the reference to general arrangement drawing 24590-LAB-P1-60-P0010 in the Engineering Description column for the Hot Cell Drain Collection Vessel (RLD-VSL-00165).
- Please delete the reference to the LAB System Description 24590-LAB-3YD-RLD-00001. System descriptions are only listed in the Administrative Record not the permit.

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Improvement  
(14):

**Table III.10.E.E. Pretreatment Plant Tan System Process and Leak Detection System Instruments and Parameters**

- Please delete P&ID drawing numbers
- Please combine this table with Tables III.10.F.D and III.10.G.C.

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Improvement  
(15):

**Table III.10.E.F., LAW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters (General beginning on page 75 of 293, Tank System Locator Column):**

- Please delete the reference to the P&ID in this column consistent with Footnote (a) of this table.

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Improvement  
(16):

**Table III.10.E.G., HLW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters:**

- Delete Items 8, 9, 10 and the footnote: RWH-SUMP-00001, RWH-SUMP-00005, RWH-SUMP-00006. The RWH sumps are located in the Drum Transfer Tunnel and are not part of the Tank System. The Drum Transfer Tunnel is not a permitted dangerous waste management unit. (See Ecology's approval of the Class 2 permit modification removing the Drum Transfer Tunnel Containment Building (H-B015) from the DWP, 24590-HLW-PCN-ENV-0903-002, dated January 13, 2004)
- Delete Items 13, 14 and the footnote: HMM-SUMP-00002 and HMM-SUMP-00003. The HMM sumps are located in the containment buildings (Rooms H-0105B and H-0116B) that do not manage dangerous waste liquids. Containment buildings that do not manage dangerous waste

liquids are not required to be equipped with secondary containment and leak detection systems (WAC 173-393-695).

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Improvement (17): **Table III.10.E.H., Laboratory Tank System Process and Leak Detection System Instruments and Parameters (General beginning on 80 of 293):**

- In the Operating Trips column, please change the RESERVED to Not Applicable to be consistent with the rest of the text in this table.
- 

Improvement (18): **Table III.10.E.J. Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains**

- For PWD-SUMP-00040, please delete nominal operating volume of 140.3 gallons, this is now a dry sump.
  - Please delete General Arrangement section drawings that have been cancelled and removed from permit.
  - Add missing room numbers and elevations
  - Delete PWD-SUMP-00034 and -00035 and add to tables III.10.F.C. and III.10.F.D.
  - Add drain line PVP-ZY-00036-S11B-03 from PVP-BULGE-00002 on 24590-PTF-M6-PVP-P00018
- 

Improvement (19): **Table III.10.E.L., LAW Vitrification Plant Tank System Secondary Containment Systems Including Sumps, Bulges, and Floor Drains (General beginning on 96 of 293):**

- In the Sump or Drain Line Dimensions column, please add the word “Approximate” to the title so this column title reads: “Approximate Sump or Drain Line Dimensions (inches)....” This is consistent with both the permit Secondary Containment Document (24590-WTP-PER-CSA-02-001 and the LAW sump data document which describe the sumps as either 24” or 36” O.D. Dished Heads.
- Page 97 of 293, please correct the alignment of the referenced general

arrangement drawing, P1-P01T-P0010.

- Pages 98 and 99 of 293, 1st column of table, please revise the names of the “Melter 1 Feed Detection Box Leak, El +3, and Melter 2 Feed Detection Box Leak, El +3 (respectively), to “Melter 1 Encasement Assembly drain, El +3, and “Melter 2 Encasement Assembly drain, El +3.” These are the correct names of these drains, as provide on LAW P&ID - 24590-LAW-M6-RLD-P0003 in PCN 24590-LAW-PCN-ENV-05-002.

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Improvement  
(20):

**Table III.10.E.P., Laboratory Tank System Secondary Containment Systems Including Sumps and Floor Drains (General beginning on 103 of 293):**

- Please revise the title of this table to “Laboratory Tank System Secondary Containment Systems Including Sumps.” The Analytical Laboratory does not have floor drains that flow directly to sumps.
- In the Sump or Drain Line Dimensions column, please add the word “Approximate” to the title so this column title reads: “Approximate Sump or Drain Line Dimensions (inches) ....” This is consistent with both the permit Secondary Containment Document (24590-WTP-PER-CSA-02-001) and LAW Sump Data Document which describe the sumps as 30” O.D. Dished Heads.
- On page 104 or 293, please delete all reference to the four drain lines provide in the table (RLD-ZN-02207-S11E-04, RLD-ZN-02203-S11E-04, RLD-ZN-03393-S11E-04, RLD-ZN-03394-S11E-04). These drains are associated with weirs that drain sumps 43A, 43B, 44, and 45. These sumps are already included in this table. Further, these lines drain to either RLD-VSL-00164 or RLD-VSL-00165 and if a leak were to occur they would drain to secondary containment system sumps for these vessels (sumps 41 or 42), that are also include in this table.

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Improvement  
(21):

**Table III.10.F.A. - Containment Building Unit Description**

- For the Pretreatment Plant, please correct the room name for P-0121A to “Spent” Resin Dewatering.
- For Room P0431A General Filter Rm, add “RESERVED” across the row.

Improvement  
(22):

**Table III.10.F.C., Containment Building Secondary Containment Systems Including Sumps and Floor Drains:**

- Item 10 (HFP-SUMP-00002), 3rd column: Delete “Wet Sump/60” (see Attachment 51 Appendix 10.5) and retain the correct information (“Dry Sump/55.6”).
  - Items 12 and 13, 4th column: Delete “30” Dia. X 18” Deep” (see Attachment 51 Appendix 10.5) and retain the correct information (“31.5”x25.5”x16”).
  - Add Pretreatment Facility hot cell sumps in Room P-123.
  - Delete Pretreatment Facility General Arrangement section drawings that have been cancelled and removed from permit by PCN.
- 

Improvement  
(23):

**Table III.10.F.D. - Containment Building Leak Detection System Instrumentation and Parameters**

- For PWD-SUMP-00034 AND -00035, add Radar as type of leak detection instrument and add RESERVED for location of leak detection instrument.
  - Add Pretreatment Facility hot cell sumps PWD-SUMP-00028 and -00029.
- 

Improvement  
(24):

**Table III.10.G.A., Pretreatment Plant Miscellaneous Unit Systems:**

- To avoid duplication and inconsistencies, please revise Table III.10.G.A. , as indicated below, to:
  - Retain information relative to the PTF miscellaneous units to be consistent with Table 4-14
  - Remove duplicate information, which is already contained in Table III.10.E.A., Table 4-3, and Attachment 51 Appendix 8.
- Retain the following information in Table III.10.G.A. (and delete the remaining information and footnotes):

Miscellaneous Unit System Description	Engineering Description (drawings, data sheets, specifications, etc.)	Total volume (gallons)
<p><b>Waste Feed Evaporation Process System (FEP)</b>  [Comprised of the following miscellaneous units and equipment: ]</p> <p>Waste Feed Evaporator Separator Vessels:</p> <ul style="list-style-type: none"> <li>▫ FEP-SEP-0001A</li> <li>▫ FEP-SEP-0001B</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0004002</li> <li>▫ M6-FEP-P0002</li> <li>▫ M6-FEP-P0004</li> <li>▫ MVD-FEP-P0006</li> <li>▫ MVD-FEP-P0007</li> <li>▫ N1D-FEP-P0007</li> <li>▫ P1-P01T-P0001</li> <li>▫ 3PS-MEVV-TP001</li> </ul>	<p>FEP-SEP-00001A = 13,569</p> <p>FEP-SEP-00001B = 13,569</p>
<p><b>Waste Feed Evaporation Process System (FEP)</b>  [Comprised of the following miscellaneous units and equipment: ]</p> <p>Waste Feed Evaporator Primary Condensers:</p> <ul style="list-style-type: none"> <li>▫ FEP-COND-00001A</li> <li>▫ FEP-COND-00001B</li> </ul> <p>Waste Feed Evaporator Inter-Condensers:</p> <ul style="list-style-type: none"> <li>▫ FEP-COND-00002A</li> <li>▫ FEP-COND-00002B</li> </ul> <p>Waste Feed Evaporator After-Condensers:</p> <ul style="list-style-type: none"> <li>▫ FEP-COND-00003A</li> <li>▫ FEP-COND-00003B</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0004002</li> <li>▫ M6-FEP-P0002</li> <li>▫ M6-FEP-P0004</li> <li>▫ MED-FEP-P0003</li> <li>▫ MED-FEP-P0004</li> <li>▫ MED-FEP-P0005</li> <li>▫ MED-FEP-P0006</li> <li>▫ MED-FEP-P0007</li> <li>▫ MED-FEP-P0008</li> <li>▫ N1D-FEP-P0009</li> <li>▫ N1D-FEP-P0010</li> <li>▫ N1D-FEP-P0013</li> <li>▫ P1-P01T-P0003</li> <li>▫ 3PS-MEVV-TP001</li> </ul>	

<p><b>Waste Feed Evaporation Process System (FEP)</b>  [Comprised of the following miscellaneous units and equipment: ]</p> <p>Waste Feed Evaporator  Reboilers: FEP-RBLR-00001A  FEP-RBLR-00001B</p>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0004002</li> <li>▫ M6-FEP-P0002</li> <li>▫ M6-FEP-P0004</li> <li>▫ MED-FEP-P0009</li> <li>▫ MED-FEP-P0010</li> <li>▫ N1D-FEP-P0008</li> <li>▫ P1-P01T-P0001</li> <li>▫ 24590-WTP-3PS-MES0-TP001</li> <li>▫ 3PS-MEVV-TP001</li> </ul>	
<p><b>Cesium Nitric Acid Recovery Process System (CNP)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>Cesium Evaporator  Separator Vessel:</p> <ul style="list-style-type: none"> <li>▫ CNP-EVAP-00001</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0014</li> <li>▫ M6-CNP-P0008</li> <li>▫ MVD-CNP-P0006</li> <li>▫ N1D-CNP-P0005</li> <li>▫ P1-P01T-P0002</li> <li>▫ 3PS-MEVV-TP002</li> </ul>	
<p><b>Cesium Nitric Acid Recovery Process System (CNP)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>Cesium Evaporator  Concentrate Reboiler:</p> <ul style="list-style-type: none"> <li>▫ CNP-HX-00001</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0014</li> <li>▫ M6-CNP-P0008</li> <li>▫ MED-CNP-P0005</li> <li>▫ N1D-CNP-P0004</li> <li>▫ P1-P01T-P0001</li> <li>▫ 3PS-MEVV-TP002</li> </ul>	
<p><b>Cesium Nitric Acid Recovery Process System (CNP)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>Cesium Nitric Acid  Rectifier Column:</p> <ul style="list-style-type: none"> <li>▫ CNP-DISTC-00001</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0014</li> <li>▫ M6-CNP-P0010</li> <li>▫ MWD-CNP-P0001</li> <li>▫ N1D-CNP-P0001</li> <li>▫ P1-P01T-P0003</li> <li>▫ 3PS-MEVV-TP002</li> </ul>	

<p><b>Cesium Nitric Acid Recovery Process System (CNP)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>Cesium Evaporator Primary Condenser:  ▫ CNP-HX-00002</p> <p>Cesium Evaporator Inter-Condenser:  ▫ CNP-HX-00003</p> <p>Cesium Evaporator After-Condenser:  ▫ CNP-HX-00004</p>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0014</li> <li>▫ M6-CNP-P0010</li> <li>▫ MED-CNP-P0003</li> <li>▫ MED-CNP-P0010</li> <li>▫ MED-CNP-P0004</li> <li>▫ N1D-CNP-P0002</li> <li>▫ N1D-CNP-P0003</li> <li>▫ N1D-CNP-P0012</li> <li>▫ P1-P01T-P0004</li> <li>▫ 3PS-MEVV-TP002</li> </ul>	
<p><b>Treated LAW Evaporator Process System (TLP)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>Treated LAW Evaporator Separator Vessel:  ▫ TLP-SEP-00001</p>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0005</li> <li>▫ M6-TLP-P0003</li> <li>▫ MVD-TLP-P0005</li> <li>▫ N1D-TLP-P0005</li> <li>▫ P1-P01T-P0001</li> <li>▫ 3PS-MEVV-TP001</li> </ul>	<p>TLP-SEP-00001 =  13,369</p>
<p><b>Treated LAW Evaporator Process System (TLP)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>Treated LAW Evaporator Reboiler:  ▫ TLP-RBLR-00001</p>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0005</li> <li>▫ M6-TLP-P0003</li> <li>▫ MED-TLP-P0004</li> <li>▫ N1D-TLP-P0011</li> <li>▫ P1-P01T-P0001</li> <li>▫ 3PS-MEVV-TP001</li> </ul>	

<p><b>Treated LAW Evaporator Process System (TLP)</b>          [Comprised of the following miscellaneous units and equipment:]</p> <p>Treated LAW Evaporator Primary Condenser:</p> <ul style="list-style-type: none"> <li>▫ TLP-COND-00001</li> </ul> <p>Treated LAW Evaporator Inter-Condenser:</p> <ul style="list-style-type: none"> <li>▫ TLP-COND-00002</li> </ul> <p>Treated LAW Evaporator After-Condenser:</p> <ul style="list-style-type: none"> <li>▫ TLP-COND-00003</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0005</li> <li>▫ M6-TLP-P0002</li> <li>▫ MED-TLP-P0001</li> <li>▫ MED-TLP-P0002</li> <li>▫ MED-TLP-P0003</li> <li>▫ N1D-TLP-P0002</li> <li>▫ N1D-TLP-P0003</li> <li>▫ P1-P01T-P0003</li> <li>▫ 3PS-MEVV-TP001</li> </ul>	
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Improvement (25):

**Table III.10.G.A.i., Pretreatment Plant Miscellaneous Unit Systems' Pretreatment Vessel Vent Process System:**

- Suggest changing the table title to read: "Pretreatment Facility Miscellaneous Units Associated with Vessel Ventilation Systems"
- To avoid duplication and inconsistencies, please revise Table III.10.G.A.i., as indicated below, to:
  - Retain information relative to the PTF miscellaneous units: PVP, PVV, and PJV, as found in Table 4-14. Please note that most of the design documents, except for general arrangement drawings, process flow diagrams, and some piping and instrumentation diagrams for these units still need to be provided, so RESERVED should be added in the table.
  - Remove duplicate information, which is already contained in Table III.10.G.A., III.10.E.A., and Attachment 51 Appendix 8.
- Retain the following information in Table III.10.G.A.i. (and remove the remaining information):

<b>Miscellaneous Unit System Description</b>	<b>Engineering Description (drawings, data sheets, specifications, etc.)</b>
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<p><b>Pretreatment Vessel Vent Process System (PVP)</b>        [Comprised of the following miscellaneous units and equipment:]</p> <p>Carbon Bed Adsorbers:</p> <ul style="list-style-type: none"> <li>▫ PVP-ADBR-00001A/B</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0021001</li> <li>▫ M6-PVP-P0004</li> <li>▫ P1-P01T-P0003</li> <li>▫ <b>RESERVED</b></li> </ul>
<p><b>Pretreatment Vessel Vent Process System (PVP)</b>        [Comprised of the following miscellaneous units and equipment:]</p> <p>After Cooler:</p> <ul style="list-style-type: none"> <li>▫ PVP-CLR-00001</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0021001</li> <li>▫ M6-PVP-P0004</li> <li>▫ P1-P01T-P0003</li> <li>▫ <b>RESERVED</b></li> </ul>
<p><b>Pretreatment Vessel Vent Process System (PVP)</b>        [Comprised of the following miscellaneous units and equipment:]</p> <p>VOC Oxidizer Unit:</p> <ul style="list-style-type: none"> <li>▫ PVP-OXID-00001</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0021001</li> <li>▫ M6-PVP-P0004</li> <li>▫ P1-P01T-P0003</li> <li>▫ <b>RESERVED</b></li> </ul>
<p><b>Pretreatment Vessel Vent Process System (PVP)</b>        [Comprised of the following miscellaneous units and equipment:]</p> <p>Adsorber Outlet Filter:</p> <ul style="list-style-type: none"> <li>▫ PVP-FILT-00001</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0021001</li> <li>▫ M6-PVP-P0004</li> <li>▫ P1-P01T-P0003</li> <li>▫ <b>RESERVED</b></li> </ul>

<p><b>Pretreatment Vessel Vent Process System (PVP)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>HEME Filter(s):</p> <ul style="list-style-type: none"> <li>▫ PVP-HEME-00001A</li> <li>▫ PVP-HEME-00001B</li> <li>▫ PVP-HEME-00001C</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0021001</li> <li>▫ M6-PVP-P0018</li> <li>▫ P1-P01T-P0003</li> <li>▫ <b>RESERVED</b></li> </ul>
<p><b>Pretreatment Vessel Vent Process System (PVP)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>Caustic Scrubber:</p> <ul style="list-style-type: none"> <li>▫ PVP-SCB-00002</li> </ul>	<p><b><u>24590-PTF-</u></b></p> <ul style="list-style-type: none"> <li>▫ M5-V17T-P0021001</li> <li>▫ M6-PVP-P0017</li> <li>▫ MKD-PVP-P0002</li> <li>▫ N1D-PVP-P0001</li> <li>▫ P1-P01T-P0001</li> <li>▫ 3PS-MKAS-TP001</li> </ul>
<p><b>Pretreatment Vessel Vent Exhaust System (PVV)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>Primary HEPA Filters:</p> <ul style="list-style-type: none"> <li>▫ PVV-HEPA-00001A</li> <li>▫ PVV-HEPA-00001B</li> </ul> <p>Secondary HEPA Filters:</p> <ul style="list-style-type: none"> <li>▫ PVV-HEPA-00002A</li> <li>▫ PVV-HEPA-00002B</li> </ul>	<p><b><u>24590-PTF-</u></b>  M5-V17T-P0021001  P1-P01T-P0002  <b>RESERVED</b></p>
<p><b>Pretreatment Vessel Vent Exhaust System (PVV)</b>  [Comprised of the following miscellaneous units and equipment:]</p> <p>Exhaust Fans:</p> <ul style="list-style-type: none"> <li>▫ PVV-FAN-00001A</li> <li>▫ PVV-FAN-00001B</li> </ul>	<p><b><u>24590-PTF-</u></b>  M5-V17T-P0021001  P1-P01T-P0003  <b>RESERVED</b></p>
<p><b>Pretreatment Vessel Vent Exhaust System (PVV)</b></p>	<p><b><u>24590-PTF-</u></b>  M5-V17T-P0021001</p>

<p>[Comprised of the following miscellaneous units and equipment:]</p> <p>PVV Stack</p>	<p>P1-P01T-P0003</p>
<p><b>Pretreatment Pulse Jet Ventilation System (PJV)</b>          [Comprised of the following miscellaneous units and equipment:]</p> <p>Primary HEPA Filters:</p> <ul style="list-style-type: none"> <li>▫ PJV-HEPA-00001A</li> <li>▫ PJV-HEPA-00001B</li> <li>▫ PJV-HEPA-00001C</li> <li>▫ PJV-HEPA-00001D</li> <li>▫ PJV-HEPA-00001E</li> <li>▫ PJV-HEPA-00001F</li> <li>▫ PJV-HEPA-00001G</li> </ul> <p>Secondary HEPA Filters:</p> <ul style="list-style-type: none"> <li>▫ PJV-HEPA-00002A</li> <li>▫ PJV-HEPA-00002B</li> <li>▫ PJV-HEPA-00002C</li> <li>▫ PJV-HEPA-00002D</li> <li>▫ PJV-HEPA-00002E</li> <li>▫ PJV-HEPA-00002F</li> </ul>	<p><b><u>24590-PTF-</u></b>          M5-V17T-P0021002          P1-P01T-P0003          P1-P01T-P0004  <b>RESERVED</b></p>
<p><b>Pretreatment Pulse Jet Ventilation System (PJV)</b>          [Comprised of the following miscellaneous units and equipment:]</p> <p>Exhaust Fans:</p> <ul style="list-style-type: none"> <li>▫ PJV-FAN-00001A</li> <li>▫ PJV-FAN-00001B</li> <li>▫ PJV-FAN-00001C</li> </ul>	<p><b><u>24590-PTF-</u></b>          M5-V17T-P0021002          P1-P01T-P0004  <b>RESERVED</b></p>

<p><b>Pretreatment Pulse Jet Ventilation System (PJV)</b>          [Comprised of the following miscellaneous units and equipment:]</p> <p>Demisters:</p> <ul style="list-style-type: none"> <li>▫ PJV-DMST-00002A</li> <li>▫ PJV-DMST-00002B</li> <li>▫ PJV-DMST-00002C</li> </ul>	<p><b><u>24590-PTF-</u></b>          M5-V17T-P0021002          M6-PJV-P0002          P1-P01T-P0003  <b>RESERVED</b></p>
<p><b>Pretreatment Pulse Jet Ventilation System (PJV)</b>          [Comprised of the following miscellaneous units and equipment:]</p> <p>PJV Stack</p>	<p><b><u>24590-PTF-</u></b>          M5-V17T-P0021002          P1-P01T-P0003</p>

Improvement (26):

**Table III.10.G.B. - Pretreatment Plant Miscellaneous Unit Secondary Containment Systems Including Sumps, Bulges, and Floor Drains.**

- Add PTF-SUMP-00009 to Room P-0112 and PTF-SUMP-00012 to Room P-0117.

Improvement (27):

**Table III.10.G.C., Pretreatment Plant Miscellaneous Unit System Process and Leak Detection Instruments and Parameters:**

Please correct Table III.10.G.C, as indicated below:

<p><b>Miscellaneous Unit System Locator, Name and Room</b></p>
<p>PVP-BULGE-00001, Vessel Vent Caustic Scrubber Transfer Pump Bulge, P-0105</p>
<p>PVP-BULGE-00014, Vessel Vent Heat Exchanger Bulge, P-0302</p>

Improvement  
(28):

**Table 111.10.H.A., General Comment beginning on 178 of 293:**

Delete reference to Table 4-4 in the narrative description column. Table 4-4 is for LAW Tank systems.

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Improvement  
(29):

**Table 111.10.H.A., General Comment beginning on 178 of 293:**

- In the Narrative Description, Tables and Figures Column, please delete the reference to Table 4-4 on this page. In both cases the Sub-system Description is for a miscellaneous unit system and Table 4-4 is a vessel table and is not an applicable reference here.
  - Throughout Table 111.10.H.A., please delete the phrase “and Figure 4A-22”. This figure has been deleted and replaced with process flow diagrams 24590-LAW-M5-V17T-P0007 and 24590-LAW-M5-V17T-P0008.
  - As provided in earlier comments, in the Engineering Description column please correct the reference the on pages 180 please correct the references to process flow diagrams 24590-LAW-M5-V17T-P0007 and 24590-LAW-M5-V17T-P0008, and 24590-LAW-M5-V17T-P0010. These process flow diagrams are listed incorrectly as 24590-LAW-M5-V17-P0007 and 24590-LAW-M5-V17-P0008 (T left out). On pages 181 and 183 please correct the references to process flow diagrams 24590-LAW-M5-V17T-P0010. It is listed as 24590-LAW-M5-LVP-P0010.
  - As provided in earlier comments, on page 182 please correct the references to the following LAW General Arrangement drawings in the Engineering Description column. 24590-LAW-P1-P01T-P0004 and 24590-LAW-P1-P01T-P0009 should be. 24590-LAW-P1-P01T-P0002 and 24590-LAW-P1-P01T-P0010 respectively.
  - Page 184, The Engineering Description column for the LAW Secondary Offgas/Vessel Vent Process System [Comprising the following equipment LAW Stack]. Consistent with table III.10.I.A please delete this entire row in the table or add the appropriate drawing (24590-LAW-M6-LVP-P0002 and 24590-LAW-M5-V17T-P0011) because no further permit documentation will be submitted for the offgas LAW stack.
-

Improvement (30): **Table III.10.H.B., LAW Vitrification System Description (Page 185 of 293):**

Consistent with table III.10.I.B, please delete the reference to LVP-FD-00001 and replace with RESERVED. This floor drain is a vertical drain that is sleeved through the floor and if a leak were to occur, it would be collected and detected in the sump for LVP-VSL-00001.

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Improvement (31): **Table III.10.I.A., LAW Vitrification System Description (General beginning on 208 of 293):**

- The inclusion of two duplicate tables in III.10.H.A and III.10.I.A is very confusing. Please consider deleting one table and referencing the reader to that table in the text of the permit for the long- term and short-term compliance actions. This duplication leads to the increased potential for errors between sections of the permit text.
  - In the Narrative Description, Tables and Figures Column, please delete the reference to Table 4-4 on pages 208 and 209. In both cases the Sub-system Description is for a miscellaneous unit system and Table 4-4 is a vessel table and is not an applicable reference here.
  - Throughout Table III.10.I.A., please delete the phrase “and Figure 4A-22”. This figure has been deleted and replaced with LAW PFD - 24590-LAW-M5-V17T-P0007 and 24590-LAW-M5-V17T-P0008.
  - As provided in earlier comments, in the Engineering Description column please correct the reference on page 210 to 24590-LAW-M5-V17T-P0007, 24590-LAW-M5-V17T-P0008, and 24590-LAW-M5-V17T-P0010. These process flow diagrams are listed incorrectly as 24590-LAW-M5-V17-P0007 and 24590-LAW-M5-V17-P0008 (T left out).
  - Please correct the reference to M6-V17T-P0001 on page 213 in the Engineering Description column. This is a P&ID, and should be the same as the reference on Table III.10.H.A, 24590-LAW-M6-LVP-P0001.
- 

Improvement (32): **Table III.10.J.A., HLW Vitrification System Description:**

- General comment: Delete System Descriptions from this table (3rd column, all documents starting as 24590-3YD-) because all HLW System Description documents have been submitted for the DWP Administrative

Record in accordance with Permit Condition III.10.J.5.c.vii.

- Row 4, Change to Film Cooler, add HOP-FCLR-00003 and -00004
- Delete the footnote - it is not applicable.
- Add the following drawings under the last Item (Stack) that have been incorporated into the Attachment 51 Appendices 10.1 and 10.2:
  - 24590-HLW-M5-V17T-P0004
  - 24590-HLW-M5-V17T-P20004
  - 24590-HLW-M6-HOP-P0008
  - 24590-HLW-M6-HOP-P20008

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Improvement  
(33):

**Table III.10.K.A., HLW Vitrification System Description:**

- General comment: Delete System Descriptions from this table (3rd column, all documents starting as 24590-3YD-) because all HLW System Description documents have been submitted for the DWP Administrative Record in accordance with Permit Condition III.10.J.5.c.vii.
- Row 4, Change to Film Cooler, add HOP-FCLR-00003 and -00004
- Delete the footnote - it is not applicable.
- Add the following drawings under the last Item (Stack) that have been incorporated into the Attachment 51 Appendices 10.1 and 10.2:
  - 24590-HLW-P1-P01T-P0004
  - 24590-HLW-P1-P01T-P20004
  - 24590-HLW-M6-HOP-P0008
  - 24590-HLW-M6-HOP-P20008
- Delete the last 3 items: PJV Electric Heater, PJV HEPA Filters and PJV Fans to maintain consistency with Table III.10.J.A and because the PJV system is associated with the HLW tank systems, not the Vitrification (i.e., the melter system).

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Improvement  
(34):

**Tables, General Comments:**

We have some ideas for making the tables easier to use while keeping the same information. We believe that these changes will significantly reduce confusion and increase accuracy of the permit data. Repeating the same

information in multiple places in the permit is causing errors and inconsistencies that will only worsen as data is added to the tables.

Two suggestions we're offering will minimize the number of tables. Below are some specific suggestions:

1. **Remove tables and reference PER documents instead.**

The tables titled ...*Secondary Containment Systems Including Sumps, Bulges, and Floor Drain* should be removed and instead reference the sump data documents for each facility. Remove the following tables III.10.E.J., III.10.E.L., III.10.E.N., III.10.E.P., III.10.F.C, III.10.G.B., III.10.H.B., III.10.I.B, III.10.J.B., III.10.K.B., for tanks, miscellaneous unit systems and containment buildings.

The equipment identification numbers, room locations, capacity, type, dimensions, materials of construction, and P&ID numbers are all found in the Sump Data documents. The only information on these tables not found in the Sump Data Documents is the General Arrangement drawing number. However, since the documents tell the reader the elevation and room number where the sump, bulge or drain is located, a reference to the appendices with GAs would easily tell the reader where to find the GA.

Deleting these tables would require changing permit conditions. A suggested change to condition III.10.E.9.b.vii. might read:

Provide the following information for all secondary containment sumps, bulges and floor drains: line identification number and room location; maximum capacity for sump/bulge (gallons) or drain line (gallons per minute); sump type; dimensions (inches) and materials of construction; engineering description (drawing numbers, specifications, etc.) This information will be incorporated in Appendices 8.5, 9.5, 10.5 and 11.5.

Hot links could be added to the appendices.

2. **Consolidate tables with same information for each facility.**

Combine all the *Process and Leak Detection System Instruments and Parameters* tables into one table for each facility. For example, combine the Pretreatment tables III.10.E.E., III.10.F.D, and III.10.G.C. into one table and annotate the sump/bulge/drain ID numbers to show if it is part of a tank system, miscellaneous unit system, containment building or some combination. The new table could go in its facility-specific Appendix, instead of the permit body. Do the same thing for tables III.10.E.F, III.10.H.C, III.10.I.C, for LAW, and III.10.E.G, III.10.J.C, and III.10.K.C for HLW, and III.10.E.H for the Lab.

We found that repeating tables for each waste management unit with the same information was very confusing, particularly because the same equipment often was part of more than one type of waste management unit. In Pretreatment, the table *Tank System Secondary Containment Systems Including Sumps, Bulges and Floor Drain* (III.10.E.J.) overlaps with the same information in tables III.10.F.C. and III.10.G.B. Because the PT hot cell is permitted as a tank system, miscellaneous unit system, and containment building, the three sumps located in the hot cell belong in all three of these tables, but were not.

Permit condition III.10.C.3.e.iii would need to be changed to reference the newly combined tables in the appendices.

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Improvement  
(35):

**Attachment 51, Appendix 4A, Table 4-14:**

As referenced in Tables III.10.J.A. and III.10.K.A., please add the following components to Attachment 51, Appendix 4A, Table 4-14:

- HOP-SCO-00002
- HOP-SCO-00003

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Improvement  
(36):

**Attachment 51, Appendix 4A, Figures and Drawings:**

1. The table of contents listing for figure 4A-116 is shown as follows:

- Analytical Laboratory ~~Hot Cell Ventilation Deleted~~

It should be modified to be shown as follows:

- ~~Analytical Laboratory Hot Cell Ventilation Deleted~~

2. Figures 4A-65 and 4A-70 are out dated and no longer reflect the current design. The drawings will be updated if not superseded by general arrangements as a later permit modification.

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Improvement  
(37):

**Attachment 51, Appendix 6A, Inspection Schedules:**

Table 6A-3, pg 51-6A-11:

Under the HFP system, the entries for the HLW melter feed preparation vessels should be consolidated to match the entry for the HLW melter feed vessels.

Table 6A-3, pg 51-6A-5:

Under the CXP system, the plant item number for the cesium reagent vessel needs to be changed from CXP-IXC-00005 to CXP-VSL-00005.

Table 6A-3, pg 51-6A-8:

All entries for the TXP and TEP systems need to be deleted. Because this equipment does not exist in the current design it is misleading and confusing to list nonexistent equipment as permitted.

If a Technetium removal process is added to the Pretreatment Facility in the future, then the proper equipment should be included when this Permit is modified.

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Improvement  
(38):

**Attachment 51, Appendix 10.11, High-Level Waste Building IQRPE Reports:**

Typo: The last two items added to Table 10.11 should be:

- 24590-CM-HC4-HXYG-00211 **AREVA** -IA-084, Rev. 0
- 24590-CM-HC4-HXYG-00211 **AREVA** -IA-082, Rev. 1

**Attachment 2 - Public Announcement Classified Ad**

530 HELP WANTED 530 HELP WANTED

AGENDA
Richland City Council
Special Workshop
No. 1797
6:00 p.m. - Tuesday,
October 10, 2006
Richland City Hall
Council Chamber
505 Swift Boulevard

Workshop Items:
1. Review of 2007 Budget and Capital Facilities Plan A. Continue Discussion of 2007 Budget
B. Review and Discussion of 2006-2011 Capital Facilities Plan
#6466 10/8

CITY OF PASCO
NOTICE OF CHANGE
OF MEETING
PLEASE TAKE NOTICE
that the Pasco Civil Service Commission meeting scheduled for Monday, October 9, 2006 has been cancelled. The next regular meeting of the Civil Service Commission will be held Monday, November 13, 2006 5:15 p.m., in Conference Room 1, 1st Floor, at 525 North 3rd Avenue. Please enter via the east entrance.
Lynne Jackson, Clerk to the Board
#6468 10/8

CITY OF RICHLAND,
WASHINGTON
CALL FOR BIDS
Sealed bids will be received by the City of Richland, at the City Shops, Building 100, Room 110, 2700 Duportail Street, (off I-182 and Queensgate) until 10:00 A.M. on Thursday, October 26, 2006, for the "2006 Sanitary Sewer Rehabilitation Project, Contract SB 06-023 PW", and will then and there be opened and publicly read for the inspection of the existing sanitary sewer system. Plans and Specifications may be obtained from the City's Purchasing Dept., located at 2700 Duportail Street, faxing your request to (509) 942-7397 or by writing Purchasing Dept., MS-11, P.O. Box 190, Richland, WA, 99352.

Upon request each firm, company and/or corporation shall receive one set of Contract plans and Specifications at no charge. Each additional requested plan set will be issued for a non-refundable fee of Fifty Dollars (\$25.00). Only certified, cashier, or company check will be accepted. NO CASH WILL BE ACCEPTED.
MAJOR ITEMS OF WORK:
The project involves the installation of the following major items of work:
Trenchless Rehabilitation of 6-inch Sewer Main (Cured-in-place pipe or fold-in-form PVC pipe liner); 2733 LF
Trenchless Rehabilitation of 8-inch Sewer Main (Cured-in-place pipe or fold-in-form PVC pipe liner); 2335 LF
Television inspection of 6-inch or 8-inch sewer main using PACP coding; 10,136 LF
New 48" Sewer Manhole (0-8' deep); 9 EACH
All bid proposals shall be accompanied by a bid proposal deposit in the form of a certified check, cashier's check or surety bond in the amount equal to five percent (5%) of the total amount of the bid proposal. Should the successful bidder fail to enter into such contract and furnish satisfactory performance bond within the time stated in the specification, the bid proposal deposit shall be forfeited to the City of Richland.
Bids shall be submitted on the form attached with the bid documents. All envelopes containing bids are to be clearly marked "2006 Sanitary Sewer Rehabilitation Project, Contract SB 06-023 PW, October 26, 2006 10:00 am" and are to be delivered to the City of Richland, Purchasing Division located at

2700 Duportail Street (off I-182 and Queensgate) or mailed to Purchasing Dept. MS-11, P. O. Box 190, Richland, WA 99352. Successful bidders will be required to post a 100% performance bond. No bidder may withdraw his bid after the hour set for the bid opening or before the award of the contract without the consent of the City Council unless said award is delayed for a period of more than 30 days. Informational copies of the plans and specifications are on file for inspection in the Civil and Utility Engineering office located at 840 Northgate Drive, Richland, WA. All questions regarding the project should be directed to City staff member, Sheldon Williamson, at (509) 942-7492. Only firm bids and those meeting all the specifications will be tabulated. The City of Richland reserves the right to reject any and all bids and to waive minor irregularities. Determinations of whether or not any irregularity is minor shall be the sole responsibility of the City of Richland.
The City of Richland, in accordance with Title V of the Civil Rights Act of 1964, 79 Stat. 252, 42 U.S.C. 2000d to 2000d-4 and Title 49, Code of Federal Regulations, Department of Transportation, Subtitle A, Office of the Secretary, Part 21, Nondiscrimination in Federally-assisted programs of the Department of Transportation issued pursuant to such Act, hereby notifies all bidders that it will affirmatively ensure that in any contract entered into pursuant to this advertisement, disadvantaged business enterprises as defined at 49 CFR Part 23 will be afforded full opportunity to submit bids in response to this invitation and will not be discriminated against on the grounds of race, color, national origin, or sex in consideration for an award.
Michael R. Mitchell
Contracts Officer
City of Richland
#6465 10/15

Comment Period and Public Hearing for Waste Treatment Plant 2-2 Permit Modification
Washington State's Department of Ecology invites you to comment on a permit modification for Hanford's Waste Treatment and Immobilization Plant. The comment period is October 9 through November 27, 2006.
The plant will change millions of gallons of highly radioactive waste, now stored in aging underground tanks, into glass. The draft permit incorporates the following changes into the Attachment 51 of the Dangerous Waste Portion of the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit.
• The melter configuration is changed from one high-level waste (HLW) melter and three low-activity waste (LAW) melters to two HLW and two LAW melters (2+2)
• The permit would include detailed designs for the HLW melters.
• The permit would include secondary containment calculations for the pretreatment facility.
A public comment period runs from October 9 through November 27, 2006. Ecology will consider all comments it receives during the comment period. Ecology will also issue a response to comments when it issues the final decision on the modification.
The permittee is the United States Department of Energy, P.O. Box 550, Richland, Washington 99352.

How can you review the permit?
During the public comment period, you can review the draft permit modification at the Hanford Public Information Repositories. You can make an appointment to review the information at Ecology2s Nuclear Waste Program office by calling 509-372-7920. You also can review the draft permit online at http://www.ecy.wa.gov/programs/nwp/
Please send written comments to:
Brenda Becker-Khaleel
Department of Ecology Nuclear Waste Program
3100 Port of Benton Blvd.
Richland, WA 99354
bbec461@ecy.wa.gov
Attend the public hearing
Ecology will hold a public hearing on the evening of Thursday, November 9 at the agency's Nuclear Waste Program office, 3100 Port of Benton Blvd., Richland, WA 99354.
At 7:00 p.m., Ecology will give presentations and be available to answer questions. Formal testimony will follow. You can submit official spoken and written comments.
Please contact Madeleine Brown at 509-372-7936 for more information.
Information repositories
Portland
Portland State University, Branford Price Millar Library, 1875 Park Ave SW, Attn: Don Frank
503-725-4132
Richland
U.S. Department of Energy Reading Room, Consolidated Information Center, Room 101-L2770 University, Dr. Attn: Janice Parthree, 509-372-7443
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206-543-4664
Spokane
Gonzaga University, Foley Center, E. 502 Boone, Attn: Linda Pierce
509-323-3834 #6447 10/08/06

IN THE SUPERIOR COURT OF THE STATE OF WASHINGTON
IN AND FOR THE COUNTY OF FRANKLIN
NO. 06-2-50361-1
LAURA GONZALEZ, Plaintiff,
v.
JACOBE HORTON and JANE DOE HORTON, husband and wife and the marital community comprised thereof; and ROBERT CONTRERAS and BETTY CONTRERAS, husband and wife and the marital community comprised thereof; Defendants.
AND TO: YOUR ATTORNEYS OF RECORD
A lawsuit has been started against you in the above entitled court by the plaintiff, LAURA GONZALEZ, by and through her attorney, DAVID L. PETERSEN, of ROACH & PETERSEN, LLP. Plaintiff's claim is stated in the written complaint, a copy of which is served upon you with this summons.
In order to defend against this lawsuit, you must respond to the complaint by stating your defense in writing, and serve a copy upon the person signing this summons within twenty (20) days after the service of this summons, or sixty (60) days if service is obtained outside of this jurisdiction, excluding the day of service, or a default judgment may be entered against you without notice. A default judgment is one where the plaintiff is entitled to what she asks for because you have not responded. If you serve a

notice of appearance on the undersigned person you are entitled to notice before a default judgment may be entered. Any response or notice of appearance which you serve on any party to this lawsuit must also be filed by you with the court within twenty (20) days after service of this summons, or sixty (60) days if service is obtained out of this jurisdiction, excluding the day of service.
If you wish to seek the advice of an attorney in this matter, you should do so promptly so that your written response, if any, may be served on time. This summons is issued pursuant to rule 4 of the Civil Rules for Superior Courts of the State of Washington.
Dated this 25 day of April, 2006.
ROACH & PETERSEN, LLP
David L Petersen, WSBA #27291
Attorney for Plaintiff
#6362 9/24, 10/1, 10/8, 10/15, 10/22, 10/29/06

INVITATION TO BID
MAIN CANAL EAST LOW GATE RE-COATING PROJECT for Quincy-Columbia Basin Irrigation District
The Quincy-Columbia Basin Irrigation District Post Office Box 188, Quincy, Washington 98848, is advertising for THE SANDBLASTING AND COATING OF Two (2) STEEL RADIAL GATES located at THE Bifurcation HEADWORKS, of the West and East Low Canals, ABOUT ONE-HALF (1/2) MILES NORTH OF the Adco Section WASHINGTON. Specifications and Bid Forms can be obtained from the Quincy District Office between the hours of 7:30 AM and 4:30 PM, Monday through Friday. Telephone No. (509)787-3591. All Bids must be in a sealed envelope marked "Bid on EAST LOW CANAL RADIAL GATE AND EAST LOW AND WEST CANALS DECK GEAR PAINTING PROJECT 2007" and returned by 1:30 p.m. November 2, 2006 at which time they will be opened and publicly read. Bid surety in the amount of five percent (5%) of the Bid must accompany the Bid in accordance with "Instructions to Bidders." The district reserves the right to reject any or all Bids and to waive any informality or to exercise any other right or action provided by statute.
QUINCY-COLUMBIA BASIN IRRIGATION DISTRICT BY: GARTH A. GUNTER, ASSISTANT MANAGER #6402, 10/1, 10/8/06

NOTICE OF HEARING
NOTICE IS HEREBY GIVEN: that the Greater Columbia Behavioral Health Board of Directors has before it a proposal for a supplemental appropriation to the 2005-2007 Biennium Budget.
NOTICE IS FURTHER GIVEN: that a public hearing will be conducted at the Greater Columbia Behavioral Health Board of Directors regular meeting on October 19, 2006 at 9:20 a.m. at the Benton Franklin Department of Human Services, 7207 W. Deschutes Avenue, Kennewick, WA, at which time any person may appear either for or against the proposed supplemental appropriation.
#6467 10/8,15

NOTICE OF PUBLIC HEARING
NOTICE IS HEREBY GIVEN that a Public Hearing will be held on Monday, October 23, 2006 at 9:05 a.m., Local Time for the Board of Benton County Commissioners to consider the dissolution of Drainage Improvement District No. 4 Sub A pursuant to RCW

36.96.030 through RCW 36.96.080. Testimony will be taken at the Hearing, to be held in the Commissioners' Meeting Room, Benton County Courthouse, 620 Market Street, Prosser, Wash. DATED this 3rd day of October, 2006.
/s/Steven W. Becken
Asst. Co. Eng/Asst. Public Works Director
#6458 10/6/9/13/15/06

regulation of private property. Initiative 933 would require government agencies to consider alternatives to regulating private property and to pay compensation when regulations are enforced that damage the use or value of the property. The measure would also allow retroactive claims for compensation from property regulations back to January 1, 1996.
A copy of Initiative 933 is available for review at the City Clerk's Office, City Hall Annex, on Monday, October 9, 2006.
Cynthia Johnson, City Clerk
#6464 10/8

PORT OF BENTON
NOTICE OF COMMISSION MEETING DATE CHANGE
PUBLIC NOTICE IS HEREBY GIVEN that the regularly scheduled Commission Meeting of the Port of Benton for the month of October has been moved from October 11, 2006, to October 25, 2006, at 8:30 a.m. The Commission Meeting will be held at the Port of Benton Conference Room, 3100 George Washington Way, Richland, Washington. Dated at Richland, Washington, this 4th day of October, 2006.
/s/Harold B. Lindberg
Commission Secretary
#6453 10/8/06

NOTICE OF PUBLIC HEARING
PLEASE TAKE NOTICE that Aissata Sidibe and Floy Durham have filed a rezoning petition requesting a rezoning from "O" (Office) to C-1 (Retail Business) for the following described land located at the northwest corner of W Agate Street and N. 20th Avenue:
Rezone Legal: Lots 9-11 Block 3, Sprouse Addition together with vacated alley.
General Location: 1704 and 1712 N 20th Ave.
THEREFORE, LET ALL CONCERNED TAKE NOTICE that a public hearing will be held by the Pasco Hearing Examiner in the City Council Chambers, Pasco City Hall, 525 North Third Avenue at the hour of 7:00 p.m., Thursday, October 19, 2006, so that all concerned may appear and present any objections or support for the proposed rezoning.
State law allows only one open record public hearing on this matter. This will be the only opportunity to provide input on this issue. For additional information, please contact the Pasco Planning Office at 545-3441.
David McDonald
City Planner, Pasco
Washington
#6452; 10/8, 10/15/06

NOTICE OF PUBLIC HEARING
Notice is hereby given that a public hearing will be held by the Richland City Council, as a part of its regular meeting, Tuesday, October 17, 2006 at 7:30 p.m., in the Council Chamber, Richland City Hall, 505 Swift Boulevard, Richland, Washington.
The purpose of the hearing is to receive comments from interested individuals regarding Washington State Initiative 937, an act relating to requirements for new energy resources. Initiative 937 would require large utilities to obtain fifteen percent of their electricity from new renewable resources such as solar and wind by 2020 and undertake cost-effective energy conservation. A copy of Initiative 937 is available for review at the City Clerk's Office, City Hall Annex, on Monday, October 9, 2006.
Cynthia Johnson, City Clerk
#6463 10/8

PORT OF PASCO
TRICITIES AIRPORT AIRPORT IMPROVEMENTS PROJECT TERMINAL APRON RECONSTRUCTION PROJECT
A.I.P. PROJECT NO. 3-53-0046-29
Sealed proposals will be received for the Tri-Cities Airport Project, Terminal Apron Reconstruction Project addressed to the Port of Pasco, Board of Commissioners, Tri-Cities Airport Office, 3601 N. 20th Street, Pasco, Washington, until 2:00 PM, November 2, 2006, and then will be publicly opened and read. Bids received after the time fixed for the opening cannot be considered.
A pre-bid meeting will be held at the Tri-Cities Airport Office at 10:00 AM, October 18, 2006 for those interested contractors and interested subcontractors and suppliers.
The work contemplated consists of reconstructing the apron area at the Tri-Cities Airport, Pasco, Washington, and includes removal of asphalt concrete pavement, excavation and subgrade preparation, removal of existing storm drain collection structures and piping, constructing storm drain collection structures and piping, replacing terminal apron lighting, crushed aggregate base, cement treated base, Portland cement concrete in pavement, hot mix asphalt, alleys constructing an aircraft named



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A copy of Initiative 933 is available for review at the City Clerk's Office, City Hall Annex, on Monday, October 9, 2006.
Cynthia Johnson, City Clerk
#6464 10/8

To Place Your Legal Call 582-1588

**If you thought you missed your chance to tell us what you think, think again.**

**Hanford Waste Treatment Plant Permit Modification comment period extended until Friday, January 5.**

**The main change is to the melter configuration, to add one high-level waste melter and remove one low-activity waste melter to have two of each.**

**How do you make a comment?**

*Your comments can make a difference.*

**Please send all comments in writing to:**

Brenda Becker-Khaleel  
Washington State Dept. of Ecology  
3100 Port of Benton Blvd.  
Richland, WA 99354  
fax: 509-372-7971  
Bbec4810@ecy.wa.gov

Call the Hanford cleanup toll free line  
1800-321-2002

To learn more:



Section

# B Mid-Columbia

FRIDAY, NOVEMBER 10, 2006

[tricityherald.com](http://tricityherald.com)

## Briefs

### State vit plant hearing draws 1 comment

Only one person showed up Thursday to comment at a state-sponsored hearing on changes to Hanford's vitrification plant that have been proposed by the Department of Energy.

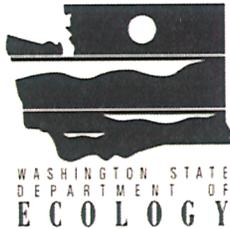
DOE and contractor Bechtel National have asked for a permit modification for the \$1.2 billion vitrification plant being built to treat Hanford waste. Among changes requested was adding one high level waste melter and decreasing one low activity waste melter to have two of each.

But with no assurances yet that a supplemental treatment technology for low activity waste, bulk vitrification, will work as well as the main vitrification plant, the state should not allow DOE to reduce low-activity melters, said Allyn Boldt, a former Hanford worker and the only person to comment Thursday.

The public comment period has been extended through Jan. 5.

— By the Herald staff

## **Attachment 3 - Public Notice**



## Public Comment Period

Waste Treatment & Immobilization Plant:  
2+2 Melter Configuration Permit Modification

October 9 through November 27, 2006

The Washington State Department of Ecology invites you to comment on a permit modification for Hanford's Waste Treatment and Immobilization Plant (WTP). The plant will immobilize millions of gallons of highly radioactive waste in glass. The permit modification would change Attachment 51 of the Dangerous Waste portion of the Hanford Facility Resource Conservation and Recovery Act (RCRA) Permit as follows:

- The melter configuration would change from one high-level waste (HLW) melter and three low-activity waste (LAW) melters to two HLW and two LAW melters.
- The permit would include detailed designs for the HLW melters.
- The permit would include secondary containment calculations for the pretreatment facility.

### **Background**

For more than 40 years, the federal government made plutonium at Hanford for nuclear weapons. This process generated more than 53 million gallons of radioactive and dangerous waste. This waste is now stored in 177 aging underground tanks.

The Tri-Party Agreement governs cleanup of this waste. A key part of that cleanup is to build the WTP to immobilize the tank waste in glass.

First the wastes are pretreated to separate the waste into HLW and LAW streams. Each waste stream is combined with glass-forming materials and pumped into a melter. The melters heat the glass formers and waste to very high temperatures until they become molten. Then the mixture is poured into containers. As the mixture cools, the waste is incorporated into the crystalline structure of the glass. The glass immobilizes the radioactive and dangerous waste. This is called vitrification.

The containers with immobilized LAW will be disposed of at Hanford. The containers with immobilized HLW will be stored at Hanford's canister storage building until permanent disposal is possible in the nation's geologic repository.

### **What does this permit modification change?**

U.S. Department of Energy (USDOE) first applied for this permit modification in 2004 and held a public comment period from March 31 to June 1. As a result of those public comments, Ecology determined the change was significant enough to reclassify the modification to a "Class 3." In a Class 3 modification, Ecology issues a draft permit for public review and comment. The changes in Ecology's draft permit are below:

#### **Melter configuration**

The current permit authorizes construction of three LAW melters and one HLW melter. The draft permit changes the melter configuration to two LAW melters and two HLW melters, and is referred to as the 2+2 permit modification.

The LAW building originally was to have three melters. Each melter was expected to make 10 metric tons of glass per day for a total of 30 metric tons. Recent pilot testing for the LAW melters proved that two melters will be able to make at least 30 metric tons of glass per day. At the same time USDOE wants to increase the output of the HLW building and is adding a second HLW melter.

#### **Melter design**

The current permit has a general description of the HLW melter design. The draft permit adds detailed design drawings and engineering specifications for the HLW melters.

#### **Pretreatment Facility secondary containment**

The draft permit adds details for secondary containment for the radioactive liquid waste system in the Pretreatment Facility. The details are for flooding volume scenarios and calculations, sump data, and to address findings from the Independent, Qualified, Registered Professional Engineer review.

### **How can you review the permit?**

You can review the draft permit modification at the Hanford Public Information Repositories. To make an appointment to review the information at Ecology's Nuclear Waste Program Richland office, call 509-372-7920. Review the draft permit online at <http://www.ecy.wa.gov/programs/nwp/commentperiods.htm>.

#### **Portland**

Portland State University  
Branford Price Millar Library  
1875 SW Park Ave.  
Attn: Don Frank 503-725-4132

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U.S. Department of Energy Reading Room  
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2770 University Dr.  
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Attn: Eleanor Chase 206-543-4664

#### **Spokane**

Gonzaga University  
Foley Center  
502 E. Boone Ave.  
Attn: Linda Pierce 509-323-3834



Construction on the Low Activity Waste facility at the Waste Treatment Plant.

**Attend the public hearing**

Ecology will hold a public hearing the evening of Thursday, November 9, 2006, at the Nuclear Waste Program office, 3100 Port of Benton Blvd, Richland, WA 99354.

At 7:00 p.m, Ecology will give a presentation and be available to answer questions. The formal public hearing will follow. During the hearing you can submit official spoken or written comments.

Please contact Madeleine Brown, mabr461@ecy.wa.gov or 509-372-7936, for more information on the hearing.

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If you need this publication in an alternate format, please call the Nuclear Waste Program at 509-372-7950. Persons with hearing loss can call 711 for Washington Relay Service. Persons with a speech disability can call 877-833-6341.

**Public Comment Period**

October 9 through November 27, 2006

Waste Treatment & Immobilization Plant: 2+2 Melter Configuration Permit Modification

Tell Us What You Think!

You are invited to participate in the decision to modify the Waste Treatment and Immobilization Plant permit. Public comments are critical to Ecology’s decision-making process. Look inside to learn more about the proposed changes.





## Public Comment Period

Waste Treatment & Immobilization Plant:  
2+2 Melter Configuration Permit Modification

October 9 through January 5, 2006

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## Public Comment Period

October 9 through January 5, 2006

Waste Treatment & Immobilization Plant: 2+2 Melter Configuration Permit Modification

---

Tell Us What You Think!

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**Attachment 4 - Ecology letter documenting permit decision**



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950

October 29, 2007

Ms. Shirley J. Olinger, Manager  
Office of River Protection  
United States Department of Energy  
P.O. Box 450, MSIN: H6-60  
Richland, Washington 99352

Mr. David A. Brockman, Manager  
Richland Operations Office  
United States Department of Energy  
P.O. Box 550, MSIN: A7-50  
Richland, Washington 99352-0550

Mr. William S. Wilkins, Project Director  
Bechtel National Inc.  
2435 Stevens Center Place, MSIN: H4-02  
Richland, Washington 99352

Dear Ms. Olinger, Mr. Brockman, and Mr. Wilkins:

Re: Final Decision on the 2+2 Modification of the Waste Treatment and Immobilization Plant (WTP) Dangerous Waste Permit (DWP)

This letter's purpose is to notify you of the Department of Ecology's final permit decision to modify the WTP DWP in Part III, Operating Unit 10, of the Hanford Facility's *Dangerous Waste Portion of the Resource Conservation and Recovery Act Permit for the Treatment, Storage, and Disposal of Dangerous Waste* (WA7890008967).

This modification incorporated the following changes into the WTP Permit:

- Deleted one melter from the Low Activity Waste (LAW) Facility design, but added Permit Condition III.10.I.1.a.xxiii., this requires the Permittees to retain the ability to install the third melter if necessary.
- Added one melter to the High Level Waste (HLW) Facility design.
- Deleted the technetium ion exchange process system from the Pretreatment Facility (PTF) design.
- Added Permit Condition III.10.E.2.e. This condition requires the Permittees to high level vitrify any high level fraction of mixed waste (LAW feed, supplemental treatment waste feed, and/or secondary waste streams) this exhibits the characteristic of corrosivity (D002) and/or toxicity for metals (D004 – D011).
- Added flooding volume calculations and sump data submitted in PTF design package PTF-065.
- Added detailed HLW melter design information submitted in permit design packages HLW-018 and HLW-019 and added instruments to Permit Table III.10.J.C.
- Added Permit Condition III.10.C.15.a.i. This condition requires submittal of design information for specific Mechanical Handling Systems.

Ms. Olinger, Mr. Brockman, Mr. Wilkins

October 29, 2007

Page 2

- Removed the Radioactive Waste Handling System from the Critical System List in Appendix 2.0.
- Added Permit Condition III.10.E.2.d. This condition limits design, fabrication, and installation of WTP tanks containing pulse jet mixers.
- Added Permit Condition III.10.C.2.m. This condition requires the United States Department of Energy to ensure all waste streams generated at the WTP will not contribute to an exceedence of environmental standards.
- Denied the Part A Permit Application, Revision 2.
- Established an agreement between Ecology and the Permittees to eliminate the use of phantom in all Permit documents within one year of the effective date of this Permit.
- Incorporated several Class 1 and <sup>1</sup>1 modifications to existing portions of the permit.
- Made several editorial corrections and format changes.

During the public comment period (October 9, 2006, through January 5, 2007), comments were received from one Tribal Government, two governmental organizations, and three public citizens.

Comments are addressed in the enclosed Responsiveness Summary (Ecology Publication # 07-05-006) as required by Washington Administrative Code (WAC) 173-303-840(9). The Responsiveness Summary and the WTP DWP are also available on the Ecology web site: [www.ecy.wa.gov/biblio/nwp.html](http://www.ecy.wa.gov/biblio/nwp.html). Additional copies of the permit will be provided on CD-ROM, if requested.

The final permit modification package consists of the Responsiveness Summary, Fact Sheet, and Part III, Operating Unit 10, this includes Permit Conditions, Chapters, and Appendices included in Volumes 1-16, for the WTP.

Due to the number of permit modifications since the WTP DWP was issued in September 2002, we are providing a complete paper copy of the modified permit. If you administer a paper copy of this permit, replace the Permit in its entirety with the September 2007 Modification, accompanying this letter. Please recycle any previous copies of the permit.

**In accordance with WAC 173-303-840(8)(b)(i), this permit is effective December 7, 2007.**

You have a right to appeal this permit. To appeal you must:

- File your appeal with the Pollution Control Hearings Board within 30 days of the “date of receipt” of this document. Filing means actual receipt by the Board during regular office hours.
- Serve your appeal on the Department of Ecology within 30 days of the “date of receipt” of this document. Service may be accomplished by any of the procedures identified in WAC 371-08-305(10). “Date of receipt” is defined at Revised Code of Washington 43.21B.001(2).

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Be sure to do the following:

- Include a copy of (1) the permit you are appealing and (2) the application for the permit.
- Serve and file your appeal in paper form; electronic copies are not accepted.

**1. To file your appeal with the Pollution Control Hearings Board**

Mail appeal to:

The Pollution Control Hearings Board OR  
PO Box 40903  
Olympia, Washington 98504-0903

Deliver your appeal in person to:

The Pollution Control Hearings Board  
4224 – 6th Ave SE Rowe Six, Bldg 2  
Lacey, Washington 98503

**2. To serve your appeal on the Department of Ecology**

Mail appeal to:

The Department of Ecology  
Appeals Coordinator OR  
P.O. Box 47608  
Olympia, Washington 98504-7608

Deliver your appeal in person to:

The Department of Ecology  
Appeals Coordinator  
300 Desmond Dr SE  
Lacey, Washington 98503

**3. Send a copy of your appeal to:**

Brenda Becker-Khaleel  
Department of Ecology  
Nuclear Waste Program  
3100 Port of Benton Blvd  
Richland, Washington 99354

If there are any questions regarding this letter, please contact Brenda Becker-Khaleel at 509-372-7882.

Sincerely,



Jane A. Hedges  
Program Manager  
Nuclear Waste Program

aah:jc  
Enclosure

cc: See next page

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cc electronic w/enc:

Nick Ceto, EPA  
John Eschenberg, USDOE  
Peter Garcia, USDOE  
Lori Huffman, USDOE  
Tony McKarns, USDOE  
Gae Neath, USDOE  
Don Sommer, USDOE  
William Taylor, USDOE  
Brad Erlandson, BNI  
Peggy Fisher, BNI  
Stan Hill, BNI  
Dennis Klein, BNI  
Sandi Murdock, BNI  
Suzette Thompson, FHI  
Phil Peistrup, WGI

cc w/hard copy:

Dave Bartus, EPA  
Administrative Record  
Environmental Portal  
Operating Record  
USDOE-ORP Correspondence Control  
USDOE Reading Room

cc w/CD:

Gabriel Bohnee, NPT  
Stuart Harris, CTUIR  
Russell Jim, YN  
Susan Leckband, HAB  
Ken Niles, ODOE

cc w/o enc:

Roby Enge, PNNL  
Richard Englemann, FH  
Moussa Jaraysi, CH2MHILL  
Patrick Pettiette, WHC