This document was too large to scan as a single document. It has been divided into smaller sections.

Section 1 of 14

Document Information			
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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99352 • (509) 372-7950

October 4, 2006

Mr. Roy J. Schepens, Manager
Office of River Protection
United States Department of Energy
P.O. Box 450, MSIN: H6-60
Richland, Washington 99352-0550

Mr. Keith Klein, 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

Re: Draft Waste Treatment and Immobilization Plant (WTP) Dangerous Waste Permit

Dear Messrs. Schepens, Klein, and Wilkins:

This letter transmits the proposed draft permit modification for incorporation of the WTP into Part III, Chapter 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). Additional copies of the draft permit modification will be provided on CD-ROM, if requested.

Public review of the draft permit modification is required for forty-five days in accordance with Washington Administrative Code (WAC) 173-303-840(3). The public review begins October 9, 2006, and ends November 27, 2006. A public meeting is scheduled for 7:00 p.m. on November 9, 2006, to be held at the Washington State Department of Ecology (Ecology) Office in Richland, Washington. Ecology has distributed copies of the draft permit modification to the Hanford Public Information Repositories in Richland, Spokane, and Seattle, Washington, and Portland, Oregon for public review.

This draft modification to the WTP Permit consists of the following changes to the Permit:

- Deletion of one Low Activity Waste (LAW) melter from LAW Building design.
- Addition of a High Level Waste (HLW) melter to HLW Building design.
- Updates to Chapters 4 and 6 in Appendix 51 of the permit to reflect current design.

- Addition of detailed HLW melter design information submitted in Permit Design Packages HLW-018 and HLW-019.
- Addition of Flooding Volume calculations and Sump Data submitted in Pretreatment Facility design package PTF-065.
- Incorporation of several Class 1 and Class [1]1 permit modifications.
- Addition of several Permit Conditions.

In accordance with WAC 173-303-830, only those conditions subject to modification are reopened. All other aspects of the existing Permit remain in effect for the duration of the modification.

If there are any questions, contact Brenda Becker-Khaleel at 509-372-7882.

Sincerely,

Jane A. Hedges
Program Manager
Nuclear Waste Program

AAH:jc
Enclosure

cc w/enc: Nick Ceto, EPA
Linda Meyer, EPA
Stuart Harris, CTUIR
Gabriel Bohnee, NPT
Russell Jim, YN
Todd Martin, HAB
Ken Niles, ODOE

Administrative Record: Waste Treatment Plant
BNI Correspondence Control
Environmental Portal
OR General File
USDOE Correspondence Control
USDOE-ORP Correspondence Control

cc/electronic: Dave Bartus, EPA
Robert Barr, USDOE
John Eschenberg, USDOE
Pete Garcia, USDOE
Lori Huffman, USDOE
Tony McKarns, USDOE
Gae Neath, USDOE
Woody Russell, USDOE

Don Sommer, USDOE
Julie Atwood, BNI
Brad Erlandson, BNI
Stan Hill, BNI
Dennis Klein, BNI
Sandi Murdock, BNI
Ermelinda Sauceda, BNI
Phil Peistrup, WGI

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.

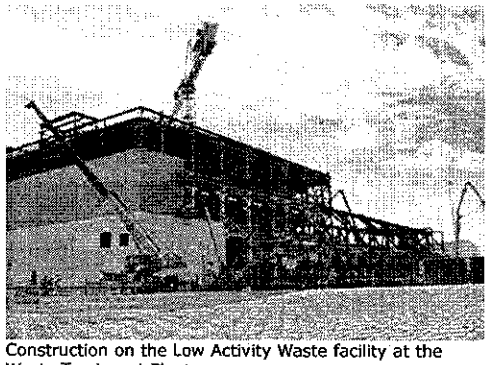
The containers with immobilized LAW will be disposed of at Hanford. The containers with immobilized HLW will be stored at Hanford's canister storage building until permanent disposal is possible in the nation's geologic repository.

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.


Construction on the Low Activity Waste facility at the Waste Treatment Plant.

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

Seattle
University of Washington
Suzzallo Library
Government Publications Division
Attn: Eleanor Chase 206-543-4664

Richland
U.S. Department of Energy Reading Room
Consolidated Information Center, Room 101-L
2770 University Dr.
Attn: Janice Parthree 509-372-7443

Spokane
Gonzaga University
Foley Center
502 E. Boone Ave.
Attn: Linda Pierce 509-323-3834

Publication Number 06-05-016

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.

How do you make a comment?

Please send all comments in writing to:

Brenda Becker-Khaleel
3100 Port of Benton Blvd.
Richland, WA 99354
509-372-7971 fax
Bbec461@ecy.wa.gov

The 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.

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

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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.

WASHINGTON STATE DEPARTMENT OF ECOLOGY
Nuclear Waste Program
3100 Port of Benton Blvd.
Richland, WA 99354

WASHINGTON STATE
DEPARTMENT OF
ECOLOGY

Statement of Basis

For the Modification of Waste Treatment and Immobilization Plant-Specific Conditions in the Dangerous Waste Portion of the Hanford Resource Conservation and Recovery Act Permit

October 2006

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STATEMENT OF BASIS FOR MODIFICATION OF
THE DANGEROUS WASTE PORTION OF THE
RESOURCE CONSERVATION AND RECOVERY ACT PERMIT
FOR THE TREATMENT, STORAGE, AND DISPOSAL
OF DANGEROUS WASTE, PART III, OPERATING UNIT 10 (WA7890008967),
WASTE TREATMENT AND IMMOBILIZATION PLANT

Permittees

United States Department of Energy
(Owner/Operator)
Office of River Protection/Richland Operations Office
P.O. Box 550
Richland, Washington 99352

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

The Washington State Department of Ecology (Ecology) has developed this Statement of Basis in accordance with the requirements of Washington Administrative Code (WAC) 173-303-840(2)(f)(iv). Its purpose is to present information on Ecology's tentative decision to modify Part III, Operating Unit 10, Waste Treatment and Immobilization Plant (WTP) of the Hanford Facility's Dangerous Waste Portion of the Resource Conservation and Recovery Act (RCRA) Permit for the Treatment, Storage, and Disposal (TSD) of Dangerous Waste, hereafter called "the Permit". This modification includes supporting technical information and engineering drawings for construction on the regulated portions of the WTP Pretreatment Building, Low-Activity Waste (LAW) Building, High-Level Waste (HLW) Building, and Analytical Laboratory. In addition, this modification incorporates format changes to the Permit Appendices and changes to supporting information. Pursuant to WAC 173-303-830(3), only the conditions that are subject to this modification are reopened for comment.

Ecology has elected to prepare a Statement of Basis pursuant to WAC 173-303-840(2)(f)(iv) rather than a Fact Sheet. A Statement of Basis was prepared for previous major WTP Permit modifications. This process is being followed for permit modifications initiated by Ecology to incorporate similar design package information and other changes to the WTP Permit conditions. The September 25, 2002, Fact Sheet is available from Ecology upon request (Ecology Publication Number 01-05-006).

This Statement of Basis is divided into four sections, which include:

1.0 Hanford Facility Permit Background

2.0 The WTP Permitting Process

3.0 Procedures for Reaching a Final Decision on the Draft Permit

4.0 Proposed Modifications to the Hanford Facility Permit

1.0 Hanford Facility Permit Background

Ecology initially issued the Permit for the Hanford Facility in 1994. The Permit provides standard and general facility conditions, as well as unit-specific conditions for the operation, closure, and post-closure care of mixed and dangerous waste TSD units at Hanford.

The Permit is normally modified annually to incorporate newly permitted units, reflect Class 1/2/3 Modifications, and include minor changes in grammar, consistency, and presentation. The Washington State Dangerous Waste Regulations in WAC 173-303-830 describe the types of changes or modifications that may be made to a dangerous waste permit issued by Ecology.

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

Conditions of the Permit are presented in six parts:

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

The WTP TSD Unit was added to the Unit-Specific Conditions for Final Status Operations (Part III) portion of the Permit on September 25, 2002. The Permit modification was effective on October 25, 2002. The WTP Unit is currently being constructed under final status standards.

2.0 The WTP Permitting Process

The permitting of the WTP Unit is using a phased (or stepped) approach. The first phase was completed on September 25, 2002, with issuance of a final Permit allowing construction of the WTP LAW, Pretreatment (PT), and HLW Buildings to commence, and a compliance schedule to provide additional detailed information to Ecology. The compliance schedule addresses submittal of information necessary for construction of the rest of the WTP Unit, and eventual operation.

The second phase of permitting is implementation of the compliance schedule, which requires design and other information be submitted for Ecology approval before regulated portions of the WTP Unit are constructed. The third phase of permitting is implementation of the last portion of the compliance schedule, which requires updating portions of the Dangerous Waste Permit Application prior to facility start of operations. These portions of the Permit are administrative in

nature, and cannot be completed before the design is nearly complete (e.g., Contingency Plan, Closure Plan, and Training Plan). At the completion of the three phases, the WTP Unit will comply with all the applicable requirements of WAC 173-303, and after receiving written permission from Ecology, can begin treatment and/or storage of dangerous and/or mixed waste. For more details on the WTP permitting process, see the September 25, 2002, Fact Sheet (Ecology Publication Number 01-05-006).

The design submittals (second phase described above) have been structured to allow the Permittees to provide design information in roughly the same order as the buildings are constructed. Therefore, the packages start at the lowest level of the building (i.e., below-grade levels) and are submitted for regulated areas of each level of the building before construction begins. This process has been adjusted for some design packages. If the process system in the design package is located on more than one level in a WTP Building, the design package can address components on more than one building level. This will prevent the confusion caused by one process system description being segmented into multiple design packages.

The Permit breaks out design packages into three general groups by the type of regulated equipment: (1) secondary containment; (2) primary containment (e.g., tanks, miscellaneous units [i.e., evaporators and melters], containment buildings); and (3) other associated, regulated equipment (e.g., ancillary equipment, equipment associated with miscellaneous units). Using tank systems as an example, secondary containment packages include details of the design of secondary containment that must be in place in regulated areas when the floors and walls are built for that level of the building (e.g., floor slope, sump location). The installation of tanks and other large equipment usually follows construction of the floors and walls. Therefore, a tank package on that level will be included in the Permit before installation (e.g., structural details for those tanks or miscellaneous units showing nozzle locations, unit volumes, and tank shell thickness). The last equipment usually installed on a level for a tank system is the ancillary equipment (e.g., piping, pumps, process instrumentation, and electrical equipment). Therefore, the ancillary equipment package that provides details for equipment on that level will be included in the Permit before installation (e.g., materials of construction, pipe support details, pump types and their operating limits).

With each WTP Building consisting of multiple levels, the total number of design packages is large. The Permittees estimate about 150 packages will have to be incorporated into the Permit. This could potentially trigger 150 public comment periods. Ecology intends to group packages, where possible, to reduce the number of public comment periods.

The secondary containment, primary containment, and other associated, regulated equipment packages for different levels require repetitive information submittals in each package. Again, using tank systems as an example, the method of installation of secondary containment liners on each level should be the same and most tanks will use the same construction specifications. The Permit allows the Permittees to reference the previously submitted design information. Therefore, some design packages may consist mostly of references to information already provided.

Ecology is authorized, pursuant to WAC 173-303-830(4)(e), to grant temporary authorizations for the Permittees to start construction on a design package after Ecology approval, but before the draft permit modification process is complete. A Permittee is allowed to request a Temporary

Authorization (TA) to implement a modification prior to public notice and comment, pursuant to WAC 173-303-830(4)(e)(ii)(A). To issue a TA, Ecology must find it meets the criteria as described in WAC 173-303-830(4)(e)(ii)(A) and -830(4)(e)(iii). The term of a TA is limited to 180 days with the potential for Ecology approval of two terms, with a maximum combined duration of 360 days, provided that the Permittee has requested a Class 2 or 3 modification for the activity covered in the TA (WAC 173-303-830(4)(e)(iv)). The purpose of a TA is to allow the timely implementation of a permit modification. Construction that takes place under a TA is at the Permittees' risk because public comment may require the Permittees to modify something they have already built. The submittal schedule developed by the Permittees will allow most design packages to undergo public comment and be incorporated into the Permit prior to construction of those areas.

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

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

On March 29, 2004, the Permittees submitted a Class 2 modification request to Ecology in accordance with WAC 173-303-830(4)(b). Pursuant to this regulation, the modification request was distributed for a 60-day public review from March 31 to June 1, 2004. One Tribal Nation, one individual and three groups commented. The comments received were similar, and contained significant public concerns about the proposed modification.

On June 29, 2004, Ecology notified the Permittees that, as a result of significant public comments, the modification will follow the Class 3 modification process contained in WAC 173-303-830(4)(c) pursuant to WAC 173-303-830(4)(b)(vi)(A)(III)(AA). In addition, Ecology also asked for additional information[1] from the Permittees to justify two of the proposed Permit modifications. Additional information was submitted to Ecology on August 4, 2004. After evaluating the information submitted by the Permittees, as required by WAC 173-303-840(2) Ecology has decided to issue a draft Permit indicating a tentative decision by Ecology to modify the WTP Permit to eliminate one LAW melter from the LAW Building design, add one HLW melter to the HLW Building design, and keep the Technetium Ion Exchange Process System (TXP) and the Technetium Eluant Recovery Process System (TEP) in the PT Building design. In addition, this draft Permit modification 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 PT Building design package PTF-065, several Class 1 and Class [1]1 Permit modifications, and several new Permit conditions.

As required by WAC 173-303-840(3)(d) draft permit modifications to Part III, Operating Unit 10, WTP, of the Permit will have a 45-day public comment period. It begins on October 9, 2006, and ends on November 27, 2006. All comments received during the public comment period will be considered and responded to before final decisions are made on the proposed modifications.

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[1] Letter 04-ED-068, dated August 4, 2004, Roy J. Schepens to Michael A. Wilson titled: "Re: Additional information Requested for the Waste Treatment and Immobilization Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification Facility"

Regulatory requirements for public notice and involvement (for this Permit modification) are described in WAC 173-303-840(3) and (4). Comments must be post-marked or received by e-mail no later than close of business November 27, 2006. Comments hand-delivered by November 27, 2006, to the address below will be accepted. Direct all written comments to:

Ms. Brenda Becker-Khaleel
Department of Ecology
3100 Port of Benton Blvd.
Richland, Washington 99354
E-mail address: Bbec461@ecy.wa.gov

A public hearing will be held at the Department of Ecology, Richland Office on the evening of November 9, 2006. A presentation and short question and answer period will begin at 7:00 pm and formal comments will follow.

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

All commenters and the Permittees will receive a copy of the Responsiveness Summary and a notification of the final permit decision. Ecology's final permit decision may be appealed within 30 days after notice of the final permit decision has been provided.

Copies of the Permit for the Hanford Facility, including the proposed draft permit modifications are available for review at the Hanford Public Information Repositories listed below. [For additional information, call the Hanford Cleanup Hotline toll-free at (800) 321-2008].

HANFORD PUBLIC INFORMATION REPOSITORIES

Portland
Portland State University
Branford Price Millar Library
1875 SW Park Ave
Portland, Oregon 97201-3220
(503) 725-3690
Attn: Michael Bowman/Jocelyn Kramer
E-mail: bowman@lib.pdx.edu

Richland
Public Reading Room
2770 University Drive
Consolidated Information Center, Rm. 101L
Richland, Washington 99352
(509) 372-7443
Attn: Terri Traub
E-mail: readingroom@pnl.gov

Spokane
Gonzaga University
Foley Center
East 502 Boone
Spokane, Washington 99258-0001
(509) 323-3839
Attn: Connie Scarppelli
E-mail: carter@its.gonzaga.edu

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Government Publication Division
Seattle, Washington 98195
(206) 543-4664
Attn: Eleanor Chase
E-mail: echase@u.washington.edu
Public Service: (206) 543-4664

This Statement of Basis for the proposed draft Permit modification is also available on the World Wide Web at http://www.ecy.wa.gov/programs/nwp/.

If special accommodations are needed for public comment, please contact Madeleine Brown, Department of Ecology, Nuclear Waste Program, at (509) 372-7936 (voice), or (360) 407-6006 (TDD).

4.0 Proposed Permit Modification to Part III, Operating Unit 10, WTP of the Permit

This draft modification to the WTP Permit consists of the following changes:

- Deletion of one LAW melter and addition of one HLW melter.
- Updates to Chapters 4 and 6 in Appendix 51 of the Permit to reflect current design.
- Addition of flooding volume calculations and sump data submitted in PT Building design package PTF-065.
- Addition of detailed HLW melter design information submitted in Permit Design Packages HLW-018 and HLW-019.
- Incorporation of several Class 1 and Class [1]1 Permit modifications.
- Addition of several new Permit Conditions.

In addition to the changes discussed above, the March 29, 2004, Class 2 modification request also, included a revised Part A Permit application, and a proposal to eliminate the Technetium Ion Exchange (TXP) and Technetium Eluant Recovery Process Systems (TEP) from the PT Building.

Ecology is denying these requested changes and did not incorporate these changes into this draft Permit modification.

The draft Permit modification shows all significant changes to the Permit. To communicate changes, the text to be deleted will be struck-out with a single line and the new text will be double-underlined. Only the text being changed in the current modification will be highlighted by underlines and strikeouts. At issuance of the next permit modification, clean page changes will be issued to the Permittees and Administrative Record for the previous modification.

The following sections put the modification in historical context, describe each of the major changes to the WTP Permit, and present the justifications for the modifications.

4.1 Historical Context

The current effort by the U. S. Department of Energy (USDOE) to vitrify the Hanford tank waste began in 1995, when USDOE decided to pursue a "privatization" approach for waste vitrification. The overall approach was to select two private companies to each build competing pilot-scale vitrification facilities. USDOE would then select the "best" technology after evaluating the pilot-scale results. The winning contractor would construct a full-scale vitrification plant to vitrify at least 25 percent of the waste by radioactivity and 10 percent of the waste by mass by 2018. The winning contractor would be responsible for financing, constructing, and operating the vitrification plant. USDOE would pay the contractor based on the number of glass canisters produced, within a certain chemical constituent envelope.

It is critical to understand that the original configuration of the vitrification plant was never intended to process all of the tank waste. By 2018, a second LAW vitrification facility needs to be constructed and a second melter added to the HLW Building to provide enough capacity to finish vitrifying all the tank waste by 2048. This is considerably later than the Hanford Facility Agreement and Consent Order (also known as the Tri-Party Agreement or TPA) milestone of 2028.

It became apparent early in the design process for the pilot-scale plants that the amount of radioactive shielding required to construct a pilot-scale plant was very large. The shielding requirements were expected to drive up the cost of the pilot-scale plant so much that it would not be much more expensive to build one full-scale plant rather than building two pilot-scale plants. USDOE decided to abandon the dual pilot-plant competition approach and subsequently selected British Nuclear Fuels Limited (BNFL) to build the full-scale vitrification plant following the privatization concept. As the design progressed, the cost of the plant, using the privatization approach, became too high for a private company to finance. In 1999, the USDOE cancelled the BNFL contract and put the design and construction of the vitrification plant out for bid as a traditional government-owned facility.

In 2000, the USDOE-Office of River Protection (ORP) awarded the design/construction contract to Bechtel National Inc. (BNI). The contract required BNI to meet the TPA milestones for first glass to be produced in 2007 and 25 percent of the waste by radioactivity and 10 percent of the waste by mass to be treated by 2018. Before BNI could receive complete payment for constructing the vitrification plant, BNI must meet certain glass production requirements specified in the contract before USDOE acceptance of the plant. The vitrification plant, now named the WTP, was to be

designed following the basic approach started by BNFL. At the time the BNI contract was awarded, the design of the WTP was less than 10 percent complete.

The original contract required that the LAW Building be designed to produce an average of 30 metric tons of glass per day using three melters with a nominal production rate of 10 metric tons per melter per day. The original HLW Building design was for an average of 1.5 metric tons of glass per day for the one melter with an open bay to add a second HLW melter later. When the 2000 contract was established, it was believed that a 30 metric ton per day LAW Building and 1.5 metric ton per day HLW Building could complete vitrification of 25 percent of the waste by radioactivity and 10 percent by mass by the TPA milestone date of 2018. The BNI contract does not extend to operation of the WTP after USDOE acceptance. The USDOE will solicit a separate contract for operation of the WTP.

During strategic planning for preparation of the Hanford Performance Management Plan (DOE/RL-2002-47, Rev D), USDOE decided to accelerate the tank waste treatment and vitrification. During this planning, it was determined that the one HLW melter (1.5 metric tons per day) would not provide enough capacity to meet the 10 percent and 25 percent requirements of 2018 in the TPA. A total six metric ton-per-day HLW capacity would be needed to meet 2018 requirements. It was also determined that a total capacity of 90 metric tons per day of LAW treatment would be needed to meet 2028. As a result of these revelations, the previous concept of deciding the details of additional tank waste treatment facilities in 2014 was abandoned. Instead, a second HLW melter was added to the design, both HLW melter capacities were increased to 3 metric tons each, and the additional LAW treatment brought on line sooner, around 2011. The type of treatment would be selected from supplemental treatment options or a second LAW vitrification facility. Regardless of the type of additional LAW treatment, the capacity would need to approach 60 metric tons per day. Because more waste would be treated sooner, this acceleration of the mission was projected to meet the TPA milestone date for completion of tank vitrification by 2028. USDOE contends that implementing a supplemental treatment will be less expensive than building a second LAW vitrification facility. Although many of the details are yet to be resolved, and the supplemental technologies have not been demonstrated to work on Hanford tank waste, USDOE believes that this acceleration will be successful and will result in considerable cost savings to the government. The selection of a supplemental treatment technology or a second LAW vitrification facility is part of TPA milestones M-62-08 and M-62-11.

The vast majority of the waste in the Hanford waste tanks fall under the classification of 'HLW' as defined in the Nuclear Waste Policy Act. All HLW must be disposed of at the national high-level waste repository (designated to be Yucca Mountain, Nevada). Primarily because of the cost of disposal and the limit on the amount of HLW waste the national repository will be able to accept, USDOE has developed a process to pretreat the waste to separate out key radionuclides, vitrify the waste, and reclassify a portion of the waste as "Immobilized Low-Activity Waste" (ILAW). This dramatically reduces the amount of HLW going to the national repository. ILAW that has been processed for permanent onsite disposal must meet the waste acceptance criteria for the Integrated Disposal Facility (IDF), and specific requirements spelled out in the United States Nuclear Regulatory Commission (USNRC) letter to USDOE in 1997 (the process which allows reclassification of waste as ILAW) (Paperiello, USNRC to Kinzer, USDOE, June 9, 1997).

In 2005, USDOE issued the Estimate at Completion showing significant increases in the estimated cost of designing and constructing the WTP, as well as significant delays in the facility startup and commissioning. Again, in 2006 USDOE issued another Estimate at Completion showing additional cost increases and schedule delays for the WTP. USDOE has indicated that current TPA milestones are unrecoverable. However, those milestones have not yet been renegotiated.

4.2 Removal of a LAW Melter and Addition of a HLW Melter

When first proposed by the Permittees, this change was greeted with a great deal of skepticism by Ecology. After several months of discussions with the Permittees about the potential impacts to the vitrification efforts, both positive and negative, Ecology decided to support this modification request. The discussion below addresses the major questions brought forward by Ecology, Tribes, and the stakeholders during the first public review of this modification request.

Two factors were involved in the decision to add one HLW melter and remove one LAW melter. One factor was the decision by USDOE to accelerate the tank waste vitrification effort to meet the requirements of TPA milestone M-62-00 and to finish the mission by 2028 (mentioned above). The other factor was the results of a research and development effort funded by USDOE.

As design of the WTP proceeds, there is an extensive research and development project being conducted to test various pieces of treatment equipment and optimize their design and operation. One of the most significant activities is research at two pilot-scale melters. One melter is located in Columbia, Maryland. This melter has been used to optimize LAW melter performance. This melter is one third the size of the planned LAW melter. The other research melter is located at Vitreous States Laboratory (VSL) in Washington D.C. The VSL melter has been used to optimize HLW melter performance. The VSL melter is about one third the size of the planned HLW melter, the VSL melter has been used to test certain melter components and melter off gas treatment equipment.

One of the most important results of the melter research and development efforts was the demonstration in the Columbia melter that a significant increase in glass output could be achieved if bubbler tubes were installed in the melter. Bubbling is simply a method to inject gas into the melt pool near the bottom, resulting in significant increases in glass production in the LAW and HLW melters. A considerable amount of testing went into optimizing the number of bubblers, bubbler spacing, and bubbler materials of construction.

As a result of testing in the Columbia melter, the glass production rate (the name plate rating) for the HLW melters increased from 1.5 metric tons per day for each melter to 3 metric tons per day for each melter. WTP LAW melters increased from 10 tons of glass per day to 15 metric tons per day (nameplate rating). In addition, it was determined that LAW melters may be able to attain a glass production rate of 20 metric tons of glass per day or more.

Ecology thought that the increased melter production rates from the original 30 tons of glass per day for three melters to a production rate of 45 to 60 tons of glass per day for three melters could reduce the vitrification schedule. However, in addition to melter production rates, there are other limitations to glass production that Ecology was not aware of when the change was originally proposed. The two main issues are container handling and heat removal.

Container handling after filling includes:

- Canister cooling.
- Adding sand to fill the canister (if necessary).
- Sealing the lid on the canister.
- Decontamination.
- Smear testing to ensuring external contamination is at acceptable levels.
- Storing the canisters before shipment out of the LAW Building.

The LAW Building has been designed for a production throughput of 30 metric tons of glass per day. The capacity of the LAW canister handling system appears to be limited to six containers per day, which is equivalent to a production capacity of 36 metric tons of glass per day.

The ventilation system in the LAW Building is also sized for 30 metric tons per day glass production rate. Air is chilled and introduced into the melter rooms and the storage areas for cooling and into the container handling lines 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 reduction in the structural integrity of the building's walls and floor.) While the system can handle up to a peak production rate of 45 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 problem and the ventilation problem can be mitigated. However, there is not enough space in the existing LAW Building to add another container handling line or to add more HEPA filter housings. Following generally accepted good engineering practice, BNI has designed a building sized 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 storage and ventilation sizing problems would require an expansion of the footprint of the LAW Building and considerable redesign work. The cost could be substantial, possibly more than $100 Million. The proposed change in melter configuration (two LAW melters and two HLW melters) would result in a relatively small change in the project cost, but it would allow meeting the contract requirement to deliver 30 metric tons of LAW glass per day. In addition, one HLW melter does not provide enough capacity to meet the 2018 and 2028 milestones. Substantially more LAW treatment capacity (an additional 60 metric tons) will still be needed.

Effective treatment of the tank waste requires that the output from the PT Building be carefully balanced with the treatment capabilities of the LAW and HLW process systems to ensure that all treatment processes are fully utilized. With the two LAW and two HLW melter configuration, the following production rates have been estimated:

- PT Building will process sufficient tank farm waste to yield approximately 90 metric tons/day total of HLW or LAW glass.

- HLW melters, at full capacity, can produce 3 metric tons/day each for a total of 6 metric tons per day.

- LAW melters can operate at 15 metric tons/day each for a total of 30 metric tons per day.

The two-LAW and two-HLW melter configuration will only be able to process a little more than one-third of the output from the PT Building; therefore, more LAW treatment will be required. USDOE believes that a less costly supplemental technology may be used, rather than building the second LAW vitrification facility as they originally planned. USDOE and Ecology have entered into a multi-year effort to determine how the additional LAW treatment will be provided. Ecology's baseline remains addition of a second LAW vitrification facility.

Ecology is requiring that <u>if</u> a supplemental treatment technology is selected, that supplemental treatment must produce primary and secondary waste forms that are as protective of human health and the environment as WTP LAW vitrification. If it appears that the supplemental technology waste form is not as protective, or it must be abandoned for any other reason, Ecology will require that a second LAW vitrification facility be constructed.

In the event that two LAW melters do not meet the combined production rate of 30 metric tons of glass per day, Ecology is adding the following Permit condition. This Permit condition is intended to ensure that if the two LAW melters do not perform as expected, a third melter will be added to the LAW Building. However, Ecology is not proposing addition of a third LAW melter that would exceed the capacity of the container handling system or the ventilation system in the LAW Building.

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 melter support vessels or support systems should be deleted from "process cell design" that could preclude later melter installation.

4.3 <u>Updates to Chapters 4 and 6 in Appendix 51</u>

In the March 29, 2004, Class 2 modification request the Permittees included updated versions of Chapters 4 and 6 to reflect requested design changes. Ecology has incorporated the majority of requested changes into the draft Permit modification. The draft Permit modification shows all Permittee requested changes to the current Permit, new text is double-underlined, and deleted text is struck-out with a single line. The major basis for the requested changes include removal of one LAW melter from LAW Building design, addition of one HLW melter to HLW Building design, and updates to building and system descriptions. Information contained in Chapters 4 and 6 has not been revised since the original Permit application was submitted in December 2001. The equipment and room numbers in the current Permit use a numerical system established by the previous contractor. This modification revises the equipment and room numbers to the current contractors numbering system. Any Permittee requested changes related to the TXP or TEP Systems were not incorporated into this draft Permit modification.

4.4 <u>Addition of Flooding Volume Calculations and Sump Data</u>

WAC 173-303-640(4) requires that secondary containment be provided for all new tank systems or components, prior to their being put into service. In November 2005, the Permittees submitted Permit

Design Package PTF-065. This was the final submittal for Permittee compliance with Compliance Schedule Item 12 in Attachment 51, Appendix 1.0 of this Permit, "*Submit Engineering Information for Each Secondary Containment and Leak Detection System for the WTP Permit System to be Included in the Permit.*" This package included: *Flooding Volume for Room P-0150 in the Pretreatment Facility*, 24590-PTF-PER-M-04-0008, Revision 1; *Sump Data for Pretreatment Facility Room P-0150*, 24590-PTF-PER-M-04-0009, Revision 0; and the *IQRPE review of the Pretreatment Facility (PTF) Elevation (-) 2'-0" Secondary Containment of Radioactive Liquid Waste Disposal System (RLD) Tanks (RLD-TK-00006 A/B)*, Revision 0.

The *Flooding Volume for Room P-0150 in the Pretreatment Facility*; 24590-PTF-PER-M-04-0008, specifically addresses flooding scenarios for Room P-0150, a tank containment area located outside the PTF, which contains the RLD tanks RLD-TK-00006A and RLD-TK-00006B. The flooding scenarios addressed in the document established the minimum requirements for secondary containment in Room P-0150. Because the tank system is in an outdoor uncovered area, containment of rainfall is also included.

The *Sump Data for Pretreatment Facility Room P-0150*; 24590-PTF-PER-M-04-0009, specifically addresses sump data for Room P-0150. The *IQRPE review of the Pretreatment Facility (PTF) Elevation (-) 2'-0" Secondary Containment of Radioactive Liquid Waste Disposal System (RLD) Tanks (RLD-TK-00006 A/B)*, Revision 0 includes as independent review of the current design for the *Pretreatment Facility Elevation (-) 2'- 0'' Secondary Containment of RLD Tanks (RLD-TK-00006 A/B)* as required by WAC 173-303-640(3)(a) through (g).

Ecology has reviewed each of these submittals and did not have any comments. Therefore, they have been included in this draft Permit modification for incorporation into Attachment 51, Appendices 8.8, 8.5, and 8.11, respectively.

4.5 Addition of detailed HLW Melter Design Information

On June 16, 2006, the Permittees submitted Permit Design Packages HLW-018 and HLW-019, *Miscellaneous Treatment Unit for the HLW Facility HMP System*, and *Miscellaneous Treatment Unit Sub-system Equipment for HLW Facility HMP System*, respectively. These two Design Packages are the final packages scheduled for submittal under Compliance Schedule Items 28 and 29 in Attachment 51, Appendix 1 of the WTP Permit. Prior to submittal of these design packages, Ecology had requested the Permittee remove ghosting from portions of the HLW Melter Process (HMP) System. Ecology also requested the addition of two design drawings depicting portions of the HMP system that were not included in the submittal. The Permittee did not incorporate Ecology's requests; as a result, the design packages did not meet our expectations. However, Ecology has included the information from these design packages in this draft Permit modification with the following changes:

- Ecology added 'bubbles' to affected Permit drawings to identify non-regulated portions of the design. Non-regulated portions of the design are located inside 'bubbles'. These modifications are consistent with Ecology's comments provided on draft documents.

- Ecology added a note indicating that portions of this drawing that are enclosed by a 'bubble' are non-regulated. All other portions of the drawing are regulated.

- Ecology added 'bubbles' to non-regulated notes and references. This is consistent with guidance Ecology provided to the Permittee on September 27, 2005, that all notes and references on the source documents should appear on the Permit-version drawings, but may be ghosted if they are administrative in nature or refer only to ghosted portions of a drawing.

- Ecology populated Table III.10.J.C. – *HLW Vitrification System Process and Leak Detection System Instruments and Parameters* using the *System Description for HLW Melter Process System (HMP),* and information provided in Permit Design Packages HLW-018 and HLW-019, and design drawings.

- Ecology added source equipment assembly drawings to meet Permit condition III.10.J.5.c.ii., which requires submittal of HLW melter mechanical drawings. Permit versions of these drawings were not provided in the design package submittal. Ecology selected five drawings to fulfill this Permit condition, 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.

- Ecology added two Process and Instrument Diagrams (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 design 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 HLW melter operation.

The drawings added by Ecology have not been reviewed and stamped by an Independent Qualified Registered Professional Engineer. Ecology has determined that the incorporation of these drawings into the Permit will not affect the proper design and installation of the HLW melters. In accordance with Permit Condition III.10.J.1.a.ix., the Permittees will prepare a certification of proper design and installation prior to receipt of dangerous and/or mixed waste.

This permitting approach falls outside the 'normal' permitting process. In a normal permitting situation, with nearly complete design, the Permittee and the regulators would sift through the drawings, select a small subset for demonstrating compliance with the regulations, and incorporate these drawings into the Permit. One of the most difficult issues for Ecology during construction of the WTP is how to balance need for design approval against the sheer volume of technical information being generated during the design process. The project has generated tens of thousands of drawings.

Because of the WTP's design and construct strategy, the permitting process has been uniquely customized to support the WTP construction process. In May 15, 2002, the Fact Sheet for the *Hanford Facility Resource Conservation and Recovery Act Draft Permit for the Treatment, Storage, and Disposal of Dangerous Waste* (Fact Sheet), Publication Number 01-05-0006, Ecology described the significant factual, legal, methodological, and policy questions considered in preparing the draft Permit modification. Ecology "reviewed the application and found it to be 'incomplete.'" BNI submitted a demonstration that certain information needed for the Permit application was not available at the time the draft Permit was issued; Ecology accepted the demonstration and made allowances for the submission of additional information to supplement

material that had already been provided in the application. Ecology's decision to proceed in this manner was based on the threat posed by highly radioactive mixed waste stored in outdated underground storage tanks and the time it would take to follow a traditional permitting process.

The original draft Permit was based on overall design of less than 30% complete and much of the detailed design information usually included in a Permit application was not yet available. Ecology wrote conditions that require compliance with the regulations in WAC 173-303 and described, in as much detail as possible at this time, the information that must be submitted to supplement the Permit to allow construction and operations to begin. As design proceeds and new issues arise, Ecology continues to modify this Permit to include new conditions or modify existing conditions, as described in WAC 173-303-830(3) and WAC 173-303-840(2) and (3).

This permitting approach allowed for modification of the Hanford Facility RCRA Permit to allow construction to start without a complete design being available, subject to Ecology's review and approval authority over future, more detailed design submittals. Through this process, Ecology does not require a Permit modification for a design change until construction on that portion of the WTP is ready to proceed. Before construction on any portion of the WTP can proceed, the Permit must be modified in accordance with WAC 173-303-830(4) to incorporate the changes into the Permit. As originally intended, changes to the drawings incorporated into the Permit that do not affect a regulated area or activity in the building are considered Class 1 modifications and are incorporated into the Permit following the Hanford Site permit process. "For example, if a general arrangement drawing in the Permit has one regulated cell on a level in the plant, changes to non regulated areas (moving a stair well, increasing the size of a change room, etc.) on that level would trigger a Class 1 modification." This language led to the origination of ghosting (showing non-regulated portions of the facility design in a lighter font than the regulated portions). Although this process of ghosting is not used elsewhere in Washington State, Ecology believed that the use of ghosting as described above is legitimate.

Because many of the drawings were not available and were being issued continually during the concurrent design and construction process, Ecology could not determine in advance all the drawings that needed to be incorporated into the Permit. As design proceeds, Ecology reviews drawing types identified in Attachment 51, Appendix 3.0 for compliance with the Permit. Ecology will select appropriate drawings to be incorporated into the Permit, in addition to those supplied by the Permittees, which will best demonstrate compliance with the regulations.

Originally, ghosting was intended for non-regulated portions of the facility (e.g., stairwells, restrooms, change rooms, utilities, raw chemical storage, non-contact cooling waters, service air, electrical systems, etc., <u>for non-waste management operations</u>). In addition, Ecology allowed instrumentation (other than level indicators and leak detectors) to be ghosted <u>until</u> enough information was available to determine their regulatory status. Over the past four years, the Permittees have expanded the use of ghosting to more of the facility design with each Permit submittal. The Permittees have submitted documents to Ecology with ghosting applied to portions of the facility, which include:

1. Melter and offgas internal systems.

2. Tank internals.

3. Cooling systems needed for safe operations of certain tanks or systems.

4. ILAW containers/waste conveyors.

5. Mechanical handling systems for transporting waste/waste products.

Ecology has determined that too much of the design affecting the operation of regulated systems has been ghosted, or been requested to be ghosted, by the Permittee. Ecology and the Permittees have held numerous meetings over the past two years to discuss the use of ghosting on Permit drawings. Ecology and the Permittees have been unable to reach a mutually agreeable resolution to this issue; as a result, Ecology has determined that continuing the use of ghosting as we have in the past is not acceptable.

Permit drawings with ghosting contain the note: "The portions of this drawing shown in phantom are considered non-permit affecting and are not subject to the regulatory requirements of the WAC for the dangerous waste permit to the extent that those portions do not impact dangerous waste areas/operations." Ecology's position is that ghosted portions generally do affect dangerous waste areas/operations, and therefore the standard note is misleading. As a result, Ecology has added 'bubbles' and notes to the drawings in Design Packages for HLW-018 and HLW-019 to indicate the regulatory status of equipment shown on the drawings. The effect of this 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. This is especially important for the phased design/build and permitting process in effect for WTP. In conjunction with the addition of 'bubbles,' Ecology populated Permit Table III.10.J.C. (*HLW Vitrification System Process and Leak Detection System Instruments and Parameters*) so that the Permittees will know which specific pieces of equipment are included in the Permit. It is important to note that not all instruments in un-ghosted portions of the P&IDs in Design Packages HLW-018 and HLW-019 appear in Permit Table III.10.J.C. Ecology's intent in populating that table is to identify only those instruments important to maintaining and monitoring confinement and containment of dangerous waste, and meeting performance standards for melter offgas treatment.

In accordance with WAC 173-303-806(4)(i)(v), the owner or operator must provide "Any additional information determined by the department to be necessary for evaluation of compliance of the unit with the environmental performance standards of WAC 173-303-680(2)." In addition, Permit conditions III.10.C.9.f, III.10.E.9 (b.ii, c.ii, d.ii), III.10.G.10 (b.ii, c.ii, d.ii), III.10.H.5 (b.ii, c.ii, d.ii), and III.10.J.5 (b.ii, c.ii, d.ii) require submittal of design drawings and specifications to Ecology for incorporation into the Permit. Information requested by Ecology regarding ghosting and addition of P&IDs not presently in the Permit apply to critical systems, per the critical systems list in Attachment 51, Appendix II. The additional information requested is important to the design and operation of critical systems. In accordance with WAC 173-303-830(3)(a)(i), during review of the permit file Ecology may determine that a permit modification is necessary, if "There are material and substantial alterations or additions to the permitted facility or activity which occurred after Permit issuance which justify the application of Permit conditions that are different or absent in the existing Permit." Ecology will continue to systematically review and evaluate the drawings in the Permit for inappropriate application of ghosting. Ecology has tentatively identified 45 additional drawings which need to be added to the Permit.

In addition, Ecology will revise Permit Condition III.10.J.5.e.ix. as follows:

> Permit Table III.10.J.C and III.10.K.C shall be revised and/or completed for HLW Vitrification System process and leak detection system monitors and instruments (to include, but not be limited to: instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH, level, humidity, and emissions) to provide the information as specified in each column heading. Process and leak detection system monitors and instruments for critical systems, as specified in Attachment 51, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b., and for operating parameters as required to comply with Permit Condition III.10.C.3.e.iii., shall be addressed. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this Permit condition [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)]

4.3 Incorporation of Several Class 1 and/or Class [1]1 Permit Modifications

This draft Permit modification incorporates several Class 1 and/or Class [1]1 Permit modifications including changes to Part III, Chapter 10 and Appendix 51 which were approved by Ecology in accordance with WAC 173-303-830(4)(a) and include:

- **24590-HLW-PCN-ENV-05-009** Class '1 Modification: Update Mechanical Data Sheet for the Canister Decon Vessel 2 (HDH-VSL-00002), 24590-HLW-MVD-HDH-P0012, Rev. 0 in Appendix 10.6.

- **24590-HLW-PCN-ENV-05-011** Class '1 Modification: Update Mechanical Data Sheet, Canister Decon Vessel 1, 24590-HLW-MVD-HDH-P0006, Rev. 1; Material Selection Data Sheet, Canister Decon Vessels (HDH-VSL-00002 AND 00004) 24590-HLW-N1D-HDH-P0003, Rev. 1; and Mechanical Assembly Drawing, 24590-HLW-MV-HDH-P0006, Rev. 0 in Appendix 10.6.

- **24590-LAB-PCN-ENV-05-002** Class '1 Modification: Update Plant Item Material Selection Data Sheet for Hot cell Drain Collection Vessel (RLD-VSL-00165) in Appendix 11.9.

- **24590-LAB-PCN-ENV-06-001** Class '1 Modification: Update Material Selection Data Sheet for the Lab Area Sink Drain Collection Vessel (RLD-VSL-00164) in Appendix 11.9.

- **24590-LAW-PCN-ENV-05-004** Class 1 Modification: Editorial changes to "Flooding Volume for LAW Facility" (24590-LAW-PER-M-02-002) in Appendix 9.8.

- **24590-LAW-PCN-ENV-06-001** Class '1 Modification: Updates LAW Plant Item Material Selection Data Sheet for LAW concentrate receipt vessels LCP-VSL-00001/00002 in Appendix 9.9.

- **24590-LAW-PCN-ENV-06-005** Class 1 Modification: Update Material Selection Data Sheets for LOP-SCB-00001/-00002 (LAW) Melter 1 and Melter 2 Submerged Bed

Scrubbers (SBS) and LOP-VSL-00001/-00002 (LAW) Melter 1 and Melter 2 SBS Condensate Vessels in Appendix 9.9.

- **24590-PTF-PCN-ENV-05-002** Class '1 Modification to Update Equipment Assembly Drawing for Pretreatment Ultrafiltration Feed Preparation Vessel (UFP-VSL-00001B) in Appendix 8.6.

- **24590-PTF-PCN-ENV-05-011** Class 1 Modification: Update the Mechanical Data Sheet and Material Selection Data Sheet for the Vessel Vent Caustic Scrubber (PVP-SCB-00002) in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-012** Class '1 Modification: Update Mechanical Data Sheet and Material Selection Data Sheet for the Plant Wash Vessel (PWD-VSL-00044) in Appendix 8 of the Dangerous Waste Permit Appendix 8.9.

- **24590-PTF-PCN-ENV-05-013** Class '1 Modification: Update PTF Plant Item Material Selection Data Sheet for HLW Feed Receipt Vessel (HLP-VSL-00022) in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-014** Class '1 Modification: Update Permit specification 24590-PTF-3PS-MEVV-TP001, ENGINEERING SPECIFICATION FOR FORCED CIRCULATION VACUUM EVAPORATOR SYSTEM in Appendix 8.7.

- **24590-PTF-PCN-ENV-05-016** Class 1 Permit Modification to the Ultrafilter Permeate Collection Vessel, UFP-VSL-00062A/B/C, Plant Item Material Selection Data Sheet 24590-PTF-N1D-UFP-P0008, Rev. 1 in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-018** Class 1 Modification to the Plant Item Material Selection Data Sheet (24590-PTF-N1D-UFP-P0001) for the Pretreatment Facility Ultrafiltration Recycle Breakpot UFP-BRKPT-00001A/B) in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-019** Class 1 Permit Modification to the Treated LAW Evaporator Separator Vessel TLP-SEP-00001 Mechanical Data Sheet 24590-PTF-MVD-TLP-P0005, Rev. 2 in Appendix 8.6.

- **24590-PTF-PCN-ENV-05-020** Class 1 Permit Modification to the Pretreatment Facility Waste Feed Evaporator Separator Vessel FEP-SEP-00001A Mechanical Data Sheet 24590-PTF-MVD-TLP-P0006, Rev. 3 in Appendix 8.6.

- **24590-PTF-PCN-ENV-05-021** Class 1 Permit Modification to the Pretreatment Facility Waste Feed Evaporator Separator Vessel FEP-SEP-00001B Mechanical Data Sheet 24590-PTF-MVD-FEP-P0007, Rev. 2 in Appendix 8.6.

- **24590-PTF-PCN-ENV-05-024** Class '1 Modification: Update Existing TCP-Vessel-00001 (PTF) information provided in Part III, Chapter 10, Attachment 51, Appendix 8.9.

- **24590-PTF-PCN-ENV-05-025** Class '1 Modification: Update PTF Plant item Material Selection Data Sheet for the PTF ultimate overflow vessel (PWD-VSL-00033) in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-026** Class '1 Modification: Update Material Selection Data Sheet for the alkaline effluent vessels (RLD-VSL-00017-A/B) in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-027** Class 1 Modification: Update PTF Plant Item Material Selection Data Sheets for Cs Concentrate Break-pot and Cs Eluate Break-pot (CNP-BRKPT-00001/2) in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-030** Class 1 Modification: Update Material Selection Data Sheet for Ultrafiltration Feed Preparation Vessels (UFP-VSL-00001A/B) in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-031** Class 1 Modification: Update Mechanical System Data Sheet 24590-PTF-MVP-PWD-P0001 Rev. 3 for the Pretreatment Facility ultimate overflow vessel 24590-PTF-MV-PWD-VSL-00033 in Appendix 8.6.

- **24590-PTF-PCN-ENV-05-032** Class '1 Modification: Update PTF Plant Item Material Selection Data Sheet for PTF Spent Resin Slurry Vessels (RDP-VSL-00002A/B/C) in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-033** Class '1 Modification: Update PTF Plant Item Material Selection Data Sheet for PTF C3 Floor Drain Collection Vessel (PWD-VSL-00046) Appendix 8.9.

- **24590-PTF-PCN-ENV-05-034** Class '1 Modification: Update Plant Item Material Selection Data Sheet for FEP-VSL-00005 (Waste Feed Evaporator Condensate Vessel) in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-035** Class '1 Modification: Cancel Pretreatment General Arrangement (GA) sections 24590-PTF-P1-P0008 through P0017 in Appendix 8.4.

- **24590-PTF-PCN-ENV-05-036** Class 1 Modification: Update Material Selection Data Sheets for CNP-VSL-00001, CNP-VSL-00003, CNP-VSL-00004, CNP-EVAP-00001 in Appendix 8.9.

- **24590-PTF-PCN-ENV-05-039** Class 1 Modification: Updated Material Selection Data Sheet for Cs Ion exchange feed, rinsate collection and reagent vessels CXP-VSL-00001, -00004, and 0005 respectively in Appendix 8.9.

- **24590-PTF-PCN-ENV-06-001** Class 1 Modification: Update Material Selection Data Sheet for PWD-BRKPT-00015/16 and PWD-VSL-00015/16 Appendix 8.9.

- **24590-PTF-PCN-ENV-06-002** Class 1 Modification: Update material selection data sheet for PVP-VSL-00001 in Appendix 8.9

- **24590-PTF-PCN-ENV-06-005** Class 1 Modification: Plant Item Material Selection Data Sheets for filters and pulse pots UFP-FILT-00001 A/B, 2A/B & 3 A/B, and UFP-PP-00001 A/B, 2 A/B & 3A/B, respectively in Appendix 8.9.

- **24590-PTF-PCN-ENV-06-008** Class 1 Modification: Update MSDS for the Cs Evaporator Primary Condenser, CNP-HX-00002, Cs Evaporator Inter-Condenser, CNP-HX-00001, Cs Evaporator Concentrate Reboiler and Cs Evaporator After-Condenser, CNP-HX-00004 in Appendix 8.9.

- **24590-PTF-PCN-ENV-06-009** Class 1 Modification: Update Pretreatment General Arrangement P1-P01T-P0002 (El. 28') in Appendix 8.4.

- **24590-PTF-PCN-ENV-06-015** Class 1 Modification: Update PTF RLD vessels (RLD-VSL-00017 A & B) Mechanical Data Sheets 24590-PTF-MVD-RLD-P0005 and -P0006 in Appendix 8.6.

- **24590-WTP-PCN-ENV-05-007** Class '1 Modification: Update Permit specification 24590-WTP-3PS-MCE0-TP002, rev. 2 ENGINEERING SPECIFICATION FOR PROCESS EJECTOR/EDUCTOR in Appendix 7.7.

- **24590-WTP-PCN-ENV-05-012** Class 1 Modification: Modification of Permit Conditions III.10.c.3.e.ii to refer to Regulatory DQO optimization Report (24590-WTP-RPT-MGT-04-001, Rev 0) (not in Appendices).

- **24590-PTF-PCN-ENV-05-022** Class 1 Modification: Update Material Selection Data Sheets for TLP Plant Items in Appendix 8.9.

- **24590-PTF-PCN-ENV-06-003** Class '1 Modification: Update GA for El. 0 and Section A-A in 8.4

4.4 Addition of Several New Permit Conditions

As the Permit for the WTP Unit is implemented, Ecology will modify the Permit conditions for many reasons including: to clarify text, add new conditions, delete existing conditions, or to correct errors

This Class 3 modification adds several new Permit conditions:

The following systems were added to the Critical System List in Attachment 51, Appendix 2.0 of this Permit.

Mnemonic System Locator	System Name
RWH	Radioactive Solid Waste Handling System
LEH	LAW Canister Export Handling System
LMH	LAW Melter Handling System
HEH	HLW Canister Export Handling System
PVV	Process Vessel Vent System (for HLW)

A critical system as defined in Part I 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.

Addition of the Mechanical Handling Systems to the Critical Systems List

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 fork lifts 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.

III.10.C.15 Support Systems

III.10.C.15.a. Mechanical Handling Systems

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

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,

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

Interim Compliance Schedule- WTP Facility		
	Compliance Schedule Submittal	**Interim Compliance Date**
	III.10.C.16	
36.	Submit system descriptions for mechanical handling systems identified in Permit Table III.10.C.A.	12/31/2009
37.	Submit mechanical handling diagrams and mechanical handling data sheets for mechanical handling equipment identified in Permit condition III.10.C.16.a.i.B.	12/31/2007
38.	Submit equipment instrument logic narrative description for mechanical handling equipment, as specified in Permit condition III.10.C.16.a.ii.A.	Prior to initial receipt of dangerous waste.
39.	Submit descriptions of operational procedures for mechanical handling systems, as specified in Permit condition III.10.C.16.a.ii.B.	Prior to initial receipt of dangerous waste.

III.10.C.9.f. For each Critical System identified in Attachment 51, Appendix 2.0 or meets the definition of Critical System as defined in this Permit, the Permittees shall submit to Ecology for review and approval, following the schedule in Attachment 51, Appendix 1.0 of this Permit, the information identified in Permit conditions III.10.C.16., III.10.D.10., III.10.E.9., III.10.F.7., III.10.G.10., III.10.H.5., and III.10.J.5. Information Ecology determines to incorporate into the Permit will follow the Permit condition III.10.C.2.g. process unless stated otherwise within the specific Permit condition. Information Ecology determines necessary to support design basis will be incorporated into the Administrative Record.

Addition of the HLW Process Vessel Vent (PVV) system to the Critical Systems List

Ecology added the HLW PVV system to the critical systems list (Appendix 2.0). The HLW PVV system ventilates various dangerous waste tanks in the HLW Building. 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." Systems identified as critical cannot be modified without Ecology review, and if necessary, a Permit change.

The HLW PVV system is designed to contain and transfer gaseous emissions to control devices in the HLW melter offgas system, where the emissions are treated prior to release. The gaseous emissions originate from tanks used for: preparing and transferring tank waste feed to the melter; neutralizing waste; storing acid waste; and for collecting liquids from plant wash, drains and offgas condensate. This tank waste contains organic dangerous constituents with the potential to volatilize, designates for both toxic and persistent dangerous criteria waste (WAC 173-303-100), and is considered toxic upon inhalation. Proper design, construction, and operation of the HLW PVV system is critical to ensuring the emissions are contained until they have been treated for release.

The Permit requires proper design and operation to ensure releases of toxic vapors, fumes, or other emissions are prevented (Permit conditions III.10.E.5.m. and III.10.E.9.c.xii.). A leak from the HLW PVV system would result in emissions being released to the HLW Building structure, which would be ventilated through HEPA filters and then to the environment (atmosphere), without the benefit of treatment to remove volatized organics and other dangerous constituents.

Gaseous emissions from dangerous wastes in the WTP tanks are subject to control under dangerous waste regulations since they are emitted from a dangerous waste *after* the point at which the waste *first* designated as a solid and a dangerous waste. Gaseous emissions from a solid waste stream *already* identified as dangerous do not stop being subject to control under dangerous waste rules because the waste form has changed from a solid or liquid to a gas. Such gases remain subject to controls under the dangerous waste regulations until the point of final discharge to the environment (atmosphere), capture, or destruction (after such emissions controls as necessary to protect human health and the environment). The analysis presented above in support of defining the HLW PVV system as a critical system is consistent with the regulation of organic vapor emissions from tanks, surface impoundments, and containers under WAC 173-303-690 through -692 (which incorporate by reference 40 CFR 264/265 Subparts AA, BB, and CC). The U.S. Environmental Protection Agency established RCRA 40 CFR 264/265 Subparts AA, BB, and CC regulations, to provide RCRA air standards for controlling organic emissions from TSD units.

The HLW PVV system is an integral part of the tank system and is classified as ancillary equipment. The design package for the HLW PVV system (Package HLW-023, Rev. 0) was submitted to Ecology on November 8, 2004, (USDOE-ORP Letter # 04-ED-093) as a tank system ancillary equipment package for the HLW Building. The HLW PVV system should have been added to the critical systems list at that time. This is consistent with both the Pretreatment and LAW Buildlings, which currently have their vessel ventilation piping system design in the Permit, and their vessel ventilation systems listed in Appendix 2.0 as critical systems.

In addition to our intent to ensure adequate containment and control of gaseous emissions from dangerous waste management units, Ecology must also ensure appropriate management of condensate formation within the ventilation system. P&ID design drawings 24590-HLW-M6-PVV-P0001 and 24590-HLW-M6-PVV-P20001 "HLW Process Vessel Vent Exhaust System" show the vessel vent lines are sloped toward the down stream HEME's. Notes 11 and 9 require "As a minimum all pipelines on this drawing shall be free draining with no pockets. In addition, pipelines within C5/R5 areas shall be sloped at 2% unless constrained by layout limitations. If a portion/section of a pipeline's slope must be limited, the slope may be reduced within the affected section as necessary, provided that the minimum slope is 0.5% or greater." These notes point to the possible collection of condensate within the piping, were it not sloped. Any condensates formed in this instance are derived from listed dangerous wastes (40 CFR Part 261.3(c)(2)(i)).

Since containment and transfer of gaseous emissions from dangerous waste (and any associated condensate) between the tanks and the HLW melter off-gas treatment system are the primary functions of the HLW PVV system, Ecology has concluded it meets the definition of a critical system, and has added it to the WTP critical systems list. This will ensure information relating to system design, construction and operation cannot be modified without Ecology review, and if necessary, a Permit change.

Additional Permit Modifications

Ecology has held multiple meetings and exchanged several letters regarding the erosion-corrosion estimates for tanks. On June 28, 2006, Ecology issued a letter to USDOE-ORP/BNI, informing them that additional wear allowances are required for vessels with Pulse Jet Mixers (PJMs), or they would need to demonstrate the adequacy of the current design for erosion-corrosion. In addition, Ecology will require an opportunity to review and comment on the test plan and objectives for the demonstration. USDOE-ORP/BNI responded by requesting time to allow independent experts to review the method and data used to estimate erosion wear, a reassessment of tank waste particulate characteristics, and a determination if additional testing is required. Ecology approved the requested delay and is proposing the following Permit condition to ensure tank fabrication and assembly does not preclude any modifications to wear plates inside the tanks.

III.10.E.2.d. Fabrication and assembly of vessels HLP-VSL-00022, HLP-VSL-00027A, HLP-VSL-00027B, HLP-VSL-00028, UFP-VSL-00002A, UFP-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.

In accordance with Permit condition III.10.E.9.d., the Permittees are required to submit, prior to installation of ancillary equipment for each tank system, engineering information that includes:

III.10.E.9.d.ii. Design drawings (Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems], etc.) specifications (including required performance warranties), and other information specific to ancillary equipment (these drawings should include all equipment such as pipe, valves, fittings, pumps, instruments, etc.) [WAC 173-303-640(3)(WAC 173-303-806(4)(c)(i), (iii), (iv)];

III.10.E.9.d.iii. The Permittees will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the ancillary equipment [WAC 173-303-640(3)(a), WAC 173-303-640(3)(f), WAC 173-303-806(4)(c)(i)];

In January 2005, Ecology requested submittal of BNI's pipe stress criteria for incorporation into the WTP Permit. During review of document, Ecology identified that BNI's pipe stress criteria allow stress limits for occasional (seismic) loads for some DWP regulated piping (e.g., C3 floor drains) that exceed American Society Mechanical Engineers limits. Ecology commented on the document and is still waiting for the document to be issued so it can be incorporated into this Permit. As a result, Ecology has added the following Compliance Schedule Item that requires submittal of the requested document.

Interim Compliance Schedule- WTP Facility		
	Compliance Schedule Submittal	**Interim Compliance Date**
	TANK SYSTEMS	
40.	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.	4/30/2007

4.5 Denial of the Permittees' Request to Remove Technetium Treatment from the PT Building Design

Technetium-99 (Tc-99) is a fission product that was generated in Hanford production reactors. Tc-99 is a low energy Beta emitter with a half-life of 211,100 years. USDOE estimates the total quantity of Tc-99 produced at Hanford to be 33,500 Ci. The total quantity of Tc-99 remaining in immobilized tank waste is estimated to be approximately 25,500 Ci after accounting for Tc-99 transferred to Fernald, Ohio with uranium oxide, and transfers to cribs and past tank leaks. However, Tc-99 is one of the major constituents of concern in relationship to potential impacts to groundwater beneath the site due to its high mobility and long half-life.

The USDOE estimates are largely based on process knowledge. There is very little tank characterization data available for Tc-99 to verify these estimates. Part of the reason for the lack of data is difficulty in developing reliable analytical methods to measure technetium concentrations. Because of the lack of information on isotopic abundances in Hanford tank waste, all the technetium has been assumed to be Tc-99.

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).

Under the performance standards in the Dangerous Waste Regulations [WAC 173-303-283(3)], a dangerous waste facility must in part, to the maximum extent practical given the limits of technology, prevent:

- Degradation of ground water quality.
- Destruction or impairment of flora and fauna outside the active portion of the facility.
- Use processes that treat, detoxify, reclaim, and recover waste material to the extent economically feasible.
- Not endanger the health of employees, or the public near the facility.

Furthermore, Ecology must consider all the impacts of the operations of a facility when issuing a Permit, not just regulated activities. If a facility cannot meet these performance standards for any reason, a permit should not be issued. Ecology can also apply more stringent facility standards than required in WAC 173-303 [WAC 173-303-283(2)].

To estimate the future consequences of disposal of a waste, mathematical models are routinely used to predict contaminant concentrations at different times and locations. USDOE used performance assessment models for the proposed disposal facilities to predict long-term impacts to human health and the environment. USDOE conducted Performance Assessments for the disposal of WTP Immobilized LAW for 1000 years based on DOE Order 435.1 and 10,000 years based on 10 CFR 61 and the Nuclear Regulatory Commission "waste incidental to reprocessing" ruling.

The USDOE performance assessment found that Tc-99 is a predominant radionuclide in LAW disposal performance assessment impacts (DOE/ORP-2000-24). USDOE assumes that the LAW immobilized waste produced from WTP will not exceed applicable concentration limits for Class C Low-Level Waste (< 3 Curies/cubic meter [Ci/m^3]). The average Tc-99 concentration for all tank waste immobilized as glass is projected to be approximately 0.2 Ci/m^3. The performance assessment takes no credit for the stainless steel container or landfill barriers and assumes the waste canisters will be disposed of at the Integrated Disposal Facility (IDF) in the 200 East Area, near the Plutonium-Uranium Extraction (PUREX) Plant

The results of this performance assessment show that without Tc-99 removal, the impacts to Drinking Water and All-path Dose would be far below the maximum allowable dose under USDOE regulations at both 1,000 and 10,000 years. These results have led USDOE to conclude that Tc-99 removal is not required for LAW glass produced from WTP to meet performance objectives.

Where the Tc-99 will be disposed and what the waste form will be are the main concerns Ecology has with regard to removing Tc-99 treatment. In the supplemental information provided on August 4, 2004, the Permittees provided Tc-99 mass balances that showed the expected fate of the Tc-99 in the following situations:

- Tc-99 treatment in the Pretreatment Building (original design).
- Tc-99 treatment removed from the design.
- Tc-99 treatment removed and a LAW supplemental treatment process in place.

The flow sheets show a marked difference in the fate of Tc-99 depending on whether Tc-99 treatment was or was not used. When Tc-99 treatment was used, the amount of Tc-99 expected to be found in the HLW glass was 90.4 percent, with 8.8 percent being tied up in the LAW glass. A small amount (0.7 percent) would be expected in the PT Building liquid effluents and an even smaller amount (0.07 percent) would be trapped on the HEPA filters.

Without Tc-99 treatment, the situation becomes reversed. The amount of Tc-99 in the LAW glass would be expected to increase to 97.0 percent. Only 2.2 percent of the Tc-99 would end up in the HLW glass, 0.3 percent would be expected in the PT Building liquid effluents and 0.5 percent would be trapped on the HEPA filters.

In the case with no Tc-99 treatment and use of the supplemental LAW treatment, some changes are observed. In this case, the amount of Tc-99 contained in the HLW glass does not change (2.2 percent). The expected amount of Tc-99 in the LAW vitrification plant glass would be 26.0 percent and the amount in the supplemental LAW treatment waste form would be about 71.5 percent. The remaining 0.3 percent would be present in effluents sent to the Effluent Treatment Facility. This change reflects the mass (roughly two-thirds) of pretreated LAW expected to be treated through supplemental treatment. The remainder of the Tc-99 would be split between an estimated high of 0.4 percent as liquid effluent, with very little in the off gas or HEPA filters. However, the fate of Tc-99 in the supplemental LAW treatment primary and secondary waste cannot be determined because the technology and its integration with the WTP have not been established.

The Tc-99 treatment question becomes primarily one of whether it matters if the bulk of the Tc-99 ends up in HLW glass or LAW glass. Secondarily, does it matter if the bulk of the Tc-99 ends up in a LAW supplemental waste form versus LAW glass from the WTP? How much Tc-99 ends ups in secondary waste under either scenario?

After evaluating additional information, e.g. the Flowsheet Bases, Assumptions, and Requirements Document (24590-WTP-RPT-PT-02-005, Rev 3) dated June 29,2005, provided by USDOE in support of this modification request, Ecology has decided to deny removal of the TXP system and the TEP system from the PT Building design until a suitable supplemental treatment technology or second LAW vitrification facility has been selected by USDOE and approved by Ecology. Ecology's decision is based on the following:

- Development of a suitable supplemental treatment technology is not far enough along to develop a good estimate of how much Tc-99 will be effectively retained in its primary waste form.

- There are a variety of alternatives currently under consideration for treating the large volume of low activity waste that cannot be processed through the existing LAW Building in the time frame required. Characteristics of secondary waste streams and impacts on secondary waste disposal facilities for these alternatives are not well understood. Until the appropriate treatment technology is selected, a decision on eliminating Tc-99 removal from WTP is premature.

Although the WTP is not responsible for the operation of the IDF, Ecology is responsible for protection of human health and the environment. Until Ecology has been provided with assurance that the supplemental treatment selected for LAW waste performs as well as ILAW, at immobilizing Tc-99 in glass and minimizing Tc-99 in the secondary waste streams, Ecology will require the WTP to maintain the capability to separate Tc-99 in the PT Building. The intent of this condition is to preserve the ability to add the process (e.g., the capability of adding a room to the external wall of the building for the Tc-99 separation process to occur).

In support of this decision, the following Permit condition will be added:

III.10.E.2.e. The existing PT Building will retain the capability to install the Technetium Ion Exchange 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 Permittee and approved by Ecology.

Ecology's approval will require demonstration by the Permittees that:

- The waste form produced by the selected Supplemental Treatment performs as well as or better than borosilicate glass from the LAW Building.
- A scientifically defensible understanding of the distribution of Tc-99 within the mass balance of the WTP, Waste form from the Supplemental Treatment, and secondary waste streams.
- The fraction of technetium-99, iodine-129, and mercury in secondary waste streams from the Supplemental Treatment do not exceed those from the WTP.
- Technically defensible modeling showing that onsite disposal of primary and secondary waste forms from Supplemental Treatment or a second LAW vitrification facility will not cause a violation of federal and state drinking water standards.

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

From a dangerous waste regulatory viewpoint, Ecology can require that the waste regulated under this Permit be disposed of in a manner that is protective of human health and the environment, meets the requirements of WAC-173-303-665 (permitted landfills), and the waste acceptance criteria for IDF. ILAW that has been processed for permanent onsite disposal must meet the IDF waste acceptance criteria and specific requirements spelled out in the USNRC letter to USDOE in 1997.

In addition, Ecology wants to ensure that any of the waste forms resulting from WTP treatment will meet the exposure and ground water performance criteria. Ecology has added a proposed Permit Condition III.10.C.15, which requires that any waste form from the WTP Treatment process meet performance assessment ground water and exposure limits, not result in a substantial groundwater impact, and not approach Federal drinking water standard, which is defined as 900 picoCuries per liter for Tc-99.

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 exceedence of the requirements dictated in the IDF's Permit waste acceptance criteria.

This condition is intended to ensure that, if the performance assessment shows that the Tc-99 in any waste form may pose a threat to human health or the environment, the treatment of the waste for Tc-99 will be required.

4.6 Denial of the Permittees Revised Part A Permit Application

In the March 29, 2004, Class 2 modification request, the Permittees included a revised Part A Permit Application in support of this modification request. During its review of the Part A Permit Application, Ecology requested documentation to support the *Process Design Capacity* values in Section XII and *Estimated Annual Quantity of Waste* values in Section XIV of the Part A form. USDOE-ORP/BNI provided Ecology with a copy of Engineering Calculation 24590-WTP-U0D-50-00001, Revision B. During review of these calculations, Ecology identified the use of contingency factors that erroneously increased the quantity of waste at the WTP facility. Ecology is denying revision of the Part A Permit Application until USDOE-ORP/BNI and Ecology discuss the assumptions used when completing the Part A Form.

Class 2 Modification
Request to Modify the Hanford Facility Resource Conservation and Recovery Act Permit, Part III, Chapter 10, Waste Treatment and Immobilization Plant

Responsiveness Summary

WASHINGTON STATE
DEPARTMENT OF
ECOLOGY

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

October 3, 2006

Publication Number 06-05-019

RESPONSIVENESS SUMMARY

Prepared by:

Suzanne Dahl

Washington State Department of Ecology

Nuclear Waste Program

October 3, 2006

Publication Number 06-05-019

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.

Introduction

The Washington State Department of Ecology encouraged the public to comment on proposed changes to the Waste Treatment and Immobilization Plant (WTP) Unit permit during a 60-day public comment period held March 31 through June 1, 2004. The proposed permit modification deleted one melter from the Low-Activity Waste (LAW) facility design, added one melter to the High-Level Waste (HLW) facility design, and deleted the technetium ion exchange process system from the Pretreatment (PT) facility design. U.S. Department of Energy (USDOE), the permit holder, submitted revised Chapters 4.0 and 6.0, and a revised Part A permit application in support of this proposed permit modification.

Ecology sent a letter to commenters on July 1, 2004, reclassifying the proposed permit modification to a Class 3 Modification. Ecology has prepared a draft permit modification in accordance with WAC 173-303-840(2) and will issue it for a 45-day public comment period. Additional technical and regulatory details are provided in the modification Statement of Basis. Ecology's decision to approve portions of the proposed permit modification may be evaluated during the 45-day public comment period.

The following responsiveness summary addresses comments received during the initial 60-day public comment period. Ecology received comments from one Tribal Government, one governmental organization, one public citizen, and two interest groups. The comments focused on two main issues:

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

Summarized versions of the comments and Ecology responses are provided below. Copies of the complete comments appear as an attachment to this Responsiveness Summary.

Responsiveness Summary

Comment #1:
PAT SOBOTTA, DIRECTOR
ENVIRONMENTAL RESTORATION & WASTE MANAGEMENT PROGRAM
NEZ PERCE TRIBE
P.O.BOX 365
LAPWAI, IDAHO 83540-0365

It is our understanding that ~98% of the Tc-99 in the waste stream is at this time expected to be diverted to the Low Activity Waste stream, being treated with regular vitrification (26%), or an alternative supplemental technology, very likely bulk vitrification (72%). As such, the waste stream would then be disposed on site, leaving Tc-99 at Hanford.

It is not yet clear that bulk vitrification is a viable treatment for this waste stream. Other alternative forms of treatment/stabilization currently being investigated apparently are not. In addition, we question the assumption that the bulk vitrification product can remain stable for the period necessary to protect human health and the environment from Tc-99 during its decay life, one of the primary radionuclides of concern at Hanford.

Because this isotope is a major long term contributor to groundwater contamination, and because of the uncertainty regarding the capability of alternative treatments to stabilize Tc 99 effectively, the Nez Perce ERWM cannot support removing the Tc 99 ion exchange system from the pretreatment process. Therefore, we would encourage the Department of Energy to do what ever it takes to see that the Tc 99 is placed in a disposable form for shipment off site, as was originally intended, so that it poses no future risks to the Nez Perce Tribe.

Ecology's Response:

Deletion of the technetium ion exchange process system from PT facility design

Ecology agrees. We share your concern, and the concern of other commenters, that technetium-99 (Tc-99) in the tank waste poses one of the largest risks to ground water. Ecology also agrees with your comment that development of bulk vitrification as a supplemental technology for treating LAW is not far enough along to provide a good basis for estimating distribution of Tc-99 in the primary and secondary waste streams, or the degree of immobilization in the vitrified waste product. Ecology is also concerned that too little is known about the fate of other key contaminants besides Tc-99 in the primary and secondary waste streams to support selection of supplemental treatment alternatives, or supplemental treatment vs. a second LAW vitrification facility. Bulk vitrification and competing supplemental treatment technologies, as well as a second LAW vitrification facility, are being considered for treating the volume of LAW that cannot be processed in the time frame required to meet Tri-Party Agreement (TPA) milestones. Risk assessments show that Tc-99 in borosilicate glass (the waste form produced by the LAW melters) is protective of environmental standards. Ecology's position is that the supplemental treatment waste form must perform as well as or better than the borosilicate glass produced by the LAW melters. It is also Ecology's position that environmental risks from secondary waste streams for the selected supplemental treatment technology or second LAW vitrification facility will not exceed what is expected with the currently planned LAW vitrification facility.

After evaluating additional information provided by USDOE in support of this modification request, Ecology has decided to deny deletion of the technetium ion exchange process system from the PT facility design, until a suitable supplemental treatment technology or second LAW vitrification facility has been selected by USDOE, and approved by Ecology. Ecology's decision is based on the following:

- Development of a suitable supplemental treatment technology is not far enough along to develop a good estimate of how much Tc-99 will be effectively retained in its primary waste form.
- There are a variety of alternatives currently under consideration for treating the large volume of LAW that cannot be processed through the existing LAW vitrification 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. Until the appropriate treatment technology is selected, a decision on deleting the technetium ion exchange process system from the PT facility design is premature.

In support of this decision, the following permit condition will be added:

- 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.

Ecology's approval will require demonstration by the permittees that:

- The primary waste form performs as well as or better than borosilicate glass from the LAW vitrification facility.
- A scientifically defensible model of the fate and transport of various chemicals within the WTP mass balance and supplemental treatment systems.
- The inventories of Tc-99, iodine-129, and mercury in secondary waste streams do not exceed, on a per unit volume of LAW feed basis, expected inventories of those contaminants in the secondary waste streams from the WTP.
- Defensible modeling predicting that onsite disposal of primary and secondary waste forms from supplemental treatment or a second LAW vitrification facility will not cause a violation of federal and state drinking water standards.

TPA Milestone M-62-08 reinforces this new permit condition by requiring USDOE to provide Ecology all supplemental treatment technology waste form performance data compared with borosilicate glass.

Comment #2:
KEN NILES, ASSISTANT DIRECTOR
OREGON DEPARTMENT OF ENERGY
625 MARION ST. NE
SALEM, OREGON 97301-3737

We are concerned about the elimination of pre-treatment to remove technetium 99 (Tc-99) from the waste stream. Although Tc-99 represents only a small portion of the total curies present in the tank waste, the U.S. Department of Energy's (DOE) own calculations identify it as a major contributor to long term groundwater contamination from the low activity waste. DOE has stated that Tc-99 pre-treatment is economically and technically impractical. While this may be true for ion exchange technologies, we are not aware that DOE has thoroughly investigated other methods of Tc-99 removal. For example, BNFL has tested, with apparent success, the tetraphenylphosonium bromide (TPP) precipitation process.

DOE stated that the design of the bulk vitrification process could result in as much as 90 percent of the Tc-99 being removed from the low activity glass without pre-treatment. We don't believe testing is as far enough along to give us great confidence in these projections. As a result, we recommend that Ecology deny the removal of the Tc-99 pre-treatment for now and require DOE to provide Ecology and the public, a comprehensive examination of Tc-99 removal options before making a final decision.

With regards to melter configuration, the Oregon Department of Energy recommends that Ecology require the third low-activity waste melter be installed at this time. We are aware that DOE has stated that the facility heat removal systems would need to be redesigned to handle the capacity of this melter. Now would seem to be the ideal time to make any needed modifications to the tank waste treatment facilities. We don't believe that it is reasonable to assume that if a third melter is needed at some later date, that DOE will be willing to spend the money and take the actions necessary to install that melter at that time. Oregon has consistently supported optimizing vitrification capabilities as much as possible. Installing a third melter now would do that.

Ecology's Response:

Deletion of the technetium ion exchange process system from PT facility design

Ecology agrees. We share your concern, and the concern of other commenters, that Tc-99 in the tank waste poses one of the largest risks to ground water. As explained in our response to comments made by the Nez Perce Tribe, development of bulk vitrification as a supplemental treatment technology is not far enough along to provide a good basis for estimating the distribution of Tc-99 in the primary and secondary waste streams, or the degree of immobilization in the vitrified waste product. In addition, too little is known about the fate of key contaminants (besides Tc-99) in secondary waste streams for the alternative supplemental treatment technologies or second LAW vitrification facility. As a result, Ecology has decided to deny deletion of the PT facility technetium ion exchange process system until a suitable supplemental treatment technology is demonstrated by the Permittees and approved by Ecology.

Deletion of one LAW melter from the LAW vitrification facility design

Ecology offers the following explanation. After evaluation of additional information provided by USDOE in support of this modification, Ecology has decided to approve the removal of one melter from the LAW vitrification facility and the addition of one melter to the HLW vitrification facility for the following reasons. Tri-Party Agreement Milestone M-62-00A requires 10% of the tank waste by mass and 25% of the tank waste by activity to be processed by

2018. This equates to a total production rate for LAW melters of 30 metric tons per day (MTG/day), and for HLW melters of 1.5 MTG/day. The design for the LAW vitrification facility has always specified a glass production rate of 30 MTG/day, and was acceptable to all parties. Initially, LAW melter glass production had contract required throughput rates of 10 MTG/day for each melter. Through research and development activities, the melter developers found that significant increases in melter production resulted when using 'bubblers' in the melters. Bubblers deliver air into the bottom of the melt through vertical pipes inserted from the top of the melter. The developers found glass production rates reached approximately 20 MTG/day for each melter. Subsequently, the manufacturer increased the name plate rating (design basis) for the LAW melters from 10 MTG/day to 15 MTG/day (HLW melter capacity also increased to 3 MTG/day for each melter). Operated at that increased capacity, two melters would produce the same amount of glass as the three melters initially proposed.

The LAW vitrification support systems, such as melter feed preparation, materials handling, melter and glass container heat removal and other services, are sized to support a production rate of 30 MTG/day. The changes required to accommodate an increased production rate of 45 MTG/day from installation of the third melter would be extensive. The changes would include adding more HEPA filter banks to handle the increased airflow, for which there is currently no space. The contractor would have to re-evaluate duct sizing and possibly increase it, which may also have space limitations. The canister cooling area would need to be expanded to accommodate the increased number of canisters. Additional canister mechanical handling lines for canister lidding and decontamination would need to be added. No space is available for additional storage or mechanical handling. In short, substantial modifications to the footprint of the overall LAW facility would be necessary to accommodate the third melter and the increased production rate of 45 MTG/day.

USDOE has not estimated the cost of accommodating a third melter's production, but it assumes it would be very large. Even if funding were available, the completion of the vitrification mission would still not be substantially accelerated with the additional melter.

Comment #3:
GERRY POLLET, EXECUTIVE DIRECTOR
HEART OF AMERICA NORTHWEST
1305 4TH AVE #208
SEATTLE, WASHINGTON 98101

USDOE applications to Washington Ecology for permits for the vitrification plants under construction delete the third vitrification melter capacity from the Low Activity Waste (LAW) treatment plant. Without completing the pending Hanford Tank Closure Environmental Impact Statement, it is not possible to determine: a) if having the third melter is the only means to meet the TPA milestones for completion of vitrification; b) whether this third melter is the most reliable and effective means to treat the LAW from the Waste Tanks. It is also the only proposal that is consistent with the TPA as it currently exists. There is no record on which to base decisions that presume substitution of alternative forms of treatment for Vitrification, and any

presumption to do so would violate both the State Environmental Policy Act (SEPA) and NEPA. Furthermore, USDOE has publicly announced its intention to leave at least ten percent of all the wastes in the High-Level Nuclear Waste Tanks forever. Its proposal to delete the melter capacity and use alternative treatment is inextricably linked to the proposal to leave some wastes forever in the tanks. This proposal has not been reviewed for environmental and health impacts. Therefore, taking action to delete required treatment capacity would violate the State Environmental Policy Act (SEPA) and National Environmental Policy Act (NEPA). Therefore, we urge Washington State to require, as part of the air and hazardous waste permits for the LAW treatment plant, that the third melter capacity be restored and constructed as part of the plants now under construction.

The HAB advises that USDOE should consider if the most cost effective and reliable means to ensure treatment of the LAW portion of the High-Level Nuclear Wastes would be to include the capacity for a third melter in the LAW vitrification plant now under construction, as had initially been expected. USDOE has informed the HAB that the cost of including the third melter during design and construction would be $75 million. Adding it subsequently, USDOE has stated, would add an additional $50 million to the cost – even if the melter is included in the permit and design. The pretreatment plant's capacity is being designed to meet the flow rate for 90% or more of all LAW wastes, thus that plant's capacity is not a limiting factor in providing feed to the third melter in the first LAW plant. USDOE needs to prove to the public, Congress and regulators that it has an alternative that treats a similar 15 metric ton capacity of LAW which meets the following criteria:

a) the alternative will perform as well as or better than glass, including for byproduct and secondary waste streams, which USDOE expect to bury in near surface landfills at Hanford – the standard that state officials have repeatedly promised the public would be applied in decisions regarding USDOE's efforts to substitute alternatives for vitrification;
b) the alternative has demonstrated a reliability to give as high a degree of assurance that it can be utilized, permitted and treat a similar amount of waste as a third melter in the LAW vitrification plant under construction;
c) the marginal cost to construct and treat waste utilizing the alternative approach can reliably be projected to be lower for 15 metric tons per day capacity than having the 3rd melter in the LAW vitrification plant currently being built.

Until USDOE meets this burden of proof in a final environmental impact statement, it is incumbent – and, indeed, required, upon Washington Ecology and Health to issue permits that are based on full vitrification of all tank wastes by 2028.

USDOE's cost estimates for alternative technologies are unvalidated and have no degree of reliability at this point in time. The costs for treating secondary and byproduct wastes, and emission controls – and whether these wastes and emissions can meet standards – are unknown at this time. The State of New Mexico has also objected to renaming of wastes for disposal at WIPP without vitrification. Thus, USDOE is proposing to trade a reliable treatment capacity for another set of untested promises.

Having a third melter increases the reliability of the entire first phase LAW plant and the entire vitrification system. Based on the preliminary cost life cycle estimates for alternatives to vitrification provided the HAB, the marginal cost for constructing capacity and treating the volume of waste that would be treated by the third melter is $250 to $350 million for alternative technologies. In contrast, the capital cost to vitrify this same volume was stated by USDOE to be $75 million (if the capacity is installed now) and $125 million if the capacity is installed later. Clearly the most reliable and cost effective means of treating this additional segment of the LAW wastes is to install the third melter now.

Because the alternatives to vitrification of waste are speculative, with unknown costs and unknown ability to meet standards (for primary and secondary wastes and for emissions), it is not possible to estimate what savings – if any – would come from not vitrifying all portions of the High-Level Nuclear Wastes. It is clear that claims that the Performance Management Plan scheme would save $20 billion are entirely fictitious.

USDOE currently plans to proceed with decisions and actions to rename some wastes from the High-Level Nuclear Waste tanks as Transuranic Waste (TRU). These wastes would be solidified, rather than treated and glassified, and sent to WIPP for disposal. This scheme has never been considered in an environmental impact statement, nor has its interrelated and cumulative impacts been considered. USDOE proposes to issue a "Supplemental Analysis" to proceed, rather than await public review and comment on this scheme as part of the pending Tank Waste Closure EIS. There was no public or stakeholder notice or involvement in this determination by ORP. The proposed process is unjustified, and will not withstand scrutiny. USDOE should halt any effort to proceed based on a claim that prior analyses bounded impacts of this proposal, and consider all impacts of the proposal as part of the pending EIS.

USDOE applications to Washington Ecology for permits for the vitrification plants under construction delete the third vitrification melter capacity from the LAW treatment plant. As shown above, this capacity is currently the most reliable and cost effective means to assure treatment of an additional portion of the wastes from Hanford's High-Level Nuclear Waste tanks. It is also the only proposal that is consistent with the TPA as it currently exists. Any deletion of capacity – which would either require use of untested alternative technologies (that have not even had their impacts considered in an EIS) or delay in meeting the TPA milestone for vitrification of all tank wastes – would violate SEPA and NEPA, as well as the underlying RCRA requirements that the best available treatment technology be utilized. Therefore, we urge Washington State to require, as part of the air and hazardous waste permits for the LAW treatment plant, that the third melter capacity be restored and constructed as part of the plants now under construction.

Ecology's Response:

<u>Deletion of one LAW melter from the LAW vitrification facility design</u>

Ecology offers the following explanation. Ecology has decided to issue a draft permit modification to delete the third LAW melter for reasons explained in our response to comments made by the Oregon Department of Energy. The overall LAW facility, as now configured, cannot support 3 melters at 45 MTG/day because the support systems are not sized to support

that production rate. With the increased efficiency of the two LAW melters, there is no decrease in glass production over the 30 MTG/day originally proposed. The glass production will not be increased over the original design basis.

We agree that an adequate *Final Tank Closure Environmental Impact Statement (TCEIS)* (now called the Tank Closure Waste Management Environmental Impact Statement (TC&WM EIS)) could provide Ecology useful information about the environmental impacts of treating LAW by various methods, disposing of the treated waste and resulting secondary wastes, and closing Hanford's tank farms. Ecology could adopt the TC&WM EIS if the document met the State's requirements in WAC 197-11-440; however, Ecology will not adopt it without a thorough review of all of the impacts associated with each alternative.

We are very interested in the near-term and future (10,000 years) environmental impacts that will result from on-site disposal of treated LAW and secondary wastes. Ecology supports the consideration of supplemental treatment and its disposal if the final waste forms (both primary and secondary wastes) perform as well as or better than WTP LAW final waste forms. We expect the TC&WM EIS to present credible analyses of the fate of contaminants in any treated LAW or secondary wastes resulting from the LAW treatment process.

Ecology will require USDOE – Office of River Protection (ORP) to treat LAW to meet the performance standards of borosilicate glass. Ecology will also require ORP to produce secondary waste forms that perform at least as well as those produced by WTP's LAW vitrification facility, and that when disposed would not result in a violation of federal and state drinking water standards. Ecology expects one of the alternatives evaluated in the TC&WM EIS to include construction of a second LAW vitrification facility that could be combined with the existing LAW vitrification facility. In another alternative, Ecology expects to see an evaluation of the existing LAW vitrification facility combined with supplemental vitrification technologies to treat LAW. Ecology will not proceed with permitting any LAW treatment process or facility that cannot create a waste form that performs as well as or better than borosilicate glass.

The TPA major Milestone M-45-00 requires ORP to retrieve "as much of the single shell tank waste as technically possible" with limits on the residues that may remain after retrieval to ensure that 99% of the waste will be retrieved, unless Ecology agrees otherwise.[1] The commenter asserted USDOE has declared that it will leave 10% of the waste untreated in the Hanford tanks. Ecology will not support any USDOE plan to leave 10% of the waste in the tanks. We will require ORP to retrieve tank waste to meet the standards set in the TPA and to treat the waste that it retrieves.

[1] Agreement Change Form M-45-04-01, "Hanford Federal Facility Agreement and Consent Order (HFFACO or Agreement) modifications pursuant to Milestone M-45-00C including Appendix D work schedule modifications governing single-shell tank (SST) waste retrieval and closure, and the establishment of new Agreement Appendix I, 'Single Shell Tank System Waste Retrieval and Closure Process,'" Attachment 1, p. 14, dated August 17, 2004.

Ecology agrees with the commenter that TPA major Milestone M-62-00 requires that all HLW and LAW be pretreated and vitrified by December 31, 2028. We support acceleration of tank waste treatment to meet the December 31, 2028 completion date in the TPA major milestone.[2]

If a supplemental treatment results in a LAW waste form that performs as well as or better than borosilicate glass and supports a 20 year mission for the WTP, Ecology will consider its use. We are not in complete agreement with the commenter that vitrification in the WTP is the only proposal that complies with the HFFACO. Milestone M-62-08 requires ORP to provide Ecology a "Tank waste Phase II treatment alternatives report" that identifies credible alternatives to complete treatment of tank waste. The report will include descriptions of "the technical, financial, and contractual alternatives to treat tank waste remaining after Phase I treatment." Ecology expects the report to contain analyses of several forms of treatment, including bulk vitrification. The TPA does not preclude Ecology from permitting another treatment method; however, Ecology will not abandon the requirement for vitrification of tank waste in the WTP if information required by the M-62-08 report is not provided.

Ecology issued a final permit for a Research, Development and Demonstration (RD&D) permit for the bulk vitrification system (DBVS) that will treat waste from tank 241-S-109 in the Hanford 200 West Area. Ecology will allow ORP to vitrify individual containers of tank waste and glass formers and to perform analyses of the vitrified waste form. The intent of the RD&D project is to help ORP and Ecology determine whether treatment of LAW in the DBVS will yield a primary waste form that performs as well as or better than borosilicate glass, and secondary waste forms that perform as well as or better than those produced by WTP's LAW vitrification facility, and that will meet federal and state drinking water standards. That information can be useful to Ecology and ORP in determining if bulk vitrification is a viable alternative for treating the balance of tank waste.

The commenter addressed an ORP proposal to retrieve, treat, and package waste from specific tanks for disposal as transuranic waste. While this is not an issue specifically for the WTP Permit, Ecology offers the following explanation. ORP proposed using the origin of the waste in selected tanks as the basis for changing its designation from high level waste to transuranic waste. The waste from those tanks could then be treated through a filtration and drying process, then packaged for disposal in the Waste Isolations Pilot Plant (WIPP). The commenter is correct that the State of New Mexico has in the past raised objections to receipt of treated tank waste. However, a draft permit modification to WIPP is being proposed to include tank transuranic mixed waste. Ecology determined that granting ORP a permit to conduct treatment and packaging of tank waste as transuranic mixed waste was not prudent (at this time), absent an approved disposal site and a defensible determination by USDOE that the tank waste was transuranic waste.

The commenter presented information that was intended to prove than any treatment aside from a third LAW melter would be much more expensive than the melter, based on estimated costs

[2] Letter, Linda Hoffman, Director to Todd Martin, Chair, "Re: HAB Advice No. 164, Tank Closure EIS Alternatives," dated June 25, 2004.

presented to the Hanford Advisory Board. The commenter asserted that ORP had to prove that any supplemental treatment should be required to provide an additional 15 MTG/day capacity at costs that are lower than the cost of the third LAW melter. The Parties to the TPA framed Milestone M-62-08 specifically to aid in "budget planning for future budget authority"[3]. Ecology expects ORP to provide life cycle cost estimates for any alternatives to treat tank waste. Ecology recognizes reduced costs for a third melter will not prevent the problems of sulfate loading that lead to melter degradation, or the increase in the volume of LAW that results from reduced waste loading.

Ecology disagrees that the deletion of capacity to treat LAW is a "violation" of the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA). The Tank Waste Remediation System EIS evaluated vitrification, which is the method of tank waste treatment approved for HLW destined for disposal in a geologic repository under the Resource Conservation and Recovery Act (RCRA) and incorporated in the TPA. Ecology expects ORP to evaluate LAW supplemental treatment alternatives in the TC&WM EIS and to address any impacts to public health and the environment that may arise. Ecology expects ORP to provide the M-62-08 treatment report to aid the Parties in selecting a treatment process to treat LAW. Ecology does not intend to grant any new permits for any supplemental treatment technology until we determine that the Final TC&WM EIS provides an adequate evaluation of treatment alternatives and until we have evaluated the alternatives that ORP will present in its treatment report required by TPA Milestone M-62-08.

Comment #4:
ALLYN BOLT
1019 S. IRBY ST.
KENNEWICK, WASHINGTON 99338

Melter Configuration

The permit modification proposes to change the configuration of the Waste Treatment Plant, WTP, from 3 Low Activity Waste, LAW, melters and 1 High level Waste, HLW, melter to 2 LAW melters and 2 HLW melters. The reduction of the LAW melters from 3 to 2 will reduce the capability of the WTP to vitrify LAW. LAW vitrification capability increases with a third melter are 1) increased total vitrification capacity and/or 2) increased Total Operating Efficiency, TOE. The total instantaneous plant vitrification capacity may be increased from 36 metric ton, MT, per day with two melters to 45 MT per day with 3 melters. The WTP currently assumes an optimistic 80 percent TOE. A third melter with an operating philosophy of two melters operating of three available or the third melter in scheduled maintenance may increase the TOE for two-melter operation basis to approximately 90 percent.

[3] Hanford Federal Facility Agreement and Consent Order, 89-10 Rev. 6 Table D. Major and Interim Milestones and Target Dates, dated April 18, 20003, p. D-36.

The Department of Energy-Office of River Protection, DOE-ORP, has proposed to vitrify the balance of mission LAW with "bulk vitrification". It is premature to reduce WTP LAW vitrification capability based on an unproven supplemental technology proposal.

My comment on melter configuration is:

> The LAW vitrification facility should retain capability to expediently install the third melter before or after hot start up. No melter support vessels or support systems should be deleted from "black cells" that could preclude later melter installation without extensive schedule impact. The Waste Permit modification should include a project description with schedule and production impacts of deferred third melter installation.

Added Components to Off-gas Treatment Trains

The permit modification proposes to add Activated Carbon Adsorbers to the off-gas trains of both the HLW and LAW vitrification facilities. The melter configuration also adds a second Silver Mordenite Column for the second HLW melter. Both of these devices will remove a significant quantity of Iodine-129, I-129, from the off-gasses. Neither of these secondary wastes is included in the Hanford Solid Waste Environmental Impact Statement, HSWEIS.

My comment on added off-gas equipment is:

> The Waste Permit modification should define the quantities and properties of secondary wastes resulting from vitrification facilities off-gas treatment. The description should include volumes, frequencies, I-129 inventories, other radionuclide inventories, and hazardous chemical inventories produced. The description should include any treatment and packaging of the secondary wastes in preparation for disposal. The description should provide leach performance parameters for disposal calculations in the draft Hanford Tank Closure EIS.

Ecology's Response:

Deletion of one LAW melter from the LAW vitrification facility design

Ecology offers the following explanation. Ecology has decided to issue a draft permit modification to delete the third LAW melter for reasons explained in our response to comments made by the Oregon Department of Energy. The overall LAW facility, as now configured, cannot support 3 melters at 45 MTG/day because the support systems are not sized to support that production rate. With the increased efficiency of the two LAW melters, there is no decrease in glass production over the 30 MTG/day originally proposed. The glass production will not be increased over the original design basis.

Your comment on increasing LAW Total Operating Efficiency is well taken. However, USDOE believes that the additional capital expense cannot be justified at this time. USDOE used the money to procure the additional HLW melter.

Ecology is approving deletion of the LAW melter for the reasons stated above, not because Ecology is accepting that bulk vitrification is a substitute. There are a number of questions regarding potential air emissions, other secondary waste streams, and the performance of the primary waste form that must be answered before Ecology approves bulk vitrification. To this end, Ecology granted USDOE a Research, Development, and Demonstration Permit to demonstrate this technology with actual tank waste. The Parties modified the TPA Milestone M-62-08 to require waste form information and a comparison of the proposed waste form to borosilicate glass.

Added Components to Off-gas Treatment Trains

Ecology offers the following explanation. Ecology and the Washington State Department of Health worked very hard to get the added offgas treatment train components into the design. Ecology will add the changes to the dangerous waste components in the secondary waste stream in the Waste and Analysis Plan for the WTP Permit. The WTP Permit requires USDOE to submit this information to Ecology at least 180 days before the start of cold commissioning.

Ecology shares the commentator's concern about the liquid secondary waste that will be generated as part of the WTP operation and then solidified for disposal at Hanford. We agree the ground water impact analysis for disposal of solidified liquid secondary wastes on the Hanford Site was inadequate in the *Final Hanford Solid Waste Environmental Impact Statement* (FHSW EIS). We respectfully disagree with the commenter as to how best to derive the most accurate analyses of the actual impacts.

Hanford has several closed, current, and planned disposal facilities. In the central part of the Hanford Site, there are many "burial grounds" (some which have no liners), a solid waste landfill, several RCRA compliant mixed waste trenches, and the Environmental Restoration Disposal Facility (ERDF) that USDOE constructed to accept CERCLA (Superfund) remediation waste. Ecology recently issued a permit to USDOE for building a new integrated disposal facility (IDF) to meet RCRA land-disposal facility standards in the Hanford 200 East Area. Half of the IDF will receive RCRA regulated mixed low-level waste (including Immobilized Low Activity Waste (ILAW) from the WTP and vitrified waste from the DBVS), and eventually secondary waste from the Effluent Treatment Facility (ETF). The ETF will treat both WTP and 2nd LAW Treatment system condensate. The USDOE will dispose of low-level waste in the other half of the IDF.

Ecology is aware of the assumptions USDOE used in the HSW EIS for the total inventory of iodine-129 and Tc-99 in the waste that the WTP will treat. We are also aware of USDOE's assumptions about the curies of these constituents that will be retained in the vitrified waste and grouted secondary waste form from the ETF. We know that those assumptions are in direct conflict with other contemporaneous studies that we have received from USDOE.

Ecology will not and has not used any part of the FHSW EIS in our assessment of the fate and transport of iodine-129 and Tc-99. That assessment will become a part of the administrative record associated with the IDF permit and will become part of the TC&WM EIS.

Comment #5:
TODD MARTIN, CHAIR
HANFORD ADVISORY BOARD
1933 JADWIN AVE., SUITE 135
RICHLAND WA 99352

The Hanford Advisory Board has taken positions on these issues in advice numbers 139 and 146. The Board advised DOE to build the 2+3 melter configuration and advised Ecology to ensure the removal of Tc99 pretreatment receives a rigorous technical review. The Board submits these pieces of advise for review and inclusion as part of the public comment for this permit modification (Please see attached).

Advice #139:

The Board believes the greatest risk reduction is achieved by vitrifying the most tank waste possible. Thus, "acceleration" efforts should not come at the expense of the overall vitrification capacity of the WTP which currently is two HLW and three low activity waste (LAW) melters. DOE is currently contemplating the delay of installing the third LAW melter to add the second HLW melter.

DOE maintains the footprint of the WTP will allow the future addition of LAW melters. History tells us that attempts to increase vitrification capacity at a later date will cost more than maximizing capacity today. In order to better understand DOE's rationale, the Board asks DOE to provide the cost of adding a second HLW melter; what cost is avoided by deleting a third LAW melter; and the cost of adding a third LAW melter at a later date.

Washington State permitting authorities have indicated that adding vitrification capacity after the plant has been constructed will likely involve a lengthy permitting process. This too, then, will delay and increase the cost of maximum HLW and LAW waste vitrification.

As DOE moves forward with WTP design and construction, contracts should not be based on the assumption or plans that the majority of LAW will not be vitrified. Decisions to utilize technologies other than vitrification should be made only after engineering and environmental analysis with public input. The recently negotiated Performance-Based Incentives between DOE-ORP & CH2M Hill Hanford Group for identifying and evaluating alternative disposal forms for LAW should be funded only after the WTP is funded at its maximum operational potential.

Advice #146:

The current Tri Party Agreement (TPA) baseline, which includes Tc-99 removal capability in the WTP, resulted from a detailed technical analysis and public vetting. Any proposed changes to that baseline must undergo an equally detailed technical analysis and thorough public vetting.

To date, such an analysis has not been presented to the public or the Board. Therefore, the Board neither sees nor understands a compelling reason to eliminate Tc-99 pretreatment capability from the WTP. In fact, at this time, it appears the adverse effects may outweigh the benefits.

- Both the 1998 and 2000 Immobilized Low Activity Waste (ILAW) Performance Assessments identify Tc-99 as the primary long term contributor to ground water contamination. What are the increased impacts to groundwater caused by elimination of the Tc-99 pretreatment?

- How will elimination of Tc-99 pretreatment impact the concentration of Tc-99 in various waste discharge and process streams? What are the consequences?

- What are the impacts on permitting of removing Tc-99 pretreatment? Will permitting consequences and delays offset the cost savings of eliminating Tc-99 pretreatment?

- What are the impacts of eliminating Tc-99 pretreatment on existing and future Nuclear Regulatory Commission incidental waste rulings?

Ecology's Response:

Deletion of one LAW melter from the LAW vitrification facility design

Ecology offers the following explanation. Ecology has decided to issue a draft permit modification to delete the third LAW melter for reasons explained in our response to comments made by the Oregon Department of Energy. The overall LAW facility, as now configured, cannot support 3 melters at 45 MTG/day because the support systems are not sized to support that production rate. With the increased efficiency of the two LAW melters, there is no decrease in glass production over the 30 MTG/day originally proposed. The glass production will not be increased over the original design basis.

Ecology firmly believes that maximum risk reduction is tied to retrieving as much of the tank waste as possible in the shortest reasonable time. We will continue working to get the best cleanup possible. Waste retrieval and treatment must be balanced against the time required to achieve the optimal risk reduction. Accelerating the mission to meet the 2028 TPA Milestone for completion of tank waste treatment is a plan that Ecology supports. Ecology will be actively monitoring the development of supplemental technologies to ensure that human health and the environment are not sacrificed in a rush to complete cleanup.

Deletion of the technetium ion exchange process system from PT facility design

Ecology agrees. We share your concern, and the concern of other commenters, that Tc-99 in the tank waste poses one of the largest risks to ground water. As explained in our response to comments made by the Nez Perce Tribe, development of bulk vitrification as a supplemental treatment technology is not far enough along to provide a good basis for estimating the distribution of Tc-99 in the primary and secondary waste streams, or the degree of immobilization in the vitrified waste product. In addition, too little is known about the fate of key contaminants (besides Tc-99) in secondary waste streams for the alternative supplemental

treatment technologies or second LAW vitrification facility. As a result, Ecology has decided to deny deletion of the PT facility technetium ion exchange process system until a suitable supplemental treatment technology is demonstrated by the Permittees and approved by Ecology.

Summary of Public Involvement Actions

A public meeting was held on May 6, 2004, at the Bechtel National Inc. office in Richland, Washington. There were no members of the public in attendance. A public notice announcing the comment period was mailed to approximately 900 highly interested members of the public. A public announcement classified advertisement was placed in the Tri-City Herald on March 31, 2004. The public information repositories received:

- Public Notice
- Transmittal Letter
- Proposed Class 2 Modification request and supporting documentation

Attachments

Comment letters
Public Announcement Classified Ad
Public Notice
Ecology letters documenting reclassification of the Class 2 modification request to a Class 3 modification

Nez Perce

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

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Department of Ecology
NWP - Richland

Central Files
File Name:
Cross Reference:

May 28, 2004

Steve Skurla
Department of Ecology
Nuclear Waste Program
Washington Department of Ecology
3100 Port of Benton Blvd.
Richland, WA 99352

COPY FOR YOUR INFORMATION

James Rassmussen
US Department of Energy
Office of River Protection
PO Box 450, MSIN H6-60
Richland, WA 99352

Re: *CLASS 2 MODIFICATION OF THE DANGEROUS WASTE PERMIT FOR THE WASTE TREATMENT AND IMMOBILIZATION PLANT*

Dear Mr. Skurla and Mr. Rassmussen:

Since 1855, reserved treaty rights of the Nez Perce Tribe in the Mid-Columbia have been recognized and affirmed through a series of Federal and State actions. These actions protect Nez Perce rights to utilize our usual and accustomed resources and resource areas in the Hanford Reach of the Columbia River and elsewhere. Accordingly, the Nez Perce Tribe's ERWM Program responds to actions that impact the Hanford ecosystem.

The Nez Perce Environmental Restoration and Waste Management staff realizes you are nearing the end of your review period for the abovementioned RCRA permit modifications for the Waste Treatment Plant. We understand that these modifications include the elimination of the technetium ion exchange system from the Pretreatment Facility.

It is our understanding that ~ 98% of the Tc 99 in the waste stream is at this time expected to be diverted to the Low Activity Waste stream, being treated with regular vitrification (26%), or an alternative supplemental technology, very likely bulk vitrification (72%). As such, the waste stream would then be disposed on site, leaving Tc 99 at Hanford.

It is not yet clear that bulk vitrification is a viable treatment for this waste stream. Other alternative forms of treatment/stabilization currently being investigated apparently are not. In addition, we question the assumption that the bulk vitrification product can remain stable for the period necessary to protect human health and the environment from Tc 99 during its decay life, one of the primary radionuclides of concern at Hanford.

Because this isotope is a major long term contributor to groundwater contamination, and because of the uncertainty regarding the capability of alternative treatments to stabilize Tc 99 effectively, the Nez Perce ERWM cannot support removing the Tc 99 ion exchange system from the pretreatment process. Therefore we would encourage the Department of Energy to do what ever it takes to see that the Tc 99 is placed in a disposable form for shipment off site, as was originally intended, so that it poses no future risks to the Nez Perce Tribe.

Sincerely,

Patrick Sobotta

Patrick Sobotta
ERWM Director

Cc: Kevin Clarke
Roy Scheppens
Nick Ceto
Mike Wilson
Ken Niles
Stuart Harris
Russell Jim

Central Files
File Name:
Cross Reference:

Oregon
Theodore R. Kulongoski, Governor

OREGON DEPARTMENT OF ENERGY
625 Marion St. NE
Salem, OR 97301-3737
Phone: 503-378-4040
Toll Free: 1-800-221-8035
FAX: 503-373-7806
www.energy.state.or.us

COPY FOR YOUR INFORMATION

RECEIVED
JUN 01 2004
Department of Ecology
NWP - Richland

May 27, 2004

Mr. Jim Rasmussen
U.S. Department of Energy
Office of River Protection
PO Box 450 MS H6-60
Richland, WA 99352

Mr. Steve Skurla
Washington Department of Ecology
3100 Port of Benton Blvd
Richland, WA 99352

Subject: Oregon Department of Energy Comments on Modification of Class 2 Dangerous Waste Permit for the Waste Treatment Plant.

Dear Mr. Rasmussen and Mr. Skurla:

Thank you for the opportunity to review the dangerous waste permit modification for the waste treatment plant. Safely immobilizing Hanford's tank waste has long been a priority for the State of Oregon.

We are concerned about the elimination of pre-treatment to remove technetium 99 (Tc-99) from the waste stream. Although Tc-99 represents only a small portion of the total curies present in the tank waste, the U.S. Department of Energy's (DOE) own calculations identify it as the major contributor to long term groundwater contamination from the low activity waste. DOE has stated that Tc-99 pre-treatment is economically and technically impractical. While this may be true for ion exchange technologies, we are not aware that DOE has thoroughly investigated other methods of Tc-99 removal. For example, BNFL has tested, with apparent success, the tetraphenylphosphonium bromide (TPP) precipitation process.

DOE has stated that the design of the bulk vitrification process could result in as much as 90 percent of the Tc-99 being removed from the low activity glass without pre-treatment. We don't believe testing is far enough along to give us great confidence in these projections. As a result, we recommend that Ecology deny the removal of the Tc-99 pre-treatment for now and require DOE to provide to Ecology and the public, a comprehensive examination of Tc-99 removal options before making a final decision.

With regards to melter configuration, the Oregon Department of Energy recommends that Ecology require the third low-activity waste melter be installed at this time. We are aware that DOE has stated that the facility heat removal systems would need to be

redesigned to handle the capacity of this melter. Now would seem to be the ideal time to make any needed modifications to the tank waste treatment facilities. We don't believe it is reasonable to assume that if a third melter is needed at some later date, that DOE will be willing to spend the money and take the actions necessary to install that melter at that time. Oregon has consistently supported optimizing vitrification capabilities as much as possible. Installing a third low-activity melter now would do that.

If you have any questions, please contact Mr. Douglas Huston of my staff at (503) 378-4456.

Sincerely,

Ken Niles
Assistant Director

Cc: Barbara Jarvis, Chair, Oregon Hanford Cleanup Board
Armand Minthorn, Confederated Tribes of the Umatilla Indian Reservation
Russell Jim, Confederated Tribes and Bands of the Yakama Indian Nation
Patrick Sobotta, Nez Perce Tribe
Nicolas Ceto, U.S. Environmental Protection Agency
Todd Martin, Chair, Hanford Advisory Board

Skurla, Steven

From: Gerry Pollet, Janet Miller [gerry-pollet@msn.com]

Sent: Monday, May 31, 2004 10:43 PM

To: Dahl, Suzanne; Skurla, Steven

Cc: office@heartofamericanorthwest.org; Wuennecke, Mary Anne; Power, Max; Wilson, Michael (ECY)

Subject: Comments of Heart of America Northwest on Proposed Permit Modifications for Hanford Tank Waste Vitrification Plant

TO: Suzanne Dahl and Steve Skurla, Washington Ecology
FR: Gerald Pollet, Heart of America Northwest (office@heartofamericanorthwest.org) (206-382-1014)
Date: June 1, 2004

Dear Suzanne and Steve:

Please accept and consider fully the enclosed (atached as a Word document) comments on the proposed modification to the permit for the Hanford Waste Treatment (vitrification) Plant.

I am cc'ing Mary Anne, Max and Mike to facilitate discussion of our concerns at the upcoming Hanford Public Interest Network - ecology meeting.

We are very concerned that there is no SEPA or NEPA coverage for deletion of the third melter from the HWT Plant. USDOE has shown in its written documents that deletion means that it will not meet the TPA deadline of 2028 for treatment, unless it replaces vitrification with proposals to leave waste in tanks and use alternative treatments to vitrification. The impacts of those proposed actions have never been considered. Inclusion of the thrid melter is the most reliable and cost effective means to meet the 2028 deadline for treatment.

Comments of Heart of America Northwest and Heart of America Northwest Research Center to Washington Ecology Relating to Proposed Permit Modifications for the Hanford Waste Vitrification Plant (June, 2004):

USDOE applications to Washington Ecology for permits for the vitrification plants under construction delete the third vitrification melter capacity from the Low Activity Waste (LAW) treatment plant. Without completing the pending Hanford Tank Closure Environmental Impact Statement, it is not possible to determine: a) if having the third melter is the only means to meet the TPA milestones for completion of vitrification; b) whether this third melter is the most reliable and effective means to treat the LAW from the Waste Tanks. It is also the only proposal that is consistent with the TPA as it currently exists. There is no record on which to base decisions that presume substitution of alternative forms of treatment for Vitrification, and any presumption to do so would violate both the State Environmental Policy Act (SEPA) and NEPA. Furthermore, USDOE has publicly announced its intention to leave at least ten percent of all the wastes in the High-Level Nuclear Waste Tanks forever. Its proposal to delete the melter capacity and use alternative treatment is inextricably linked to the proposal to leave some wastes forever in the tanks. This proposal has not been reviewed for environmental and health impacts. Therefore, taking action to delete required treatment capacity would violate the State Environmental Policy Act (SEPA) and National Environmental Policy Act (NEPA). Therefore, we urge Washington State to require, as part of the air and hazardous waste permits for the LAW treatment plant, that the third melter capacity be restored and constructed as part of the plants now under construction.

The HAB advises that USDOE should consider if the most cost effective and reliable means to ensure treatment of the LAW portion of the High-Level Nuclear Wastes would be to include the capacity for a third melter in the LAW vitrification plant now under construction, as had initially been expected. USDOE has informed the HAB that the cost of including the third melter during design and construction would be $75 million. Adding it subsequently, USDOE has stated, would add an additional $50 million to the cost – even if the melter is included in the permit and design. The pretreatment plant's capacity is being designed to meet the flow rate for 90% or more of all LAW wastes, thus that plant's capacity is not a limiting factor in providing feed to the third melter in the first LAW plant. USDOE needs to prove to the public, Congress and regulators that it has an alternative that treats a similar 15 metric ton capacity of LAW which meets the following criteria:

a) the alternative will perform as well as or better than glass, including for byproduct and secondary waste streams, which USDOE expect to bury in near surface landfills at Hanford – the standard that state officials have repeatedly promised the public would be applied in decisions regarding USDOE's efforts to substitute alternatives for vitrification;
b) the alternative has demonstrated a reliability to give as high a degree of assurance that it can be utilized, permitted and treat a similar amount of waste as a third melter in the LAW vitrification plant under construction;
c) the marginal cost to construct and treat waste utilizing the alternative approach can reliably be projected to be lower for 15 metric tons per day capacity than having the 3rd melter in the LAW vitrification plant currently being built.

Until USDOE meets this burden of proof in a final environmental impact statement, it is incumbent – and, indeed, required, upon Washington Ecology and Health to issue permits that are based on full vitrification of all tank wastes by 2028.

USDOE's cost estimates for alternative technologies are unvalidated and have no degree of reliability at this point in time. The costs for treating secondary and byproduct wastes, and emission controls – and whether these wastes and emissions can meet standards – are unknown at this time. The State of New Mexico has also objected to renaming of wastes for disposal at WIPP without vitrification. Thus, USDOE is proposing to trade a reliable treatment capacity for another set of untested promises.

Having a third melter increases the reliability of the entire first phase LAW plant and the entire vitrification system. Based on the preliminary cost life cycle estimates for alternatives to vitrification provided the HAB, the marginal cost for constructing capacity and treating the volume of waste that would be treated by the third melter is $250 to $350 million for alternative technologies. In contrast, the capital cost to vitrify this same volume was stated by USDOE to be $75 million (if the capacity is installed now) and $125 million if the capacity is installed later. Clearly the most reliable and cost effective means of treating this additional segment of the LAW wastes is to install the third melter now.

Because the alternatives to vitrification of waste are speculative, with unknown costs and unknown ability to meet standards (for primary and secondary wastes and for emissions), it is not possible to estimate what savings – if any – would come from not vitrifying all portions of the High-Level Nuclear Wastes. It is clear that claims that the Performance Management Plan scheme would save $20 billion are entirely fictitious.

USDOE currently plans to proceed with decisions and actions to rename some wastes from the High-Level Nuclear Waste tanks as Transuranic Waste (TRU). These wastes would be solidified, rather than treated and glassified, and sent to WIPP for disposal. This scheme has never been considered in an environmental impact statement, nor has its interrelated and cumulative impacts been considered. USDOE proposes to issue a "Supplemental Analysis" to proceed, rather than await public review and comment on this scheme as part of the pending Tank Waste Closure EIS. There was no public or stakeholder notice or involvement in this determination by ORP. The proposed process is unjustified, and will not withstand scrutiny. USDOE should halt any effort to proceed based on a claim that prior analyses bounded impacts of this proposal, and consider all impacts of the proposal as part of the pending EIS.

USDOE applications to Washington Ecology for permits for the vitrification plants under construction delete the third vitrification melter capacity from the LAW treatment plant. As shown above, this capacity is currently the most reliable and cost effective means to assure treatment of an additional portion of the wastes from Hanford's High-Level Nuclear Waste tanks. It is also the only proposal that is consistent with the TPA as it currently exists. Any deletion of capacity – which would either require use of untested alternative technologies (that have not even had their impacts considered in an EIS) or delay in meeting the TPA milestone for vitrification of all tank wastes – would violate SEPA and NEPA, as well as the underlying RCRA requirements that the best available treatment technology be utilized. Therefore, we urge

Washington State to require, as part of the air and hazardous waste permits for the LAW treatment plant, that the third melter capacity be restored and constructed as part of the plants now under construction.

Submitted by Gerald Pollet, JD; Executive Director
office@heartofamericanorthwest.org

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Department of Ecology
NWP - Richland

COPY FOR YOUR
INFORMATION

Date: June 4, 2004

To: Steve Skurla
Department of Ecology; Nuclear Waste Program
3100 Port of Benton Blvd.
Richland, WA 99352

Subject: Comments on Proposed Class 2 Modification of the Dangerous Waste Permit for the Waste Treatment and Immobilization Plant

The Washington State Department of Ecology has requested public comments on proposed "Class 2 Modification of the Dangerous Waste Permit for the Waste Treatment and Immobilization Plant". This letter provides comments on the proposed modifications.

Melter Configuration

The permit modification proposes to change the configuration of the Waste Treatment Plant, WTP, from 3 Low Activity Waste, LAW, melters and 1 High level Waste, HLW, melter to 2 LAW melters and 2 HLW melters. The reduction of the LAW melters from 3 to 2 will reduce the capability of the WTP to vitrify LAW. LAW vitrification capability increases with a third melter are 1) increased total vitrification capacity and/or 2) increased Total Operating Efficiency, TOE. The total instantaneous plant vitrification capacity may be increased from 36 metric ton, MT, per day with two melters to 45 MT per day with 3 melters. The WTP currently assumes an optimistic 80 percent TOE. A third melter with an operating philosophy of two melters operating of three available or the third melter in scheduled maintenance may increase the TOE for two-melter operation basis to approximately 90 percent.

The Department of Energy-Office of River Protection, DOE-ORP, has proposed to vitrify the balance of mission LAW with "bulk vitrification". It is premature to reduce WTP LAW vitrification capability based on an unproven supplemental technology proposal.

My comment on melter configuration is:

> The LAW vitrification facility should retain capability to expediently install the third melter before or after hot start up. No melter support vessels or support systems should be deleted from "black cells" that could preclude later melter installation without extensive schedule impact. The Waste Permit modification should include a project description with schedule and production impacts of deferred third melter installation.

Added Components to Off-gas Treatment Trains

The permit modification proposes to add Activated Carbon Adsorbers to the off-gas trains of both the HLW and LAW vitrification facilities. The melter configuration also adds a second Silver Mordenite Column for the second HLW melter. Both of these devices will remove a significant quantity of Iodine-129, I-129, from the off-gasses. Neither of these secondary wastes is included in the Hanford Solid Waste Environmental Impact Statement, HSWEIS.

My comment on added off-gas equipment is:

> The Waste Permit modification should define the quantities and properties of secondary wastes resulting from vitrification facilities off-gas treatment. The description should include volumes, frequencies, I-129 inventories, other radionuclide inventories, and hazardous chemical inventories produced. The description should include any treatment and packaging of the secondary wastes in preparation for disposal. The description should provide leach performance parameters for disposal calculations in the draft Hanford Tank Closure EIS.

Thank you,

Allyn Boldt
Allyn Boldt
1019 S. Irby St.
Kennewick, WA 99338

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HANFORD ADVISORY BOARD

A Site Specific Advisory Board, Chartered under the Federal Advisory Committee Act

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Ex-Officio
Confederated Tribes of the Umatilla
Washington State Department of Health

June 4, 2004

Steve Skurla
Washington Department of Ecology
3100 Port of Benton Blvd.
Richland, WA 99352

Re: WTP Permit Modifications

Dear Mr. Skurla,

The Department of Energy (DOE) has requested a modification to the Dangerous Waste Permit for the Waste Treatment Plant to reflect the two high-level/two low-activity waste melter (2 + 2) configuration and the elimination of technetium (Tc99) pretreatment. The Hanford Advisory Board (Board) has taken positions on these issues in advice numbers 139 and 146. The Board advised DOE to build the 2+3 melter configuration and advised Ecology to ensure the removal of Tc99 pretreatment receives a rigorous technical review. The Board submits these pieces of advice for review and inclusion as part of the public comment for this permit modification. (Please see attached.)

Sincerely,

Todd Martin, Chair
Hanford Advisory Board

This letter represents HAB consensus for this specific topic. It should not be taken out of context to extrapolate Board agreement on other subject matters.

Attachments: Board Advice #139 & 146

cc: Roy Schepens, Manager, U.S. Department of Energy, Office of River Protection
Howard Gnann, Deputy Designated Federal Official, U.S Department of Energy
Michael Gearheard, U.S. Environmental Protection Agency
Michael Wilson, Washington State Department of Ecology
Sandra Waisley, U.S. Department of Energy Headquarters
Site Specific Advisory Boards
The Oregon and Washington Congressional Delegations

EnviroIssues Hanford Project Office
1933 Jadwin, Suite 135
Richland, WA 99352
Phone: (509) 942-1906
Fax: (509) 942-1926

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Confederated Tribes of the Umatilla
Washington State Department of Health

Apr. 4, 2003

Roy Schepens, Manager
U. S Department of Energy, Office of River Protection
P.O. Box 450
Richland, WA 99352

Subject: Technetium Removal at WTP

Dear Mr. Schepens,

Recently the Department of Energy Office of River Protection (DOE-ORP) announced the decision to eliminate technetium (Tc-99) pretreatment from the tank waste pretreatment plant (WTP). The Hanford Advisory Board (Board) has several concerns with this decision.

The current Tri Party Agreement (TPA) baseline, which includes Tc-99 removal capability in the WTP, resulted from a detailed technical analysis and public vetting. Any proposed change to that baseline must undergo an equally detailed technical analysis and thorough public vetting. To date, such an analysis has not been presented to the public or the Board. Therefore, the Board neither sees nor understands a compelling reason to eliminate Tc-99 pretreatment capability from the WTP. In fact, at this time, it appears the adverse effects may outweigh the benefits.

- Both the 1998 and 2000 Immobilized Low Activity Waste (ILAW) Performance Assessments identify Tc-99 as the primary long-term contributor to ground water contamination. What are the increased impacts to groundwater caused by elimination of Tc-99 pretreatment?

- How will elimination of Tc-99 pretreatment impact the concentration of Tc-99 in various waste discharge and process streams? What are the consequences?

- What are the impacts on permitting of removing Tc-99 pretreatment? Will permitting consequences and delays offset the cost savings of eliminating Tc-99 pretreatment?

- What are the impacts of eliminating Tc-99 pretreatment on existing and future Nuclear Regulatory Commission incidental waste rulings?

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Richland, WA 99352
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Fax: (509) 942-1926

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State of Oregon
Shelley Cimon
Doug Huston

Ex-Officio
Confederated Tribes of the Umatilla
Washington State Department of Health

Dec 6, 2002

Roy Schepens, Manager
U.S. Department of Energy, Office of River Protection
P.O. Box 450
Richland, WA 99352

Subject: Waste Treatment Plant and Supplemental Technologies

Dear Mr. Schepens,

The Department of Energy's Office of River Protection (DOE-ORP) has taken a positive step toward reducing risk and accelerating vitrification by adding a second high level waste (HLW) melter to the Waste Treatment Plant (WTP). The Hanford Advisory Board (Board) has always supported efforts to expedite and accelerate tank waste treatment in order to reduce risk. The Board believes the greatest risk reduction is achieved by vitrifying the most tank waste possible. Thus, "acceleration" efforts should not come at the expense of the overall vitrification capacity of the WTP which currently is two HLW and three low activity waste (LAW) melters. DOE is currently contemplating the delay of installing the third LAW melter to add the second HLW melter.

DOE maintains the footprint of the WTP will allow the future addition of LAW melters. History tells us that attempts to increase vitrification capacity at a later date will cost more than maximizing capacity today. In order to better understand DOE's rationale, the Board asks DOE to provide the cost of adding a second HLW melter; what cost is avoided by deleting a third LAW melter; and the cost of adding the third LAW melter at a later date.

Washington State permitting authorities have indicated that adding vitrification capacity after the plant has been constructed will likely involve a lengthy permitting process. This too, then, will delay and increase the cost of maximum HLW and LAW waste vitrification.

As DOE moves forward with WTP design and construction, contracts should not be based on assumptions or plans that the majority of the LAW will not be vitrified. Decisions to utilize technologies other than vitrification should be made only after engineering and environmental analyses with public input. The recently negotiated Performance-Based Incentives between DOE-ORP & CH2M Hill Hanford Group for identifying and evaluating alternative disposal forms for LAW should be funded only after the WTP is funded at its maximum operational potential.

EnviroIssues Hanford Project Office
1933 Jadwin, Suite 135
Richland, WA 99352
Phone: (509) 942-1906
Fax: (509) 942-1926

Norm Dicks
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Tri-City Herald
Wednesday, March 31, 2004
Page C6

CLASS 2 MODIFICATIONS TO THE DANGEROUS WASTE PERMIT FOR THE WASTE TREATMENT AND IMMOBILIZATION PLANT

The purpose of this announcement is to notify the public and invite comments on a proposed modification to the Hanford Facility RCRA Permit pertaining to the Waste Treatment and Immobilization Plant (WTP). The proposed Class 2 permit modification includes:

- Updates to elements of the narrative portion of the permit for the WTP to support Hanford Facility RCRA Permit renewal and incorporate design and other information previously approved by Ecology
- Incorporation of the new WTP configuration of two high-level waste (HLW) melters and two low activity waste (LAW) melters into the permit
- Elimination of the technetium ion exchange system from the WTP pretreatment (PT) facility.

The US Department of Energy and Bechtel National, Inc. are constructing the WTP to vitrify radioactive and chemical wastes that are stored in underground tanks at the Department of Energy's Hanford Site in southeastern Washington State. The Department of Ecology (Ecology) issues and approves or denies proposed changes to the permit.

Copies of the modification requests and supporting documentation may be obtained at the Public Reading Room, Consolidated Information Center, Rm. 101L, 2770 University Drive, Richland, Washington.

A sixty-day public comment period will be held from March 31, 2004 through June 1, 2004 on the proposed modification. Comments should be submitted to the Ecology contact identified below.

A public meeting will be held on May 6, 2004 at 7:00 p.m. at the Bechtel National, Inc. offices at 3000 George Washington Way, Richland, Washington.

The permittee's compliance history during the life of the permit being modified is available from the Department of Ecology contact person.

WHOM TO CONTACT

If you would like further information, please contact:

1. Mr. Jim Rasmussen, U.S. Department of Energy, Office of River Protection at 376-2247, E-mail address: *James_E_Jim_Rasmussen@rl.gov.*

2. Mr. Steve Skurla, Department of Ecology, 1315 W. 4th Avenue, Kennewick, Washington 99336 at 509-736-3011, E-mail address: *ssku461@ecy.wa.gov.*

Office of River Protection

~NOTICE~

CLASS 2 MODIFICATION OF THE HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT (RCRA) PERMIT

The purpose of this announcement is to notify the public and invite comments on a proposed modification to the Hanford Facility RCRA Permit pertaining to the Waste Treatment and Immobilization Plant (WTP). The proposed Class 2 permit modification includes:

- Updates to elements of the narrative portion of the permit for the WTP to support Hanford Facility RCRA Permit renewal and incorporate design and other information previously approved by Ecology
- Incorporation of the new WTP configuration of two high-level waste (HLW) melters and two low activity waste (LAW) melters into the permit
- Elimination of the technetium ion exchange system from the WTP pretreatment (PT) facility.

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The permittee's compliance history during the life of the permit being modified is available from the Department of Ecology contact person.

WHOM TO CONTACT

If you would like further information, please contact:

1. Mr. Jim Rasmussen, U.S. Department of Energy, Office of River Protection at 509-376-2247, E-mail address: James_E_Jim_Rasmussen@rl.gov.
2. Mr. Steve Skurla, Department of Ecology, 1315 W. 4th Avenue, Kennewick, Washington 99336 at 509-736-3011, E-mail address: ssku461@ecy.wa.gov.

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99352 • (509) 372-7950

June 29, 2004

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

Mr. Jim Henschel, Project Manager
Bechtel National Inc.
2435 Stevens Center Place, MSIN: H4-02
Richland, Washington 99323

Dear Messrs. Schepens and Henschel:

Re: Waste Treatment and Immobilization and Treatment Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification

The 60-day public comment period for the WTP Class 2 DWP modification began on March 31, 2004 and ended on June 1, 2004. This modification request includes a proposal to remove one Low-Activity Waste (LAW) melter, add one High-Level Waste (HLW) melter, and eliminate the technetium-99 (Tc-99) ion exchange system in the Pretreatment Building.

At the close of the public comment period, the Washington State Department of Ecology (Ecology) had received significant comments from four groups and one individual. The comments received were similar, containing significant public concerns about the proposed modification. As a result, pursuant to Washington Administrative Code (WAC) 173-303-830(4)(b)(vi)(A)(III)(AA), Ecology has elected to require that the modification follow the procedures for a Class 3 modification contained in WAC 173-303-830(4)(c). The 60-day public comment period on the modification request required for a Class 3 modification was completed during the Class 2 modification process, therefore, Ecology will be proceeding directly with the WAC 173-303-840 process, as required for a Class 3 modification.

The proposed modification application is judged complete. As allowed under WAC 173-303-840(b), Ecology is requesting more detailed supplemental information be submitted to Ecology as soon as possible in order to complete our evaluation of the modification request. The supplemental information to be supplied includes the following:

2+2 Modification

- Explanation of the LAW melter performance and how they have been demonstrated.
- Explain the limitations of the LAW material handling and cooling systems related to the increased glass output.
- Explain the difference in vitrification end dates between the WTP configuration of one HLW melter and three LAW melters and the configuration of two HLW melters and two LAW melters and relate to the Tri Party Agreement 2028 date for completing retrieval of all tanks.
- Explain how WTP LAW Vitrification Facility output will not provide enough feed to keep HLW operating at capacity.
- Explain how a third melter could be added later if the through put of two melters falls short of expectations.

Elimination of Tc-99 Removal Systems

- Provide a material balances and flow sheets on Tc-99 similar to the one presented to Ecology in the March 29 meeting showing the following:
  - Tc-99 removal using ion exchange columns (not including supplemental technology)
  - No Tc-99 ion exchange in conjunction with bulk vitrification
  - No Tc-99 ion exchange and no bulk vitrification.

Include a narrative to describe the processes, written to be understood by the general public.

- Could Tc-99 ion exchange be put back into WTP Pretreatment at a future date? If so, provide a description of the work required and a rough estimate of cost.
- Other than bulk vitrification, what methods to mitigate Tc-99 could be implemented in the future?

By asking United States Department of Energy to provide information on Tc-99, Ecology is not asserting it has regulatory authority over radionuclides.

After Ecology has reviewed the above supplemental information, Ecology will write additional permit conditions, if warranted. Ecology will also prepare a public notice, a Statement of Basis, and schedule a 45-day public review and public meeting pursuant to WAC1173-303-840(2)(d) and (3) through (5). At the conclusion of the 45-day public comment period, Ecology will consider and respond to all significant comments and make a final permit decision.

To expedite the processing of this permit modification request, it is requested that the Permittees respond to supplemental information request as soon as possible.

If there are any questions regarding this letter, please contact Suzanne Dahl at (509) 372-7892.

Sincerely,

for Michael A. Wilson
Program Manager
Nuclear Waste Program

MW:SS:jc

cc: Dave Bartus, EPA
Nick Ceto, EPA
Cathy Massimino, EPA
John Eschenberg, ORP
Lori Huffman, ORP
Jim Rasmussen, ORP
Jim Betts, BNI
Bill Clements, BNI
Brad Erlandson, BNI
Tim Horst, BNI
Bob Lawrence, BNI
Phil Schuetz, BNI
Rich Tosetti, BNI
Mark Sautman, DNFSB
Todd Martin, HAB
R. Vinson, PEC
Fred Beranek, WGI
Phil Peistrup, WGI
Steve Piccolo, WGI
Stuart Harris, CTUIR
Pat Sobotta, NPT
Russell Jim, YN
Ken Niles, ODOE
Administrative Record: Tank Waste Treatment Requirements
Environmental Portal

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99352 • (509) 372-7950

July 1, 2004

Mr. Patrick Sobotta
Environmental Restoration and Waste Management
Nez Perce Tribe
P.O. Box 365
Lapwai, Idaho 83540

Dear Mr. Sobotta:

Re: Comments on the Waste Treatment and Immobilization and Treatment Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification

The Washington State Department of Ecology (Ecology) would like to thank you for taking the time to comment on the Class 2 WTP DWP modification application submitted by the United States Department of Energy-Office of River Protection (USDOE-ORP) and Bechtel National Inc. (BNI) (Permittees.)

At the completion of the 60-day public review cycle, Ecology had received significant comments from four groups and one individual. As a result of receiving similar, significant public concerns about the proposed modification and pursuant to Washington Administrative Code (WAC) 173-303-830(b)(vi)(A)(III)(AA), Ecology has elected to require that the modification follow the procedures for a Class 3 modification contained in WAC 173-303-830(c). To issue a Class 3 modification, Ecology is required to follow the processes described in WAC 173-303-840.

This means before making a decision on this permit modification, Ecology is requesting submittal of specific, supplemental information from the Permittees. After reviewing the supplemental information, Ecology will make a tentative permitting decision. Ecology will address your concerns as part of the tentative permitting decision. This tentative permitting decision, including any additional permit conditions written by Ecology, will be subject to a 45-day public review period.

In addition to the public notification requirements in WAC 173-303-640, each group or individual submitting comments will receive written notification regarding start and end of the public review cycle.

If there are any questions regarding this letter, please contact Suzanne Dahl at (509) 372-7892 or Steve Skurla at (509) 372-7925.

Sincerely,

for Michael A. Wilson
Program Manager
Nuclear Waste Program

MW:SS:jc

cc: Cathy Massimino, EPA
John Eschenberg, ORP
Lori Huffman, ORP
Roy Schepens, ORP
Jim Henschel, BNI
Mark Sautman, DNFSB
Fred Beranek, WGI
Stuart Harris, CTUIR
Russell Jim, YN
Administrative Record: Waste Treatment Plant
Environmental Portal

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99352 • (509) 372-7950

July 1, 2004

Mr. Ken Niles, Assistant Director
Oregon Department of Energy
625 Marion Street NE
Salem, Oregon 97301

Dear Mr. Niles:

Re: Comments on the Waste Treatment and Immobilization and Treatment Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification

The Washington State Department of Ecology (Ecology) would like to thank you for taking the time to comment on the Class 2 WTP DWP modification application submitted by the United States Department of Energy-Office of River Protection (USDOE-ORP) and Bechtel National Inc. (BNI) (Permittees.)

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Sincerely,

Michael A. Wilson
Program Manager
Nuclear Waste Program

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Administrative Record: Waste Treatment Plant
Environmental Portal

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99352 • (509) 372-7950

July 1, 2004

Mr. Gerald Pollet, Executive Director
Heart of America Northwest
1305 4th Ave. #208
Seattle, Washington 98101

Dear Mr. Pollet:

Re: Comments on the Waste Treatment and Immobilization and Treatment Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification

The Washington State Department of Ecology (Ecology) would like to thank you for taking the time to comment on the Class 2 WTP DWP modification application submitted by the United States Department of Energy-Office of River Protection (USDOE-ORP) and Bechtel National Inc. (BNI) (Permittees.)

At the completion of the 60-day public review cycle, Ecology had received significant comments from four groups and one individual. As a result of receiving similar, significant public concerns about the proposed modification and pursuant to Washington Administrative Code (WAC) 173-303-830(b)(vi)(A)(III)(AA), Ecology has elected to require that the modification follow the procedures for a Class 3 modification contained in WAC 173-303-830(c). To issue a Class 3 modification, Ecology is required to follow the processes described in WAC 173-303-840.

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If there are any questions regarding this letter, please contact Suzanne Dahl at (509) 372-7892 or Steve Skurla at (509) 372-7925.

Sincerely,

Michael A. Wilson
Program Manager
Nuclear Waste Program

MW:SS:jc

cc: Cathy Massimino, EPA
John Eschenberg, ORP
Lori Huffman, ORP
Roy Schepens, ORP
Jim Henschel, BNI
Mark Sautman, DNFSB
Fred Beranek, WGI
Stuart Harris, CTUIR
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Administrative Record: Waste Treatment Plant
Environmental Portal

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99352 • (509) 372-7950

July 1, 2004

Mr. Allyn Boldt
1019 South Irby Street
Kennewick, Washington 99338

Dear Mr. Boldt:

Re: Comments on the Waste Treatment and Immobilization and Treatment Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification

The Washington State Department of Ecology (Ecology) would like to thank you for taking the time to comment on the Class 2 WTP DWP modification application submitted by the United States Department of Energy-Office of River Protection (USDOE-ORP) and Bechtel National Inc. (BNI) (Permittees.)

At the completion of the 60-day public review cycle, Ecology had received significant comments from four groups and one individual. As a result of receiving similar, significant public concerns about the proposed modification and pursuant to Washington Administrative Code (WAC) 173-303-830(b)(vi)(A)(III)(AA), Ecology has elected to require that the modification follow the procedures for a Class 3 modification contained in WAC 173-303-830(c). To issue a Class 3 modification, Ecology is required to follow the processes described in WAC 173-303-840.

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In addition to the public notification requirements in WAC 173-303-640, each group or individual submitting comments will receive written notification regarding start and end of the public review cycle.

Mr. Allyn Boldt
July 1, 2004

bcc: Michelle Anderson-Moore, Ecology
Robbie Biyani, Ecology
Laura Cusack, Ecology
Kelly Elsethagen, Ecology
Ed Fredenberg, Ecology
Tracy Gao, Ecology
Jane Hedges, Ecology
Jerry Hensley, Ecology
Tim Hill, Ecology
Ron Skinnarland, Ecology
Steve Skurla, Ecology
Jean Vanni, Ecology
Mike Wilson, Ecology
Mary Ann Wuennecke, Ecology
Jerry Yokel, Ecology
NWP Reader File
NWP Central File: Waste Treatment Plant

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
3100 Port of Benton Blvd • Richland, WA 99352 • (509) 372-7950

July 1, 2004

Mr. Todd Martin, Chair
Hanford Advisory Board
1933 Jadwin Avenue, Suite 135
Richland, Washington 99352

Dear Mr. Martin:

Re: Comments on the Waste Treatment and Immobilization and Treatment Plant (WTP) Class 2 Dangerous Waste Permit (DWP) Modification

The Washington State Department of Ecology (Ecology) would like to thank you for taking the time to comment on the Class 2 WTP DWP modification application submitted by the United States Department of Energy-Office of River Protection (USDOE-ORP) and Bechtel National Inc. (BNI) (Permittees.)

At the completion of the 60-day public review cycle, Ecology had received significant comments from four groups and one individual. As a result of receiving similar, significant public concerns about the proposed modification and pursuant to Washington Administrative Code (WAC) 173-303-830(b)(vi)(A)(III)(AA), Ecology has elected to require that the modification follow the procedures for a Class 3 modification contained in WAC 173-303-830(c). To issue a Class 3 modification, Ecology is required to follow the processes described in WAC 173-303-840.

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In addition to the public notification requirements in WAC 173-303-640, each group or individual submitting comments will receive written notification regarding start and end of the public review cycle.

If there are any questions regarding this letter, please contact Suzanne Dahl at (509) 372-7892 or Steve Skurla at (509) 372-7925.

Sincerely,

for Michael A. Wilson
Program Manager
Nuclear Waste Program

MW:SS:jc

cc: Cathy Massimino, EPA
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Administrative Record: Waste Treatment Plant
Environmental Portal

Part III, Operating Units

Operating Unit 10

Waste Treatment and Immobilization Plant

The Waste Treatment and Immobilization Plant (WTP) is the unit designed to treat the mixed (radioactive and dangerous) waste stored in underground tanks at the Hanford Site. The waste will be separated into High-level and Low-level waste streams in a Pretreatment Building. The waste streams are mixed with glass forming additives, heated to 950-1250° C in melters, and poured into containers. The waste is immobilized in the glass matrix. The immobilized waste is transported from the WTP Unit for disposal.

III.10.A. COMPLIANCE WITH APPROVED PERMIT

The Permittees ~~shall~~ will comply with all requirements set forth in Operating Unit 10, including the conditions specified in Permit Conditions III.10.B through III.10.K. Enforceable portions of the application have been incorporated in Operating Unit 10 and are identified as follows. All sections, figures, and tables included in these portions are also enforceable, unless stated otherwise.

Where information regarding treatment, management, and disposal of the radioactive source, byproduct material, special nuclear material ~~and/or special nuclear components of mixed waste~~ (as defined by the Atomic Energy Act of 1954, as amended) and/or the radionuclide component of mixed waste 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~~ or 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 ~~shall~~ will prevail.

OPERATING UNIT 10:

Chapter 1.0	Part A, Form 3 Permit Application, Revision 1 (December 6, 2001)
Chapter 2.0	Facility Description (Topographic Map)
Chapter 3.0	Waste Analysis Plan
Chapter 4.0	Process Information
Chapter 5.0	Groundwater Monitoring (RESERVED)
Chapter 6.0	Procedures to Prevent Hazards
Chapter 7.0	Contingency Plan
Chapter 8.0	Personnel Training
Chapter 9.0	Corrective Action (RESERVED)
Chapter 10.0	Waste Minization Certification (RESERVED)
Chapter 11.0	Closure
Chapter 12.0	Reporting and Recordkeeping
Appendix 1.0	Compliance Schedule
Appendix 2.0	Critical Systems
Appendix 3.0	Drawing Category Table
Appendix 4.0	Piping Material Index Table

Appendix 5.0 Legends for Process Flow Diagrams and Piping and Instrumentation Diagrams

Appendix 6.0 Risk Assessment

6.1 ~~Preliminary Risk Assessment Work Plan (RESERVED)~~ Environmental Risk Assesment Work Plan

6.1.1 Previously Submitted Preliminary Risk Assessment Work Plan

6.1.2 Documentation of Revisions to Preliminary Risk Assessment Work Plan

6.2 Risk Assessment Work Plan (RESERVED)

6.3 Pre-Demonstration Test Risk Assessment Report (RESERVED)

6.3.1 Basis and Assumptions (RESERVED)

6.4 Final Risk Assessment Report (RESERVED)

6.4.1 Basis and Assumptions (RESERVED)

Appendix 7.0 WTP Documents Applicable to All Regulated Areas

7.1 Process Flow Diagrams

7.2 Piping and Instrumentation Diagrams

7.3 System Description Documentation (RESERVED)

7.4 General Arrangement Drawings

7.5 Civil, Structural, and Architectural Criteria and Typical Design Details

7.6 Mechanical Drawings

7.7 Specifications

7.8 Engineering Calculations

7.9 Material Selection Documentation

7.10 Critical Systems Equipment/Instrument List

7.11 IQRPE Reports

7.12 Installation Plans

7.13 Instrument Control Logic and Narrative Description (RESERVED)

7.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)

7.15 Operating Documents

Appendix 8.0 Pretreatment Building

8.1 Process Flow Diagrams

8.2 Piping and Instrumentation Diagrams

8.3 System Description Documentation (RESERVED)

8.4 General Arrangement Drawings

8.5 Civil, Structural, and Architectural Criteria and Typical Design Details

8.6 Mechanical Drawings

8.7 Specifications

8.8 Engineering Calculations

8.9 Material Selection Documentation
8.10 Critical Systems Equipment/Instrument List
8.11 IQRPE Reports
8.12 Installation Plans
8.13 Instrument Control Logic and Narrative Description
8.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
8.15 Operating Documents (RESERVED)
Appendix 9.0 LAW Building
9.1 Process Flow Diagrams
9.2 Piping and Instrumentation Diagrams
9.3 System Description Documentation (RESERVED)
9.4 General Arrangement Drawings
9.5 Civil, Structural, and Architectural Criteria and Typical Design Details 9.6 Mechanical Drawings
9.7 Specifications
9.8 Engineering Calculations
9.9 Material Selection Documentation
9.10 Critical Systems Equipment /Instrument List
9.11 IQRPE Reports
9.12 Installation Plans (RESERVED)
9.13 Instrument Control Logic, and Narrative Description
9.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
9.15 Demonstration Test Plan (RESERVED)
9.16 Demonstration Test Report (RESERVED)
9.17 Treatment Effectiveness Report (RESERVED)
9.18 Operating Documents
Appendix 10.0 HLW Building
10.1 Process Flow Diagrams
10.2 Piping and Instrumentation Diagrams
10.3 System Description Documentation (RESERVED)
10.4 General Arrangement Drawings
10.5 Civil, Structural, and Architectural Criteria and Typical Design Details
10.6 Mechanical Drawings
10.7 Specifications
10.8 Engineering Calculations
10.9 Material Selection Documentation
10.10 Critical Systems Equipment/Instrument List

10.11 IQRPE Reports
10.12 Installation Plans (RESERVED)
10.13 Instrument Control Logic and Narrative Description
10.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
10.15 Demonstration Test Plan (RESERVED)
10.16 Demonstration Test Report (RESERVED)
10.17 Treatment Effectiveness Report (RESERVED)
10.18 Operating Documents
Appendix 11.0 Laboratory Building
11.1 Process Flow Diagrams
11.2 Piping and Instrumentation Diagrams
11.3 System Description Documentation (RESERVED)
11.4 General Arrangement Drawings
11.5 Civil, Structural, and Architectural Criteria and Typical Design Details
11.6 Mechanical Drawings
11.7 Specifications (RESERVED)
11.8 Engineering Calculations
11.9 Material Selection Documentation
11.10 Critical Systems Equipment/Instrument List
11.11 IQRPE Reports
11.12 Installation Plans (RESERVED)
11.13 Instrument Control Logic and Narrative Description (RESERVED)
11.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)
11.15 Operating Documents (RESERVED)
Appendix 12.0 Balance of Facilities
12.1 Process Flow Diagrams (RESERVED)
12.2 Piping and Instrumentation Diagrams (RESERVED)
12.3 System Description Documentation (RESERVED)
12.4 General Arrangement Drawings (RESERVED)
12.5 Civil, Structural, and Architectural Criteria and Typical Design Details (RESERVED)
12.6 Mechanical Drawings (RESERVED)
12.7 Specifications (RESERVED)
12.8 Engineering Calculations (RESERVED)
12.9 Material Selection Documentation (RESERVED)
12.10 Critical Systems Equipment/Instrument List (RESERVED)
12.11 IQRPE Reports (RESERVED)

12.12 Installation Plans (RESERVED)

12.13 Instrument Control Logic and Narrative Description (RESERVED)

12.14 Descriptions of Instrument Installation and Testing Procedures (RESERVED)

12.15 Operating Documents (RESERVED)

III.10.B STANDARD CONDITIONS AND GENERAL FACILITY CONDITIONS

In addition to the conditions in this chapter, the Permittees must comply with all the applicable portions of the Dangerous Waste Portion and EPA portion of the Resource Conservation and Recovery Act (RCRA) Permit for the Hanford Facility. In the event that a Unit-Specific Condition for the WTP Unit in Permit Conditions III.10.C. through III.10.K. conflicts with a general condition in Permit Conditions I and II of this permit, the Unit-Specific Condition ~~shall~~ will apply to the WTP Unit.

III.10.C. UNIT-SPECIFIC CONDITIONS FOR THE WTP UNIT

III.10.C.1 Facility-Specific Definitions and Acronyms

The following definitions are specific to the WTP Unit:

Ash: means a measure of the contribution of particulate matter from the melter feeds to the melter off-gas, as determined by representative sampling and analysis of the melter feed using ASTM Method D-482, or an equivalent method.

Batch: refers to waste staged in one DST designated as mixed waste for transfer to the WTP Unit for treatment.

Continuous monitoring system: means using a device which continuously samples the regulated parameter specified on Permit Tables III.10.H.F, III.10.I.F, III.10.J.F, and III.10.K.F, with the exception of pressure, without interruption, evaluates the detector response at least once every fifteen (15) seconds and computes and records the average value at least every sixty (60) seconds, except during allowable periods of calibration and except as defined otherwise by the CEMS Performance Specifications in 4B and 8A in Appendix B, 40 CFR Part 60. For the parameter pressure, the term "continuous monitoring system" means using a device that continuously samples the pressure without interruption and evaluates the detector response without averaging at least once each second and records the value at least every sixty (60) seconds. In addition, if the AWFCO is engaged due to a pressure exceedence, the pressure value must be recorded.

Cascade event: means when additional waste feed cut-off parameter set points deviate outside the limits specified in Permit Tables III.10.H.F, III.10.I.F, III.10.J.F, and III.10.K.F after waste feed is cut-off, but while waste or waste residues are being managed in HLW and LAW.

Dangerous and/or mixed waste management unit: means dangerous and/or mixed waste management units, areas, systems, and sub-systems as defined in Permit Tables III.10.D.A, III.10.E.A through D, III.10.F.A, III.10.G.A, III.10.H.A, III.10.I.A, III.10.J.A, and III.10.K.A.

Dioxin/furan" and "dioxins and furans: means tetra-, penta-, hexa-, hepta-, and octa-chlorinated dibenzo dioxins and furans.

HLW Vitrification System: is defined as specified on Permit Tables III.10.J.A and B, and III.10.K.A and B.

Hourly rolling average or HRA: ~~shall~~ will mean the arithmetic mean of the sixty (60) most recent one-minute readings recorded by the continuous monitoring system.

LAW Vitrification System: is defined as specified on Permit Tables III.10.H.A and B, and III.10.I.A and B.

Mode of operation: means operation of the LAW Vitrification System or the HLW Vitrification System within set limits for each operating parameter specified in Permit Tables III.10.H.D and F (for LAW) and Permit Tables III.10.I.D and F (for HLW).

One-minute average: means the average of detector responses calculated at least every sixty (60) seconds from responses obtained at least every fifteen (15) seconds.

Permittees: means the United States Department of Energy (owner/operator) and Bechtel National, Inc. (Co-operator).

Pretreatment Plant Miscellaneous Unit Systems: is defined as specified on Permit Tables III.10.G.A and B.

Primary sump: means any pit or reservoir that meets the WAC 173-303-040 definition of "tank," and those troughs/trenches connected to it, that serve to collect dangerous/hazardous waste, deliberately introduced (e.g., from decontamination or treatment activities), for transport to TSD facilities.

Rolling average: means the average of all one-minute averages over the averaging period.

Secondary sump: means any pit or reservoir that meets the WAC 173-303-040 definition of "tank," and those troughs/trenches connected to it, that serve to collect dangerous/hazardous waste, not deliberately introduced (e.g., from spills, leaks, or overflows), for transport to TSD facilities.

Standard operating procedure or SOP: ~~shall~~ will mean a written description of the procedures by which a process, equipment, etc. ~~shall~~ will be operated. An SOP may be written by the manufacturer and/or the Permittees.

Successful completion of the demonstration test: ~~shall~~ will mean operations including a minimum of three test runs without significant interruptions (i.e., each test run was completed on the same day initiated and the samples have been preserved and maintained intact, and one in which sampling of exhaust gas was representative of the LAW Vitrification System or HLW Vitrification System Operations, whichever is applicable, and adequate to achieve evaluation of PODCs destruction and removal efficiency (DRE) to 99.99%).

TEQ: means toxicity equivalence, the international method of relating the toxicity of various dioxin/furan congeners to the toxicity of 2,3,7,8- tetrachlorodibenzo-p-dioxin.

Pre-process: means prior to introduction into a dangerous or mixed waste management unit at the WTP Unit.

In-process: means duration of a waste in a dangerous or mixed waste management unit at the WTP Unit.

Post-process: means prior to the introduction into a subsequent dangerous or mixed waste management unit at the WTP Unit or prior to shipment from the WTP Unit.

Vendor information: means documentation prepared by a vendor (e.g., catalog cut sheets) for plant items that are routinely manufactured and stocked by vendors (i.e., items that are considered "off the shelf") and are not being procured in accordance with Permittee's engineering drawings and specifications. Documentation such as catalog cut sheets ~~shall~~ will be annotated to specify selected items which meet Permittee's procurement requirements equipment specification. Documentation associated with "one of a kind", custom items, and commercial grade items (e.g., bulk pipe, valves) that will be procured in accordance with the Permittees engineering drawings and specifications is not considered vendor information. Changes to the drawings and specifications may require a permit modification.

The following acronyms are specific to the WTP Unit:

AWFCO	Automatic Waste Feed Cut-off
CDR	Construction Deficiency Report
CEMS	Continuous Emissions Monitoring System
CMS	Continuous Monitoring System
CNP	Cesium Nitric Acid Recovery Process System

CRP	Cesium Resin Addition Process System
CPE	Cathodic Protection Electrical System
CXP	Cesium Ion Exchange Process System
DFETP	Dioxin and Furan Emission Test Plan
DRE	Destruction and Removal Efficiency
Dscf	Dry standard cubic feet
ERP	Emergency Response Plan
FEP	Waste Feed Evaporation Process System
FRP	Waste Feed Receipt Process System
HCP	HLW Concentrate Receipt Process System
HDH	HLW Canister Decontamination Handling System
HFH	HLW Filter Cave Handling System
HEH	HLW Canister Export Handling System
HFP	HLW Melter Feed Process System
HLP	HLW Lag Storage and Feed Blending Process System
HLW	High-level Waste
HMH	HLW Melter Handling System
HMP	HLW Melter Process System
HOP	HLW Vit Primary Offgas Treatment System
HPH	HLW Canister Pour Handling System
HSH	HLW Melter Cave Support Handling System
IHLW	Immobilized High-Level Waste (Glass)
ILAW	Immobilized Low-Activity Waste (Glass)
IQRPE	Independent, qualified, registered, professional engineer
LAB	WTP Laboratory Building
LAW	Low Activity Waste
LCP	LAW Concentrate Receipt Process System
LEH	LAW Container Export Handling System
LFH	LAW Canister 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
LSM	Locally Shielded Melter
LVP	LAW Secondary Offgas/Vessel Vent Process System
NCR	Nonconformance Report
PFH	Pretreatment Filter Cave Handling System
PIH	Pretreatment In-Cell Handling System
PJV	Pulse Jet Ventilation System
PODC	Principal Organic Dangerous Constituents
PTF	Pretreatment Building
PVP	Pretreatment Vessel Vent Process System
PVV	Process Vessel Vent System
PWD	Plant Wash and Disposal System
RDP	Spent Resin and Dewatering Process System
RDTP	Revised Demonstration Test Plan
RLD	Radioactive Liquid Waste Disposal System
RPP-WTP	River Protection Project-Waste Treatment Plant
RWH	Radioactive Solid Waste Handling System
SBS	Submerged Bed Scrubber

TCP	Treated LAW Evaporation Process System
TLP	Treated LAW Evaporation System
TOC	Total Organic Carbon
TXP	Technetium Ion Exchange Process System
TEP	Technetium Eluant Recovery Process System
UFP	Ultrafiltration Process System
WESP	Wet Electrostatic Precipitator
WTP	River Protection Project – Waste Treatment and Immobilization Project (also known as the Waste Treatment Plant and Vitrification Plant)
6Mo	Six Percent Molybdenum Alloy
304L	ASTM A240 Grade 304L Stainless Steel
316L	ASTM A240 Grade 316L Stainless Steel

III.10.C.2. General Waste Management

III.10.C.2.a. The Permittees may not commence treatment or storage of dangerous waste or mixed waste in any new or modified portion of the facility until the Permittees have received a Permit modification approval pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g., and submitted to Ecology, by certified mail, express mail, or hand delivery, a letter signed by the Permittees and a Registered Professional Engineer stating that the facility has been constructed or modified in compliance with the Permit in accordance with WAC 173-303-810(14)(a); and

III.10.C.2.a.i. Ecology has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the Permit, or

III.10.C.2.a.ii. Ecology has either waived the inspection or has not, within fifteen business days, after receipt of the Permittees' letter, notified the Permittees of an intent to inspect.

III.10.C.2.b. The Permittees are authorized to accept the dangerous and/or mixed waste specified in Operating Unit 10, Chapter 1.0 (Part A Form 3) except for those wastes outside the waste acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this Permit as long as the generator has a valid State/EPA identification number.

III.10.C.2.c. All dangerous and/or mixed waste must be managed only in areas authorized for dangerous and/or mixed waste management under the conditions of this Permit, except as allowed under WAC 173-303-200. The authorized dangerous and/or mixed waste management areas of the WTP Unit are specified in Conditions III.10.D through III.10.K. of this Permit.

III.10.C.2.d. 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.e. Permit modifications pursuant to this Permit for dangerous and/or mixed waste at the request of the Permittees must be done according to the three tiered modification system specified in WAC 173-303-830(4) and Condition I.C.3. The Permit modification request must include page changes to the Permit, attachments, and permit application supporting documentation necessary to incorporate the proposed permit modification.

III.10.C.2.f. In addition to other requirements in WAC 173-303-830, within forty-five (45) days of a permit change (i.e., permit modification) being put into effect or approved, the Permittees ~~shall~~ will retype the relevant portions of the Permit and attachments, to incorporate the change (if not already reflected in the change pages submitted in the original permit modification request), reprint the documents, and submit them to Ecology. This submittal does not require certification described in WAC 173-303-810(13).

III.10.C.2.g. For permit modifications pursuant to Operating Unit 10, Appendix 1.0 of this Permit, a draft permit will be prepared and issued by Ecology pursuant to WAC 173-303-

830(3)(a)(ii) and WAC 173-303-840. A final permit decision will be issued by Ecology pursuant to WAC 173-303-840.

III.10.C.2.h. The Permittees must complete at least one Compliance Schedule interim requirement every 12 months, as specified in Operating Unit 10, Appendix 1.0 of this Permit. If no interim requirement will be completed within a 12 month period, the Permittees ~~shall~~ will submit progress reports to Ecology for incorporation into the Administrative Record. Progress report Compliance Schedule dates ~~shall~~ will be submitted to Ecology as a Class [1]1 permit modification, for incorporation into Operating Unit 10, Appendix 1.0 of this Permit. Progress reports ~~shall~~ will contain at a minimum, the following information:

III.10.C.2.h.i. A description of the portion of the interim requirement completed;

III.10.C.2.h.ii. Summaries of any problems affecting timely completion of the interim requirement;

III.10.C.2.h.iii. A description of the plans for completing the remaining portion of the interim requirement, including any alternatives;

III.10.C.2.h.iv. Projected interim requirement completion date.

III.10.C.2.i. The Permittees ~~shall~~ will submit a Part A, Form 3 Permit Application revision for Ecology approval as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g., in accordance with the schedule in Operating Unit 10, Appendix 1.0 of this Permit to incorporate changes to Tables III.10.D.A, III.10.E.A through D, III.10.F.A, III.10.G.A, III.10.H.A, III.10.I.A, III.10.J.A, and III.10.K.A, as modified pursuant to the compliance schedule in Operating Unit 10, Appendix 1.0 of this Permit.

III.10.C.2.j. The Permittees ~~shall~~ will submit to Ecology the potential disposal path(s), including the potential authorized TSD facilities, for each waste stream generated at the WTP Unit in accordance with the schedule in Operating Unit 10, Appendix 1.0 of this Permit for incorporation into the Administrative Record.

III.10.C.2.k. The Permittees ~~shall~~ will submit to Ecology, traffic information at the WTP Unit pursuant to WAC 173-303-806(4)(a)(x), in accordance with the schedule in Operating Unit 10, Appendix 1.0 of this Permit for incorporation into the Administrative Record.

III.10.C.2.l. During operations of the LAW Vitrification System and HLW Vitrification System, pursuant to Permit Sections III.10.H. and J., processing of materials in the LAW and HLW Vitrification Systems that would designate as dangerous waste are fully subject to the requirements of this Permit, excluding the melter feed system as identified in Tables III.10.H.A. and III.10.J.A., respectively. This exclusion does not apply to mixed waste.

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 exceedence of the requirements dictated in the IDF's permit waste acceptance criteria.

III.10.C.3. Waste Analysis

III.10.C.3.a. The Permittees ~~shall~~ will maintain adequate knowledge of any waste to be managed properly by the WTP Unit before acceptance, after receipt, and during treatment and storage of these waste. The Permittees will ensure this knowledge through compliance with the requirements of WAC-173-303-300 and with the provisions of the WAP, Operating Unit 10, Chapter 3.0 of this Permit [WAC 173-303-806(4)(a)(ii), WAC 173-303-300(1)].

III.10.C.3.b. When laboratory analytical methods are required to confirm the Permittees knowledge of the waste, the Permittees must ensure that the sampling and test procedures listed as acceptable by WAC 173-303-110, Appendices II and III to 40 CFR Part 261, the current revision of SW-846, or equivalent methods approved in writing by Ecology are used.

III.10.C.3.c. The Permittees are responsible for obtaining accurate information for each waste stream. Inaccurate waste analysis information provided by the generating site (or unit) is not a defense for noncompliance by the Permittees with the waste management requirements and conditions of this Permit, WAC 173-303, and the LDR in 40 CFR Part 268, as incorporated by reference in Chapter 173-303.

III.10.C.3.d. Records and results of waste analyses described in Conditions II.D.3 or III.10.C.3.e. ~~shall~~ will be maintained as described in Condition II.I.1 of this Permit. The WTP Unit operating record ~~shall~~ will include, but not be limited to, information requirements for waste analysis in Conditions I.E.10 and II.I of this Permit.

III.10.C.3.e. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will submit to Ecology for review and approval a revised WAP and QAPP in Operating Unit 10, Chapter 3.0 of this Permit as a permit modification pursuant to Conditions III.10.C.2.e and III.10.C.2.f, and Compliance Schedule in Operating Unit 10, Appendix 1.0. The revised WAP and QAPP ~~shall~~ will include:

III.10.C.3.e.i. All the elements listed in WAC 173-303-300(5), Condition II.D.3 of this Permit (Waste Analysis), and in compliance with Condition II.E of this Permit (Quality Assurance/Quality Control).

III.10.C.3.e.ii. Requirements that characterization ~~shall~~ will be performed on the waste feed prior to transfer to the WTP Unit in conformance with the regulatory data quality objectives ~~supporting~~ identified in the ~~*Tank Waste Remediation System Privatization Project "Regulatory DQO" Process* (Wiemers and others, 1998), as amended~~ Regulatory DQO Optimization Report (24590-WTP-RPT-MGT-04-001, Rev 0). Requirements that the following analyses, at a minimum, ~~shall~~ will be conducted on each new batch prior to waste transfer to the WTP Unit, in accordance with the methods under WAC 173-303-110: Ammonia, pH, metals, organic acids, mercury, cyanide, volatiles, semi-volatiles, PCBs/pesticides, anions, TOC, and compatibility (ASTM Method D5058-90). For the purposes of this Permit Condition, a "new batch" is one that has been sampled and analyzed in accordance with the ~~*Tank Waste Remediation System Privatization Project "Regulatory DQO" Process* (Wiemers and others, 1998~~ Regulatory DQO Optimization Report (24590-WTP-RPT-MGT-04-001, Rev 0), and has received no further additions. Further additions require the Permittees to resample and reanalyze, unless an exception is approved by Ecology on a case-by-case basis. Only mixed waste meeting the definition of "new batch", or granted an exception as discussed above, are authorized for transfer to the WTP Unit. Water additions for the purposes of waste transfer are not considered additions for the purposes of this Permit Condition.

III.10.C.3.e.iii. Identify and include operating parameters to be monitored/controlled and limitations for these parameters for pre-process, in-process, and post-process operations addressing on a unit specific basis treatment effectiveness, as specified in Tables III.10.E.E through H, III.10.G.C, III.10.H.C, III.10.I.C, III.10.J.C, and III.10.K.C, waste compatibility, safe operation, and compatibility with unit materials of construction. Amend the sampling, analysis, and QA/QC procedures to include these parameters and the monitoring frequency.

III.10.C.3.e.iv. Requirements that the Permittees ~~shall~~, will for Type I sumps if liquids are detected, and for Type II sumps, as defined in Operating Unit 10, Chapter 4.0 of this Permit, if liquid levels are outside normal operating parameters, either collect the liquid and return to the treatment process, or designate the sump contents for proper management and disposal prior to removal.

III.10.C.3.e.v. For ILAW and IHLW containers, a description of procedures used to verify exterior container surfaces are visually free of mixed waste.

III.10.C.3.e.vi. Requirement that wastes generated at the WTP Unit meet the receiving authorized TSD facility waste acceptance criteria prior to a waste stream transfer.

III.10.C.3.e.vii. Requirements and criteria for reevaluation of sampling and analysis frequency for all waste streams.

III.10.C.3.e.viii. Documentation demonstrating methods for obtaining samples of wastes are representative as discussed in WAC 173-303-110(2).

III.10.C.4. Recordkeeping

III.10.C.4.a. The unit specific portion of the Hanford Facility Operating Record ~~shall~~ will include the documentation specified in Operating Unit 10, Chapter 12.0, ~~General~~ Permit Condition II.I, applicable to the WTP Unit and other documentation specified in Operating Unit 10. The facility and unit specific record keeping requirements are distinguished in Table 12-1 of the General Information portion, Attachment 33 to the Sitewide Permit, and tied to the associated Sitewide Permit Conditions.

III.10.C.5 Procedure to Prevent Hazards

III.10.C.5.a. The Permittees ~~shall~~ will design, construct, and operate the WTP Unit in compliance with Operating Unit 10, Chapter 6.0, Section 6.1.

III.10.C.5.b. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will update and resubmit for approval Operating Unit 10, Chapter 6.0, Sections 6.3, 6.4, and 6.5 as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, to be consistent with design details and schedule described in Operating Unit 10, Appendix 1.0. The WTP Unit fire protection systems ~~shall~~ will be constructed to the applicable codes listed in Operating Unit 10, Chapter 6.0, Section 6.3.1.4. Updated Section 6.4.4. ~~shall~~ will include descriptions of the essential loads and critical systems supplied with back-up, un-interruptible, and standby power.

III.10.C.5.c. The Permittees ~~shall~~ will inspect the WTP Unit to prevent malfunctions and deterioration, operator errors, and discharges that may cause or lead to the release of dangerous waste constituents to the environment, or a threat to human health. Inspections must be conducted in accordance with the WTP Unit Inspection Schedule, Operating Unit 10, Chapter 6.0, Section 6.2. Prior to the receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will update and resubmit to Ecology for review and approval the Inspection Schedule in Operating Unit 10, Chapter 6.0 of this Permit as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, and Compliance Schedule in Operating Unit 10, Appendix 1.0. The revised schedule ~~shall~~ will include, but not be limited to, III.10.C.5.i. through v. below. In addition, the Permittees ~~shall~~ will submit to Ecology for incorporation into the Administrative Record, the basis for developing Inspection Schedule frequencies:

III.10.C.5.c.i. Detailed dangerous and/or mixed waste management unit specific and general inspection schedules and description of procedures (not examples) pursuant to WAC 173-303-395(1)(d), 173-303-630(6), 173-303-640(4)(a)(i) and (6), 173-303-670(7)(b) in accordance with 173-303-680(3), 40 CFR, 264.1101(c)(4). The inspection schedule ~~shall~~ will be presented in the form of a table that includes a description of the inspection requirement, inspection frequency, and types of problems to look for during the inspections.

III.10.C.5.c.ii. The proposed locations (scaled drawing with layout) and capabilities of camera(s) (i.e., zoom angles, field of view, etc.) to be used for remote inspections.

III.10.C.5.c.iii. Schedule and program description for performing integrity assessments as specified in Permit Conditions III.10.E.9.e.i., III.10.G.10.e.i., III.10.H.5.e.i., III.10.I.1.a.v., III.10.J.5.e.i., and III.10.K.1.a.v.

III.10.C.5.c.iv. Inspection schedules for leak detection system and control instrumentation to include, but not limited to, valves pressure devices, flow devices, measuring devices, as specified in Permit Conditions III.10.E.9.e.xi, III.10.F.3.c, and III.10.G.10.e.xii, and Permit Conditions III.10.H.5.f.xvi, and III.10.J.5.f.xvi.

III.10.C.5.c.v. Inspection schedule ~~shall~~ will include inspections for all dangerous and/or mixed waste management units specified in Permit Sections III.10.D, E, F, G, H, I, J, and K.

III.10.C.5.d. The Permittees ~~shall~~ will equip the WTP Unit with the equipment specified in Operating Unit 10, Chapter 6.0, as required by WAC 173-303-340(1), and Condition II.B.1 of this Permit.

III.10.C.5.e. The Permittees ~~shall~~ will test and maintain the equipment specified in Operating Unit 10, Chapter 6.0, as necessary, to assure proper operation in the event of emergency as required by Condition II.B.2 of this Permit.

III.10.C.5.f. The Permittees ~~shall~~ will maintain access to communications or alarms pursuant to WAC 173-303-340(2), as provided in the *RPP-WTP Emergency Response Plan*, Operating Unit 10, Chapter 7.0 ~~as required by~~ and Condition II.B.3 of this Permit.

III.10.C.6. Contingency Plan

III.10.C.6.a. The Permittees ~~shall~~ will immediately carry out applicable provisions of the *RPP-WTP Emergency Response Plan*, Operating Unit 10, Chapter 7.0 of this Permit, pursuant to WAC 173-303-360(2), whenever there is a release of dangerous and/or mixed waste or dangerous waste constituents, or other emergency circumstance, any of which threatens human health or the environment.

III.10.C.6.b. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will update and resubmit the Contingency Plan in compliance with Operating Unit 10, Chapter 7.0, and pursuant to WAC 173-303-350(5), as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, to be consistent with design details and schedule described in Operating Unit 10, Appendix 1.0.

III.10.C.6.c. After initial receipt of dangerous and/or mixed waste, the Permittees ~~shall~~ will review and amend, if necessary, the applicable portions of the Contingency Plan, Operating Unit 10, Chapter 7.0 of this Permit, and in accordance with the provisions of WAC 173-303-350(5) and WAC 173-303-830(4). The Contingency Plan ~~shall~~ will be amended as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f.

III.10.C.6.d. RESERVED.

III.10.C.6.e. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will comply with the requirements of WAC 173-303-350(3) and –360(1) concerning the emergency coordinator specific to the WTP Unit in compliance with Permit Condition II.A.4.

III.10.C.7. ~~Training Plan~~Personnel Training

III.10.C.7.a. Prior to the initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will update and resubmit, to Ecology for review and approval, the Training Program description in Operating Unit 10, Chapter 8.0 of this Permit as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f, and Compliance Schedule in Operating Unit 10, Appendix 1.0. The revised Training Program description ~~shall~~ will include but not be limited to:

III.10.C.7.a.i. Detailed unit specific and general Training Program descriptions (not typical) consistent with WAC 173-303-806(4)(a)(xii).

III.10.C.7.a.ii. Sufficient detail to document that the training and qualification program for all categories of personnel whose activities may reasonably be expected to directly affect emissions from the LAW and HLW Systems, except control room operators, is appropriately consistent with 40 CFR 63.1206(c)(6)(ii), and for control room operators, is appropriately consistent with 40 CFR 63.1206(c)(6)(i) and 63.1206(c)(6)(iii) through 63.1206(c)(6)(vi) [WAC 173-303-680(2)].

III.10.C.7.b. The Permittees ~~shall~~ will ensure that the LAW and HLW Systems are operated and maintained, at all times, by persons who are trained and qualified to perform these and any other duties that may reasonably be expected to directly affect emissions from the LAW and HLW Systems [WAC 173-303-680(2)].

III.10.C.7.c. The Permittees ~~shall~~ will conduct personnel training in accordance with the approved description of the WTP Unit Training Plan, Operating Unit 10, Chapter 8.0 of this Permit, pursuant to WAC 173-303-330. The Permittees ~~shall~~ will maintain documents in accordance with Condition II.C.1 of this Permit and WAC 173-303-330(2) and (3).

III.10.C.7.d. RESERVED.

III.10.C.7.e. The Permittees ~~shall~~ will submit, under separate cover, the actual detailed WTP Unit Dangerous Waste Training Plan in accordance with the Compliance Schedule in Operating Unit 10, Appendix 1.0. The WTP Unit Dangerous Waste Training Plan will be reviewed for compliance with the outline of the training program in Operating Unit 10, Chapter 8.0 and requirements of WAC 173-303-330. The Training Plan will be incorporated into the Administrative Record.

III.10.C.8. Closure

III.10.C.8.a. The Permittees must conduct closure of the WTP Unit according to the Closure Plan in Operating Unit 10, Chapter 11.0, and Conditions II.J (Facility Closure), II.K (Soil/Ground Water Closure Performance Standards), and III.10.C.8. of this Permit. The closure plan ~~shall~~ will be modified according to provisions of WAC 173-303-610(3)(b)(ii).

III.10.C.8.b. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will update and resubmit the Closure Plan, Operating Unit 10, Chapter 11.0 of this Permit, for approval as a permit modification pursuant to Permit Condition III.10.C.2.g., to be consistent with design details and schedule described in Operating Unit 10, Appendix 1.0. The updated Closure Plan must be consistent with the closure performance standards specified in Condition II.K, WAC 173-340 and, in addition for Containment Buildings, consistent with 40 CFR 264.1102(b) as referenced by WAC 173-303-695.

III.10.C.8.c. The Permittees ~~shall~~ will submit, for Ecology review and approval, an update to the Closure Plan, Operating Unit 10, Chapter 11.0 within one hundred eighty (180) days prior to commencing partial closure, as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f.

III.10.C.8.d. One hundred eighty (180) days prior to commencing closure, the Permittees must submit to Ecology, for review and approval, a Sampling and Analysis Plan and a revised Closure Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e and III.10.C.2.f.

III.10.C.8.e. At least forty-five (45) days before initiating closure, the Permittees must provide Notification of Closure pursuant to WAC 173-303-610(3)(c).

III.10.C.8.f. Ecology may require additional sampling and/or investigation after the Permittees implement the approved Sampling and Analysis Plan if Ecology determines that the sampling and analyses have not adequately demonstrated whether clean closure has been

achieved. Such a requirement will be implemented pursuant to WAC 173-303-830(3). Additional sampling and analysis may be required for the following reasons:

III.10.C.8.f.i. Specialized sample collection or analytical techniques are required to ensure adequate quantitation limits for chemical constituents; or

III.10.C.8.f.ii. Results indicate the need to analyze for additional constituents at certain locations; or

III.10.C.8.f.iii. Results indicate additional soil or groundwater sampling is required in certain locations; or

III.10.C.8.f.iv. Other reasons indicate the Sampling and Analysis Plan has not adequately demonstrated whether clean closure has been achieved.

III.10.C.8.g. RESERVED.

III.10.C.8.h. Documentation supporting the independent registered professional engineer's certification of closure must be submitted to Ecology with the closure certification required by WAC 173-303-610(6). In addition to the items in Operating Unit 10, Chapter 11.0, the documentation must include the following and other information Ecology may request. The Permittees are required to furnish documentation supporting the independent registered professional engineer's certification to Ecology upon request, until Ecology has notified the Permittees in writing that Ecology agrees with and has accepted the Permittees' closure certification:

III.10.C.8.h.i. Sampling procedures that were followed;

III.10.C.8.h.ii. soil and concrete locations that were sampled;

III.10.C.8.h.iii. Sample labeling and handling procedures that were followed, including chain of custody procedures;

III.10.C.8.h.iv. Description of procedures that were followed to decontaminate concrete or metal to meet the clean closure standards as set by Ecology, on a case by case basis, in accordance with the closure performance standards of WAC 173-303-610(2)(a)(ii) and in a manner that minimizes or eliminates post-closure escape of dangerous waste constituents, or to achieve a "clean debris surface" as specified in 40 CFR 268.45, Table 1, concrete surfaces, as incorporated by reference in WAC 173-303-140. [WAC 173-303-610(2)(b)(ii)].

III.10.C.8.h.v. Laboratory and field data, including supporting QA/QC summary;

III.10.C.8.h.vi. Report that summarizes closure activities;

III.10.C.8.h.vii. Copy of all field notes taken by the independent registered professional engineer; and

III.10.C.8.h.viii. Copy of all contamination survey results.

III.10.C.9. Critical Systems

III.10.C.9.a. The WTP Unit critical systems, as defined in the Hanford Site-wide Permit definition section, are identified in Operating Unit 10, Appendix 2.0.

III.10.C.9.b. As the design proceeds, Ecology reserves the right to modify this Permit for reasons described in the WAC 173-303-830(3) to add additional systems to the Critical Systems in Operating Unit 10, Appendix 2.0.

III.10.C.9.c. The Permittees ~~shall~~ will conduct all construction subject to this Permit in accordance with the approved designs, plans, and specifications that are required by this Permit, except as specified in Conditions III.10.C.9.d. or III.10.C.9.e. For purposes of Conditions III.10.C.9.d. and III.10.C.9.e., the Ecology representative will be an Ecology construction inspector, project manager, or other designated representative of Ecology.

III.10.C.9.d. The Permittees ~~shall~~ will submit a nonconformance report (NCR) or construction deficiency report (CDR) to the Ecology representative (s), as applicable, within five (5) calendar days of the Permittees becoming aware of incorporation of minor nonconformance or construction deficiency from the approved designs, plans, and specifications into the construction of critical systems, as defined in the Hanford Site-wide Permit definition section. Such minor nonconformance or construction deficiency ~~shall~~ will be defined, for the purposes of this Permit Condition, as nonconformance or construction deficiency that is necessary to accommodate proper construction and the substitution or the use of equivalent or superior materials or equipment that do not substantially alter the Permit conditions or reduce the capacity of the facility to protect human health or the environment. Such minor nonconformance or construction deficiency ~~shall~~ will not be considered a modification of this Permit. If Ecology determines that the nonconformance or construction deficiency is not minor, it will notify the Permittees in writing that a permit modification is required for the deviation and ~~notify the Permittees in writing~~ whether prior approval is required from Ecology before work proceeds which affect the nonconforming or construction deficiency item.

III.10.C.9.e. The Permittees ~~shall~~ will formally document, with a nonconformance report (NCR) or construction deficiency report (CDR), as applicable, incorporation of minor nonconformance or construction deficiency from the approved designs, plans, and specifications into the construction of non-critical systems subject to this Permit. Such minor nonconformance or construction deficiency ~~shall~~ will not be considered a modification of this Permit. All NCR's and CDR's ~~shall~~ will be maintained in the WTP Unit Operating Record and ~~shall~~ will be made available to Ecology upon request or during the course of an inspection. If Ecology determines that the nonconformance or construction deficiency is not minor, it will notify the Permittees in writing that a permit modification is required for the deviation and whether prior approval is required from Ecology before work proceeds which affect the nonconforming or construction deficiency item.

III.10.C.9.f. For each Critical System identified in Operating Unit 10, Appendix 2.0 or meets the definition of Critical System as defined in this Permit, the Permittees ~~shall~~ will submit to Ecology for review and approval, following the schedule in Operating Unit 10, Appendix 1.0 of this Permit, the information identified in Permit Conditions III.10.C.16., III.10.D.10., III.10.E.9., III.10.F.7., III.10.G.10., III.10.H.5., and III.10.J.5. Information Ecology determines to incorporate into the Permit will follow the Permit Condition III.10.C.2.g. process, unless stated otherwise within the specific permit condition. Information Ecology determines necessary to support design basis will be incorporated into the Administrative Record.

III.10.C.9.g. Upon completion of the WTP Unit construction subject to this Permit, the Permittees ~~shall~~ will produce as-built drawings of the project which incorporate the design and construction modifications resulting from all change documentation as well as modifications made pursuant to Permit Conditions III.10.C.2.e., III.10.C.2.f., and III.10.C.2.g. The Permittees ~~shall~~ will place the as-built drawings into the operating record within twelve (12) months of completing construction.

III.10.C.9.h. The Permittees ~~shall~~ will formally document changes to approved designs, plans, and specifications with design change documentation [e.g., Design Change Notice (DCN), Field Change Request (FCR), Field Change Notice (FCN), Specification Change Notice (SCN), and Supplier Deviation Disposition Request (SDDR)]. All design change documentation ~~shall~~ will be maintained in the WTP Unit-specific Operating Record and ~~shall~~ will be made available to Ecology upon request or during the course of an inspection. For any design change documentation affecting any critical systems, the Permittees ~~shall~~ will provide copies to Ecology within five (5) working days.

Identification of critical systems ~~shall~~ will be included by the Permittees in each WTP Unit-specific dangerous waste permit application, closure plan, or permit modification, as appropriate. If Ecology determines that the design change is not minor, it will notify the Permittees in writing that a permit modification is required for the design change and whether prior approval is required from Ecology before work affected by the design change may proceed.

III.10.C.9.i. Ventilation system duct work is not required to be doubly contained within the WTP Unit. However, upon discovery of accumulation of liquids, a compliance plan will be submitted within sixty (60) days of discovery to correct the problem.

III.10.C.10 Equivalent Materials

III.10.C.10.a. If certain equipment, materials, and administrative information (such as names, phone numbers, addresses) are specified in this Permit, the Permittees may use equivalent or superior substitutes. Use of such equivalent or superior items within the limits (e.g., ranges, tolerances, and alternatives) already clearly specified in sufficient detail in Operating Unit 10 of this Permit, are not considered a modification of this Permit. However, the Permittees must place documentation of the substitution, accompanied by a narrative explanation and the date the substitution became effective in the operating record within seven (7) days of putting the substitution into effect, and submit documentation of the substitution to Ecology. Upon review of the documentation of the substitution, if deemed necessary, Ecology may require the Permittees to submit a permit modification in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f.

Note: The format of tables and forms contained in Operating Unit 10 of this Permit are not subject to the requirements of this Permit, and may be revised at the Permittees' discretion.

III.10.C.10.b. If Ecology determines that a substitution was not equivalent to the original, they will notify the Permittees that the Permittees' claim of equivalency has been denied, of the reasons for the denial, and that the original material or equipment must be used. If the product substitution is denied, the Permittees ~~shall~~ will comply with the original approved product specification, find an acceptable substitution, or apply for a permit modification in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f.

III.10.C.11. Risk Assessment

III.10.C.11.a. The Permittees ~~shall~~ will submit, in accordance with Operating Unit 10, Appendix 1.0 of this Permit to Ecology for approval, the "Previously Submitted Risk Assessment Workplan," Operating Unit 10, Appendix 6.1.1. of this Permit, revised in consultation with Ecology to address the revisions (NOD/responses) documented in Operating Unit 10, Appendix 6.1.2 and updated to address the following, as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. The updated previously submitted Risk Assessment Work Plan ~~shall~~ will be added to Operating Unit 10 as Appendix 6.2 (Risk Assessment Work Plan).

III.10.C.11.a.i. EPA guidance for performance of Human Health and Ecological Risk Assessments for Hazardous Waste Combustion Facilities current at the time of the submittal;

III.10.C.11.a.ii. Toxicity data current at the time of the submittal;

III.10.C.11.a.iii. Compounds newly identified or updated emissions data from current waste characterization and emission testing;

III.10.C.11.a.iv. Air modeling updated to include stack gas parameters based on most current emissions testing and WTP Unit design;

III.10.C.11.a.v. Physical/transport properties of constituents current at the time of the submittal;

III.10.C.11.a.vi. Process Description based on most current WTP Unit design;

III.10.C.11.a.vii. Emissions data and all supporting calculations based on most current WTP Unit; and

III.10.C.11.a.viii. Update of receptor locations based on land use or land use zoning changes, if any.

III.10.C.11.b. The Permittees ~~shall~~ will submit for Ecology approval, prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, a Pre-Demonstration Test Risk Assessment Report as Operating Unit 10, Appendix 6.3 addressing direct and indirect human health and ecological risks performed pursuant to Ecology approved work plan under Permit Condition III.10.C.11.a. This report ~~shall~~ will also include submittal of projected stack emissions data in Tables III.10.G.D., III.10.H.E., and III.10.J.E. of this Permit and Operating Unit 10, Appendix 6.3.1 (Basis and Assumptions), completed and updated which details the basis and assumptions for these emissions, including but not limited to, projected operating conditions, feed-rates, and treatment effectiveness, consistent with information provided and approved pursuant to Permit Conditions III.10.G.6., III.10.G.10., III.10.H.5., and III.10.J.5. as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f.

III.10.C.11.c. Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted pursuant to Permit Condition III.10.H.3.d.i, the Permittees ~~shall~~ will submit a Final Risk Assessment Report as Operating Unit 10, Appendix 6.4, incorporating the emission test results from the Demonstration Report(s). The Final Risk Assessment Report ~~shall~~ will be prepared in accordance with the Risk Assessment Work Plan, as approved by Ecology pursuant to Permit Condition III.10.C.11.a, except the following updates are hereby incorporated. The Permittees ~~shall~~ will also submit with this Final Risk Assessment Report, Tables III.10.G.D. and III.10.I.E. of this Permit and Operating Unit 10, Appendix 6.4.1 (Basis and Assumptions) updated to incorporate the emissions data from this Final Risk Assessment Report(s), as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f.

III.10.C.11.c.i. Toxicity data current at the time of the submittal;

III.10.C.11.c.ii. Compounds newly identified or updated emissions data from current waste characterization and emission testing;

III.10.C.11.c.iii. Air modeling updated to include stack gas parameters based on most current emissions testing;

III.10.C.11.c.iv. Physical/transport properties of constituents current at the time of the submittal;

III.10.C.11.c.v. Update of receptor locations based on land use or land use zoning changes, if any;

III.10.C.11.c.vi. Process description based on current WTP Unit design;

III.10.C.11.c.vii. Emissions data and all supporting calculations based on current WTP Unit; and

III.10.C.11.c.viii. Data from final risk assessment report pursuant to Permit Condition III.10.C.11.d, if available first, or simultaneously.

III.10.C.11.d. Within ninety (90) days of Ecology approval of the Demonstration Report(s) submitted pursuant to Permit Condition III.10.J.3.d.i, the Permittees ~~shall~~ will submit a Final Risk Assessment Report as Operating Unit 10, Appendix 6.4, incorporating the emission test results from the Demonstration Report(s). The Final Risk Assessment Report ~~shall~~ will be prepared in accordance with the Risk Assessment Work Plan, as approved by Ecology pursuant to Permit Condition III.10.C.11.a, except the following updates are hereby incorporated. The Permittees ~~shall~~ will also submit with this Final Risk Assessment Report, Tables III.10.G.D. and III.10.K.E. of this Permit and Operating Unit 10, Appendix 6.4.1 (Basis and Assumptions) updated to incorporate the emissions data from

this Final Risk Assessment Report, as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f.

III.10.C.11.d.i. Toxicity data current at the time of the submittal;

III.10.C.11.d.ii. Compounds newly identified or updated emissions data from current waste characterization and emission testing;

III.10.C.11.d.iii. Air modeling updated to include stack gas parameters based on most current emissions testing;

III.10.C.11.d.iv. Physical/transport properties of constituents current at the time of the submittal;

III.10.C.11.d.v. Update of receptor locations based on land use or land use zoning changes, if any;

III.10.C.11.d.vi. Process description based on current WTP Unit design;

III.10.C.11.d.vii. Emissions data and all supporting calculations based on current WTP Unit; and

III.10.C.11.d.viii. Data from final risk assessment report pursuant to Permit Condition III.10.C.11.c. if available first, or simultaneously.

III.10.C.11.e. The Final Risk Assessment Report(s) required by Permit Conditions III.10.C.11.c. and III.10.C.11.d. may be combined, or provided separately, as appropriate.

III.10.C.12 Air Emissions

III.10.C.12.a Prior to installing or using any equipment subject to the requirements of WAC 173-303-690, the Permittees ~~shall~~ will obtain a Permit Modification following the Permit Condition III.10.C.2.g. process to incorporate WAC 173-303-690 standards into the permit application and this Permit prior to generation/receipt of dangerous and/or mixed waste in the WTP Unit.

III.10.C.12.b Prior to installing or using any equipment subject to the requirements of WAC 173-303-691, the Permittees ~~shall~~ will obtain a Permit Modification following the Permit Condition III.10.C.2.g. process to incorporate WAC 173-303-691 standards into the permit application and this Permit prior to generation/receipt of dangerous and/or mixed waste in the WTP Unit.

III.10.C.12.c The Permittees ~~shall~~ will comply with the organic air emission standards as set forth in WAC 173-303-692. The Permittees ~~shall~~ will obtain a permit modification following the Permit Condition III.10.C.2.g. process to incorporate WAC 173-303-692 standards into the permit application and this Permit prior to generation/receipt of dangerous waste in the WTP Unit.

III.10.C.13 Remote Data Access

Onsite, unrestricted, twenty-four (24) hour access to key WTP Unit operating data and emissions monitoring data ~~shall~~ will be provided to Ecology. This onsite, unrestricted access ~~shall~~ will include providing and maintaining for Ecology only use a computer terminal and printer linked to key WTP Unit operating data and emissions monitoring data. This terminal ~~shall~~ will be equipped with all necessary software and hardware to monitor, retrieve, and trend this data. Additional remote access will be provided on Ecology request if security concerns can be addressed.

III.10.C.14 Interim Period of Operation during Post Demonstration Test Period prior to receiving Ecology approval of the complete Demonstration Test Reports and the Final Risk Assessment Report.

III.10.C.14.a. During this Interim Period of Operation, the Permittees will be able to treat dangerous waste and mixed waste feed subject to the following conditions:

III.10.C.14.a.i. Obtain receipt of Ecology's approval for the LAW Vitrification System, Permit condition III.10.H.3.d.iii., prior to receiving dangerous or mixed waste feed into the LAW Vitrification System

III.10.C.14.a.ii. Obtain receipt of Ecology's approval for the HLW Vitrification System, Permit condition III.10.J.3.d.iii., prior to receiving dangerous or mixed waste feed into the HLW Vitrification System

III.10.C.14.a.iii. Accept and treat up to 3 million gallons of Hanford tank waste feed in WTP.

III.10.C.14.a.iv. Accepting and treating more than 3 million gallons of Hanford tank waste feed in WTP during this Interim Period will require a permit modification in accordance with WAC 173-303-830, Appendix 1, 5a.

III.10.C.15 Support Systems

III.10.C.15.a. Mechanical Handling Systems

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

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.

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

III.10.D. CONTAINERS

III.10.D.1. Container Storage Areas and Storage Limits

III.10.D.1.a. The Permittees may store, in containers, all dangerous and/or mixed waste listed in the Part A, Forms Operating Unit 10, Chapter 1.0 of this Permit, in accordance with the WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved pursuant to Permit Conditions III.10.C.3. and III.10.C.2. Total containerized dangerous and/or mixed waste storage at the Facility ~~shall~~ will not exceed 2,780,000 gallons (372,520 cubic feet) pursuant to requirements in Permit Condition III.10.D.1.b.

III.10.D.1.b. The Permittees may place and store dangerous and mixed waste only in approved container storage areas and containment systems listed in Permit Tables III.10.D.A, III.10.D.B, and III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.), in accordance with Permit Section III.10.D, and in accordance with Operating Unit 10, Chapters 1.0 and 4.0, and Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 9.18, 10.4, 10.5, 10.7, 10.8, 10.9, 10.18, 12.4, 12.5, 12.7, 12.8, 12.9, and 12.15 of this Permit, as approved pursuant to Permit Conditions III.10.D.10.b. through d. The Permittees ~~shall~~ will limit the total volume of waste to quantities specified for the individual container storage areas listed in Permit Table III.10.D.A.

III.10.D.1.c. The Permittees must maintain a free volume (i.e., free volume = total capacity of containment system minus volume occupied by equipment and containers within containment systems) within containment systems identified in Permit Tables III.10.D.B and III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.), equal to ten percent (10%) of the total volume of dangerous and mixed waste stored within the containment system, or the volume of the largest container stored within the containment system, whichever is greater.

III.10.D.1.d. The Permittees ~~shall~~ will maintain documentation in the operating record for each container storage area and containment system listed in Permit Tables III.10.D.A, III.10.D.B, and III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.), in accordance with WAC 173-303-380.

III.10.D.1.e. For the purpose of determining compliance with container storage area capacity limits and containment system requirements, every waste container ~~shall~~ will be considered to be full.

III.10.D.1.f. If the containers of ILAW and/or IHLW are determined to no longer be dangerous and/or mixed waste as described in WAC 173-303-070, the ILAW and/or IHLW containers will no longer be subject to the conditions of this Permit.

III.10.D.2 Container Storage Areas Design and Construction

III.10.D.2.a. The Permittees ~~shall~~ will construct container storage areas identified in Permit Table III.10.D.A (as approved/modified pursuant to Permit Condition III.10.D.10.), as specified in all applicable drawings and specifications in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 of this Permit, as approved pursuant to Permit Condition III.10.D.10.b.

III.10.D.2.b. The Permittees ~~shall~~ will construct all permanent containment systems identified in Permit Table III.10.D.B (as approved/modified pursuant to Permit Condition III.10.D.10.), as specified in all applicable drawings and specifications in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 of this Permit, as approved pursuant to Permit Condition III.10.D.10.b.

III.10.D.2.c. All container storage areas and containment systems identified in Permit Tables III.10.D.A, III.10.D.B, and III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.), must be constructed, or operated to protect containers from

contact with accumulated liquids (e.g., leaks, spills, precipitation, fire water, liquids from damaged or broken pipes) [WAC 173-303-630(7)(a)(i) and WAC 173-303-630(7)(c)(ii)].

III.10.D.2.d. Modifications to approved design, plans, and specifications in Operating Unit 10 of this Permit for the Container Storage Areas and containment systems ~~shall~~ will be allowed only in accordance with Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g, III.10.C.9.d, e., and h.

III.10.D.3. Container Storage Area and Permanent Containment System Installation

III.10.D.3.a. RESERVED.

III.10.D.3.b. The Permittees ~~shall~~ will obtain and place in the WTP Unit operating record, within thirty (30) days of completion of each container storage area and containment system identified in Permit Tables III.10.D.A, and III.10.D.B (as approved/modified pursuant to Permit Condition III.10.D.10.), written statements by a qualified, installation inspector or a qualified registered, professional engineer, attesting that these areas were installed in compliance with WAC 173-303-630(7)(a), (b), and (c) [WAC 173-303-630(7), WAC 173-303-340].

III.10.D.4 Container Management Practices

III.10.D.4.a. No dangerous and/or mixed waste ~~shall~~ will be managed in the container storage areas unless the operating conditions specified under Permit Condition III.10.D.4. are complied with.

III.10.D.4.b. The Permittees ~~shall~~ will manage all containerized dangerous and mixed waste for container storage areas and containment systems identified in Permit Tables III.10.D.A, III.10.D.B, and III.10.D.C (as approved/modified pursuant to Permit Condition III.10.D.10.), in accordance with procedures described in Operating Unit 10, Chapter 4.0, Appendices 9.18, 10.18, and 12.15 of this Permit, as approved pursuant to Permit Condition III.10.D.10.c, and the following conditions:

III.10.D.4.b.i. The operating records and waste tracking procedures ~~shall~~ will indicate all times at which containerized dangerous and mixed waste were removed from and returned to designated staging, storage, segregation, and treatment areas as approved pursuant to Permit Condition III.10.D.10.c.vi. (WAC 173-303-380).

III.10.D.4.b.ii. The physical arrangement (i.e., spacing) of dangerous and mixed waste containers ~~shall~~ will be as specified in WAC 173-303-630(5)(c), except for the immobilized LAW and HLW waste containers, which must be as described in Operating Unit 10, Chapter 4.0, Section 4.2.1.2.1. of this Permit, as updated pursuant to Permit Condition III.10.D.10.c.i.

III.10.D.4.b.iii. All container storage areas and containment systems must be operated to protect containers from contact with accumulated liquids resulting from leaks, spills, or precipitation [WAC 173-303-630(7)(a)(i) and (c)(ii)].

III.10.D.4.b.iv. At all times, the Permittees ~~shall~~ will place and store ignitable and/or reactive dangerous and/or mixed waste in accordance with the procedures described in Operating Unit 10, Appendix 9.18, 10.18, and 12.15, as approved pursuant to Permit Condition III.10.D.10.c.xi.

III.10.D.4.b.v. At all times, the Permittees ~~shall~~ will place and store incompatible dangerous and/or mixed waste in accordance with the procedures described in Operating Unit 10, Appendix 9.18, 10.18, and 12.15, as approved pursuant to Permit Condition III.10.D.10.c.xii.

III.10.D.4.b.vi. At all times, storage containers holding dangerous and/or mixed waste that contain free liquids and/or exhibit either the characteristic of ignitability or reactivity as described in

WAC 173-303-090(5) or (7), must be provided with a containment system in accordance with WAC 173-303-630(7)(a)(i) through (iii) [WAC 173-303-630(7)(c)].

III.10.D.4.b.vii. At all times, containers holding dangerous and/or mixed waste in container storage areas must be closed, except when it is necessary to add or remove waste [WAC 173-303-630(5)(a)].

III.10.D.4.b.viii. At all times, containers holding dangerous and/or mixed waste must not be opened, handled, or stored in a manner which may rupture the container or cause it to leak [WAC 173-303-630(5)(b)].

III.10.D.4.b.ix. A storage container holding a dangerous and/or mixed waste that is incompatible with any waste or other materials stored nearby in other containers, piles, open tanks, or surface impoundments must be separated from the other waste or materials or protected from them by means of a dike, berm, wall, or other device (as approved by Ecology) [WAC 173-303-630(9)(c)].

III.10.D.4.b.x. If a container holding dangerous and/or mixed waste is not in good condition (e.g., exhibits severe rusting, apparent structural defects, or any other condition that could lead to container rupture or leakage) or is leaking, the Permittees ~~shall~~ will manage the container in accordance with procedures described in Operating Unit 10, Appendices 9.18, 10.18, and 12.15 of this Permit, as approved pursuant to Permit Condition III.10.D.10.c.viii. [WAC 173-303-630(2)].

III.10.D.4.b.xi. The Permittees ~~shall~~ will maintain an adequate inventory of containers and/or over-pack containers at the WTP Unit for use pursuant to Permit Condition III.10.D.4.b.x.

III.10.D.4.b.xii. The Permittees ~~shall~~ will ensure that all containers used for dangerous and/or mixed waste management, are made of or lined with materials which will not react with and are otherwise compatible with the waste to be stored [WAC 173-303-630(4)].

III.10.D.4.b.xiii. Except for lab packs assembled in compliance with WAC 173-303-161 requirements, the Permittees ~~shall~~ will not place incompatible wastes, or incompatible wastes and materials, in the same container, unless WAC 173-303-395(1)(b) is complied with [WAC 173-303-630(9)(a)].

III.10.D.4.b.xiv. The Permittees ~~shall~~ will not place dangerous and/or mixed waste in an unwashed container that previously held an incompatible waste or material [WAC 173-303-630(9)(b)].

III.10.D.5. Identification of Containers and Container Storage Areas

III.10.D.5.a. Pursuant to WAC 173-303-630(3), the Permittees ~~shall~~ will ensure that all dangerous and/or mixed waste containers (except as otherwise specified in Operating Unit 10, Chapter 4.0, Section 4.2.1.3., as updated pursuant to Permit Condition III.10.D.10.c.i., for containers of ILAW and IHLW) are labeled in a manner that adequately identifies the major risk(s) associated with the contents. For purposes of container labeling, major risk(s) could include but are not limited to the following:

III.10.D.5.a.i. PERSISTENT (if a WP01 or WP02 waste code);

III.10.D.5.a.ii. TOXIC (if a WT01, WT02, or D waste code other than D001, D002, or D003);

III.10.D.5.a.iii. FLAMMABLE (if a D001 and other waste codes);

III.10.D.5.a.iv. CORROSIVE (if a D002 and other waste codes);

III.10.D.5.a.v. REACTIVE (if a D003 and other waste codes).

III.10.D.5.b. For all dangerous and mixed waste containers (except as otherwise specified in Operating Unit 10, Chapter 4.0, Section 4.2.1.3., as updated pursuant to Permit Condition III.10.D.10.c.i., for containers of ILAW and IHLW), the Permittees ~~shall~~ will ensure that:

III.10.D.5.b.i. Labels are not obscured or otherwise unreadable;

III.10.D.5.b.ii. Waste containers are oriented so as to allow inspection of the labels identified in Permit Conditions III.10.D.5.a and III.10.D.5.b, the container tracking number, and, to the extent possible, any labels which the generator placed upon the container; and

III.10.D.5.b.iii. Empty dangerous and mixed waste containers, as defined by WAC 173-303-160(2), must have their dangerous and/or mixed waste labels destroyed or otherwise removed immediately upon being rendered empty.

III.10.D.5.c. The Permittees ~~shall~~ will post entrances and access points to all ILAW and IHLW container storage areas, and any other areas where containers of ILAW and IHLW are handled, with signs that, in addition to meeting the requirements of WAC 173-303-310(2)(a), clearly identify the major risk(s) associated with the containers of ILAW and IHLW.

III.10.D.6. Containment Systems

III.10.D.6.a. Containerized dangerous and mixed waste, and other materials that are incompatible, ~~shall~~ will not be staged, segregated, or stored within the same containment system as identified in Permit Tables III.10.D.B. and III.10.D.C., as approved/modified pursuant to Permit Condition III.10.D.10. (e.g., metal pan, concrete berm, portable containment system) [WAC 173-303-630(9)(c)].

III.10.D.6.b. The integrity of containment systems identified in Permit Tables III.10.D.B. and III.10.D.C. (as approved/modified pursuant to Permit Condition III.10.D.10.) must be maintained in accordance with WAC 173-303-630(7)(a)(i). Cracks, gaps, loss of integrity, deterioration, corrosion, or erosion of containment pads, joints in containment pads, berms, curbs, trenches, sumps, and coatings must be repaired in accordance with Operating Unit 10, Chapter 6.0 of this Permit, as approved/modified pursuant to Permit Conditions III.10.D.10.c.vii., III.10.C.5.b., and III.10.C.5.c. [WAC 173-303-320, WAC 173-303-630(7)(a)(i)].

III.10.D.6.c. An impermeable coating, as specified in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 ~~shall~~ will be maintained for all concrete containment systems identified in Permit Table III.10.D.B (as approved/modified pursuant to Permit Condition III.10.D.10.) and ~~shall~~ will meet the following performance standards [WAC 173-303-630(7)(a)]:

III.10.D.6.c.i. The coating must seal the containment system surface such that no cracks, seams, or other pathways through which liquid could migrate are present;

III.10.D.6.c.ii. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical damage to the coating or lining can be identified and remedied before waste could migrate from the containment system; and

III:10.D.6.c.iii. The coating must be compatible with the waste managed in the containment system.

III.10.D.6.d. The Permittees must inspect all containment systems specified in Permit Tables III.10.D.B and III.10.D.C in accordance with the inspection schedules and requirements in Operating Unit 10, Chapter 6.0, as approved/modified pursuant to Permit Conditions III.10.D.10.c.vii. and III.10.C.5.c, and take the following actions if liquid is detected in these containment systems:

III.10.D.6.d.i. Remove the liquid from the containment system in accordance with procedures described in Attachments 51, Chapter 6.0, (as modified pursuant to Permit Conditions III.10.C.5.b. and III.10.C.5.c.), Permit Condition III.10.C.6.a., and Operating Unit 10, Chapter 7.0 (as modified pursuant to Permit Condition III.10.C.6.b.). The liquid removed from containment systems ~~shall~~ will be managed as dangerous and/or mixed waste, except for liquids from the Non-Radioactive Dangerous Waste Container Storage Area which ~~shall~~ will be managed as dangerous waste, unless the Permittees demonstrate, to Ecology's satisfaction, that the liquid is not a dangerous waste.

III.10.D.6.d.ii. Determine the source of the liquid.

III.10.D.6.d.iii. If the source of the liquid is determined to be a leak in a container, the Permittees must follow the procedures specified in Permit Condition III.10.D.4.b.x.

III.10.D.6.d.iv. The Permittees must take action to ensure the incident that caused liquid to enter the containment system will not reoccur.

III.10.D.6.d.v. The Permittees ~~shall~~ will document in the WTP Unit operating record actions/procedures taken to comply with i. through iv. above in accordance with WAC 173-303-630(6).

III.10.D.6.d.vi. The Permittees ~~shall~~ will notify and report releases to the environment to Ecology in accordance with Permit Condition III.10.C.6.a.

III.10.D.7 Inspections

III.10.D.7.a. The Permittees ~~shall~~ will inspect the container storage areas and containment systems in accordance with the Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified pursuant to Permit Condition III.10.C.5.c.

III.10.D.7.b. The inspection data for the container storage areas and containment systems ~~shall~~ will be recorded, and the records ~~shall~~ will be placed in the WTP Unit operating record in accordance with Permit Condition III.10.C.4.

III.10.D.8. Recordkeeping (WAC 173-303-380)

For the container storage areas and containment systems, the Permittees ~~shall~~ will record and maintain in the WTP Unit operating record, all monitoring, recording, maintenance, calibration, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Condition III.10.C.4. and III.10.C.5.

III.10.D.9. Closure

The Permittees ~~shall~~ will close the container storage areas and containment systems in accordance with Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.

III.10.D.10. Compliance Schedules

III.10.D.10.a. All information identified for submittal to Ecology in III.10.D.10.b. through III.10.D.10.d. of this compliance schedule must be signed in accordance with requirements in WAC 173-303-810(12).

III.10.D.10.b. The Permittees ~~shall~~ will submit to Ecology, consistent with the schedule described in Operating Unit 10, Appendix 1.0, for review and approval, prior to construction of container storage area and permanent containment systems as identified in Permit Tables III.10.D.A and III.10.D.B respectively, engineering information as specified below, for incorporation into Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9 of this Permit. In order to incorporate engineering information specified below into Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.8, 9.9, 10.4, 10.5, 10.7, 10.8, 10.9, 12.4, 12.5, 12.7, 12.8, and 12.9, Permit Condition III.10.C.2.g. process will be followed. At a minimum, container storage area

and permanent containment system drawings and specifications will show the following pursuant to WAC 173-303-806(4)(b) and WAC 173-303-630:

III.10.D.10.b.i. Design drawings (General Arrangement Drawings - in plan and cross sections) and specifications including references to specific building codes (e.g., UBC, ASCE) for each container storage areas' foundation and permanent containment systems. These items should show basic design parameters and dimensions, and location of the container storage areas and permanent containment systems; how permanent containment system design promotes positive drainage control (such as a locked drainage valve) to prevent release of contaminated liquids and so that uncontaminated liquids can be drained promptly for convenience of operation; capacity of the permanent containment system relative to the volume of the largest container to be stored; for permanent containment systems, how the base underlying the containers is sloped (i.e., floor slopes to sumps) or the containment system is otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or other liquids, or how containers are kept from contact with standing liquids in the permanent containment system (i.e., elevated or are otherwise protected); for container storage areas without permanent containment systems, a description of how the storage area is designed or operated to drain and remove liquids or how containers are kept from contact with standing liquids;

III.10.D.10.b.ii. Permanent containment systems materials selection documentation (including, but not limited to, materials of construction, coatings and liner materials for concrete portions of containment systems);

III.10.D.10.b.iii. Sketches, drawings, or data demonstrating compliance with WAC 173-303-630(8) (location of buffer zone and containers holding ignitable or reactive waste) and WAC 173-303-630(9)(c) (location of incompatible waste), where applicable;

III.10.D.10.b.iv. Submit Permit Table III.10.D.B. completed to provide for all permanent containment systems, the information as specified in each column heading, consistent with information to be provided in III.10.D.10.b.i. through iii. above.

III.10.D.10.c. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will update and submit to Ecology, consistent with the schedule described in Operating Unit 10, Appendix 1.0, for review and approval, the following, as specified below, for incorporation into Operating Unit 10, Chapter 4.0, and Appendices 9.18, 10.18, and 12.15 of this Permit, except Permit Condition III.10.D.10.c.vii., which will be incorporated into Operating Unit 10, Chapter 6.0 of this Permit. In order to incorporate the following information (specified below) into Operating Unit 10, Appendix 9.18, 10.18, and 12.15, Permit Condition III.10.C.2.g. will be followed. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions III.10.D.10.b., III.10.D.10.c., and III.10.D.10.d. as approved by Ecology, and will include at a minimum, the following information as required pursuant to WAC 173-303-630 and WAC 173-303-340:

III.10.D.10.c.i. Operating Unit 10, Chapter 4.0, Narrative Descriptions, updated;

III.10.D.10.c.ii. Descriptions of procedures for addition and removal of waste from containers;

III.10.D.10.c.iii. Descriptions of procedures for opening and closing of containers, including any inspections performed prior to opening;

III.10.D.10.c.iv. Descriptions of procedures for handling and transport of containers within the WTP Unit;

III.10.D.10.c.v. Description of the tracking system used to track containers throughout the WTP Unit pursuant to WAC 173-303-380. The tracking system, at a minimum, will do the following:

A. Track the location of containers within the WTP Unit;

B. Track which containers have been shipped off-facility and/or off-site, and to where they have been shipped;

C. For containers intended for transport off-site, include information in accordance with the requirements specified in WAC 173-303-190(3)(b);

D. Record the date container is placed in the container storage area;

E. Record the nature of the waste in any given container, including dangerous waste designation codes, any associated land disposal restriction treatment requirements, and the major risk(s) associated with the waste (as described in Permit Conditions III.10.D.5.a. and III.10.D.5.c.).

III.10.D.10.c.vi. Descriptions of procedures for container spacing, stacking, and labeling pursuant to WAC 173-303-630(3), WAC 173-303-630(5)(c), WAC 173-303-340(3), WAC 173-303-630(6);

III.10.D.10.c.vii. Descriptions of procedures for investigating container storage areas and investigating and repairing containment systems [WAC 173-303-320, WAC 173-303-630(6)];

III.10.D.10.c.viii. Descriptions of procedures for responding to damaged (e.g., severe rusting, apparent structural defects) or leaking containers [WAC 173-303-630(2)];

III.10.D.10.c.ix. Descriptions of operational procedures demonstrating how accumulated liquids can be analyzed and removed from permanent and portable containment systems to prevent overflow [WAC 173-303-806(4)(b)(i)(E)];

III.10.D.10.c.x. For portable containment systems, vendor information, design drawings, or sketches showing the following information. These items ~~shall~~ will include as a minimum basic design parameters, dimensions, and materials of construction; how the design promotes positive drainage control (such as a locked drainage valve) to prevent release of contaminated liquids and so that uncontaminated liquids can be drained promptly for convenience of operation; how the base underlying the containers is sloped (i.e., floor slopes to sumps) or the containment system is otherwise designed and operated to drain and remove liquids resulting from leaks, spills, or other liquids, or how containers are kept from contact with standing liquids in the containment system (i.e., elevated or are otherwise protected); and capacity of the containment system relative to the volume of the largest container to be stored;

III.10.D.10.c.xi. Where ignitable and reactive waste are stored or otherwise managed in containers, a description of the procedures used to ensure compliance with WAC 173-303-630(8)(a) and (b);

III.10.D.10.c.xii. Where incompatible waste are stored or otherwise managed in containers, a description of the procedures used to ensure compliance with WAC 173-303-630(9)(a) and (b), and 173-303-395(1)(b) and (c);

III.10.D.10.c.xiii. Submit Permit Table III.10.D.C completed to provide for all portable containment systems, the information as specified in each column heading, consistent with information to be provided in III.10.D.10.c.i. through xii. above;

III.10.D.10.c.xiv. Test procedures and results or other documentation or information to show that the waste do not contain free liquids, as applicable.

III.10.D.10.d. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will submit to Ecology, consistent with the schedule described in Operating Unit 10, Appendix 1.0, for review and approval, completed Permit Tables III.10.D.A, III.10.D.B, and III.10.D.C, for incorporation into Operating Unit 10, Chapter 4.0, and Appendices 9.18, 10.18, and 12.15 of this Permit. In order to incorporate the information into

Operating Unit 10, Chapter 4.0, and Appendices 9.18, 10.18, and 12.15 of this Permit, Permit Condition III.10.C.2.g. process will be followed.

Table III.10.D.A – Container Storage/Containment Building Areas Description

Dangerous and Mixed Waste Container Storage Areas	Maximum Capacity Gallons (Solids) (ft³)[a]	~~Maximum Capacity~~ Maximum Operating Volume (Liquid[c])
~~LAW Vitrification Plant~~		
~~ILAW Buffer Container Storage Area[a]~~	~~89,099 gal. (11,939 ft³)~~	~~RESERVED~~
~~ILAW Container Storage Area[a]~~	~~889,448 gal. (119,186 ft³)~~	~~RESERVED~~
~~LAW Container Storage Area~~	~~80,549 gal. (10,794 ft³)~~	~~RESERVED~~
HLW Vitrification Plant		
IHLW Canister Storage ~~Area~~ Cave[a]	~~245,504~~ 162,589 gal. (32,898 ft³)	~~RESERVED~~ ~~N/A~~
HLW ~~Container Storage Area No. 1~~East Corridor El. 0' (HC-0108/9/10)	~~266,654~~ 310,291 gal. (35,732 ft³)	~~RESERVED~~ NA
HLW ~~Container Storage Area No. 2~~ Loading Area (H-0130)	~~71,999~~ 159,185 gal. (9,648 ft³)	~~RESERVED~~ NA
~~HLW Container Storage Area No. 3~~	~~43,392 gal. (5,815 ft³)~~	~~RESERVED~~
Other Areas		
~~Central Waste Storage Facility~~	~~617,137 gal. (82,696 ft³)~~	~~RESERVED~~
Non-Radioactive Dangerous Waste Container Storage Area[b]	~~48,214~~56,104 gal. (6,461 ft³)	RESERVED
~~HLW Melter Out Of Service Storage Area~~	~~202,498 gal. (27,135 ft³)~~	~~RESERVED~~
~~LAW Melter Out Of Service Storage Area~~	~~216,962 gal. (29,073 ft³)~~	~~RESERVED~~
Failed Melter Storage Facility	403,947	RESERVED
Lab Waste Management Area (Rooms 0-139, 0-139A/B/C/D)	119,613 gal. (16,029 ft³)	RESERVED
Containment Buildings/Container Storage	Maximum Capacity Gallons (Solids) (ft³)[d]	~~Maximum Capacity~~ Maximum Operating Volume (Liquid[e])
Pretreatment Plant	RESERVED	RESERVED
P-0123 Pretreatment Hot Cell Containment Building	RESERVED	RESERVED
Pretreatment Maintenance Containment Building	RESERVED	RESERVED
PM0124 Hot Cell Crane Maintenance Area	RESERVED	RESERVED

P-0121A Spend Resin Dewatering	RESERVED	RESERVED
P-0421A General Filter Room	RESERVED	RESERVED
P-0122A Waste Packaging Area	RESERVED	RESERVED
P-0123A Remote Decontamination Maintenance Cave	RESERVED	RESERVED
P-0124 C3 Workshop	RESERVED	RESERVED
P-0124A C3 Workshop	RESERVED	RESERVED
P-0125 Filter Cask Airlock	RESERVED	RESERVED
P-0125A Filter Cask Area	RESERVED	RESERVED
P-0128A MSM Repair Area	RESERVED	RESERVED
P-0128 Temporary Storage Room	RESERVED	RESERVED
P-0223 Pretreatment ~~Air Filtration~~ Filter Package Maintenance Containment Building		
P-0335 Pretreatment Air Filter Package Containment Building	RESERVED	RESERVED
LAW Vitrification Plant		
L-0112 LAW LSM Gallery Containment Building	RESERVED	RESERVED
ILAW Container Finishing Containment Building	RESERVED	RESERVED
L-0109B Swabbing Area Line 2	RESERVED	RESERVED
L-0109C Decontamination Area Line 2	RESERVED	RESERVED
L-0109D Inert Fill Area Line 2	RESERVED	RESERVED
L-0115B Swabbing Area Line 1	RESERVED	RESERVED
L-0115C Decontamination Area Line 1	RESERVED	RESERVED
L-0115D Inert Fill Area Line 1	RESERVED	RESERVED
L-0109E Container Monitoring/Export Area	RESERVED	RESERVED
L-0115E Container Monitoring/Export Area	RESERVED	RESERVED
L-0119B LAW Consumable Import/Export Containment Building	RESERVED	RESERVED
L-226A LAW C3 Workshop Containment Building	RESERVED	RESERVED
LAW Pour Cave Containment Building	RESERVED	RESERVED
L-B015A Melter 1 Pour Cave	RESERVED	RESERVED
L-B013C Melter 1 Pour Cave	RESERVED	RESERVED
L-B013B Melter 2 Pour Cave	RESERVED	RESERVED
L-B011C Melter 2 Pour Cave	RESERVED	RESERVED
L-B011B Future Melter 3 Pour Cave	RESERVED	RESERVED
L-B009B Future Melter 3 Pour Cave	RESERVED	RESERVED
ILAW Buffer Container Containment Building	RESERVED	RESERVED
L-B025C Container Buffer Store	RESERVED	RESERVED
L-B025D Container Rework	RESERVED	RESERVED
HLW Vitrification Plant		
H-0117, H-0116B, H-0310A HLW Melter No. 1	RESERVED	RESERVED
H-0106, H-0105B, H-0304A HLW Melter No. 2	RESERVED	RESERVED
H-0136 IHLW Canister Handling Cave Containment Building	RESERVED	RESERVED
H-0133 IHLW Canister Swab and Monitoring Cave Containment Building	RESERVED	RESERVED
H-0311A/B HLW Vitrification Plant C3 Workshop Containment Building	RESERVED	RESERVED
H-0104 HLW Filter Cave	RESERVED	RESERVED
H-B032 HLW Pour Tunnel No. 1 Containment Building	RESERVED	RESERVED
H-B005A HLW Pour Tunnel No. 2 Containment Building	RESERVED	RESERVED
H-0410B, H0411 HLW Waste Handling Area Containment Building	RESERVED	RESERVED

HLW Drum Swabbing and Monitoring Area	RESERVED	RESERVED
H-0126A/B Swabbing and Monitoring Area	RESERVED	RESERVED
H-B028 Cask Transfer Tunnel	RESERVED	RESERVED

[a] Capacity is for immobilized glass waste storage.
[b] Capacity is for dangerous and/or mixed waste storage.
[c] All material within the containment systems will be considered waste for the purposes of calculating free volume, where free volume is the amount of space available in containment systems (i.e., free volume = total capacity of containment systems [which includes total capacity of portable containment systems] minus volume occupied by equipment and containers within containment systems).
[d] Gallons converted to cubic feet using a conversion factor of 1 gallon (liquid) x 0.134 = 1ft^3 (rounded to the nearest whole number).
[e] Location and capacities of containers stored within portable containment systems specified on Table III.10.D.C are limited to the dangerous and mixed waste container storage areas and capacities specified above.

Table III.10.D.B – Container Storage Area Permanent Containment Systems

Container Storage Areas	Permanent Containment System Description – Drawing #s	Permanent Containment System Sump/Floor Drain ID#	Permanent Containment System Dimensions (ft) & Materials of Construction	Permanent Containment System Capacity (gal) (relative to 10% of the volume of all containers within the container storage area, or 100% of the volume of the largest container, whichever is greater).
RESERVED ~~Central Waste Storage Facility~~	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.D.C – Container Storage Area Portable Containment Systems[a]

Portable Containment System Description – Specifications and Vendor Information	Portable Containment System Container Storage Area(s) Location(s)	Portable Containment System Dimensions (ft) & Materials of Construction	Portable Containment System Capacity (gal) (relative to 10% of the volume of all containers managed within the portable containment system, or 100% of the volume of the largest container, whichever is greater).
RESERVED	RESERVED	RESERVED	RESERVED

[a] Location and capacities of containers stored within portable containment systems specified on this Permit Table are limited to the dangerous and mixed waste container storage areas and capacities specified in Permit Table III.10.D.A.

III.10.E TANK SYSTEMS

III.10.E.1 Approved Waste and Storage Limits

III.10.E.1.a. The Permittees may store in tank systems all dangerous and/or mixed waste listed in the Part A Forms, Operating Unit 10, Chapter 1.0 of this Permit and in accordance with the Waste Analysis Plan, Operating Unit 10, Chapter 3.0 as approved pursuant to Permit Condition III.10.C.3. of this Permit. Total tank system dangerous and/or mixed waste storage at the Facility ~~shall~~ will not exceed 4,735,000 gallons pursuant to requirements in Permit Condition III.10.E.1.

III.10.E.1.b. The Permittees may store and manage dangerous and/or mixed waste only in approved tank systems listed in Permit Tables III.10.E.A through D, I, K, M, and O, as approved/modified pursuant to Permit Condition III.10.E.9., in accordance with Permit Section III.10.E of this Permit, and in accordance with Operating Unit 10, Chapters 1.0 and 4.0, and Operating Unit 10, Appendices 8.1 through 8.15, 9.1 through 9.14, 9.18, 10.1 through 10.14, 10.18, and 11.1 through 11.15 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.b through e. The Permittees ~~shall~~ will limit the total volume of waste to quantities specified for the individual units listed in Permit Tables III.10.E.A through D, I, K, M, and O.

III.10.E.1.c. The Permittees ~~shall~~ will manage ignitable and reactive, and incompatible waste in accordance with WAC 173-303-395(1). Any tank system specified in Permit Tables III.10.E.A through D and III.10.E, I, K, M, and O as approved/modified pursuant to Permit Condition III.10.E.9., in which ignitable, reactive, or incompatible waste are managed ~~shall~~ will meet the requirements specified in WAC 173-303-640(9) and (10).

III.10.E.1.d. The Permittees ~~shall~~ will ensure all certifications required by specialists (e.g., independent, qualified, registered professional engineer; independent corrosion expert;

independent, qualified installation inspector; etc.) use the following statement or equivalent pursuant to Permit Condition III.10.C.10 of this Permit:

"I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new tank system or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector, testing for tightness, etc.), for the following tank system components (e.g., the tank, venting piping, etc.), as required by the Dangerous Waste Regulations, namely, WAC 173-303-640(3) (applicable paragraphs (i.e., (a) through (g)).

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

III.10.E.1.e. In all future permit submittals, the Permittees ~~shall~~ will include tank names with the tank designation (e.g., Process Condensate Vessels located in the RLD System are designated V45028A and V45028B, respectively).

III.10.E.2 Tank System Design and Construction

III.10.E.2.a. The Permittees ~~shall~~ will construct the tank systems identified in Permit Tables III.10.E.A through D, I, K, M, and O, as approved/modified pursuant to Permit Condition III.10.E.9., as specified in Operating Unit 10, Appendices 8.1 through 8.14, 9.1 through 9.14, 10.1 through 10.14, and 11.1 through 11.14 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.b., III.10.E.9.c., and III.10.E.9.d.

III.10.E.2.b. The Permittees ~~shall~~ will construct all secondary containment systems identified in Permit Tables III.10.E.A through D, and I through P, as approved/modified pursuant to Permit Condition III.10.E.9., as specified in Operating Unit 10, Appendices 8.2, 8.4 through 8.15, 9.2, 9.4 through 9.14, 9.18, 10.2, 10.4 through 10.14, 10.18 and 11.2, 11.4 through 11.15, 11.15 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.b., III.10.E.9.c., and III.10.E.9.d.

III.10.E.2.c. Modifications to approved design, plans, and specifications in Operating Unit 10 of this Permit for the WTP Unit Tank Systems ~~shall~~ will be allowed only in accordance with Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g., III.10.C.9.d, e., and h.

III.10.E.2.d. Fabrication and assembly of vessels HLP-VSL-00022, HLP-VSL-00027A, HLP-VSL-00027B, HLP-VSL-00028, UFP-VSL-00002A, UFP-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.

III.10.E.2.e. The existing PT Building will retain the capability to install the Technetium Ion Exchange 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 facilty has been selected by the Permittee and approved by Ecology.

III.10.E.3 Tank System Installation and Certification

III.10.E.3.a. The Permittees must ensure that proper handling procedures are adhered to in order to prevent damage to the system during installation. Prior to covering, enclosing, or placing

a new tank system or component in use, an independent, qualified, installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of tank systems or components, must inspect the system for the presence of any of the following items:

III.10.E.3.a.i. Weld breaks;

III.10.E.3.a.ii. Punctures;

III.10.E.3.a.iii. Scrapes of protective coatings;

III.10.E.3.a.iv. Cracks;

III.10.E.3.a.v. Corrosion;

III.10.E.3.a.vi. Other structural damage or inadequate construction/installation.

All discrepancies must be remedied before the tank system is covered, enclosed, or placed in use [WAC 173-303-640(3)(c)].

III.10.E.3.b. For tank systems or components that are placed underground and that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous substance. The backfill must be installed so that it is placed completely around the tank and compacted to ensure that the tank and piping are fully and uniformly supported [WAC 173-303-640(3)(d)].

III.10.E.3.c. The Permittees must test for tightness all new tanks and ancillary equipment prior to these components being covered, enclosed, or placed into use. If a tank system is found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the tank system being covered, enclosed, or placed in use [WAC 173-303-640(3)(e)].

III.10.E.3.d. The Permittees must ensure ancillary equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction [WAC 173-303-640(3)(f)].

III.10.E.3.e. The Permittees must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided in Operating Unit 10, Appendices 8.9, 8.11, 9.9, 9.11, 10.9, 10.11, 11.9, and 11.11 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.b.i., III.10.E.9.b.iv., III.10.E.9.b.v., III.10.E.9.c.i., III.10.E.9.c.iv., III.10.E.9.c.v., III.10.E.9.d.i., III.10.E.9.d.iv., and III.10.E.9.d.v. or other corrosion protection if the Ecology believes other corrosion protection is necessary to ensure the integrity of the tank system during use of the tank system. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-640(3)(g)].

III.10.E.3.f. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will obtain, and keep on file in the WTP Unit operating record, written statements by those persons required to certify the design of the tank system and supervise the installation of the tank system in accordance with the requirements of WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), attesting that each tank system and corresponding containment system listed in Permit Tables III.10.E.A through D and III.10.E.I through P, as approved/modified pursuant to Permit Condition III.10.E.9., were properly designed and installed, and that repairs, pursuant to WAC 173-303-640(3)(c) and (e) were performed [WAC 173-303-640(3)(a) WAC 173-303-640(3)(h)].

III.10.E.3.g. The independent tank system installation inspection and subsequent written statements ~~shall~~ will be certified pursuant to Permit Condition III.10.E.1.d., comply with all

requirements of WAC 173-303-640(3)(h) and ~~shall~~ will consider, but not be limited to, the following tank system installation documentation:

III.10.E.3.g.i. Field installation report with date of installation;

III.10.E.3.g.ii. Approved welding procedures;

III.10.E.3.g.iii. Welder qualifications and certification;

III.10.E.3.g.iv. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1, American Petroleum Institute (API) Standard 620, or Standard 650 as applicable;

III.10.E.3.g.v. Tester credentials;

III.10.E.3.g.vi. Field inspector credentials;

III.10.E.3.g.vii. Field inspector reports;

III.10.E.3.g.viii. Field waiver reports; and

III.10.E.3.g.ix. Non-compliance reports and corrective action (including field waiver reports) and repair reports.

III.10.E.4 Integrity Assessments

III.10.E.4.a. The Permittees ~~shall~~ will ensure periodic integrity assessments are conducted on the WTP Unit Tank Systems listed in Permit Tables III.10.E.A through D, I, K, M, and O, as approved/modified pursuant to Permit Condition III.10.E.9., over the term of this Permit as specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program and schedule in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.e.i. and III.10.C.5.c. Results of the integrity assessments ~~shall~~ will be included in the WTP Unit operating record until ten (10) years after post-closure, or corrective action is complete and certified, whichever is later.

III.10.E.4.b. The Permittees ~~shall~~ will address problems detected during the tank integrity assessments specified in Permit Condition III.10.E.4.a. following the integrity assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.e.i. and III.10.C.5.c.

III.10.E.4.c. The Permittees must immediately and safely remove from service any Tank System or secondary containment system which through an integrity assessment is found to be "unfit for use" as defined in WAC 173-303-040, following Permit Conditions III.10.E.5.i.i through iv., vi., and vii. The affected tank system or secondary containment system must be either repaired or closed in accordance with Permit Condition III.10.E.5.i.v. [WAC 173-303-640(7)(e) and (f), WAC 173-303-640(8)].

III.10.E.5 Tank Management Practices

III.10.E.5.a. No dangerous and/or mixed waste ~~shall~~ will be managed in the WTP Unit Tank System unless the operating conditions, specified under Permit Condition III.10.E.5 are complied with.

III.10.E.5.b. The Permittees ~~shall~~ will install and test all process and leak detection system monitoring/instrumentation, as specified in Permit Tables III.10.E.E through H, as approved/modified pursuant to Permit Condition III.10.E.9., in accordance with Operating Unit 10, Appendices 8.1, 8.2, 8.14, 9.1, 9.2, 9.14, 10.1, 10.2, 10.14, 11.1, 11.2, and 11.14 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.e.ix. and III.10.E.9.d.x.

III.10.E.5.c. The Permittees ~~shall~~ will not place dangerous and/or mixed waste, treatment reagents, or other materials in the WTP Unit Tank System if these substances could cause the tank system to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a)].

III.10.E.5.d. The Permittees ~~shall~~ will operate the WTP Unit Tank System to prevent spills and overflows using the description of controls and practices as required under WAC 173-303-640(5)(b) described in Permit Condition III.10.C.5., and Operating Unit 10, Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition III.10.E.9.e.iv. [WAC 173-303-640(5)(b), WAC 173-303-806(4)(c)(ix)].

III.10.E.5.e. For routinely non-accessible WTP Unit Tank Systems, as specified in Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition III.10.E.9.e.vi., the Permittees ~~shall~~ will mark all routinely non-accessible tank system access points with labels or signs to identify the waste contained in the tanks. The label, or sign, must be legible at a distance of at least fifty (50) feet and must bear a legend that identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the tank system(s). For the purposes of this Permit condition, "routinely non-accessible" means personnel are unable to enter these areas while waste is being managed in them [WAC 173-303-640(5)(d)].

III.10.E.5.f. For all tank systems not addressed in Permit Condition III.10.E.5.e., the Permittees ~~shall~~ will mark all these tank systems holding dangerous and/or mixed waste with labels or signs to identify the waste contained in the tank. The labels, or sign, must be legible at a distance of at least fifty (50) feet, and must bear a legend that identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the tank system(s) [WAC 173-303-640(5)(d)].

III.10.E.5.g. The Permittees ~~shall~~ will ensure that the secondary containment systems for the WTP Unit Tank Systems listed in Permit Tables III.10.E.A through D, I, K, M, and O, as approved/modified pursuant to Permit Condition III.10.E.9., are free of cracks or gaps to prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the system to the soil, ground water, or surface water at any time that waste is in the tank system. Any indication that a crack or gap may exist in the containment systems ~~shall~~ will be investigated and repaired in accordance with Operating Unit 10, Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition III.10.E.9.e.v [WAC 173-303-320, WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), WAC 173-303-640(6), and WAC 173-303-806(4)(c)(vii)].

III.10.E.5.h. An impermeable coating, as specified in Operating Unit 10, Appendices 8.4, 8.5, 8.7, 8.9, 8.11, 8.12, 9.4, 9.5, 9.7, 9.9, 9.11, 9.12, 10.4, 10.5, 10.7, 10.9, 10.11, 10.12, 11.4, 11.5, 11.7, 11.9, 11.11, and 11.12 of this Permit, as approved pursuant to Permit Condition III.10.E.9.b.v., ~~shall~~ will be maintained for all concrete containment systems and concrete portions of containment systems for each WTP Unit Tank System listed in Permit Tables III.10.E.A through D and I through P, as approved/modified pursuant to Permit Condition III.10.E.9. Concrete containment systems that do not have a liner and have construction joints, must meet the requirements of WAC 173-303-640(4)(e)(ii)(C) and -806(4)(c)(vii). The coating ~~shall~~ will prevent migration of any dangerous and/or mixed waste into the concrete. All coatings ~~shall~~ will meet the following performance standards:

III.10.E.5.h.i. The coating must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present;

III.10.E.5.h.ii. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical

damage to the coating or lining can be identified and remedied before dangerous and/or mixed waste could migrate from the system; and

III.10.E.5.h.iii. The coating must be compatible with the dangerous and/or mixed waste, treatment reagents, or other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), WAC 173-303-806(4)(c)(vii)].

III.10.E.5.i. The Permittees ~~shall~~ will inspect all secondary containment systems for WTP Unit Tank Systems listed in Permit Tables III.10.E.A through D and I through P, as approved/modified pursuant to Permit Condition III.10.E.9., in accordance with the Inspection Schedule specified in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.E.9.e.v. and III.10.C.5., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-320, WAC 173-303-640(5)(c), WAC 173-303-640(6), WAC 173-303-640(7), WAC 173-303-806(4)(a)(v)]:

III.10.E.5.i.i. Immediately and safely stop the flow of dangerous and/or mixed waste into the tank system or secondary containment system, in accordance with procedures based on all applicable safety analysis documentation;

III.10.E.5.i.ii. Determine the source of the dangerous and/or mixed waste;

III.10.E.5.i.iii. Remove the waste from the secondary containment area pursuant to WAC 173-303-640(7)(b). The waste removed from containment areas of WTP Unit Tank Systems ~~shall~~ will be managed as dangerous and/or mixed waste;

III.10.E.5.i.iv. If the cause of the release was a spill that has not damaged the integrity of the tank system, the Permittees may return the tank system to service pursuant to WAC 173-303-640(7)(e)(ii). In such a case, the Permittees ~~shall~~ will take action to ensure the incident that caused liquid to enter the containment systems of these tank systems will not reoccur [WAC 173-303-320(3);

III.10.E.5.i.v. If the source of the dangerous waste and/or mixed waste is determined to be a leak from a primary WTP Unit Tank System, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees must comply with the requirements of WAC 173-303-640(7) and take the following actions [WAC 173-303-640(5)(c)]:

A. Close the tank system according to procedures in WAC 173-303-640(7)(e)(i), and Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.; or

B. Repair and re-certify (in accordance with WAC 173-303-810(13)(a) as modified pursuant to Permit Condition III.10.E.1.d.) the tank system in accordance with Operating Unit 10, Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition III.10.E.9.e.v. before the tank system is placed back into service [WAC 173-303-640(7)(e) and (f), and WAC 173-303-806(4)(c)(vii)];

III.10.E.5.i.vi. The Permittees ~~shall~~ will document in the operating record actions/procedures taken to comply with III.10.E.5.i.i. through v. above in accordance with WAC 173-303-640(6)(d);

III.10.E.5.i.vii. The Permittees ~~shall~~ will notify and report releases to the environment to Ecology in accordance with WAC 173-303-640(7)(d).

III.10.E.5.j. If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water liquids from damaged or broken pipes) can not be removed from the secondary containment system within twenty-four (24) hours, Ecology will be verbally notified

within twenty-four (24) hours of discovery. The notification ~~shall~~ will provide the information in A, B, and C listed below. The Permittees ~~shall~~ will provide Ecology with a written demonstration within seven (7) business days, identifying at a minimum [WAC 173-303-640(4)(c)(iv), WAC 173-303-640(7)(b)(ii), WAC 173-303-806(4)(c)(vii)]:

A. Reasons for delayed removal;

B. Measures implemented to ensure continued protection of human health and the environment;

C. Current actions being taken to remove liquids from secondary containment.

III.10.E.5.k. The Permittees ~~shall~~ will operate the WTP Unit Tank System in accordance with Operating Unit 10, Chapter 4.0 as updated pursuant to Permit Condition III.10.E.9.e.vi. and Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition III.10.E.9.e., and the following:

III.10.E.5.k.i. The Permittees ~~shall~~ will operate the WTP Unit Tank System in order to maintain the systems and process parameters listed in Permit Tables III.10.E.E through H, as approved/modified pursuant to Permit Condition III.10.E.9., within the operating trips and operating ranges specified in Permit Tables III.10.E.E through H, and consistent with assumptions and basis which are reflected in Operating Unit 10, Appendix, 6.3.1. as approved pursuant to Permit Condition III.10.C.11.b. [WAC 173-303-815(2)(b)(ii) and WAC 173-303-640(5)(b)]. For the purposes of this permit condition, Operating Unit 10, Appendix 6.3.1 ~~shall~~ will be superceded by Appendix 6.4.1 upon its approval pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d.;

III.10.E.5.k.ii. The Permittees ~~shall~~ will calibrate/function test the instruments listed on Permit Tables III.10.E.E through H in accordance with Operating Unit 10, Appendices 8.15, 9.18, 10.18, and 11.15 of this Permit, as approved pursuant to Permit Condition III.10.E.9.e.xi.

III.10.E.5.l. Tank systems that have the potential for formation and accumulation of hydrogen gases must be operated to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

III.10.E.5.m. For each tank system holding dangerous waste which are acutely or chronically toxic by inhalation, operate the system to prevent escape of vapors, fumes or other emissions into the air [WAC 173-303-640(5)(e), WAC 173-303-806(4)(c)(xii)].

III.10.E.6 Inspections [WAC 173-303-640(6)]

III.10.E.6.a. The Permittees ~~shall~~ will inspect the WTP Unit Tank Systems in accordance with the Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified pursuant to Permit Condition III.10.C.5.c.

III.10.E.6.b. The inspection data for the WTP Unit Tank Systems ~~shall~~ will be recorded, and the records ~~shall~~ will be placed in the WTP Unit operating record, in accordance with Permit Condition III.10.C.4.

III.10.E.7 Recordkeeping (WAC 173-303-380)

For the WTP Unit Tank Systems, the Permittees ~~shall~~ will record and maintain in the WTP Unit operating record, all monitoring, calibration, recording, maintenance, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Conditions III.10.C.4. and III.10.C.5.

III.10.E.8 Closure

The Permittees ~~shall~~ will close the WTP Unit Tank Systems in accordance with Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.

III.10.E.9 Compliance Schedule

III.10.E.9.a. All information identified for submittal to Ecology in b. through e. of this compliance schedule must be signed and certified in accordance with requirements in WAC 173-303-810(12), as modified in accordance with Permit Condition III.10.E.1.d. [WAC 173-303-806(4)].

III.10.E.9.b. The Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to construction of each secondary containment and leak detection system for the WTP Unit Tank System (per level, per WTP Unit building and outside the WTP Unit buildings) as identified in Permit Tables III.10.E.A through D, J, L, N, and P, engineering information as specified below, for incorporation into Operating Unit 10, Appendices 8.4, 8.5, 8.7, 8.8, 8.9, 8.11, 8.12, 9.4, 9.5, 9.7, 9.8, 9.9, 9.11, 9.12, 10.4, 10.5, 10.7, 10.8, 10.9, 10.11, 11.4, 11.5, 11.7, 11.8, 11.9, and 11.11 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640 (the information specified below will include dimensioned engineering drawings and information on sumps and floor drains):

III.10.E.9.b.i. IQRPE Reports (specific to foundation, secondary containment, and leak detection system) ~~shall~~ will include review of design drawings, calculations, and other information on which the certification report is based and ~~shall~~ will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendices 8.0 through 11.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. IQRPE Reports ~~shall~~ will be consistent with the information separately provided in Permit Conditions III.10.E.9.b.ii. through ix. below. The IQRPE Report(s) (specific to foundation, secondary containment and leak detection system) for the LAW and HLW buildings (-21 foot elevation only) ~~shall~~ will be submitted with the first IQRPE Report for tanks, identified in Permit Condition III.10.E.9.c.i. [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

III.10.E.9.b.ii. Design drawings (General Arrangement Drawings in plan and cross sections) and specifications for the foundation, secondary containment, including, liner installation details, and leak detection methodology [Note: leak detection systems for areas where daily, direct, or remote visual inspection is not feasible, ~~shall~~ will be continuous in accordance with WAC 173-303-640(4)(e)(iii)(C)]. These items should show the dimensions, volume calculations, and location of the secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks, floor drains [WAC 173-303-640(4)(b) through (f), WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

III.10.E.9.b.iii. The Permittees ~~shall~~ will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the secondary containment system. This information ~~shall~~ will demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), WAC 173-303-806(4)(c)(vii)];

III.10.E.9.b.iv. A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil, including factors affecting the potential for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-806(4)(c)(v)];

III.10.E.9.b.v. Secondary containment/foundation and leak detection system materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials as applicable) [WAC 173-303-806(4)(c)(i)];

III.10.E.9.b.vi. Detailed description of how the secondary containment for each tank system will be installed in compliance with WAC 173-303-640(3)(c) [WAC 173-303-806(4)(c)(vi)];

III.10.E.9.b.vii. Submit Permit Tables III.10.E.J, L, N, and P, completed to provide for all secondary containment sumps and floor drains, the information as specified in each column heading, consistent with information to be provided in Permit Conditions III.10.E.9.b.i. through vi. above;

III.10.E.9.b.viii. Documentation that secondary containment and leak detection systems will not accumulate hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-340].

III.10.E.9.b.ix. A detailed description of how tank system design provides access for conducting future tank integrity assessments [WAC 173-303-640(3)(b), WAC 173-303-806(4)(c)(vi)];

III.10.E.9.c. The Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to installation of each tank as identified in Permit Tables III.10.E.A through D, and I, K, M, and O engineering information as specified below, for incorporation into Operating Unit 10, Appendices 8.1 through 8.9, 8.11 through 8.14, 9.1 through 9.9, 9.11 through 9.14, 10.1 through 10.9, 10.11 through 10.14, 11.1 through 11.9, and 11.11 through 11.14 of this Permit. Tanks ~~shall~~ will include primary sumps. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640 (the information specified below will include dimensioned engineering drawings):

III.10.E.9.c.i. IQRPE Reports (specific to tanks) ~~shall~~ will include review of design drawings, calculations, and other information on which the certification report is based and ~~shall~~ will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendices 8.0 through 11.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports ~~shall~~ will be consistent with the information separately provided in Permit Conditions III.10.E.9.c.ii. through ~~xiv.~~ xii. below and the IQRPE Report specified in Permit Condition III.10.E.9.b.i. [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

III.10.E.9.c.ii. Design drawings (General Arrangement Drawings in plan and cross sections, Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems], Mechanical Drawings) and specifications, and other information, specific to tanks (to show location and physical attributes of each tank) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i) through (iv)];

III.10.E.9.c.iii. The Permittees ~~shall~~ will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the tank(s). Structural support calculations specific to off-specification, non-standard, and field fabricated tanks ~~shall~~ will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

III.10.E.9.c.iv. A description of materials and equipment used to provide corrosion protection for external metal components in contact with water, including factors affecting the potential for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-806(4)(c)(v)];

III.10.E.9.c.v. Tank materials selection documentation (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

III.10.E.9.c.vi. Tank vendor information (including, but not limited to required performance warranties, as available), consistent with information submitted under ii. above, ~~shall~~ will be submitted for incorporation into the Administrative Record [WAC 173-303-640, and WAC 173-303-806(4)(c)];

III.10.E.9.c.vii. System Descriptions ~~(process)~~ related to tanks ~~shall~~ will be submitted for incorporation into the Administrative Record;

III.10.E.9.c.viii. Mass balance for each projected operating condition, including assumptions and formulas used to complete the mass balance, so that they can be independently verified, and ~~shall~~ will be submitted for incorporation into the Administrative Record;

III.10.E.9.c.ix. A detailed description of how the tanks will be installed in compliance with WAC 173-303-640(3)(c), (d), and (e) [WAC 173-303-806(4)(c)(vi)];

III.10.E.9.c.x. Submit Permit Tables III.10.E.I, K, M, and O, completed to provide for all primary containment sumps and floor drains, the information as specified in each column heading, consistent with information to be provided in Permit Conditions III.10.E.9.c.i. through ix.;

III.10.E.9.c.xi. Documentation that tanks are designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-340];

III.10.E.9.c.xii. Documentation that tanks are designed to prevent escape of vapors and emissions of acutely or chronically toxic (upon inhalation) EHW limit for incorporation into the Administrative Record [WAC 173-303-640(5)(e), WAC 173-303-806(4)(c)(xii)];

III.10.E.9.d. The Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to installation of ancillary equipment for each tank system, as identified in Permit Tables III.10.E.A, through D, and I through P, not addressed in Permit Condition III.10.E.9.c., engineering information as specified below, for incorporation into Operating Unit 10, Appendices 8.1 through 8.9, 8.11 through 8.14, 9.1 through 9.9, 9.11 through 9.14, 10.1 through 10.9, 10.11 through 10.14, 11.1 through 11.9, and 11.11 through 11.14 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640 (the information specified below will include dimensioned engineering drawings):

III.10.E.9.d.i. IQRPE Reports (specific to ancillary equipment) ~~shall~~ will include a review of design drawings, calculations, and other information as applicable, on which the certification report is based. The reports ~~shall~~ will include, but not be limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 8.0 through 11.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports ~~shall~~ will be consistent with the information provided separately in Permit Conditions III.10.E.9.d.ii. through xiii. below and the IQRPE Reports specified in Permit Conditions III.10.E.9.b and III.10.E.9.c. [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

III.10.E.9.d.ii. Design drawings (Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems], etc.) specifications (including required performance warranties), and other information specific to ancillary equipment (these drawings should include all equipment such as pipe, valves, fittings, pumps, instruments, etc.) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i), (iii), (iv)];

III.10.E.9.d.iii. The Permittees ~~shall~~ will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the ancillary equipment [WAC 173-303-640(3)(a), WAC 173-303-640(3)(f), WAC 173-303-806(4)(c)(i)];

III.10.E.9.d.iv. A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil and water, including factors affecting the potential for corrosion as required under WAC 173-303-640(3)(a)(iii)(B) [WAC 173-303-806(4)(c)(v)];

III.10.E.9.d.v. Materials selection documentation for ancillary equipment (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), WAC 173-303-806(4)(c)(i)];

III.10.E.9.d.vi. Vendor information, consistent with information submitted under ii. above, ~~shall~~ will be submitted for incorporation into the Administrative Record [WAC 173-303-640, and WAC 173-303-806(4)(c)];

III.10.E.9.d.vii. Tank, ancillary equipment, and leak detection system instrument control logic narrative description (e.g., software functional specifications, descriptions of fail-safe conditions, etc.);

III.10.E.9.d.viii. System Descriptions ~~(process)~~ related to ancillary equipment and system descriptions related to leak detection systems, (including instrument control logic and narrative descriptions), for incorporation into the Administrative Record;

III.10.E.9.d.ix. A detailed description of how the ancillary equipment will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), and WAC 173-303-806(4)(c)(vi)];

III.10.E.9.d.x. For process monitoring, control, and leak detection system instrumentation for the WTP Unit Tank System as identified in Permit Tables III.10.E.E through H, a detailed description of how the process monitoring, control, and leak detection system instrumentation will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi)];

III.10.E.9.d.xi. Mass balance for projected normal operating condition used in developing the process and instrumentation diagrams, including assumptions and formulas used to complete the mass balance, so that they can be independently verified, for incorporation into the Administrative Record;

III.10.E.9.d.xii. Documentation that ancillary equipment is designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-340].

III.10.E.9.d.xiii. Leak detection system documentation (e.g. vendor information, etc.) consistent with information submitted under Permit Condition III.10.E.9.c.ii. and Permit Conditions III.10.E.9.d.ii., vii., viii. and x. above, ~~shall~~ will be submitted for incorporation into the Administrative Record.

III.10.E.9.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following as specified below for incorporation into Operating Unit 10, Appendices 8.15, 9.18, 10.18, 11.15 of this Permit, except Permit Condition III.10.E.9.e.v., which will be incorporated into Operating Unit 10, Chapter 6.0 of this Permit. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions III.10.E.9.b., c., d., and e., III.10.C.3.e., and III.10.C.11.b., as approved by Ecology.

III.10.E.9.e.i. Integrity assessment program and schedule for all WTP Unit tanks ~~shall~~ will address the conducting of periodic integrity assessments on all WTP Unit tanks over the life of the tank, in accordance with III.10.E.9.b.ix. and WAC 173-303-640(3)(b), and descriptions of procedures for addressing problems detected during integrity assessments. The schedule must be based on past integrity assessments, age of the tank system, materials of construction, characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b), WAC 173-303-806(4)(c)(vi)];

III.10.E.9.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of dangerous and/or mixed waste, or accumulated liquid in the secondary containment system within twenty-four (24) hours. Detection of a leak of at least 0.1 gallons per hour within twenty-four (24) hours is defined as being able to detect a leak within twenty-four (24) hours. Any exceptions to this criteria must be approved by Ecology [WAC 173-303-640(4)(c)(iii), WAC 173-303-806(4)(c)(vii)];

III.10.E.9.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and accumulated liquids can be removed from the secondary containment system within twenty-four (24) hours [WAC 173-303-806(4)(c)(vii)];

III.10.E.9.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices are in place to prevent spills and overflows from tanks or containment systems in compliance with WAC 173-303-640(5)(b)(i) through (iii) [WAC 173-303-640(5)(b), WAC 173-303-806(4)(c)(ix)];

III.10.E.9.e.v. Description of procedures for investigation and repair of tank systems [WAC 173-303-320, WAC 173-303-640(6), WAC 173-303-640(7)(e) and (f), WAC 173-303-806(4)(a)(v), WAC 173-303-806(4)(c)(vii)];

III.10.E.9.e.vi. Updated Chapter 4.0, Narrative Descriptions, Tables and Figures as identified in Permit Tables III.10.E.A through D (as modified pursuant to Permit Condition III.10.E.9.e.xii.) and updated to identify routinely non-accessible tank systems;

III.10.E.9.e.vii. Description of procedures for management of ignitable and reactive, and incompatible dangerous and/or mixed waste in accordance with WAC 173-303-640(9) and (10) [WAC 173-303-806(4)(c)(x)].

III.10.E.9.e.viii. A description of the tracking system used to track dangerous and/or mixed waste throughout the WTP Unit Tank System, pursuant to WAC 173-303-380.

III.10.E.9.e.ix. Permit Tables III.10.E.E through H ~~shall~~ will be completed for WTP Unit Tank System process and leak detection system monitors and instruments (to include but not limited to: instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH, level, humidity, and emission) to provide the information as specified in each column heading. Process and leak detection system monitors and instruments for critical systems as specified in Operating Unit 10, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b. and for operating parameters as required to comply with Permit Condition III.10.C.3.e.iii. ~~shall~~ will be addressed. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this permit condition.

III.10.E.9.e.x. Supporting documentation for operating trips and expected operating range as specified in Permit Tables III.10.E.E through H as approved pursuant to Permit Condition III.10.E.9.e.ix.

III.10.E.9.e.xi. Documentation of process and leak detection instruments and monitors (as listed in Permit Tables III.10.E.E through H) for the WTP Unit Tank Systems to include but not be limited to the following:

A. Procurement specifications;

B. Location used;

C. Range, precision, and accuracy;

D. Detailed descriptions of Calibration/functionality test procedures (e.g., method number [ASTM]) or provide a copy of manufacturer's recommended calibration procedures;

E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists, including justification for calibration, inspection and maintenance frequencies, criteria for identifying instruments found to be significantly out of calibration, and corrective action to be taken for instruments found to be significantly out of calibration (e.g., increasing frequency of calibration, instrument replacement, etc.);

F. Equipment instrument control logic narrative description (e.g., software functional specifications, descriptions of fail safe conditions, etc.), as identified in Permit Tables III.10.E.E through H not addressed in Permit Condition III.10.E.9.d.

III.10.E.9.e.xii. Permit Tables III.10.E.A through D amended as follows:

A. Under column 1, update and complete list of dangerous and/or mixed waste tank systems, including plant items that comprise each system (listed by item number);

B. Under column 2, update and complete system designations;

C. Under column 3, replace the 'reserved' with the Operating Unit 10, Appendices 8.0, 9.0, 10.0, and 11.0, subsections specific to tank systems as listed in column 1;

D. Under column 4, update and complete list of narrative description tables and figures;

E. Under column 5, update and complete maximum capacity, for each tank.

III.10.E.9.e.xiii. Permit Tables III.10.E.I, K, M, and O amended as follows:

A. Under column 1, replace the 'reserved' with the updated and complete list of sump numbers and room location;

B. Under column 2, replace the 'reserved' with the updated and complete maximum sump capacities in gallons;

C. Under column 3, replace the 'reserved' with the updated and complete sump dimensions and materials of construction;

D. Under column 4, replace the 'reserved' with the updated and complete list of engineering descriptions (drawing numbers, specifications, etc.);

Table III.10.E.A – Pretreatment Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
Waste Feed Receipt Process System [Comprised of the following: Waste Feed Receipt Vessels (FRP VSL-00002-A/B/C/D)]	FRP ~~(Waste Feed Receipt Process System)~~	24590-PTF -M2-FRP-P0001 -M2-FRP-P0002 -M2-FRP-P0003 -M2-FRP-P0004 -M5-V17T-P0003 ~~-M5-V17T-P0006~~ ~~-M5-V17T-P0009~~ ~~-M5-V17T-P0010~~ ~~-M5-V17T-P0011~~ -M6-FRP-P0001 -M6-FRP-P0002 -M6-FRP-P0003 -M6-FRP-P0005 -M6-FRP-P0006 -M6-FRP-P0007 -M6-FRP-P0008 -M6-FRP-P0009 -M6-FRP-P0010 ~~-MVD-FRP-00001~~ ~~-MVD-FRP-00002~~ ~~-MVD-FRP-00003~~ ~~-MVD-FRP-00004~~ -MVD-FRP-P0005 -MVD-FRP-P0006 -MVD-FRP-P0007 -MVD-FRP-P0008 -N1D-FRP-P0001 -P1-P01T-P0001 -P1-P01T-P0002 ~~-P1-P01T-P0008~~	Section 4.1.2.1; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-5, ~~4A-61, 4A-62, 4A-78, 4A-79~~ of Operating Unit 10, Chapter 4.0 of this Permit.	FRP-VSL-00002-A = 474,000 FRP-VSL-00002-B = 474,000 FRP-VSL-00002-C = 474,000 FRP-VSL-00002-D = 474,000

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		~~-P1-P01T-P0009~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~ ~~-P1-P01T-P0016~~ ~~-P1-P01T-P0017~~ 24590-WTP 3PS-MV00-TP001 3PS-MV00-TP002 3PS-MV00-TP003 3PS-G000-TP002		
Waste Feed Evaporation Process System [Comprised of the following: Waste Feed Evaporator Feed Vessels (FEP-VSL-00017A/B)) LAW Feed Evaporator Condensate ~~Pot~~ Vessel (FEP-VSL-00005)]	FEP ~~(Waste Feed Evaporation Process System)~~	24590-PTF -M5-V17T-P0004001 ~~-M5-V17T-P0006~~ ~~-M5-V17T-P0009~~ ~~-M5-V17T-P0010~~ ~~-M5-V17T-P0011~~ -M6-FEP-P0001 -M6-FEP-P0002 -M6-FEP-P0003 -M6-FEP-P0004 -M6-FEP-P0005 -M6-FEP-P0006 -M6-FEP-P0007 -M6-FEP-P0008 ~~-MED-FEP-00001~~ ~~-MED-FEP-P0003~~ ~~-MED-FEP-P0004~~ -MVD-FEP-P0001 -MVD-FEP-P0002 -MVD-FEP-P0003 -MV-FEP-P0001 -MV-FEP-P0002 -N1D-FEP-P0002	Section 4.1.2.2; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-6 ~~4A-61, 4A-62, 4A-63, 4A-78, 4A-79, 4A-80~~ of Operating Unit 10, Chapter 4.0 of this Permit.	FEP-VSL-00017A = ~~59,070~~85,557 FEP-VSL-00017B = ~~90,070~~85,557 FEP-VSL-00005 = ~~1,190~~5,022

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		-N1D-FEP-P0003 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0007 24590-WTP-3PS-MV00-TP001 3PS-MV00-TP002 3PS-MV00-TP003 3PS-G000-TP002		
Ultrafiltration Process System [Comprised of the following: Ultrafilter Permeate Vessels (UFP-VSL-00062A/B/C) Ultrafiltration Feed Preparation Vessels (UFP-VSL-00001A/B) Ultrafiltration Feed Vessels (UFP-VSL-00002A/B)) Ultrafilters (UFP-FILT-00001A/B, UFP-FILT-00002A/B, UFP-FILT-00003A/B)]	UFP ~~(Ultrafiltration Process System)~~	24590-PTF ~~M5-V17T-P0006~~ -M5-V17T-P0009 -M5-V17T-P0010 -M5-V17T-P0011 -M6-UFP-P0001 -M6-UFP-P0002 -M6-UFP-P0003 -M6-UFP-P0004 -M6-UFP-P0005 -M6-UFP-P0006 -M6-UFP-P0007 -M6-UFP-P0008 -M6-UFP-P0009 -M6-UFP-P0010 -M6-UFP-P0011 -M6-UFP-P0013 -M6-UFP-P0015 -M6-UFP-P0016 -M6-UFP-P0017 -MLD-UFP-P0007 ~~-MVC-UFP-00001~~ ~~-MVC-UFP-00002~~ ~~-MVC-UFP-00003~~	Section 4.1.2.3; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-7 ~~4A-61, 4A-62, 4A-78, 4A-79~~ of Operating Unit 10, Chapter 4.0 of this Permit.	UFP-VSL-00062A = 34,700 UFP-VSL-00062B = 34,700 UFP-VSL-00062C = 34,700 UFP-VSL-00001A = 75,593 UFP-VSL-00002A = 40,783 UFP-VSL-00001B = 75,593 UFP-VSL-00002B = 40,783 UFP-FILT-00001A= ~~RESERVED~~ 140 UFP- FILT-00001B= ~~RESERVED~~ 140 UPF-FILT-00002A= ~~RESERVED~~ 140 ~~RESERVED~~ 140 UPF-FILT-00002B= ~~RESERVED~~ 140 UPF-FILT-00003A= ~~RESERVED~~ 140 UPF-FILT-00003B= ~~RESERVED~~ 140

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		~~-MVC-UFP-P0001~~ ~~-MVC-UFP-P0002~~ ~~-MVC-UFP-P0005~~ ~~-MVC-UFP-P0006~~ ~~-MVC-UFP-P0007~~ ~~-MVC-UFP-P0014~~ ~~-MVC-UFP-P0015~~ -MVD-UFP-P0001 -MVD-UFP-P00014 -MVD-UFP-P00015 -MVD-UFP-P0002 -MVD-UFP-P0005 -MVD-UFP-P0006 -MVD-UFP-P0007 -MV-UFP-P0001 -MV-UFP-P0002 -MV-UFP-P0003 -MV-UFP-P0004 -MV-UFP-P0005 -MV-UFP-P0006 -MV-UFP-P0007 -N1D-UFP-P0001 -N1D-UFP-P0002 -N1D-UFP-P0003 -N1D-UFP-P0004 -N1D-UFP-P0005 -N1D-UFP-P0008 -N1D-UFP-P0009 -P1-P01T-P0001 ~~-P1-P01T-P0002~~ ~~-P1-P01T-P0008~~ ~~-P1-P01T-P0009~~ ~~-P1-P01T-P0014~~		

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		~~-P1-P01T-P0015~~ 24590-WTP 3PS-MV00-TP002 3PS-MV00-TP003 3PS-G000-TP002 3PS-MV00-TP001 PER-CON-02-001		
HLW Lag Storage and Feed Blending Process System [Comprised of the following: HLW Feed Receipt Vessel (HLP-VSL-00022) HLW Feed Blending Vessel (HLP-VSL-00028) ~~Sr/TRU~~ HLW Lag Storage Vessels (HLP-VSL-00027A/B)] ~~Lag Storage Vessels (V12001D/E)~~	HLP-~~(HLW Lag Storage and Feed Blending Process system)~~	24590-PTF- ~~-M5-V17T-P0006~~ -M5-V17T-P0007 -M5-V17T-P0008 ~~-M5-V17T-P0009~~ ~~-M5-V17T-P0010~~ ~~-M5-V17T-P0011~~ -M6-HLP-P0001 -M6-HLP-P0002 -M6-HLP-P0003 -M6-HLP-P0005 -M6-HLP-P0006 -M6-HLP-P0007 -M6-HLP-P0009 -M6-HLP-P0010 -MVD-HLP-P0006 -MVD-HLP-P0007 -MVD-HLP-P0008 -MVD-HLP-P0009 -MV-HLP-P0003 -MV-HLP-P0004 -MV-HLP-P0005 -MV-HLP-P0006 -N1D-HLP-P0001 -N1D-HLP-P0003 -N1D-HLP-P0007	Section 4.1.2.4; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-8 ~~4A-61, 4A-62, 4A-78, 4A-79~~ of Operating Unit 10, Chapter 4.0 of this Permit.	HLP-VSL-00022 = 270,600 HLP-VSL-00028 = 142,200 HLP-VSL-00027A = 127,260 HLP-VSL-00027B = 127,260 ~~V12001D = 96,900~~ ~~V12001E = 96,900~~

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		-N1D-HLP-P0010 -P1-P01T-P0001 ~~-P1-P01T-P0002~~ ~~-P1-P01T-P0008~~ ~~-P1-P01T-P0013~~ ~~-P1-P01T-P0014~~ **24590-WTP** 3PS-MV00-TP001 3PS-G000-TP002 3PS-MV00-TP003 3PS-MV00-TP003 PER-CON-02-001		
Cesium Ion Exchange Process System [Comprised of the following: Cesium Ion Exchange Columns (CXP-IXC-00001/2/3/4) Cs IX Feed Vessel (CXP-VSL-00001) Cs IX Caustic Rinse Collection Vessel (CXP-VSL-00004) Cesium Ion Exchange Treated LAW Collection Vessels (VSL-00026A/B/C) Cs Reagent Vessel (CXP-VSL-00005)] ~~Cs IX Gas Separation Vessels (ID RESERVED)~~	CXP-~~(Cesium Ion Exchange Process System)~~	**24590-PTF** -M5-V17T-P0012 -M5-V17T-P0013 -M5-V17T-P0025 -M6-CXP-P0001 -M6-CXP-P0002 -M6-CXP-P0003 -M6-CXP-P0005 -M6-CXP-P0007 -M6-CXP-P0010 -M6-CXP-P0011 -M6-CXP-P0012 -M6-CXP-P0013 -MV-CXP-P0001 -MV-CXP-P0002 -MV-CXP-P0003 -MV-CXP-P0008 -MV-CXP-P0009 -MV-CXP-P0010 -MVD-CXP-P0007 -MVD-CXP-P0015	Section 4.1.2.5; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-9~~, 4A-61,~~ 4A-~~62, 4A-78, 4A-79~~ of Operating Unit 10, Chapter 4.0 of this Permit.	CXP-IXC-00001 = 680 CXP-IXC-00002= 680 CXP-IXC-00003 = 680 CXP-IXC-00004 = 680 CXP-VSL-00001 = 103,350 CXP-VSL-00004 = 11,085 CXP-VSL-00005 = ~~1141~~1180 CXP-VSL-00026A = ~~39,000~~36,480 CXP-VSL-00026B = ~~39,000~~36,480 CXP-VSL-00026C = ~~39,000~~36,480 ~~Cs IX Gas Separation Vessels = RESERVED~~

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		-MVD-CXP-P0016 -MVD-CXP-P0021 -MVD-CXP-P0022 -MVD-CXP-P0023 -N1D-CXP-P0001 -N1D-CXP-P0003 -N1D-CXP-P0007 -N1D-CXP-P0008 -P1-P01T-P0001 -P1-P01T-P0002 ~~-P1-P01T-P0008~~ ~~-P1-P01T-P0009~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0014~~ ~~-P1-P01T-P0016~~ **24590-WTP** 3PS-MV00-TP001 3PS-MV00-TP002 3PS-MV00-TP003 3PS-G000-TP002		
~~RESERVED (CRP-VSL-00002)~~	~~CRP (RESERVED)~~	~~24590-PTF~~ ~~-M6-CNP-P0005~~	~~Section 4.1.2.7; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-10, 4A-61, 4A-62, 4A-78, 4A-79 of Operating Unit 10, Chapter 4.0 of this Permit.~~	~~CRP-VSL-00002 = RESERVED~~
Cesium Nitric Acid Recovery Process System [Comprised of the following: Eluate Contingency Storage Vessel (CNP-VSL-00003) Cs Evaporator Recovered Nitric Acid Vessel (CNP-VSL-00004)	CNP ~~(Cesium Nitric Acid Recovery Process System)~~	**24590-PTF** -3PS-MEVV-T0001 -3PS-MEVV-T0002 -3PS-MEVV-TP0001 -3PS-MEVV-TP0002 ~~-M5D-CNP-00001~~ -M5-V17T-P0014 -M6-CNP-P0001	Section 4.1.2.6; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-10, ~~4A-61, 4A-62, 4A-78~~, 4A-79 of Operating Unit 10, Chapter 4.0 of this Permit.	CNP-VSL-00003 = 23,2000 CNP-VSL-00004= 11,115 CNP-VSL-00001 = 109

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
Cs Evaporator Eluant Lute Pot (CNP-VSL-00001)]		-M6-CNP-P0002 -M6-CNP-P0003 -M6-CNP-P0004 -M6-CNP-P0005 -M6-CNP-P0008 -M6-CNP-P0010 ~~-MB-CNP-HX-00001~~ ~~-ME-CNP-EVAP-00001~~ ~~-ME-CNP-HX-00002~~ ~~-ME-CNP-HX-00003~~ ~~-ME-CNP-HX-00004~~ ~~-MED-CNP-P0003~~ ~~-MED-CNP-P0004~~ ~~-MED-CNP-P0005~~ ~~-MED-CNP-P0010~~ ~~-MV-CNP-DISTC-00001~~ -MV-CNP-P0001 -MV-CNP-P0002 -MV-CNP-P0005 ~~-MV-CNP-VSL-00001~~ ~~-MV-CNP-VSL-00003~~ ~~-MV-CNP-VSL-00004~~ -MVD-CNP-P0003 ~~-MVD-CNP-P0006~~ -MVD-CNP-P0007 -MVD-CNP-P0010 ~~-MWD-CNP-P0001~~ -N1D-CNP-P0006 -N1D-CNP-P0009 -N1D-CNP-P0011 -P1-P01T-P0001 ~~-P1-P01T-P0002~~ ~~-P1-P01T-P0003~~		

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		~~-P1-P01T-P0004~~ ~~-P1-P01T-P0009~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0015~~		
Technetium Ion Exchange Buffer Vessel (V43001) Cs Treated LAW Collection Vessel (ID RESERVED) Technetium Ion Exchange Columns (C43006/7/8/9) Caustic Rinse Collection Vessel (V43056) Treated LAW Buffer Vessels (V43110A/B/C) Tc Reagent Vessels (ID's RESERVED)	TXP (Technetium Ion Exchange Process System)	RESERVED	Section 4.1.2.8; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-12, 4A-61, 4A-62, 4A-78, 4A-79 of Operating Unit 10, Chapter 4.0 of this Permit.	V43001 = 18,100 Cs Treated LAW Collection Vessel (ID RESERVED) C43006 = 680 C43007 = 680 C43008 = 680 C43009 = 680 V43056 = 3,300 V43110A = 33,050 V43110B = 33,050 V43110C = 33,170 Tc Reagent Vessels (ID's RESERVED)
Recovered Technetium Eluant Vessel (V43071) Technetium Concentrate Lute Pot (V43072)	TEP (Technetium Eluant Recovery Process System)	RESERVED	Section 4.1.2.9; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-13, 4A-61, 4A-78 of Operating Unit 10, Chapter 4.0 of this Permit.	V43071 = 7,900 V43072 = 70
~~Process Condensate Hold Vessel (V41013)~~ **Treated LAW Concentrate Storage Process System** [Comprised of the following: ~~LAW SBS Purge Receipt Vessels (ID's~~	TCP	**24590-PTF** ~~-M5-V17T-P0005~~ -M6-TCP-P0001 -M6-TCP-P0002 ~~-M6-TLP-P0001~~ ~~-M6-TLP-P0002~~ ~~-M6-TLP-P0003~~	Section ~~4.1.2.11 &~~ 4.2.2.12; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-16~~, 4A-61, 4A-62, 4A-78, 4A-79~~ of Operating Unit 10, Chapter 4.0 of this Permit.	~~V41013 = 450~~ ~~LAW SBS Purge Receipt Vessels (ID's RESERVED)~~ TCP-VSL-00001 = 146,740

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
~~RESERVED)~~ Treated LAW Concentrate Storage Vessel (TCP-VSL-00001)]		~~-M6-TLP-P0005~~ ~~-M6-TLP-P0006~~ ~~-M6-TLP-P0007~~ -MV-TCP-P0002 -MVD-TCP-00001 -MVD-TCP-P0002 ~~-MV-TLP-P0001~~ ~~-MV-TLP-P0002~~ ~~-MVD-TLP-P0001~~ ~~-MVD-TLP-P0002~~ ~~-MVD-TLP-P0004~~ -P1-P01T-P0001 ~~-P1-P01T-P0002~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~ ~~-P1-P01T-P0013~~ ~~-P1-P01T-P0014~~ -N1D-TCP-P0001 **24590-WTP-** 3PS-MV00-TP002 3PS-MV00-TP003 3PS-G000-TP002 3PS-MV00-TP001		
Treated LAW Evaporation Process System [Comprised of the following: LAW SBS Condensate Receipt Vessels (TLP-VSL-00009A/B) Treated LAW Evaporator Condensate Vessel (TLP-VSL-00002)]	TLP ~~(Treated LAW Evaporation Process System)~~	**24590-PTF** -M5-V17T-P0005 -M6-TLP-P0001 -M6-TLP-P0002 -M6-TLP-P0003 -MVD-TLP-P0001 -MVD-TLP-P0002 -MVD-TLP-P0004 -MV-TLP-P0001 -MV-TLP-P0002	Section 4.1.2.11 ~~& 4.2.2.12~~; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-16~~, 4A-61, 4A-62, 4A-78, 4A-79~~ of Operating Unit 10, Chapter 4.0 of this Permit.	TLP-VSL-00009A = 130,010 TLP-VSL-00009B = 130,010 TLP-VSL-00002 = ~~RESERVED~~2300

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		-N1D-TLP-P0001 -N1D-TLP-P0006 - -P1-P01T-P0001 -P1-P01T-P0002 ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~ ~~-P1-P01T-P0013~~ ~~-P1-P01T-P0014~~ **24590-WTP** 3PS-MEVV-TP001 3PS-MV00-TP001 3PS-MV00-TP002 3PS-MV00-TP003 3PS-G000-TP002 PER-CON-02-001		
Spent Resin and Dewatering Process System (Comprised of the following: Spent Resin Slurry Vessels (RDP-VSL-00002A/B/C) ~~Resin Flush Collection Vessel (V43136)~~ Spent Resin Dewatering Moisture Separation Vessel (RDP-VSL-00004))	RDP ~~(Spent Resin and Dewatering Process System)~~	**24590-PTF-** -M6-RDP-P0001 -M6-RDP-P0002 -MVD-RDP-P0005 M6-RDP-P0006 -MVD-RDP-P0007 -MVD-RDP-P0006 -MV-RDP-P0001 -MV-RDP-P0002 -MV-RDP-P0003 **24590-PTF** 3PS-MW00-TP003 3PS-MV00-TP001 3PS-MV00-TP002 3PS-MV00-TP003 3PS-G000-TP002 M5-V17T-P0020 P1-P01T-P0001	Section 4.1.2.13; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-15~~, 4A-61, 4A-78~~ of Operating Unit 10, Chapter 4.0 of this Permit.	RDP-VSL-00002A = 15,240 RDP-VSL-00002B = 15,240 RDP-VSL-00002C = 15,240 ~~V43136 = 11,220~~ RDP-VSL-00004 = ~~101~~TBD

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
Pretreatment Plant Radioactive Liquid Waste Disposal System (Comprised of the following: Process Condensate ~~Vessels~~Tanks (RLD-TK-00006A/B) Alkaline Effluent Vessels (RLD-VSL-00017A/B))	RLD ~~(Pretreatment Plant Radioactive Liquid Waste Disposal System)~~	24590-PTF -M5-V17T-P0022003 -M5-V17T-P0022004 -M6-RLD-P0001 -M6-RLD-P0002 -M6-RLD-P0003 -M6-RLD-P0004 -M6-RLD-P0006 -MVD-RLD-P0005 -MVD-RLD-P0006 -MV-RLD-P0001 -MV-RLD-P0002 -N1D-RLD-P0002 -P1-P01T-P0001 ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~ ~~-P1-P01T-P0012~~ ~~-P1-P01T-P0013~~ 24590-WTP- 3PS-MV00-TP001 3PS-MV00-TP002 3PS-MV00-TP003 3PS-G000-TP002 PER-CON-02-001	Section 4.1.2.16; Table 4-3; and Figures 4A-1, 4A-2, 4A-18~~, 4A-61, 4A-62, 4A-78, 4A-79~~ of Operating Unit 10, Chapter 4.0 of this Permit.	RLD-TK-00006A= 394,000 RLD-TK-00006B= 394,000 RLD-VSL-00017A = 34,340 RLD-VSL-00017B = 34,340
Pretreatment Plant Wash and Disposal System (Comprised of the following: Ultimate Overflow Vessel (PWD-VSL-00033) HLW Effluent Transfer Vessel (PWD-VSL-00043)	PWD ~~(Pretreatment Plant Wash and Disposal System)~~	24590-PTF -M5-V17T-P0022001 -M5-V17T-P0022002 ~~-M5-V17T-P0029~~ -M6-PWD-P0001 -M6-PWD-P0002 -M6-PWD-P0003 -M6-PWD-P0005 -M6-PWD-P0006	Section 4.1.2.15; Table 4-3 and 4-11; and Figures 4A-1, 4A-2, 4A-17~~, 4A-60, 4A-61, 4A-62, 4A-78, 4A-79~~ of Operating Unit 10, Chapter 4.0 of this Permit.	PWD-VSL-00033 = 41,650 PWD-VSL-00043 = 41,650 PWD-VSL-00015 = 119,150 PWD-VSL-00016 = 119,150 PWD-VSL-00044 = 103,024 PWD-VSL-00046 = 4982

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
Acidic/Alkaline Effluent Vessels (PWD-VSL-00015/16) Plant Wash Vessel (PWD-VSL-00044) C3 Floor Drain Collection Vessel (PWD-VSL-00046))		-M6-PWD-P0007 -M6-PWD-P0008 -M6-PWD-P0009 -M6-PWD-P0010 -M6-PWD-P0011 -M6-PWD-P0012 -M6-PWD-P0014 -M6-PWD-P0018 -M6-PWD-P0019 -M6-PWD-P0020 -M6-PWD-P0021 -M6-PWD-P0023 -M6-PWD-P0024 -M6-PWD-P0025 -M6-PWD-P0026 -M6-PWD-P0029 -M6-PWD-P0033 -M6-PWD-P0041 -M6-PWD-P0043 -M6-PWD-P0044 -M6-PWD-P0046 -M6-PWD-P0050 -M6-PWD-P0051 -M6-PWD-P0057 -M6-PWD-P0058 -MVD-PWD-P0001 -MVD-PWD-P0002 -MVD-PWD-P0003 -MVD-PWD-P0010 -MVD-PWD-P0011 -MVD-PWD-P0012 -MV-PWD-P0001001 -MV-PWD-P0001002		

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		-MV-PWD-P0003001 -MV-PWD-P0003002 -MV-PWD-P0005 -MV-PWD-P0006 -MV-PWD-P0007 -MV-PWD-P0010 -N1D-PWD-P0001 -N1D-PWD-P0002 -N1D-PWD-P0003 -N1D-PWD-P0005 -N1D-PWD-P0006 -P1-P01T-P0001 ~~-P1-P01T-P0002~~ -P1-P01T-P0006 ~~-P1-P01T-P0008~~ ~~-P1-P01T-P0009~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0014~~ ~~-P1-P01T-P0015~~ ~~-P1-P01T-P0016~~		
Pretreatment Vessel Vent Process System (Comprised of the following: ~~Vessel Vent Header Collection Vessel (PVP-VSL-00003)~~ Vessel Ventilation HEME Drain Collection Vessel (PVP-VSL-00001))	PVP ~~(Pretreatment Vessel Vent Process System)~~	24590-PTF -M5-V17T-P0021001 -M5-V17T-P0021004 -M6-PVP-P0002 -M6-PVP-P0004 -M6-PVP-P0009 -M6-PVP-P0017 -M6-PVP-P0018 ~~-M6-PWD-P0044~~ -MVD-PVP-P0001 -MV-PVP-P0002 -N1D-PVP-P0002 -P1-P01T-P0001	Section 4.1.2.17; Table 4-3; and Figures 4A-1, 4A-2, 4A-19~~, 4A-61, and 4A-78~~ of Operating Unit 10, Chapter 4.0 of this Permit.	PVP-VSL-00003 = RESERVED PVP-VSL-00001 = 1,969

Dangerous and/or Mixed Waste Tank Systems Name	System Designation	Engineering Description (Drawing Nos., Specifications Nos., etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		~~-P1-P01T-P0003~~ ~~-P1-P01T-P0004~~ ~~-P1-P01T-P0008~~ ~~-P1-P01T-P0009~~ ~~-P1-P01T-P0013~~ ~~-P1-P01T-P0014~~ **24590-WTP** -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003 -3PS-G000-TP002		
Pulse-Jet Ventilation System (Comprised of the following: PJV Drain Collection Vessel (PJV-VSL-00002))	PJV	**24590-PTF** -M5-V17T-P0021002 -M6-PJV-P0002 -M6-PJV-P0001 -M6-PJV-P0004 -MVD-PJV-P0003 -MV-PJV-P0001 -N1D-PJV-P0001 -P1-P01T-P0001 **24590-WTP** -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003 -3PS-G000-TP002	Section 4.1.2.18; Table 4-3; and Figures 4A-1, 4A-2, 4A-19~~, 4A-61,~~ and ~~4A-78~~ 4A-128of Operating Unit 10, Chapter 4.0 of this Permit.	PJV-VSL-00002 = ~~RESERVED~~8,975
Pretreatment In-Cell Handling System (Comprised of the following: Decontamination Soak Tank (PIH-TK-00001))	PIH	**24590-PTF** -M6-PIH-P0001	Section 4.1.2.14	RESERVED

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Table III.10.E.B – LAW Vitrification Plant Tank Systems Description

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
LAW Concentrate Receipt Process System [Comprised of the following: LAW Melter 1 Concentrate Receipt Vessel (LCP-VSL-00001) LAW Melter 2 Concentrate Receipt Vessel (LCP-VSL-00002] ~~Melter 3 Concentrate Receipt Vessel (V21003)~~	LCP ~~(LAW Concentrate Receipt Process System)~~	24590-LAW -M5-V17T-P0001 -M5-V17T-P0002 ~~-M5-V17T-P0006~~ ~~-M5-V17T-P0007~~ ~~-M5-V17T-P0008~~ ~~-M5-V17T-P0009~~ ~~-M5-V17T-P0010~~ ~~-M5-V17T-P0011~~ -M6-LCP-P0001 -M6-LCP-P0002 -MV-LCP-P0001 -MV-LCP-P0002 ~~-MVD-LCP-00001~~ ~~-MVD-LCP-00002~~ -MVD-LCP-P0004 -MVD-LCP-P0005 -N1D-LCP-P0001 -P1-P01T-P0002 -P1-P01T-P0011	Section 4.1.3.1; Table 4-4 and 4-11; and Figures 4A-1, 4A-3, 4A-20, of Operating Unit 10, Chapter 4.0 of this Permit.	LCP-VSL-00001 = 18,130 LCP-VSL-00002 = 18,130 ~~V21003 = 14,392~~
LAW Melter Feed Process System [Comprised of the following: Melter 1 Feed Preparation Vessel (LFP-VSL-00001) Melter 1 Feed Vessel (LFP-VSL-00002) Melter 2 Feed Preparation Vessel (LFP-	LFP ~~(LAW Melter Feed Process System)~~	24590-LAW -M5-V17T-P0001 -M5-V17T-P0002 -M6-LFP-P0001 ~~-M6-LFP-P0002~~ -M6-LFP-P0003 ~~-M6-LFP-P0004~~ -MV-LFP-P0001 -MV-LFP-P0002	Section 4.1.3.1; Table 4-4 and 4-11; and Figures 4A-1, 4A-3, 4A-20~~, 4A-67, and 4A-83~~ of Operating Unit 10, Chapter 4.0 of this Permit.	LFP-VSL-00001 = 9,123 LFP-VSL-00002 = 9,123 LFP-VSL-00003 = 9,123 LFP-VSL-00004 = 9,123 ~~V21301 = 6,221~~ ~~V21302 = 6,221~~

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
VSL-00003) Melter 2 Feed Vessel (LFP-VSL-00004)] ~~Melter 3 Feed Preparation Vessel (V21301)~~ ~~Melter 3 Feed Vessel (V21302)~~		-MV-LFP-P0004 -MV-LFP-P0005 ~~-MVD-LFP-00001~~ ~~-MVD-LFP-00002~~ ~~-MVD-LFP-00003~~ ~~-MVD-LFP-00004~~ -MVD-LFP-P0007 -MVD-LFP-P0008 -MVD-LFP-P0010 -MVD-LFP-P0011 -P1-P01T-P0002 ~~-P1-P01T-P0004~~ ~~-P1-P01T-P0006~~ ~~-P1-P01T-P0007~~ -P1-P01T-P0010 -P1-P01T-P0011 -N1D-LFP-P0004 -N1D-LFP-P0006		
LAW Secondary Off-gas/Vessel Vent Process System [Comprised of the following: LAW Caustic ~~Scrubber Blowdown~~ Collection Tank ~~Vessel~~ (LVP-~~VSL~~TK-00001)]	LVP ~~(LAW Secondary Off-gas/Vessel Vent Process System)~~	24590-LAW -P1-P01T-P0004 -P1-P01T-P0009 ~~-P1-P01T-P0010~~ ~~-M5-V17T-P0010~~ ~~-M5-V17T-P0011~~ ~~-M6-LVP-P0001~~ -M6-LVP-P0002 ~~-M6-LVP-P0004~~ ~~-M6-LVP-P0005~~ -MT-LVP-P0004 -MTD-LVP-P0001 -N1D-LVP-P0002	Section 4.1.3.3; Table 4-4 and 4-11; and Figures 4A-1, 4A-3, 4A-23 of Operating Unit 10, Chapter 4.0 of this Permit.	LVP-TK-~~VSL~~-00001= ~~12,191~~14,232
LAW Primary Off-gas Process System [Comprised of the following:	LOP ~~(LAW Primary Off-gas~~	24590-LAW -M5-V17T-P0007	Section 4.1.3.3; Table 4-4 and 4-11; and Figures 4A-1, 4A-3, 4A-22~~, 4A-67, and 4A-83~~ of	LOP-VSL-00001 = 9,056 LOP-VSL-00002 = 9,056

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
LAW Melter 1 SBS Condensate Vessel (LOP-VSL-00001) LAW Melter 2 SBS Condensate Vessel (LOP-VSL-00002)] ~~Melter 3 SBS Condensate Vessel (V22301)~~	~~Process System)~~	-M5-V17T-P0008 -M6-LOP-P0001 -M6-LOP-P0002 ~~-MK-LOP-P001001~~ ~~-MK-LOP-P001002~~ ~~-MK-LOP-P001003~~ ~~-MKD-LOP-P0002~~ ~~-MKD-LOP-P0004~~ ~~-MKD-LOP-P0008~~ -MV-LOP-P0001 -MV-LOP-P0002 -MVD-LOP-P0004 -MVD-LOP-P0005 ~~-N1D-LOP-P0001~~ -N1D-LOP-P0002 ~~-N1D-LOP-P0003~~ -P1-P01T-P0002 ~~-P1-P01T-P0007~~ -P1-P01T-P0010 ~~-P1-P01T-P0011~~	Operating Unit 10, Chapter 4.0 of this Permit.	~~V22301 = 6,833~~
LAW Vitrification Plant Radioactive Liquid Waste Disposal System [Comprised of the following: Plant Wash Vessel (RLD-VSL-00003) C3/C5 Drains/Sump Collection Vessel (RLD-VSL-00004) SBS Condensate Collection Vessel (RLD-VSL-00005)]	RLD ~~(LAW Vitrification Plant Radioactive Liquid Waste Disposal System)~~	**24590-LAW** -M5-V17T-P0014 -M6-RLD-P0001 -M6-RLD-P0002 -M6-RLD-P0003 ~~-MVD-RLD-00002~~ ~~-MVD-RLD-00003~~ ~~-MVD-RLD-00004~~ -MVD-RLD-P0001 -MVD-RLD-P0006 -MVD-RLD-P0007 -MV-RLD-P0001 -MV-RLD-P0002	Section 4.1.3.4; Table 4-4 and 4-11; and Figures 4A-1, 4A-2~~, 4A-25, 4A-66, 4A-67, 4A-82, and 4A-83~~ of Operating Unit 10, Chapter 4.0 of this Permit.	RLD-VSL-00003 = 25,780 RLD-VSL-00004 = 7696 RLD-VSL-00005 = 25,780

Dangerous and/or Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
		-MV-RLD-P0003 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0007 ~~-P1-P01T-P0008~~ -P1-P01T-P0010 -P1-P01T-P0011 -N1D-RLD-P0001 -N1D-RLD-P0002 -N1D-RLD-P0005		

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

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
HLW ~~Cave~~ Concentrate Receipt Process System [Comprised of the following; Waste transfer piping from Pretreatment facility] ~~Concentrate Receipt Vessels (HCP-VSL-00001/2))~~	HCP ~~(HLW Cave Receipt Process System)~~	24590-HLW -M5-V17T-P0001 -M6-HCP-P0001 -M6-HCP-P0002	Section 4.1.4.1; ~~Table 4-5 and Table 4-11;~~ and Figures 4A-1, 4A-4, 4A-26~~, 4A-71, 4A-72, 4A-73, 4A-86, and 4A-87~~ of Operating Unit 10, Chapter 4.0 of this Permit.	~~HCP-VSL-00001 = 17,900~~ 20,229 ~~HCP-VSL-00002 = 17,900~~ 20,229
HLW Melter Feed Process System [Comprised of the following: HLW Melter Feed Preparation Vessels (HFP-VSL-00001/5)	HFP ~~(HLW Melter Feed Process System)~~	24590-HLW -3YD-HFP-00001 -M5-V17T-P0001 -M6-HFP-P0001 -M6-HFP-P0002 -M6-HFP-P0007 -M6-HFP-P20001 ~~-M6-HFP-P20002~~ ~~-PER-J-04-0001~~ -M6-HFP-P20007 -MVD-HFP-P0010 -MVD-HFP-P0014 -MV-HFP-P0001 -MV-HFP-P0003 -MV-HFP-P0004 -MV-HFP-P0009 -MV-HFP-P0011 -MV-HFP-P0012 -MV-HFP-P0013 -MV-HFP-P0017 -N1D-HFP-P0003 -P1-P01T-P0002 -P1-P01T-P0009 -24590-WTP -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	Section 4.1.4.1; Table 4-5 and 4-11; and Figures 4A-1, 4A-4, 4A-26~~, 4A-72, 4A-73, 4A-86, and 4A-87,~~ of Operating Unit 10, Chapter 4.0 of this Permit.	HFP-VSL-00001 = ~~8,800~~ 8,370 HFP-VSL-00005 = ~~8,800~~ 8370

HLW Melter Feed Vessels (HFP-VSL-00002/6)]	HFP ~~(HLW Melter Feed Process System)~~	**24590-HLW** -3YD-HFP-00001 -M5-V17T-P0001 -M6-HFP-P0002 -M6-HFP-P0008 -M6-HFP-P20002 -M6-HFP-P20008 ~~-PER-J-04-0001~~ -MVD-HFP-P0011 -MVD-HFP-P0015 -MV-HFP-P0002 -MV-HFP-P0006 -MV-HFP-P0007 -MV-HFP-P0008 -MV-HFP-P0010 -MV-HFP-P0014 -MV-HFP-P0015 -MV-HFP-P0016 -MV-HFP-P0017 -N1D-HFP-P0004 -P1-P01T-P0002 -24590-WTP -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	Section 4.1.4.1; Table 4-5 and 4-11; and Figures 4A-1, 4A-4, 4A-26~~, 4A-72, 4A-73, 4A-86, and 4A-87,~~ of Operating Unit 10, Chapter 4.0 of this Permit.	HFP-VSL-00002 = ~~8,800~~ 8,370 HFP-VSL-00006 = ~~8,800~~ 8,370
Melter Off-gas Treatment Process System [Comprised of the following: SBS Condensate Receiver Vessel No. 1 & 2 (HOP-VSL-00903/HOP-VSL-00904]	HOP ~~(Melter Off-gas Treatment Process System-Primary System)~~	**24590-HLW** -3YD-HOP-00001 -M5-V17T-P0003 ~~-M5-V17T-P0004~~ -M5-V17T-P20003 ~~-M5-V17T-P20004~~ -M6-HOP-P0004 -M6-HOP-P0006 ~~-M6-HOP-P0008~~ ~~-M6-HOP-P20003~~ -M6-HOP-P20004 -M6-HOP-P20006 ~~-M6-HOP-P20008~~ -MVD-HOP-P0001 -MVD-HOP-P0012	Section 4.1.4.3; Table 4-5 and 4-11; and Figures 4A-1, 4A~~-4, 4A-28, 4A-71, and 4A-86~~ of Operating Unit 10, Chapter 4.0 of this Permit.	HOP-VSL-00903 = 9891 HOP-VSL-00904 = 9891

		-MV-HOP-P0001 -MV-HOP-P0003 ~~-N1D-HOP-P0006~~ -N1D-HOP-P0009 -P1-P01T-P0001 -24590-WTP -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
HLW Canister Decontamination Handling System [Comprised of the following: Canister Rinse Tunnel Canister Rinse ~~Bogie Decontamination~~ Vessel (HDH-VSL-00001)	HDH ~~(HLW Canister Decontamination Handling System)~~	**24590-HLW** -M5-V17T-P0006 -M6-HDH-P0002 ~~-M6-HDH-P20001~~ ~~-MV-HDH-P0004~~ ~~-MV-HDH-P0005~~ ~~-MV-HDH-P0006~~ ~~-MV-HDH-P0007~~ -M0-HDH-P0012001 -M0-HDH-P0012002 -MVD-HDH-P0009 ~~-MVD-HDH-P0003~~ -N1D-HDH-P0007 ~~-N1D-HDH-P0006~~ ~~-N1D-HDH-P0009~~ -3YD-HDH-00002 -P1-P01T-P0001 -P1-P01T-P0002 24590-WTP	Section 4.1.4.7; Table 4-5 and 4-11; and Figures 4A-1, 4A-4, 4A-30~~, 4A-71, 4A-72, 4A-86, 4A-87~~ of Operating Unit 10, Chapter 4.0 of this Permit.	HDH-VSL-00001= 3314
Canister Decontamination Vessels (HDH-VSL-00002/4)	HDH ~~(HLW Canister Decontamination Handling System)~~	**24590-HLW** -3YD-HDH-00002 -M5-V17T-P0006 -M6-HDH-P0001 -M6-HDH-P20001 -MVD-HDH-P0006 -MVD-HDH-P0012 -MV-HDH-P0004 -MV-HDH-P0005 -MV-HDH-P0006 -MV-HDH-P0007 -N1D-HDH-P0003	Section 4.1.4.7; Table 4-5 and 4-11; and Figures 4A-1, 4A-4, 4A-30~~, 4A-71, 4A-72, 4A-86, 4A-87~~ of Operating Unit 10, Chapter 4.0 of this Permit	HDH-VSL-00002 =~~580~~ 630 HDH-VSL-00004 = 630

		-P1-P01T-P0002 -24590-WTP -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
Waste Neutralization Vessel (HDH-VSL-00003)	HDH ~~(HLW Canister Decontamination Handling System)~~	**24590-HLW** -3YD-HDH-00002 -M5-V17T-P0006 -M6-HDH-P0002 -MVD-HDH-P0003 -MV-HDH-P0003 -N1D-HDH-P0005 -P1-P01T-P0001 -P1-P01T-P0002 24590-WTP -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	Section 4.1.4.7; Table 4-5 and 4-11; and Figures 4A-1, 4A-4, 4A-30~~, 4A-71, 4A-72, 4A-86, 4A-87~~ of Operating Unit 10, Chapter 4.0 of this Permit	HDH-VSL-00003 = ~~5315~~ 5274
HLW Melter Cave Support Handling System (Comprised of the following: Decontamination Tank Melter Cave 1 &2 Vessel (HSH-TK-00001/2))	HSH	**24590-HLW** -M0-HSH-P0072 -M0-HSH-P0075 -M6-RLD-P0003 -N1D-HSH-P0001 -P1-P01T-P0002	Section 4.1.4.7; Table 4-5 and 4-11 of Operating Unit 10, Chapter 4.0 of this Permit	HSH-TK-00001 = 3,718 HSH-TK-00002 = 3,718
HLW Vitrification Plant Radioactive Liquid Waste Disposal System [Comprised of the following: Acidic Waste Vessel (RLD-VSL-00007) ~~Decontamination Effluent Collection Vessel (V35009)~~ ~~RESERVED (RLD-VSL-15A/B)~~ ~~RESERVED (RLD-VSL-16A/B)~~	RLD ~~(HLW Vitrification Plant Radioactive Liquid Waste Disposal System~~	**24590-HLW** -3YD-RLD-00001 -M5-V17T-P0007001 -M6-RLD-P0001 ~~-M6-RLD-P0002~~ ~~-M6-RLD-P0003~~ -M6-RLD-P0006 ~~-M6-RLD-P0007~~ ~~-M6-RLD-P0008~~ ~~-M6-RLD-P0014~~ ~~-M6-RLD-P0017~~ -MVD-RLD-P0005 ~~-MVD-RLD-P0007~~ ~~-MVD-RLD-P0008~~ ~~-MV-RLD-P0002~~	Section 4.1.5.5; Table 4-5 and 4-11; and Figures 4A-1, 4A~~-4 4A-31, 4A-71, 4A-72, 4A-73, 4A-86, 4A-87~~ of Operating Unit 10, Chapter 4.0 of this Permit.	RLD-VSL-00007 = 18,145 ~~V35009 = 7,300~~

		-MV-RLD-P0003 ~~-MV-RLD-P0004~~ -N1D-RLD-P0001 -P1-P01T-P0001 -P1-P01T-P0002 ~~-P1-P01T-P0004~~ ~~-P1-P01T-P0005~~ ~~-P1-P01T-P0008~~ ~~-P1-P01T-P0009~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~ 24590-WTP -3PS-MV00-TP001		
Plant Wash & Drain Vessel (RLD-VSL-00008)	RLD	**24590-HLW** -3YD-RLD-00001 -M5-V17T-P0007002 ~~-M6-RLD-P0001~~ -M6-RLD-P0002 ~~-M6-RLD-P0003~~ ~~-M6-RLD-P0006~~ -M6-RLD-P0007 ~~-M6-RLD-P0014~~ ~~-M6-RLD-P0017~~ ~~-M6-RLD-P20003~~ ~~-M6-RLD-P20004~~ ~~-M6-RLD-P20005~~ ~~-MVD-RLD-P0005~~ ~~-MVD-RLD-P0007~~ -MVD-RLD-P0007 ~~-MVD-RLD-P0008~~ ~~-MV-RLD-P0002~~ ~~-MV-RLD-P0004~~ -N1D-RLD-P0006 -P1-P01T-P0001 -P1-P01T-P0002 ~~-P1-P01T-P0004~~ ~~-P1-P01T-P0005~~ ~~-P1-P01T-P0008~~ ~~-P1-P01T-P0009~~ ~~-P1-P01T-P0010~~	Section 4.1.5.5; Table 4-5 and 4-11; and Figures 4A-1, 4A-4 ~~4A-31, 4A-71, 4A-72, 4A-73, 4A-86, 4A-87~~ of Operating Unit 10, Chapter 4.0 of this Permit.	RLD-VSL-00008 = 13,774

		~~-P1-P01T-P0011~~ 24590-WTP -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003		
Off-gas Drains Collection Vessel (RLD-VSL-00002)]	RLD	**24590-HLW** -3YD-RLD-00001 M5-V17T-P0007001 ~~-M6-RLD-P0001~~ ~~-M6-RLD-P0002~~ ~~-M6-RLD-P0003~~ ~~-M6-RLD-P0006~~ ~~-M6-RLD-P0007~~ ~~-M6-RLD-P0008~~ -M6-RLD-P0014 ~~-M6-RLD-P0017~~ ~~-M6-RLD-P20003~~ ~~-M6-RLD-P20004~~ ~~-M6-RLD-P20005~~ ~~-MVD-RLD-P0005~~ ~~-MVD-RLD-P0007~~ -MVD-RLD-P0008 -MV-RLD-P0002 ~~-MV-RLD-P0004~~ -N1D-RLD-P0013 -P1-P01T-P0001 ~~-P1-P01T-P0002~~ ~~-P1-P01T-P0004~~ ~~-P1-P01T-P0005~~ ~~-P1-P01T-P0008~~ ~~-P1-P01T-P0009~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~ 24590-WTP -3PS-MV00-TP001 -3PS-MV00-TP002 -3PS-MV00-TP003	Section 4.1.5.5; Table 4-5 and 4-11; and Figures 4A-1, 4A~~-4-4A-31, 4A-71, 4A-72, 4A-73,4A-86, 4A-87~~ of Operating Unit 10, Chapter 4.0 of this Permit.	RLD-VSL-00002 = 366

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Table III.10.E.D – Analytical Laboratory Tank Systems Description

Mixed Waste Tank Systems Name	Unit Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables & Figures	Maximum Capacity (gallons)
Radioactive Liquid Waste Disposal System [Comprised of the following: Lab Area Sink Drain Collection Vessel (RLD-VSL-00164)	RLD ~~(Radioactive Liquid Waste Disposal System)~~	24590-LAB -3YD-RLD-00001 -M5-V17T-P0029 -M6-RLD-P0001 -M6-RLD-P0002 -M6-RLD-P0006 -M6-RLD-P0007 -MVD-RLD-P0164 ~~-MVD-RLD-P0165~~ -MV-RLD-P0001 ~~-MV-RLD-P0003~~ -N1D-RLD-P0002 -P1-60-P0007 -P1-60-P0008 ~~-P1-60-P0010~~ 24590-WTP -3PS-MV00-TP001 -3PS-MV00-TP002	Section 4.1.5.5; Table 4-6 and 4-11; and Figures 4A-1, 4A-2, and 4A-~~113~~ 115of Operating Unit 10, Chapter 4.0 of this Permit.	RLD-VSl-00164 = ~~3180~~3200
Hot Cell Drain Collection Vessel (RLD-VSL-00165)]	RLD	24590-LAB -M5-V17T-P0029 -M6-RLD-P0001 ~~-M6-RLD-P0002~~ -M6-RLD-P0008 ~~-MV-RLD-P0001~~ -MV-RLD-P0003 ~~-MVD-RLD-P0164~~ -MVD-RLD-P0165 -P1-60-P0007 -P1-60-P0008 ~~-P1-60-P0010~~ -N1D-RLD-P0003 -3YD-RLD-00001 24590-WTP	Section 4.1.5.5; Table 4-6 and 4-11; and Figures 4A-1, 4A-2, and 4A-~~113~~ 115of Operating Unit 10, Chapter 4.0 of this Permit.	RLD-VSL-00165 = 9100

		-3PS-MV00-TP001 -3PS-MV00-TP002		

Table III.10.E.E – Pretreatment Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
PWD-SUMP-00071 P-B005[a] **24590-PTF-M6-PWD-P00041**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00040 P-B002[a] **24590-PTF-M6-PWD-P00012**	Not Applicable	Bubbler Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00001 P-0108B[a] **24590-PTF-M6-PWD-P00008**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00001A P-0108C[a] **24590-PTF-M6-PWD-P00010**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-	Not	Radar Leak	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

00002 P-0108A[a] **24590-PTF-M6-PWD-P00008**	Applicable	Detector							
PWD-SUMP-00002A P-0108[a] **24590-PTF-M6-PWD-P00010**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00003 P-0106[a] **24590-PTF-M6-PWD-P00008**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00004 P-0104[a] **24590-PTF-M6-PWD-P00008**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00005 P-0102A[a] **24590-PTF-M6-PWD-P00008**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00006 P-0102[a] **24590-PTF-M6-PWD-P00008**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

PWD-SUMP-00007 P-0109[a] **24590-PTF-M6-PWD-P00009**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00008 P-0111[a] **24590-PTF-M6-PWD-P00009**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00009 P-0112[a] **24590-PTF-M6-PWD-P00009**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00010 P-0113[a] **24590-PTF-M6-PWD-P00009**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00011 P-0114[a] **24590-PTF-M6-PWD-P00009**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00012 P-0117[a] **24590-PTF-M6-PWD-**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

P00009									
PWD-SUMP-00013 P-117A[a] **24590-PTF-M6-PWD-P00014**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00026 P-0123	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00028 P-0123	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00029 P-0123	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00031 P-0119[a] **24590-PTF-M6-PWD-P00010**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00032 P0123A	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00033 P-0123A	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-00034 P-0121A[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
PWD-SUMP-	Not	Radar Leak	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

00035 P-0122A[a]	Applicable	Detector							
PWD-SUMP-00036 P-0118[a] **24590-PTF-M6-PWD-P00012**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00003 Rm P-0150 **24590-PTF-PER-M-04-00009**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
ESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

[a]Sump locator and name (including P&ID designator) is located on Permit Table III.10.E J – Pretreatment Plant Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

Table III.10.E.F – LAW Vitrification Plant Tank System Process and Leak Detection System Instruments and Parameters

Tank System Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
~~RLD-SUMP-00001~~	~~Not Applicable~~	~~Radar Leak Detector~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~Not Applicable~~	~~RESERVED~~
~~RLD-SUMP-00003~~	~~Not Applicable~~	~~Radar Leak Detector~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~Not Applicable~~	~~RESERVED~~
RLD-SUMP-00028 L-B001B[a] **24590-LAW-**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

M6-RLD-P00002									
RLD-SUMP-00029 L-0123[a] **24590-LAW-M6-RLD-P00003**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00030 L-0123[a] **24590-LAW-M6-RLD-P00003**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00031 L-0124[a] **24590-LAW-M6-RLD-P00003**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00032 L-0124[a] **24590-LAW-M6-RLD-P00003**	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
~~RLD-SUMP-00033 L-0125[a] 24590-LAW-M6-RLD-P00003~~	~~Not Applicable~~	~~Radar Leak Detector~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~Not Applicable~~	~~RESERVED~~
~~RLD-SUMP-00034 L-0125[a] 24590-LAW-M6-RLD-P00003~~	~~Not Applicable~~	~~Radar Leak Detector~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~Not Applicable~~	~~RESERVED~~

RLD-SUMP-00035 L-0126[a] 24590-LAW-M6-RLD-P0003	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00036 L-0126[a] 24590-LAW-M6-RLD-P0003	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

[a]Sump locator and name (including P&ID designator) is located on Permit Table III.10.E L - LAW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

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

Tank System Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
HCP-SUMP-00001[a] 24590-HLW-M6-RLD-P0015	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00001[a] 24590-HLW-M6- RLD-P0015	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HOP-SUMP-00003[a] 24590-HLW-M6-RLD-P0015	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HOP-SUMP-00008[a] 24590-HLW-	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

M6- RLD-P20004									
HDH-SUMP-00001[a] **24590-HLW-**M6- RLD-P0016	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00002[a] **24590-HLW-**M6- RLD-P0016	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HDH-SUMP-00003[a] **24590-HLW-**M6- RLD-P0004	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RWH-SUMP-00001[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RWH-SUMP-00005[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RWH-SUMP-00006 [a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HPH-SUMP-00001[a] **24590-HLW-**M6- RLD-P0016	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HPH-SUMP-00005[a] **24590-HLW-**M6- RLD-P0004	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HMH-SUMP-00002[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HMH-SUMP-00003 [a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-00001[a] **24590-HLW-**M6- RLD-P0015	Not Applicable	~~Radar Leak Detector~~ None	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-	Not	Radar Leak	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

00002[a] **24590-HLW-** M6- RLD-P0008	Applicable	Detector							
HFP-SUMP-00005[a] **24590-HLW-** M6-RLD-P20005	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HFP-SUMP-00004[a] **24590-HLW-** M6- RLD-P20004	Not Applicable	~~Radar Leak Detect~~None	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00003[a] **24590-HLW-** M6- RLD-P0008	Not Applicable	~~Radar Leak Detector~~ Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00007[a] **24590-HLW-** M6- RLD-P20005	Not Applicable	~~Radar Leak Detector~~ Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00008[a] **24590-HLW-** M6-P0003	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
HSH-SUMP-00009[a] **24590-HLW-** M6- RLD-P20003	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
~~HSH-SUMP-00003[a]~~	~~Not Applicable~~	~~Radar Leak Detector~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~Not Applicable~~	~~RESERVED~~
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

[a]Sump locator and name (including P&ID designator) is located on Permit Table III.10.E N - HLW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

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3 **Table III.10.E.H – Laboratory Tank System Process and Leak Detection System Instruments and Parameters**
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Tank System Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Expected Range	Fail States	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
RLD-SUMP-00041[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00042[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00043A[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
RLD-SUMP-00043B[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00044[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-SUMP-00045[a]	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00002[a]	Not Applicable	~~Thermal Dispersion~~ RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00004[a]	Not Applicable	~~Thermal Dispersion~~ RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00005[a]	Not Applicable	~~Thermal Dispersion~~ RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00006[a]	Not Applicable	~~Thermal Dispersion~~ RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00007[a]	Not Applicable	~~Thermal Dispersion~~ RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00008[a]	Not Applicable	~~Thermal Dispersion~~ RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED

RLD-LDB-00009[a]	Not Applicable	~~Thermal Dispersion~~ RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RLD-LDB-00011[a]	Not Applicable	~~Thermal Dispersion~~ RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	Not Applicable	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

[a]Sump locator and name (including P&ID designator) is located on Permit Table III.10.E P - Laboratory Tank Systems Secondary Containment Systems Including Sumps and Floor Drains.

Table III.10.E.I – Pretreatment Plant Tank Systems Primary[a] Containment Sump Systems

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED

[a]Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640.

Table III.10.E J – Pretreatment Plant

Tank Systems Secondary Containment Systems Including Sumps, Bulges, and Floor Drains

Sump, Bulge or Drain Line I.D.# & Room Location	Maximum Sump/Bulge (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)x	Sump, Bulge or Drain Line Dimensions (inches) & Materials of Construction	Engineering Description (Drawing No.'s, Specifications No.'s, etc.)
PWD-SUMP-00071 P-B005 (Pit-19, El. –19')	~~112.~~ 55.1	Dry Sump[a]	~~24"x30"x36"~~ ~~Coating Type (RESERVED)~~ 30"Dia x 18"Deep Expoxy	**24590-PTF** -M6-PWD-P00041 -P1-P01T-P0006 -P1-P01T-P0012
PWD-SUMP-00040 P-B002 (Pit-45, El. –45')	233.7	~~Wet Sump/~~Dry Sump 140.3	60"x30"x30" 6Mo	**24590-PTF** -M6-PWD-P00012 -P1-P01T-P0006 -P1-P01T-P0009
PWD-SUMP-00001 P-0108B (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00008 -P1-P01T-P0001 -P1-P01T-P0009
PWD-SUMP-00001A P-0108C (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00010 -P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00002 P-0108A (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00008 -P1-P01T-P0001 -P1-P01T-P0008
PWD-SUMP-00002A P-0108 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00010 -P1-P01T-P0001 -P1-P01T-P0008
PWD-SUMP-00003 P-0106 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00008 -P1-P01T-P0001 -P1-P01T-P0008

PWD-SUMP-00004 P-0104 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00008 -P1-P01T-P0001 -P1-P01T-P0008
PWD-SUMP-00005 P-0102A (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00008 -P1-P01T-P0001 -P1-P01T-P0008
PWD-SUMP-00006 P-0102 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00008 -P1-P01T-P0001 -P1-P01T-P0008
PWD-SUMP-00007 P-0109 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00009 -P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00008 P-0111 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00009 -P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00009 P-0112 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00009 -P1-P01T-P0001
PWD-SUMP-00010 P-0113 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00009 -P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00011 P-0114 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00009 -P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00012 P-0117 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00009 -P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00013 P-0117A (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00014

				-P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00026	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	~~RESERVED~~ 24590-PTF-M6-PWD-P00010
PWD-SUMP-00028	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	~~RESERVED~~ 24590-PTF-M6-PWD-P00014
PWD-SUMP-00029	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	~~RESERVED~~ 24590-PTF-M6-PWD-P00010
PWD-SUMP-00031 P-0119 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00010 -P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00032	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	~~RESERVED~~ 24590-PTF-M6-PWD-P00010
PWD-SUMP-00033	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	~~RESERVED~~ 24590-PTF-M6-PWD-P00010
PWD-SUMP-00034 P-0121A (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00012 -P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00035 P-0122A (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00012 -P1-P01T-P0001
PWD-SUMP-00036 P-0118 (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00012 -P1-P01T-P0001 -P1-P01T-P0010
PJV-ZF-00027-S11B-02 P-0101 (PJV-BULGE-00001 Drain, El. 0')	60	N/A	2" Dia. 316L	**24590-PTF** -M6-PJV-P0002
PWD-ZF-00004-S11B-02 P-0105 (PVP-BULGE-00001 Drain, El. 0')	60	N/A	2" Dia. 316L	**24590-PTF** -M6-PVP-P0003

PWD-ZF-00005-S11B-02 P-0101A (PVP-BULGE-00002 Drain, El. 0')	60	N/A	2" Dia. 316L	**24590-PTF** -M6-PVP-P0003
RDP-ZF-00016-S11B-02 P-0110A (RDP-BULGE-00010 Drain, El. 0')	60	N/A	2" Dia. 316L	**24590-PTF** -M6-RDP-P0001
TCP-PH-00032-S11B-02 P-0116 (TCP-BULGE-00004 Drain, El. 0')	60	N/A	2" Dia. 316L	**24590-PTF** -M6-TCP-P0001
TEP-ZF-02066-S11B-011/2 P-0110A (TEP-BULGE-00006 Drain, El. 0')	40	N/A	1-1/2" Dia. 316L	**24590-PTF** -M6-TEP-P0001
~~TXP-ZF-00022-S11M-011/2 P-0110B (TXP-BULGE-00001 Drain, El. 0')~~	~~40~~	~~N/A~~	~~1-1/2" Dia. 316L~~	~~**24590-PTF** -M6-TXP-P0001~~
~~TXP-ZF-00021-S11M-011/2 P-0110C (TXP-BULGE-00002 Drain, El. 0')~~	~~40~~	~~N/A~~	~~1-1/2" Dia. 316L~~	~~**24590-PTF** -M6-TXP-P0001~~
~~TXP-ZF-00042-S11M-011/2 P-0110C (TXP-BULGE-00004 Drain, El. 0')~~	~~40~~	~~N/A~~	~~1-1/2" Dia. 316L~~	~~**24590-PTF** -M6-TXP-P0001~~
~~TXP-ZF-00019-S11M-011/2 P-0110C (TXP-BULGE-00005 Drain, El. 0')~~	~~40~~	~~N/A~~	~~1-1/2" Dia. 316L~~	~~**24590-PTF** -M6-TXP-P0004~~
CNP-ZF-00043-S11B-03 P-0207 (CNP-BULGE-00008 Drain, El. 28')	160	N/A	3" Dia. 316L	**24590-PTF** -M6-CNP-P0002
PWD-ZF-03000-S11B-06 P-0123 (Hot Cell, El.0')	939	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0011
PWD-ZF-03001-S11B-06 P-0123 (Hot Cell, El.0')	939	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0011

PWD-FD-00432 P-0201 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00452 P-0201 Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00456 P-0201A Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00341 P-0201A Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00351A P-0201A Drain, El. 28'	52	N/A	3" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00451 P-0203 Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00339 P-0203 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00450 P-0203 Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00450A P-0203 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00449A P-0203 Drain, El. 28'	52	N/A	3" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00449 P-0203A Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00338 P-0203A Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0044

PWD-FD-00337 P-0203B Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00448 P-0203B Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00447A P-0203B Drain, El. 28'	52	N/A	3" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00447 P-0204 Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00336 P-0204 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00397 P-0206 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00443 P-0206 Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00398A P-0207 Drain, El. 28'	52	N/A	3" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00398 P-0207 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00399 P-0208 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00400 P-0209 Drain, El. 28'	52	N/A	3" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00444 P-0209 Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0043

PWD-FD-00401 P-0209 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00402 P-0210 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00445 P-0210 Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00445A P-0212 Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00442 P-0212 Drain, El. 28'	52	N/A	3" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00404 P-0212 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00404A P-0212 Drain, El. 28'	155	N/A	6" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00446 P-0212 Drain, El. 28'	706	N/A	8" Dia. 316L	**24590-PTF** -M6-PWD-P0043
PVP-BULGE-00002 (Vessel Vent HEME Drain Vessel Pump Bulge)	RESERVED	N/A	RESERVED	RESERVED
PWD-FD-00002 P-0335 Drain, El. 56'	255 (Note 1)		4" Dia 316L	**24590-PTF** -M6-PWD-P0011
PWD-FD-00003 P-0335 Drain, El. 56'	255 (Note 1)		4" Dia 316L	**24590-PTF** -M6-PWD-P0011
PWD-FD-00313 P-0303B Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00314 P-0303B Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00315	655		8" Dia	**24590-PTF**

P-0303B Drain, El. 56'			316L	-M6-PWD-P0044
PWD-FD-00316 P-0303B Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-003117 P-0303B Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00318 P-0303B Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00319 P-0303B Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00322 P-0303B Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00323 P-0304 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00324 P-0304 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00325 P-0304 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00326 P-0304 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00327 P-0304 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00328 P-0303 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00329 P-0303 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00333 P-0324 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00334 P-0302 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00335 P-0302 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00384 P-0311 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00385 P-0311 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043

PWD-FD-00386 P-0307 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00387 P-0307 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00388 P-0307 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00389 P-0317 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00390 P-0317 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00391 P-0317 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00392 P-0317 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00393 P-0317 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00394 P-0317 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00458 P-0324 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00459 P-0324 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00460 P-0324 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00461 P-0302 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00462 P-0302 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00463 P-0302 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00464 P-0301 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00465 P-0301 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00466 P-0301 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044

PWD-FD-00469 P-0336 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00470 P-0336 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00471 P-0336 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00472 P-0336 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00503 P-0332B Drain, El. 56'	104		4" Dia 316L	**24590-PTF** -M6-PWD-P0011
PWD-FD-00508 P-0311 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00509 P-0311 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00510 P-0311 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00511 P-0332B Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00512 P-0320 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00513 P-0320 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00514 P-0320 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00515 P-0325 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00516 P-0325 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00517 P-0325 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00518 P-0311 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00519 P-0311 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00520 P-0311 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043

PWD-FD-00521 P-0311 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00522 P-0311 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00523 P-0311 Drain, El. 56'	655		8" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00524 P-0311 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00527 P-0311 Drain, El. 56'	140		6" Dia 316L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00528 P-0311 Drain, El. 56'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00286 P-0407 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00287 P-0407 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00288 P-0407 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00289 P-0407 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00290 P-0407 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00291 P-0426 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00292 P-0426 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00293 P-0426 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00298 P-0425 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00309 P-0402 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00310 P-0402 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00311 P-0402 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044

PWD-FD-00312 P-0402 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00376 P-0415 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00377 P-0415 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00378 P-0415 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00379 P-0415 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00380 P-0415A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00381 P-0415A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00382 P-0415A Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00383 P-0415A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00557 P-0430 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00559 P-0430 Drain, El. 77'	665		8" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00561 P-0430 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00563 P-0411 Drain, El. 77'	665		8" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00564 P-0411 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00565 P-0410 Drain, El. 77'	665		8" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00566 P-0410 Drain, El. 77'	665		8" Dia 304L	**24590-PTF** -M6-PWD-P0043
PWD-FD-00571 P-0410 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00572 P-0410 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044

PWD-FD-00573 P-0410 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
~~PWD-FD-00571~~ ~~P-0410 Drain, El. 77'~~	~~140~~		~~6" Dia~~ ~~304L~~	~~**24590-PTF**~~ ~~-M6-PWD-P0044~~
PWD-FD-00574 P-0410 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00575 P-0410 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00576 P-0410 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00583 P-0422A Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00584 P-0422A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00585 P-0422A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00586 P-0422A Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00588 P-0423 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00589 P-0402 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00590 P-0423 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00591 P-0423 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00592 P-0423 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00593 P-0423 Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00594 P-0423 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00595 P-0431A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00596 P-0431A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044

PWD-FD-00597 P-0431A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00598 P-0431A Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00599 P-0431A Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00600 P-0431A Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00604 P-0431A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00605 P-0431A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00606 P-0431A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00607 P-0431A Drain, El. 77'	140		6" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00629 P-0425 Drain, El. 77'	655		8" Dia 304L	**24590-PTF** -M6-PWD-P0044
PWD-FD-00630 P-0425 Drain, El. 77'	140		" Dia 304L	**24590-PTF** -M6-PWD-P0044
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

[a]This sump is routinely accessible for inspections and maintenance. Note #1: These are special cases due to their location in equipment berms. The capacity for these drain lines is based on a unique bounding case for liquid spillage.

Table III.10.E K - LAW Vitrification

Plant Tank Systems Primary[a] Containment Sump Systems

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED

[a] Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640.

Table III.10.E.L - LAW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps and Bulges and Floor Drains

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
~~RLD-SUMP-00001~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~
~~RLD-SUMP-00003~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~
RLD-SUMP-00028 L-B001B (C3/C5 Drains/Sump Collection Vessel Cell, El. –21')	59	Dry Sump[a]	24" Dia. By 30" deep 304L or higher grade	**24590-LAW** -M6-RLD-P0002
RLD-SUMP-00029 L-0123 (Process Cell, El. +3'	46	Dry Sump[a]	30" Dia. By 15" deep 304L or higher grade	**24590-LAW** -M6-RLD-P0003 -P1-P01T-P0002 -P1-P01T-P0010
RLD-SUMP-00030 L-0123 (Process Cell, El. +3')	46	Dry Sump[a]	30" Dia. By 15" deep 304L or higher grade	**24590-LAW** -M6-RLD-P0003 -LAW-P1-P01T-P0002

				-P1-P01T-P0010
RLD-SUMP-00031 L-0124 Process Cell Sump, El. +3')	46	Dry Sump[a]	30" Dia. By 15" deep 304L or higher grade	**24590-LAW** -M6-RLD-P0003 P1-P01T-P0002 -P1-P01T-P0010
RLD-SUMP-00032 L-0124 (Process Cell, El. +3')	46	Dry Sump[a]	30" Dia. By 15" deep 304L or higher grade	**24590-LAW** -M6-RLD-P0003 -LAW -P1-P01T-P0010
RLD-SUMP-00033 L-0125 (Process Cell, El. +3')	46	Dry Sump[a]	30" Dia. By 15" deep 304L or higher grade	**24590-LAW** -M6-RLD-P0003
RLD-SUMP-00034 L-0125 (Process Cell, El. +3')	46	Dry Sump[a]	30" Dia. By 15" deep 304L or higher grade	**24590-LAW** -M6-RLD-P0003
RLD-SUMP-00035 L-0126 (Effluent Cell, El. +3')	46	Dry Sump[a]	30" Dia. By 15" deep 304L or higher grade	**24590-LAW** -M6-RLD-P0003 -P1-P01T-P0002 -P1-P01T-P0010
RLD-SUMP-00036 L-0126 (Effluent Cell, El. +3')	46	Dry Sump[a]	30" Dia. By 15" deep 304L or higher grade	**24590-LAW** -M6-RLD-P0003 -P1-P01T-P0002 -LAW -P1-P01T-P0010
Drain Line ID# = RESERVED L-B001B (RLD-BULGE-00001 Drain, El. -21')	60	N/A	2" Dia. 316L	**24590-LAW** -M6-RLD-P0002
Drain Line ID# = RESERVED L-B001B (Pump Bulge [RLD-BULGE-00001] Drain/Double-Walled Piping Outer Containment Drain, El. -21')	30	N/A	1" Dia. 316L	**24590-LAW** -M6-RLD-P0002

Drain Line ID# = RESERVED L-0123 [Primary Offgas (LOP) Melter 1 Valve Bulge Drain, El. +3']	60	N/A	2" Dia. 6 Mo	**24590-LAW** -M6-LOP-P0001
Drain Line ID# = RESERVED L-0123 (~~Concentrate Feed Receipt LCP-VSL-~~ LCP-BULGE-00001/2 ~~Valve Bulge~~ Drain, El. +3')	60	N/A	2" Dia. 316L	**24590-LAW** -M6-LCP-P0001
Drain Line ID# = RESERVED L-0123 (Melter 1 Feed Detection Box Leak, El. +3')	RESERVED	RESERVED	RESERVED	**24590-LAW** -M6-RLD-P0003
Drain Line ID# = RESERVED L-0123 (Melter 1 Feed Prep/Feed Vessel Valve Bulge Drain, El. +3')	60	N/A	2" Dia. 316L	**24590-LAW** -M6-LFP-P0001
Drain Line ID# = RESERVED L-0124 [Primary Offgas (LOP) Melter 2 Valve Bulge Drain, El. +3']	60	N/A	2" Dia. 6 Mo	**24590-LAW** -M6-LOP-P0002
Drain Line ID# = RESERVED L-0124 (~~Concentrate Receipt Vessel LCP-VSL-00002 Valve Bulge~~ LCP-BULGE-00003 Drain, El. +3')	60	N/A	2" Dia. 316L	**24590-LAW** -M6-LCP-P0002
Drain Line ID# = RESERVED L-0124 (Melter 2 Feed	60	N/A	2" Dia. 316L	**24590-LAW** -M6-LFP-P0003

Prep/Feed Vessel Valve Bulge Drain, El. +3')				
Drain Line ID# = RESERVED L-0124 (Melter 2 Feed Detection Box Leak, El. +3')	RESERVED	RESERVED	RESERVED	**24590-LAW** -M6-RLD-P0003
~~Drain Line ID# = RESERVED L-0125 [Primary Offgas (LOP) Melter 3 Valve Bulge Drain, El. +3']~~	~~60~~	~~N/A~~	~~2" Dia. 6 Mo~~	~~**24590-LAW** -M6-LOP-P0003~~
~~Drain Line ID# = RESERVED L-0125 (Melter 3 Feed Prep/Feed Vessel Valve Bulge Drain, El. +3')~~	~~60~~	~~N/A~~	~~2" Dia. 316L~~	~~**24590-LAW** -M6-LFP-P0005~~
~~Drain Line ID# = RESERVED L-0125 (Concentrate Receipt Vessel LCP-VSL-00003 Valve Bulge Drain, El. +3')~~	~~60~~	~~N/A~~	~~2" Dia. 316L~~	~~**24590-LAW** -M6-LCP-P0002~~
Drain Line ID# = RESERVED L-0126 (Plant Wash Vessel/SBS Condensate Collection Vessel Valve Bulge Drain, El. +3')	60	N/A	2" Dia. 6 Mo	**24590-LAW** -M6-RLD-P0001
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.E M - HLW Vitrification Plant Tank Systems Primary[a] Containment Sump Systems

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED

[a] Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640.

Table III.10.E N - HLW Vitrification Plant Tank Systems Secondary Containment Systems Including Sumps and Floor Drains

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/~~Nominal Operating Volume (gallons)~~	Sump or Drain Line Dimensions (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
HCP-SUMP-00001 H-B014 (Wet Process Cell, El. –21')	70	~~Wet Sump~~ Dry Sump/ ~~60~~	30" Dia. x 18" Deep 6Mo	24590-HLW-M6-RLD-P0015
RLD-SUMP-00001 H-B014 (Wet Process Cell, El. –21')	70	~~Wet Sump~~ Dry Sump / ~~60~~	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P0015
HOP-SUMP-00003 H-B021 (SBS Drain Collection Cell No. 1, El. –21')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P0015
HOP-SUMP-00008 H-B005 (SBS Drain Collection Cell No. 2, El. -21	70	Dry Sump	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P20004
HDH-SUMP-00001 H-B039B (Canister Rinse Tunnel, El. –16.5')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P0016
HDH-SUMP-00002 H-B039A (Bogie Decon/Maint. Tunnel-	70	Dry Sump	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P000~~4~~16

Canister Rinse, El. –16')				
HDH-SUMP-00003 H-B035 (Canister Decon Cave, El. –16')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P00~~15~~04
~~RWH-SUMP-00001 H-B015 (Drum Transfer Tunnel, El. –9.5')~~	~~70~~	~~Dry Sump~~	~~30" Dia. X 18" Deep 6Mo~~	~~24590-HLW-M6-RLD-P0017~~
~~RWH-SUMP-00005 H-B015 (Drum Transfer Tunnel, El. –9.5')~~	~~70~~	~~Dry Sump~~	~~30" Dia. X 18" Deep 6Mo~~	~~24590-HLW-M6-RLD-P0017~~
~~RWH-SUMP-00006 H-B015 (Drum Transfer Tunnel, El. –9.5')~~	~~70~~	~~Dry Sump~~	~~30" Dia. X 18" Deep 6Mo~~	~~24590-HLW-M6-RLD-P0017~~
HPH-SUMP-00001 H-0136 (Canister Handling Cave, El. –3')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P0016
HPH-SUMP-00005 H-0136 (Canister Handling Cave, El. –3')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P0004
~~HMH-SUMP-00002 H-0116B (Melter Cave No. 1-C3/C5Airlock, El. 0')~~	~~70~~	~~Dry Sump~~	~~30" Dia. X 18" Deep 6Mo~~	~~24590-HLW-M6-RLD-P0003~~
~~HMH-SUMP-00003 H-0105B (Melter Cave No. 2-C3/C5Airlock, El. 0')~~	~~10.8~~	~~Dry Sump~~	~~18" in. x 11.5" x 12" Deep 6Mo~~	~~24590-HLW-M6-RLD-P0003~~
HFP-SUMP-00001 H-0308 (Active Services Duct Melter No.1 El. 37')	70	Gravity Drain	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P0015
HFP-SUMP-00002 H-0117 (Melter Cave No. 1, El. 5')	~~70~~55.6	~~Wet Sump / 60~~ Dry Sump/~~55.6~~	~~30" Dia. X 18" Deep~~ 31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P0008
~~HFP-SUMP-00003~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~	~~RESERVED~~
HFP-SUMP-00004 H-0302 (Active Services Duct Melter No.2 El. 37')	70	Gravity Drain	30" Dia, X 18" Deep 6Mo	24590-HLW-M6-RLD-P0004 P20004
HFP-SUMP-00005 H-0106 (Melter Cave No. 2	~~70~~ 55.6	Dry Sump/~~55.6~~	~~30" Dia. X 18" Deep~~ 31.5" 25.5" x 16"	24590-HLW-M6-RLD-~~P0005~~ P20005

El. 5')			6Mo	
~~HOP-SUMP-00004 H-0117 (Melter Cave No. 1, El. 3')~~	~~70~~	~~Dry Sump~~	~~30" Dia. X 18" Deep 6Mo~~	~~24590-HLW-M6-RLD-P0017~~
HSH-SUMP-00003 H-0117 (Melter Cave No. 1, El. 3')	~~70~~55.6	Dry Sump/~~55.6~~	~~30" Dia. X 18" Deep~~ 31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P0008
HSH-SUMP-00007 H-0106 (Melter Cave No. 2El. 3')	~~37.~~455.6	Dry Sump/~~55.6~~	~~24" x 18" x 20" Deep~~ 31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P20005
HSH-SUMP-00008 H-0310A (Melter No. 1 Equip. Decon. Area El. 0')	~~70~~ 55.6	Dry Sump/~~55.6~~	~~30" Dia x 18" Deep~~ 31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P0003
HSH-SUMP-00009 H-0304A (Melter No. 2 Equip. Decon. Area El. 0')	~~70~~ 55.6	Dry Sump/~~55.6~~	~~30" Dia x 18" Deep~~ 31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P20003
RLD-ZF-00330-S11B-03 H-B021 (SBS Drain Collection Cell No. 1)	20	Floor Drain	Overflow Line Size Pipe Dia 3" 316L Stainless Steel	24590-HLW-M6-RLD-P0015
RLD-ZF-03447-S11B-03 H-B005 (SBS Drain Collection Cell No. 2)	20	Floor Drain	Overflow Line Size Pipe Dia 3" 316L Stainless Steel	24590-HLW-M6-RLD-P20004
~~HCP-PC-00057-S12A-011/2 H-B014 (Wet Process Cell~~	~~5~~	~~Floor Drain~~	~~Overflow Line Size Pipe Dia 1.5" 316L Stainless Steel~~	~~24590-HLW-M6-RLD-P0015~~
~~HCP-PC-00061-S12A-011/2 H-B014 (Wet Process Cell~~	~~5~~	~~Floor Drain~~	~~Overflow Line Size Pipe Dia 1.5" 316L Stainless Steel~~	~~24590-HLW-M6-RLD-P0015~~
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.E O – Laboratory Tank Systems Primary[a] Containment Sump Systems

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RESERVED	RESERVED	RESERVED	RESERVED

[a] Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640.

Table III.10.E P – Laboratory Tank Systems Secondary Containment Systems Including Sumps and Floor Drains

Sump I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Type/Nominal Operating Volume (gallons)	Sump Dimensions (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications Nos., etc.)
RLD-SUMP-00041 A-B003 (C3 Effluent Vessel Cell, El. -18'7')	30	Dry	30" Dia. X ~13" Deep 304L or higher grade	24590-LAB -M6-RLD-P0002 -P1-60-P0007 -PER-M-02-002
RLD-SUMP-00042 A-B004 (C5 Effluent Vessel Cell, El. -19'2')	30	Dry	30" Dia. X ~13" Deep 304L or higher grade	24590-LAB -M6-RLD-P0001 -P1-60-P0007 -PER-M-02-002
RLD-SUMP-00045 A-B002 (C3 Pump Pit Sump, EL -6'-81/2" (LP)	1.56	Dry	2'-0" X 2'-6" X 1/2" 304L or higher grade	24590-LAB -M6-RLD-P0002 -P1-60-P0007 -PER-M-02-002
RLD-SUMP-00043A A-B007 (C5 Pump Pit Sump, EL -6'-7" (LP)	1.40	Dry	1'-6" X 3'-0" X 1/2" 304L or higher grade	24590-LAB -M6-RLD-P0001 -P1-60-P0007 -PER-M-02-002
RLD-SUMP-00043B A-B005 (C5 Pump Pit Sump, EL -6'-7" (LP)	1.40	Dry	1'-6" X 3'-0" X 1/2" 304L or higher grade	24590-LAB -M6-RLD-P0001 -P1-60-P0007 -PER-M-02-002
RLD-SUMP-00044 A-B006 (C5 Piping Pit Sump,	1.56	Dry	2'-0" X 2'-6" X 1/2" 304L or higher grade	24590-LAB -M6-RLD-P0001

EL -6'-7" (LP)				-P1-60-P0007 -PER-M-02-002
RLD-ZN-02207-S11E-04 A-B003, (C3 Effluent Vessel Cell)	86	N/A	4" Dia 316L	**24590-LAB** -M6-RLD-P0002
RLD-ZN-02203-S11E-04 A-B004, (C5 Effluent Vessel Cell)	86	N/A	4" Dia 316L	**24590-LAB** -M6-RLD-P0001
RLD-ZN-03393-S11E-04 A-B004, (C5 Effluent Vessel Cell)	86	N/A	4" Dia 316L	**24590-LAB** -M6-RLD-P0001
RLD-ZN-03394-S11E-04 A-B004, (C5 Effluent Vessel Cell)	86	N/A	4" Dia 316L	**24590-LAB** -M6-RLD-P0001
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

III.10.F. CONTAINMENT BUILDING UNITS

III.10.F.1. Containment Building Units and Storage Limits

III.10.F.1.a. Approved Waste and Storage Limits

III.10.F.1.a.i. The Permittees may store and treat, in containment building units listed in Permit Table III.10.F.A., as modified by Permit Condition III.10.F.7.d.iv., all dangerous and mixed waste listed in the Part A Forms, Operating Unit 10, Chapter 1.0 of this Permit, except for those wastes outside the waste acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0, as approved pursuant to Permit Condition III.10.C.3. Total dangerous and mixed waste storage at the containment building units ~~shall~~ will not exceed the sum of the capacities in column 7 of Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv.

III.10.F.1.a.ii. The Permittees may place and store dangerous and mixed waste only in the containment building units listed in Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv., in accordance with Permit Condition III.10.F., and in accordance with Operating Unit 10, Chapters 1.0 and 4.0, and Operating Unit 10, Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this Permit, as approved pursuant to Permit Conditions III.10.F.7.c. and III.10.F.7.d. The Permittees ~~shall~~ will limit the volume of dangerous and mixed waste to quantities specified for the individual areas listed in column 7 of Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv.

III.10.F.1.b. The Permittees ~~shall~~ will manage any ignitable, reactive, or incompatible waste in these units in accordance with WAC 173-303-395(1). Any containment building units specified in Permit Table III.10.F.A. in which ignitable, reactive, or incompatible waste are managed ~~shall~~ will meet the requirements specified in WAC 173-303-640(9) and (10), in accordance with WAC 173-303-680(2).

III.10.F.1.c. The Permittees must maintain documentation in the operating record of the description and quantity of dangerous waste in each containment building unit listed in Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv., in accordance with WAC 173-303-380.

III.10.F.1.d. The Permittees ~~shall~~ will ensure all certifications required by specialists (e.g., qualified, registered, professional engineer, etc.) use the following statement or equivalent pursuant to Permit Condition III.10.C.10.:

"I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new containment building unit or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., design engineer, etc.), for the following containment building unit components (e.g., the venting piping, etc.), as required by the Resource Conservation and Recovery Act (RCRA) regulation(s), namely, 40 CFR 264.1101©(2) in accordance with WAC 173-303-695).

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

III.10.F.2. Containment Building Unit Design and Construction

III.10.F.2.a. The Permittees ~~shall~~ will design and construct the containment building units identified in Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv., as specified in Operating Unit 10, Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this Permit, as approved in accordance with Permit Condition III.10.F.7.a. ~~of this Permit~~ and WAC 173-303-695.

III.10.F.2.b. The Permittees ~~shall~~ will design and construct all applicable containment building units' secondary containment systems for each unit listed in Permit Table III.10.F.A., as specified in Operating Unit 10, Appendices 8.4 through 8.9, 8.15, 9.4 through 9.9, 9.18, 10.4 through 10.9, and 10.18 of this Permit, as approved in accordance with Permit Condition III.10.F.7.a. ~~of this Permit~~ and WAC 173-303-695.

III.10.F.2.c. Modifications to approved design plans and specifications, in Operating Unit 10, Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this permit, for the containment building units ~~shall~~ will be allowed only in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g., III.10.C.9.d, and III.10.C.9.e.

III.10.F.3. Containment Building Unit Management Practices

III.10.F.3.a. The Permittees ~~shall~~ will manage all dangerous and mixed waste in containment building units in accordance with procedures described in Operating Unit 10, Appendices 8.15, 9.18, 10.18 and Chapter 4.0 of this Permit, as approved pursuant to Permit Condition III.10.F.7.d.iv. ~~of this Permit~~.

III.10.F.3.b. The Permittees ~~shall~~ will follow the description of operating procedures described in Operating Unit 10, Appendices 8.15, 9.18, 10.18 and Chapter 4, of this permit, as approved pursuant to Permit Condition III.10.F.7.d.iv. and Permit Condition III.10.F.3., and as specified below:

III.10.F.3.b.i. Maintain the primary barrier to be free of significant cracks, gaps, corrosion, or other deterioration that could cause dangerous and mixed waste to be released from the primary barrier;

III.10.F.3.b.ii. Maintain the level of stored/treated dangerous and mixed waste within the containment building unit walls so that the height of the wall is not exceeded;

III.10.F.3.b.iii. Take measures to prevent the tracking of dangerous and mixed waste out of the unit by personnel or by equipment used in handling the waste. An area must be designated to decontaminate equipment and any rinsate must be collected and properly managed;

III.10.F.3.b.iv. Maintain the containment building unit at all times to prevent the spread of airborne dangerous and/or mixed waste contamination into less contaminated or uncontaminated areas. All air pollution control devices for exhaust from containment building unit must be properly maintained and operational when storing or treating dangerous and mixed waste in the containment building units;

III.10.F.3.b.v. Collect and remove liquids and waste to minimize hydraulic head on the containment system at the earliest practicable time.

III.10.F.3.c. The Permittees ~~shall~~ will inspect the containment building units per requirements in the Operating Unit 10, Chapter 6.0 of this permit, as approved pursuant to Permit Condition III.10.C.5., 40 CFR 264.1101©(4),in accordance with WAC 173-303-695 and WAC 173-303-320 and record in the Facility's operating record, at least once every seven (7) days, data gathered from monitoring equipment and leak detection equipment as well as the

containment building unit and area immediately surrounding the containment building unit to detect signs of releases of dangerous and mixed waste.

III.10.F.3.d. Throughout the active life of the containment building unit, if the Permittees detects a condition that could lead to or has caused a release of dangerous and/or mixed waste, the Permittees must repair the condition promptly, in accordance with the following procedures:

III.10.F.3.d.i. Upon detection of a condition that has lead to the release of dangerous and/or mixed waste (e.g., upon detection of leakage from the primary barrier) the Permittees must:

A. Enter a record of the discovery in the facility operating record;

B. Immediately remove the portion of the containment building unit affected by the condition from service;

C. Determine what steps must be taken to repair the containment building unit, remove any leakage from the secondary collection system, and establish a schedule for accomplishing the cleanup and repairs; and

D. Within seven (7) days after the discovery of the condition, notify Ecology of the condition, and within fourteen (14) working days, provide a written notice to Ecology with a description of the steps taken to repair the containment building unit, and the schedule for accomplishing the work.

III.10.F.3.d.i.ii. Ecology will review the information submitted, make a determination regarding whether the containment building unit must be removed from service completely or partially until repairs and cleanup are complete, and notify the Permittees of the determination and underlying rationale in writing.

III.10.F.3.d.i.iii. Upon completing all repairs and cleanup the Permittees must notify Ecology in writing and provide verification, signed by a qualified, registered, professional engineer, that repairs have been completed according to the written notice submitted in accordance with Permit Condition III.10.F.3.d.i.D.

III.10.F.4 Inspections [WAC 173-303-640(6)]

III.10.F.4.a. The Permittees ~~shall~~ will inspect the containment building units in accordance with the Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified pursuant to Permit Condition III.10.C.5.c.

III.10.E.4.b. The inspection data for the containment building units ~~shall~~ will be recorded, and the records ~~shall~~ will be placed in the WTP Unit operating record, in accordance with Permit Condition III.10.C.4.

III.10.F.5 Recordkeeping (WAC 173-303-380)

For the containment building units, the Permittees ~~shall~~ will record and maintain in the WTP Unit operating record, all monitoring, calibration, recording, maintenance, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Conditions III.10.C.4. and III.10.C.5.

III.10.F.6. Closure

The Permittees ~~shall~~ will close the containment building units in accordance with Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.

III.10.F.7. Compliance Schedule

III.10.F.7.a. All information identified for submittal to Ecology in Permit Conditions III.10.F.7.b. through e. of this compliance schedule must be signed in accordance with requirements in WAC 173-303-810(12), as modified in accordance with Permit Condition III.10.F.1.d. [WAC 173-303-806(4)].

III.10.F.7.b. Prior to initial receipt of dangerous and/or mixed waste, the Permittees ~~shall~~ will submit to Ecology a certification by a qualified, registered, professional engineer that the containment building units design meets the requirements of Permit Conditions III.10.F.1.and III.10.F.2. in accordance with Permit Condition III.10.F.7.a. The certification will also be stored in the WTP Unit operating record. For containment buildings units in Permit Table III.10.F.A., as modified pursuant to Permit Condition III.10.F.7.d.iv., identified as allowed to manage free liquids, the certification ~~shall~~ will include an additional demonstration that the containment building meets the requirements specified in 40 CFR 264.1101(b), in accordance with WAC 173-303-695.

III.10.F.7.c. The Permittees ~~shall~~ will submit to Ecology pursuant to Permit Condition III.10.C.9.f., prior to construction of the containment building unit containment system, and as appropriate, leak detection system for each containment building unit (per level, per WTP Unit building) as identified in Permit Condition III.10.F.1., Permit Tables III.10.F.A., engineering information as specified below, for incorporation, as appropriate, into Operating Unit 10, Appendices 8.1, 8.2, 8.3, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18 of this Permit. At a minimum, engineering information specified below will show the following as required in accordance with WAC 173-303-695 (the information specified below will include dimensioned engineering drawings showing floors, walls, and ceilings/roof of the containment building units and other information on floor drains and sumps):

III.10.F.7.c.i. Design drawings (General Arrangement Drawings in plan and cross sections) and specifications for the foundation, containment, including liner/coating installation details and leak detection methodology, as appropriate [40 CFR 264.1101(a)(1) and (b), in accordance with WAC 173-303-695].

III.10.F.7.c.ii. The Permittees ~~shall~~ will provide the design criteria (references to codes and standards, load definitions and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the containment system. This information ~~shall~~ will demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift [40 CFR 264.1101(a)(2) in accordance with WAC 173-303-695, in accordance with WAC 173-303-695].

III.10.F.7.c.iii. The Permittees ~~shall~~ will provide documentation addressing how coatings will withstand the movement of personnel, waste, and equipment during the operating life of the containment building per 40 CFR 264.1101(a)(2), (a)(4), and (b) in accordance with WAC 173-303-695.

III.10.F.7.c.iv. Containment/foundation and, as appropriate, for leak detection systems, materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials as applicable [e.g. physical and chemical tolerances]) [40 CFR 264.1101(a)(4) and (b) in accordance with WAC 173-303-695].

III.10.F.7.c.v. A detailed description of how the containment/foundation and, as appropriate, leak detection systems, will be installed.

III.10.F.7.c.vi. Submit Permit Tables III.10.F.B and III.10.F.C, completed to provide for all secondary containment sumps and floor drains, the information as specified in each column heading, consistent with the information to be provided in i. through viii.

III.10.F.7.c.vii. A detailed description of how fugitive emissions will be controlled such that any openings (e.g., doors, windows, vents, cracks, etc.) exhibit no visible emissions [40 CFR 264.1101©(1)(iv) in accordance with WAC 173-303-695].

III.10.F.7.c.viii. Prior to installation, the Permittees ~~shall~~ will submit coating vendor information specific to containment buildings for incorporation into the Administrative Record [40 CFR 264.1101(a)(4) and (b) in accordance with WAC 173-303-695].

III.10.F.7.c.ix. Prior to installation, leak detection system documentation (e.g. vendor information, etc.) consistent with information submitted under i. above, ~~shall~~ will be submitted for incorporation into the Administrative Record; [a]

III.10.F.7.c.x. Prior to installation, the Permittees ~~shall~~ will submit leak detection system instrumentation control logic narrative description (e.g., software functional specifications, descriptions of fail-safe conditions, etc.); [a]

III.10.F.7.c.xi. Prior to installation, system descriptions related to leak detection systems (including instrument control logic and narrative descriptions) ~~shall~~ will be submitted for incorporation into the Administrative Record; [a]

III.10.F.7.c.xii. For leak detection system instrumentation for containment buildings as identified in Permit Tables III.10.F.D., a detailed description of how the leak detection system instrumentation will be installed and tested [40 CFR 264.1101(b)(3) in accordance with WAC 173-303-695] ~~shall~~ will be submitted prior to installation. [a]

Information pertaining to leak detection systems in Permit Conditions III.10.F.7.c.ix. through xii. Will be submitted pursuant to Permit Conditions III.10.E.9.d.vii., viii., x., and xiii.

III.10.F.7.d. Prior to initial receipt of dangerous and mixed waste, in the WTP Unit, the Permittees ~~shall~~ will submit the following, as specified below, for incorporation into Operating Unit 10. The information specified below into Operating Unit 10, and incorporated pursuant to Permit Condition III.10.C.2.g. ~~shall~~ will be followed:

III.10.F.7.d.i. Registered Professional Engineer certification documentation consistent with the information provided in III.10.F.7.b. and III.10.F.7.c. for incorporation in the Administrative Record. The certification must be maintained in the WTP Unit Operating Record [40 CFR 264.1101©(2)];

III.10.F.7.d.ii. Updated Chapter 4.0, Section 4.2.1., and the figures for containment building units identified in Permit Table III.10.F.A. (as modified pursuant to Permit Condition III.10.F.7.d.iv., consistent with Operating Unit 10, Appendices 8.1, 8.2, 8.4 through 8.10, 8.13, 8.15, 9.1, 9.2, 9.4 through 9.10, 9.13, 9.18, 10.1, 10.2, 10.4 through 10.10, 10.13, and 10.18, as approved pursuant Permit Conditions III.10.F.7.a. through d.);

III.10.F.7.d.iii. Description of operating procedures demonstrating compliance with 40 CFR 264.1101© and (d) in accordance with WAC 173-303-695;

III.10.F.7.d.iv. Permit Table III.10.F.A., amended as follows:

A. Under column 1, update and complete list of dangerous and mixed waste containment building units including room location and number.

B. Under column 2, update unit dimensions.

C. Under column 3, replace the 'Reserved' with the Operating Unit 10, Appendices 8.0, 9.0, and 10.0, subsections specific to containment building units as listed in column 1.

D. Under column 4, update and complete list of narrative description, tables, and figures.

E. Under column 5, replace the 'Reserved' to indicate if container storage is used in each containment building units (Yes or No) consistent with Permit Table III.10.D.A. updated pursuant to Permit Condition III.10.D.10.d.

F. Under column 6, replace the 'Reserved' to indicate if tank storage is used in each containment building units (Yes or No) consistent with Permit Tables III. 10.E.A-D., updated pursuant to Permit Condition III.10.E.9.e.vi.

G. Under column 7, replace the 'Reserved' with the maximum operating volume ~~maximum capacity~~ for each containment building unit, to include the container storage capacity specified in Permit Table III.10.D.A., tank capacity specified in Permit Tables III. 10.E.A-D. and update the total capacity for the containment building units.

H. Under column 8, update the status of each containment building unit.

III.10.F.7.d.v. Permit Table III.10.F.D. ~~shall~~ will be completed for Containment Building leak detection system instrumentation and parameters to provide the information as specified in each column heading. Leak detection system monitors and instruments for critical systems as specified in Operating Unit 10, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b. ~~shall~~ will be addressed.

III.10.F.7.e. All information provided under Permit Condition III.10.F.7.d. must be consistent with information provided pursuant to Permit Conditions III.10.F.7.a. through d., as approved by Ecology.

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Table III.10.F.A. – Containment Building Unit Description

Mixed Waste Containment Building Units[a] & Systems	Dimensions (LxWxH) (in feet)	Unit Description	Narrative Description and Figures	Container Storage Areas[b]	Tank Systems[c]	Containment Building Capacity (cu ft)	Manage Free Liquids
Pretreatment Plant							
P-0123 Pretreatment Hot Cell Containment Building	~~414x54x46~~ 350x51x52	RESERVED	Section 4.3.4 Fig. 4A-78	RESERVED	RESERVED	RESERVED	Yes
Pretreatment Maintenance Containment Building							
PM0124 Hot Cell Crane Maintenance Area	~~(98 × 56 × 18) + (54 × 5 × 18) + (54 × 78 × 18) + (18 × 98 × 18)~~54 × 51× 52	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0121A Spend Resin Dewatering	28 × 18 × 28	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0122A Waste Packaging Area	26 × 51 × 28	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0123A Remote Decontamination Maintenance Cave	55 × 51 × 28	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0124 C3 Workshop	24 × 24 × 16	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0124A C3 Workshop	(73 + 15 × 15) + (16 × 15 + 13)	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0125 Filter Cask Airlock	24 × 20 × 28	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0125A Filter Cask Area	28 × 18 × 28	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0128A MSM Repair Area	24 × 18 × 28	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0128 Temporary Storage Room	24 × 17 × 28	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0223 Pretreatment Filter Package Maintenance Containment Building	~~234x54x19~~ 40x20x28	RESERVED	Section 4.3.4 Fig. 4A-80, -81	RESERVED	RESERVED	RESERVED	No
P-0335 Pretreatment Air Filter Package Containment Building	118x54x42	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
P-0431A General Filter Rm							
LAW Vitrification Plant							
L-0112 LAW LSM Gallery Containment Building	~~151x62x25~~ 151x60x24	RESERVED	Section 4.3.4 Fig. 4A-83	RESERVED	RESERVED	RESERVED	Yes
ILAW Container Finishing Containment Building	~~98x31x25~~	RESERVED	Section 4.3.4	RESERVED	RESERVED	RESERVED	No

			Fig. 4A-83				
L-0109B Swabbing Area Line 2	21×15×24	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-0109C Decontamination Area Line 2	18×15×24	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-0109D Inert Fill Area Line 2	55×15×24	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-0115B Swabbing Area Line 1	21×15×24	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-0115C Decontamination Area Line 1	18×15×24	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-0115D Inert Fill Area Line 1	55×15×24	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-109E Container/Monitoring/Export Area	19×18×14	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-115E Container/Monitoring/Export Area	19×18×14	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-0119B LAW Consumable Import/Export Containment Building	35x40x20	RESERVED	Section 4.3.4 Fig. 4A-85	RESERVED	RESERVED	RESERVED	Yes
L-226A LAW C3 Workshop Containment Building	40x 35×19	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
LAW Pour Cave Containment Building		RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-B015A Melter 1 Pour Cave	16.5×20	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-B013C Melter 1 Pour Cave	16.5×20	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-B013B Melter 2 Pour Cave	16.5×20	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-B011C Melter 2 Pour Cave	16.5×20	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-B011B Future Melter 3 Pour Cave	16.5×20	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-B009B Future Melter 3 Pour Cave	16.5×20	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
ILAW Buffer Container Containment Building		RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-B025C Container Buffer Store	22x22x7.5	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
L-B025D Container Rework	22x14x7.5	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
HLW Vitrification Plant							
H-0117, H-0116B, H-0310A HLW Melter No. 1	145×35×55	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
H-0106, H-0105B, H-0304A HLW Melters 2	145×35×55	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
H-0136 IHLW Canister Handling Cave Containment Building	140x18x48	RESERVED	Section 4.3.4 Fig. 4A-88	RESERVED	RESERVED	RESERVED	No
H-0133 IHLW Canister Swab and Monitoring Cave Containment Building	10x80x58	RESERVED	Section 4.3.4 Fig. 4A-88	RESERVED	RESERVED	RESERVED	No
H-0311A/B HLW Vitrification Plant C3 Workshop Containment Building	30x27x19 + 33x15x19	RESERVED	Section 4.3.4 Fig.4A-89	RESERVED	RESERVED	RESERVED	No
H-0104 HLW Filter Cave	104x38x19	RESERVED	Section 4.3.4 Fig. 4A-88	RESERVED	RESERVED	RESERVED	No
H-B032 HLW Pour Tunnel No. 1 Containment Building	140x11x21	RESERVED	Section 4.3.4 Fig. 4A-86	RESERVED	RESERVED	RESERVED	No
H-B005A HLW Pour Tunnel No. 2 Containment Building	140x11x21	RESERVED	Section 4.3.4	RESERVED	RESERVED	RESERVED	No

			Fig. 4A-86				
H-0410B, H0411 HLW Waste Handling Area Containment Building	TBD	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
HLW Drum Swabbing and Monitoring Area		RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
H-0126A/B Swabbing and Monitoring Area	52×16×10	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
H-B028 Cask Transfer Tunnel	15×52×10	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

[a] Containment Building Units include associated process systems and equipment

[b] Requirements pertaining to the containers in the Containment Building Units are specified in Section III.10.D. of this Permit.

[c] Requirements pertaining to the tanks in the Containment Building Units are specified in Section III.10.E. of this Permit.

Table III.10.F.B. – Containment Building Primary[a] Containment Sump Systems

Sump I.D.# & Room Location	Maximum Capacity (gallons)	Dimensions (feet) & Materials of Construction	Maximum Allowable Liquid Height (inches)	Secondary Containment Volume (gallons)	Unit Description Drawings[#]
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

[a] Primary sumps are defined in Permit Section III.10.C, and must comply with dangerous waste tank system requirements for tanks as described in WAC-173-303-640.

Table III.10.F.C. – Containment Building Secondary Containment Systems Including Sumps and Floor Drains

Sump or Drain Line I.D.# & Room Location	Maximum Sump (gallons) or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump or Drain Line Dimensions (inches) & Materials of Construction	Engineering Description (Drawing Nos., Specifications No.'s, etc.)
PWD-SUMP-00034 P-0121a (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00012 -P1-P01T-P0001 -P1-P01T-P0010
PWD-SUMP-00035 P-0122a (El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 304L	**24590-PTF** -M6-PWD-P00012 -P1-P01T-P0001
PWD-SUMP-00026 P-0123 (Hot Cell, El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	**24590-PTF** -M6-PWD-P00010 -P1-P01T-P0001 -P1-P01T-P0009
PWD-SUMP-00028 P-0123 (Hot Cell, El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	**24590-PTF** -M6-PWD-P00014 -P1-P01T-P0001
PWD-SUMP-00029 P-0123 (Hot Cell, El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	**24590-PTF** -M6-PWD-P00014 -P1-P01T-P0001

				-P1-P01T-P0009
PWD-SUMP-00032 P-0123A (Maintenance Cave, El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	**24590-PTF** -M6-PWD-P00010 -P1-P01T-P0001 -P1-P01T-P0009
PWD-SUMP-00033 P-0123A (Maintenance Cave, El. 0')	73.5	Dry Sump[a]	30" Dia. By ~28" deep 316L	**24590-PTF** -M6-PWD-P00010 -P1-P01T-P0001 -P1-P01T-P0009
~~PWD-ZF-03000-S11B-06 P-0123 (Hot Cell, El. 0')~~	~~939~~	~~N/A~~	~~6" Dia. 316L~~	~~**24590-PTF** -M6-PWD-P0011~~
~~PWD-ZF-03001-S11B-06 P-0123 (Hot Cell, El. 0')~~	~~939~~	~~N/A~~	~~6" Dia. 316L~~	~~**24590-PTF** -M6-PWD-P0011~~
HPH-SUMP-00001 H-0136 (Canister Handling Cave, El. -3')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P0016
HPH-SUMP-00005 H-0136 (Canister Handling Cave, El. -3')	70	Dry Sump	30" Dia. X 18" Deep 6Mo	24590-HLW-M6-RLD-P0004
HFP-SUMP-00002 H-0117 (Melter Cave No. 1, El. 5')	~~70~~55.6	Wet Sump / 60 Dry Sump/55.6	31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P0008
HFP-SUMP-00005 H-0106 (Melter Cave No. 2 El. 5')	~~70~~ 55.6	Dry Sump/55.6	31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P0005 P20005
HSH-SUMP-00003 H-0117 (Melter Cave No. 1, El. 3')	~~70~~55.6	Dry Sump/55.6	30" Dia. X 18" Deep 31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P0008
HSH-SUMP-00007 H-0106 (Melter Cave No. 2El. 3')	~~37.4~~55.6	Dry Sump/55.6	24" x 18" x 20" Deep 31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P20005
HSH-SUMP-00008 H-031DA (Melter No. 1 Equip. Decon. Pit El. 0')	55.6	Dry Sump/55.6	31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P20003
HSH-SUMP-00009 H-0304A (Melter No. 2	55.6	Dry Sump/55.6	31.5" 25.5" x 16" 6Mo	24590-HLW-M6-RLD-P20003

Equip. Decon. Pit El. 0')				
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

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

Containment Building Locator and Name (including P&ID)	Type of Leak Detection Instrument	Location of Leak Detection Instrument (Tag No.)	Leak Detection Instrument Range	Expected Range	Fail States	Leak Detection Instrument Accuracy	Leak Detection Instrument Calibration Method No. and Range
PWD-SUMP-00034 P-0121A[a] 24590-PTF-M6-PWD-P00012	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
PWD-SUMP-00035 P-0122A[a] 24590-PTF-M6-PWD-P00012	Not Applicable	Radar Leak Detector	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
PWD-SUMP-00026 P-0123[a] 24590-PWD-M6-P00010	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
PWD-SUMP-00028 P-0123[a] 24590-PWD-M6-P00014	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
PWD-SUMP-00029 P-0123[a] 24590-PWD-M6-P00014	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

PWD-SUMP-00032 P-0123A[a] **24590-PWD-**M6-P00010	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
PWD-SUMP-00033 P-0123A[a] **24590-PWD-**M6-P00010	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
HPH-SUMP-00001 H-0136 **24590-HLW-**M6-RLD-P0016	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
HPH-SUMP-00005 H-0136 **24590-HLW-**M6-RLD-P0004	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
HFH-SUMP-00002 H-0117 **24590-HLW-**M6-RLD-P0008	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
HFH-SUMP-00005 H-0106 **24590-HLW-**M6-RLD-P0005	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
HSH-SUMP-00003 H-0117 **24590-HLW-**M6-RLD-P0008	Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
HPH-SUMP-00007 H-0106 **24590-HLW-**M6-RLD-	Bubbler	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

P20005							
HSH-SUMP-00009 H-0304A **24590-HLW-**M6-RLD-P20003	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
HSH-SUMP-00009 H-0304A **24590-HLW-**M6-RLD-P20003	Radar	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

[a]Sump locator and name (including P&ID designator) is located on Permit Table III.10.F.C – Containment Building Secondary Containment Systems Including Sumps and Floor Drains.

III.10.G PRETREATMENT PLANT MISCELLANEOUS UNIT SYSTEMS

For purposes of Permit Section III.10.G., where reference is made to WAC 173-303-640, the following substitutions apply:. substitute the terms "Pretreatment Plant Miscellaneous Unit System(s)" for "tank system(s)," "miscellaneous unit(s)" for "tank(s)," "equipment" for "ancillary equipment," and "miscellaneous unit(s) or equipment of a Pretreatment Plant Miscellaneous Unit System" for "component(s)" in accordance with WAC 173-303-680.

III.10.G.1 Approved Waste and Storage Limits

III.10.G.1.a. The Permittees may process, in the Pretreatment Plant Miscellaneous Unit Systems listed in Permit Table III.10.G.A, as approved/modified pursuant to Permit Condition III.10.G.10, all dangerous and mixed waste listed in the Part A Forms, Operating Unit 10, Chapter 1.0 of this Permit, and in accordance with in the WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved pursuant to Permit Condition III.10.C.3. Total Pretreatment Plant Miscellaneous Unit dangerous and mixed waste storage at the Facility ~~shall~~ will not exceed the limits specified in Permit Table III.10.G.A.

III.10.G.1.b. The Permittees may process dangerous and mixed waste only in approved Pretreatment Plant Miscellaneous Unit Systems listed in Permit Table III.10.G.A in accordance with Permit Section III.10.G and in accordance with Operating Unit 10, Chapters 1.0 and 4.0 of this Permit, and Operating Unit 10, Appendices 8.1 through 8.15 of this Permit, as approved pursuant to Permit Conditions III.10.G.10.b. through e. The Permittees ~~shall~~ will limit the total volume of wastes to quantities specified for the individual miscellaneous units listed in Permit Table III.10.G.A.

III.10.G.1.c. The Permittees ~~shall~~ will manage ignitable and reactive, and incompatible waste in accordance with WAC 173-303-395(1). Any Pretreatment Plant Miscellaneous Unit System specified in Permit Tables III.10.G.A and III.10.G.B in which ignitable, reactive or incompatible waste are managed ~~shall~~ will meet the requirements specified in WAC 173-303-640(9) and (10), in accordance to WAC 173-303-680.

III.10.G.1.d. The Permittees ~~shall~~ will ensure all certifications required by specialists (e.g., independent, qualified, registered professional engineer; independent corrosion expert; independent, qualified installation inspector; etc.) use the following statement or equivalent pursuant to Permit Condition III.10.C.10:

"I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new miscellaneous unit system or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector, testing for tightness, etc.), for the following miscellaneous unit system components (e.g., the venting piping, etc.), as required by the Dangerous Waste Regulations,. namely, WAC 173-303-640(3) (applicable paragraphs (i.e., (a) through (g)) in accordance with WAC 173-303-680).

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

III.10.G.1.e. In all future narrative permit submittals, the Permittees ~~shall~~ will include miscellaneous unit system names with the unit designation (e.g., Waste Feed Evaporator Separator Vessels are designated V11002A and V11002B, respectively).

III.10.G.2 Miscellaneous Unit Systems Design and Construction [WAC 173-303-640, in accordance with WAC 173-303-680(2) and WAC 173-303-340].

III.10.G.2.a. The Permittees ~~shall~~ will construct the Pretreatment Plant Miscellaneous Unit Systems identified in Permit Table III.10.G.A, as specified in Operating Unit 10, Appendices 8.1 through 8.14 of this Permit, as approved pursuant to Permit Conditions III.10.G.10.b., III.10.G.10.c., and III.10.G.10.d.

III.10.G.2.b. The Permittees ~~shall~~ will construct secondary containment systems for the Pretreatment Plant Miscellaneous Unit Systems identified in Permit Tables III.10.G.A and III.10.G.B, as specified in Operating Unit 10, Appendices 8.2, 8.4 through 8.14 of this Permit, as approved pursuant to Permit Conditions III.10.G.10.b., III.10.G.10.c., and III.10.G.10.d.

III.10.G.2.c. Modifications to approved design, plans, and specifications in Operating Unit 10 of this Permit for the Pretreatment Plant Miscellaneous Unit Systems ~~shall~~ will be allowed only in accordance with Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g., III.10.C.9.d., e., and h.

III.10.G.3 Miscellaneous Unit System Installation and Certification [WAC 173-303-640, in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-340].

III.10.G.3.a. The Permittees must ensure that proper handling procedures are adhered to in order to prevent damage to Pretreatment Plant Miscellaneous Unit Systems during installation. Prior to covering, enclosing, or placing a new Pretreatment Plant Miscellaneous Unit System(s) or component(s) in use, an independent, qualified, installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of similar systems or components, must inspect the system for the presence of any of the following items:

III.10.G.3.a.i. Weld breaks;

III.10.G.3.a.ii Punctures;

III.10.G.3.a.iii. Scrapes of protective coatings;

III.10.G.3.a.iv. Cracks;

III.10.G.3.a.v. Corrosion;

III.10.G.3.a.vi. Other structural damage or inadequate construction/installation;

III.10.G.3.a.vii. All discrepancies must be remedied before the Pretreatment Plant Miscellaneous Unit Systems are covered, enclosed, or placed in use [WAC 173-303-640(3)(c) in accordance with WAC 173-303-680(2) and (3)].

III.10.G.3.b. For Pretreatment Plant Miscellaneous Unit Systems or components that are placed underground and that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous substance. The backfill must be installed so that it is placed completely around the miscellaneous unit and compacted to ensure that the miscellaneous unit and piping are fully and uniformly supported [WAC 173-303-640(3)(d), in accordance with WAC 173-303-680(2) and (3)].

III.10.G.3.c. The Permittees must test for tightness all new Pretreatment Plant miscellaneous units and equipment, prior to being covered, enclosed, or placed into use. If the Pretreatment Plant Miscellaneous Unit Systems are found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the Pretreatment Plant Miscellaneous Units Systems being covered, enclosed, or placed in use [WAC 173-303-640(3)(e), in accordance with WAC 173-303-680(2) and (3)].

III.10.G.3.d. The Permittees must ensure Pretreatment Plant Miscellaneous Unit Systems equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction [WAC 173-303-640(3)(f), in accordance with WAC 173-303-680(2) and (3)].

III.10.G.3.e. The Permittees must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided in Operating Unit 10, Appendices

8.9 and 8.11 as approved pursuant to Permit Conditions III.10.G.10.b.i., III.10.G.10.b.iv., III.10.G.10.b.v., III.10.G.10.c.i., III.10.G.10.c.iv., III.10.G.10.c.v., and III.10.G.10.d.i., III.10.G.10.d.iv. III.10.G.10.d.v., or other corrosion protection if Ecology believes other corrosion protection is necessary to ensure the integrity of the Pretreatment Plant Miscellaneous Unit Systems during use of the Pretreatment Plant Miscellaneous Unit Systems. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-640(3)(g), in accordance with WAC 173-303-680(2) and (3)].

III.10.G.3.f. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will obtain, and keep on file in the WTP Unit operating record, written statements by those persons required to certify the design of the Pretreatment Plant Miscellaneous Unit Systems and supervise the installation of the Pretreatment Plant Miscellaneous Unit Systems, as specified in WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), in accordance with WAC 173-303-680, attesting that each Pretreatment Plant Miscellaneous Unit System and corresponding containment system listed in Permit Tables III.10.G.A and III.10.G.B, as approved/modified pursuant to Permit Condition III.10.G.10., were properly designed and installed, and that repairs, in accordance with WAC 173-303-640(3)(c) and (e), were performed [WAC 173-303-640(3)(a), WAC 173-303-640(3)(h), in accordance with WAC 173-303-680(3)].

III.10.G.3.g. The independent Pretreatment Plant Miscellaneous Unit System installation inspection and subsequent written statements ~~shall~~ will be certified in accordance with WAC 173-303-810(13)(a) as modified pursuant to Permit Condition III.10.G.1.d., comply with all requirements of WAC 173-303-640(3)(h), in accordance with WAC 173-303-680, and ~~shall~~ will consider, but not be limited to, the following miscellaneous unit system installation documentation:

III.10.G.3.g.i. Field installation report with date of installation;

III.10.G.3.g.ii. Approved welding procedures;

III.10.G.3.g.iii. Welder qualifications and certification;

III.10.G.3.g.iv. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1, American Petroleum Institute (API) Standard 620, or Standard 650 as applicable;

III.10.G.3.g.v. Tester credentials;

III.10.G.3.g.vi. Field inspector credentials;

III.10.G.3.g.vii. Field inspector reports;

III.10.G.3.g.viii. Field waiver reports; and

III.10.G.3.g.ix. Non-compliance reports and corrective action (including field waiver reports) and repair reports.

III.10.G.4 Integrity Assessments [WAC 173-303-340 and WAC 173-303-640, in accordance with WAC 173-303-680(2) and (3)].

III.10.G.4.a. The Permittees ~~shall~~ will ensure periodic integrity assessments are conducted on the Pretreatment Plant Miscellaneous Unit Systems listed in Permit Table III.10.G.A, as approved/modified pursuant to Permit Condition III.10.G.10., over the term of this Permit in accordance with WAC173-303-680(2) and (3) as specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program and schedule in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.G.10.e.i. and III.10.C.5.c. Results of the integrity assessments ~~shall~~ will be included in the WTP Unit operating record until ten (10) years after post-closure, or corrective action is complete and certified, whichever is later.

III.10.G.4.b. The Permittees ~~shall~~ will address problems detected during Pretreatment Plant Miscellaneous Unit Systems integrity assessments specified in Permit Condition III.10.G.4.a. following the integrity assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.G.10.e.i. and III.10.C.5.c.

III.10.G.4.c. The Permittees must immediately and safely remove from service any Pretreatment Plant Miscellaneous Unit System or secondary containment system which through an integrity assessment is found to be "unfit for use" as defined in WAC 173-303-040, following Permit Condition III.10.G.5.j.i. through iv., and vi. The affected Pretreatment Plant Miscellaneous Unit or secondary containment system must be either repaired or closed in accordance with Permit Condition III.10.G.5.j.v. [WAC 173-303-640(7)(e) and (f) and WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

III.10.G.5 Miscellaneous Unit Management Practices

III.10.G.5.a. No dangerous and/or mixed waste ~~shall~~ will be managed in the Pretreatment Plant Miscellaneous Unit Systems unless the operating conditions, specified under Permit Condition III.10.G.5, are complied with.

III.10.G.5.b. The Permittees ~~shall~~ will install and test all process and leak detection system monitoring/instrumentation, as specified in Permit Table III.10.G.C, as approved/modified pursuant to Permit Condition III.10.G.10, in accordance with Operating Unit 10, Appendices 8.1, 8.2, and 8.14 of this Permit, as approved pursuant to Permit Condition III.10.G.10.d.x.

III.10.G.5.c. The Permittees ~~shall~~ will not place dangerous and/or mixed waste, treatment reagents, or other materials in the Pretreatment Plant Miscellaneous Unit Systems if these substances could cause the systems to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a), in accordance with WAC 173-303-680(2)].

III.10.G.5.d. The Permittees ~~shall~~ will operate the Pretreatment Plant Miscellaneous Unit Systems to prevent spills and overflows using the description of controls and practices, as required under WAC 173-303-640(5)(b), described in Permit Condition III.10.C.5, and Operating Unit 10, Appendix 8.15 of this Permit, as approved pursuant to Permit Condition III.10.G.10.e.iv. [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(c)(ix)].

III.10.G.5.e. For routinely non-accessible Pretreatment Plant Miscellaneous Unit Systems, as specified in Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition III.10.G.10.e.vi., the Permittees ~~shall~~ will mark all routinely non-accessible Pretreatment Plant Miscellaneous Unit System access points with labels or signs to identify the waste contained in the units. The label, or sign, must be legible at a distance of at least fifty (50) feet and must bear a legend which identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the miscellaneous unit system(s). For the purposes of this Permit condition, "routinely non-accessible" means personnel are unable to enter these areas while waste is being managed in them [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

III.10.G.5.f. For all Pretreatment Plant Miscellaneous Unit Systems not addressed in Permit Condition III.10.G.5.e, the Permittees ~~shall~~ will mark all these miscellaneous unit systems holding dangerous and/or mixed waste with labels or signs to identify the waste contained in the unit. The labels, or sign, must be legible at a distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the miscellaneous unit system(s) [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

III.10.G.5.g. The Permittees ~~shall~~ will ensure that the secondary containment systems for Pretreatment Plant Miscellaneous Unit Systems listed in Permit Tables III.10.G.A and III.10.G.B, as

approved/modified pursuant to Permit Condition III.10.G.10, are free of cracks or gaps to prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the system to the soil, ground water, or surface water at any time waste is in the Pretreatment Plant Miscellaneous Units System. Any indication that a crack or gap may exist in the containment systems ~~shall~~ will be investigated and repaired in accordance with Operating Unit 10, Appendix 8.15 of this Permit, as approved pursuant to Permit Condition III.10.G.10.e.v. [WAC 173-303–640(4)(b)(i), WAC 173-303–640(4)(e)(i)(C), and WAC 173-303-640(6) in accordance with WAC 173-303-680(2) and (3), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-320].

III.10.G.5.i. An impermeable coating, as specified in Operating Unit 10, Appendices 8.4, 8.5,8.7, 8.9, 8.11, and 8.12 of this Permit, as approved pursuant to Permit Condition III.10.G.10.b.v. of this Permit, ~~shall~~ will be maintained for all concrete containment systems and concrete portions of containment systems for each Pretreatment Plant Miscellaneous Unit System listed in Permit Tables III.10.G.A and III.10.G.B, as approved/modified pursuant to Permit Condition III.10.G.10 [concrete containment systems that do not have a liner pursuant to WAC-173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and have construction joints, ~~shall~~ will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in accordance with WAC 173-303-680(2)]. The coating ~~shall~~ will prevent migration of any dangerous and mixed waste into the concrete. All coatings ~~shall~~ will meet the following performance standards:

III.10.G.5.i.i. The coating must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present;

III.10.G.5.i.ii. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical damage to the coating or lining can be identified and remedied before dangerous and mixed waste III.10.G.5.i.could migrate from the system; and,

III.10.G.5.i.iii. The coating must be compatible with the dangerous and mixed waste, treatment reagents, or other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(i)(i)(A)].

III.10.G.5.j. The Permittees ~~shall~~ will inspect all secondary containment systems for the Pretreatment Plant Miscellaneous Unit Systems listed in Permit Tables III.10.G.A and III.10.G.B., as approved/modified pursuant to Permit Condition III.10.G.10., in accordance with the Inspection Schedule specified in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.G.10.e.i. and III.10.C.5.c., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-806(4)(i)(i)(B)]:

III.10.G.5.j.i. Immediately and safely stop the flow of dangerous and/or mixed waste into the miscellaneous unit system or secondary containment system;

III.10.G.5.j.ii. Determine the source of the dangerous and/or mixed waste;

III.10.G.5.j.iii. Remove the waste from the containment area in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed waste removed from containment areas of miscellaneous unit systems ~~shall~~ will be, as a minimum, managed as dangerous and/or mixed waste;

III.10.G.5.j.iv. If the cause of the release was a spill that has not damaged the integrity of the miscellaneous unit system, the Permittees may return the miscellaneous unit system to service in accordance with WAC 173-303-680(2) and (3), as specified in WAC 173-303-640(7)(e)(ii). In such a case, the Permittees ~~shall~~ will take action to ensure the incident that caused liquid to enter the containment system will not reoccur [WAC 173-303-320(3)];

III.10.G.5.j.v. If the source of the dangerous and/or mixed waste is determined to be a leak from a the primary Pretreatment Plant Miscellaneous Unit System into the secondary containment system, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees must comply with the requirements of WAC 173-303-640(7), and take the following actions:

A Close the miscellaneous unit following procedures in WAC 173-303-640(7)(e)(i) and in accordance with WAC 173-303-680, and Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8; or

B. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition III.10.G.1.d.) the Pretreatment Plant Miscellaneous Unit System in accordance with Operating Unit 10, Appendix 8.15 of this Permit, as approved pursuant to Permit Condition III.10.G.10.e.v. before the Pretreatment Plant Miscellaneous Unit System is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

III.10.G.5.j.vi. The Permittees ~~shall~~ will document, in the operating record, actions/procedures taken to comply with i. through v. above, as specified in WAC 173-303-640(6)(d) and in accordance with WAC 173-303-680(2) and (3).

III.10.G.5.j.vii. In accordance with WAC 173-303-680(2) and (3), the Permittees ~~shall~~ will notify and report releases to the environment to Ecology as specified in WAC 173-303-640(7)(d).

III.10.G.5.k. If liquids (e.g., Dangerous and/or mixed waste leaks and spills, precipitation, fire water, liquids from damaged or broken pipes) cannot be removed from the secondary containment system within twenty-four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of discovery. The notification ~~shall~~ will provide the information in A., B., and C. listed below. The Permittees ~~shall~~ will provide Ecology with a written demonstration, within seven (7) business days, identifying at a minimum [WAC 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-680(3) and WAC 173-303-806(4)(i)(i)(B)]:

A. Reasons for delayed removal;

B. Measures implemented to ensure continued protection of human health and the environment; and

C. Current actions being taken to remove liquids from secondary containment.

III.10.G.5.l. The Permittees ~~shall~~ will operate the Pretreatment Plant Miscellaneous Unit Systems in accordance with Operating Unit 10, Chapter 4.0 as updated pursuant to Permit Condition III.10.G.10.e.vi. and Appendix 8.15 of this Permit, as approved pursuant to Permit Condition III.10.G.10.e., and the following:

III.10.G.5.l.i. The Permittees ~~shall~~ will operate the Pretreatment Plant Miscellaneous Unit Systems in order to maintain the systems and process parameters listed in Permit Table III.10.G.C. as approved/modified pursuant to Permit Condition III. 10.G.10., within the operating trips and operating ranges specified in Permit Table III.10.G.C., and consistent with assumptions and basis which are reflected in Operating Unit 10, Appendix 6.3.1, as approved pursuant to Permit Condition III.10.C.11.b. [WAC 173-303-815(2)(b)(ii) and WAC 173-303-680(2) and (3)]. For the purposes of this Permit Condition, Operating Unit 10, Appendix 6.3.1. ~~shall~~ will be superceded by Appendix 6.4.1. upon its approval pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d.

III.10.G.5.l.ii. The Permittees ~~shall~~ will calibrate/function test the instruments listed in Permit Table III.10.G.C., in accordance with Operating Unit 10, Appendix 8.15, as approved pursuant to Permit Condition III.10.G.10.e.xii.

III.10.G.5.m. For any portion of the Pretreatment Plant Miscellaneous Unit Systems which have the potential for formation and accumulation of hydrogen gases, the Permittees ~~shall~~ will operate the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

III.10.G.5.n. For each miscellaneous unit holding dangerous waste which are acutely or chronically toxic by inhalation, the Permittees ~~shall~~ will operate the system to prevent escape of vapors, fumes, or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].

III.10.G.6 Air Emissions

III.10.G.6.a. Treatment effectiveness, feed-rates, and operating rates for dangerous and mixed waste systems and sub-systems contained in the Pretreatment Plant (as specified in Permit Tables III.10.E.A, III.10.F.A, and III.10.G.A, as approved/modified pursuant to Permit Conditions III.10.E.9., III.10.F.5., III.10.G.10., respectively) ~~shall~~ will be as specified in Permit Sections III.10.E, III.10.F, and III.10.G, and consistent with the assumptions and basis reflected in Operating Unit 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating Unit 10, Appendix 6.3.1 ~~shall~~ will be superceded by Appendix 6.4.1, upon its approval, pursuant to either Permit Condition III.10.C.11.c. or III.10.C.11.d. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].

III.10.G.6.b. Compliance with Permit Condition III.10.G.6.a. of this Permit ~~shall~~ will be regarded as operating within the emission limits specified in Permit Table III.10.G.D., as approved pursuant to Permit Conditions III.10.C.11.b., III.10.C.11.c., or III.10.C.11.d. of this Permit.

III.10.G.6.c. All air pollution control devices and capture systems in the Pretreatment Plant Miscellaneous Unit Systems ~~shall~~ will be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants and to minimize process upsets. Procedures for ensuring that the above equipment is properly operated and maintained so as to minimize the emission of air contaminants and process upsets ~~shall~~ will be established.

III.10.G.6.d. The Permittees ~~shall~~ will ensure that for all dangerous and/or mixed waste areas, systems, and units contained in the Pretreatment Plant (as specified in Permit Tables III.10.E.A, III.10.F.A, and III.10.G.A, as approved pursuant to Permit Conditions III.10.E.9.e.xii., III.10.F.7.d.iv., and III.10.G.10.e.ix., respectively), the Pretreatment Vessel Vent Process System specified in Permit Table III.10.G.A.i ~~shall~~ will be in operation prior to waste being introduced into these dangerous and/or mixed waste areas, systems, and units contained in the Pretreatment Building. At any time the Pretreatment Vessel Vent Process System ceases to operate or produces insufficient vacuum to recover emissions from the areas, systems, or units, the Permittees ~~shall~~ will not commence new treatment activities within the dangerous and mixed waste areas, systems, or units contained in the Pretreatment Building, and take measures to minimize evolution of emissions from on-going treatment, and ~~shall~~ will not receive new dangerous and/or mixed waste shipments into the Pretreatment Building. The Permittees ~~shall~~ will not re-commence new treatment activities until the Pretreatment Vessel Vent Process System is operational and producing sufficient vacuum to recover emissions.

III.10.G.7 Inspections [WAC 173-303-680(3)]

III.10.G.7.a. The Permittees ~~shall~~ will inspect the Pretreatment Plant Miscellaneous Unit Systems in accordance with the Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in accordance with Permit Condition III.10.C.5.c.

III.10.G.7.b. The inspection data for Pretreatment Plant Miscellaneous Unit Systems ~~shall~~ will be recorded, and the records ~~shall~~ will be placed in the WTP Unit operating record for the Pretreatment Plant Miscellaneous Unit Systems, in accordance with Permit Condition III.10.C.4.

III.10.G.8 Recordkeeping

The Permittees ~~shall~~ will record and maintain in the WTP Unit operating record for the Pretreatment Plant Miscellaneous Unit Systems, all monitoring, calibration, maintenance, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Conditions III.10.C.4 and III.10.C.5.

III.10.G.9 Closure

The Permittees ~~shall~~ will close the Pretreatment Plant Miscellaneous Unit Systems in accordance with Operating Unit 10, Chapter 11.0, as approved pursuant to Permit Condition III.10.C.8.

III.10.G.10 Compliance Schedule

III.10.G.10.a. All information identified for submittal to Ecology in a. through e. of this compliance schedule must be signed and certified in accordance with requirements in WAC 173-303-810(12), as modified in accordance with Permit Condition III.10.G.1.d. [WAC 173-303-806(4)].

III.10.G.10.b. The Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to construction of each secondary containment and leak detection system for the Pretreatment Plant Miscellaneous Unit Systems (per level) as identified in Permit Tables III.10.G.A and III.10.G.B, engineering information as specified below, for incorporation into Operating Unit 10, Appendices 8.2, 8.4, 8.5, 8.7, 8.8, 8.9, 8.11, and 8.12 of this Permit. At a minimum, engineering information specified below will show the following as described in WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings and information on sumps and floor drains):

III.10.G.10.b.i. IQRPE Reports (specific to foundation, secondary containment, and leak detection system) ~~shall~~ will include review of design drawings, calculations, and other information on which the certification report is based and ~~shall~~ will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 8.0 of this Permit may be included in the report by reference and should include drawing and document numbers. IQRPE Reports ~~shall~~ will be consistent with the information separately provided in ii. through ix. below [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];

III.10.G.10.b.ii. Design drawings (General Arrangement Drawings, in plan and cross sections) and specifications for the foundation, secondary containment, including, liner installation details, and leak detection methodology [Note: leak detection systems for areas where daily, direct, or remote visual inspection is not feasible, ~~shall~~ will be continuous in accordance with WAC 173-303-640(4)(e)(iii)(C)]. These items should show the dimensions, volume calculations, and location of the secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks, floor drains [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];

III.10.G.10.b.iii. The Permittees ~~shall~~ will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the secondary containment system. This information ~~shall~~ will demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.b.iv. A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.G.10.b.v. Secondary containment/foundation and leak detection systems materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials), as applicable [WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.G.10.b.vi. Detailed description of how the secondary containment for each miscellaneous unit system will be installed in compliance with WAC 173-303-640(3)(c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B);

III.10.G.10.b.vii. Submit Permit Table III.10.G.B. completed to provide for all secondary containment sumps and floor drains, the information as specified in each column heading, consistent with information to be provided in i. through vi. above;

III.10.G.10.b.viii. Documentation that secondary containment and leak detection systems will not accumulate hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

III.10.G.10.b.ix. A detailed description of how miscellaneous unit design provides access for conducting future miscellaneous unit integrity assessments [WAC 173-303-640(3)(b) and WAC 173-303-806(4)(i)(i)(B)].

III.10.G.10.c. The Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to installation of each Pretreatment Plant Miscellaneous Unit System as identified in Permit Tables III.10.G.A and III.10.G.B, engineering information as specified below, for incorporation into Operating Unit 10, Appendix 8.1 through 8.14 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640 and in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

III.10.G.10.c.i. IQRPE Reports (specific to miscellaneous unit) ~~shall~~ will include review of design drawings, calculations, and other information on which the certification report is based and ~~shall~~ will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 8.0 of this Permit may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports ~~shall~~ will be consistent with the information separately provided in ii. through xi. below and the IQRPE Report specified in Permit Condition III.10.G.10.b.i. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

III.10.G.10.c.ii. Design drawings (General Arrangement Drawings in plan and cross sections, Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems], and Mechanical Drawings) and specifications, and other information specific to miscellaneous units (to show location and physical attributes of each miscellaneous unit), [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

III.10.G.10.c.iii. Miscellaneous unit design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the miscellaneous unit(s). Structural support calculations specific to off-specification, non-standard, and field fabricated miscellaneous units ~~shall~~ will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.c.iv. A description of materials and equipment used to provide corrosion protection for external metal components in contact with water, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.G.10.c.v. Miscellaneous unit materials selection documentation (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

III.10.G.10.c.vi. Miscellaneous unit vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, ~~shall~~ will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

III.10.G.10.c.vii. System Description ~~(process)~~ related to miscellaneous units ~~shall~~ will be submitted for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)].

III.10.G.10.c.viii. Mass and energy balance for normal projected operating conditions used in developing the Piping and Instrumentation Diagrams and the Process Flow Diagrams, including assumptions and formulas used to complete the mass and energy balance, so that they can be independently verified for incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

III.10.G.10.c.ix. A detailed description of how the miscellaneous unit will be installed in compliance with WAC 173-303-640(3)(c), (d), and (e), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B);

III.10.G.10.c.x. Documentation that miscellaneous units are designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

III.10.G.10.c.xi. Documentation that miscellaneous units are designed to prevent escape of vapors and emissions of acutely or chronically toxic (upon inhalation) EHW, for incorporation into the Administrative Record [WAC 173-303-640(5)(e), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.d. The Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., prior to installation of equipment as identified in Permit Tables III.10.G.A and III.10.G.B, not addressed in Permit Condition III.10.G.10.c., engineering information as specified below for incorporation into Operating Unit 10, Appendices 8.1through 8.14 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

III.10.G.10.d.i. IQRPE Reports (specific to equipment) ~~shall~~ will include a review of design drawings, calculations, and other information as applicable, on which the certification report is based. The reports ~~shall~~ will include, but not be limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 8.0 of this Permit may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports ~~shall~~ will be consistent with the information provided separately in ii. through xiii. below and the IQRPE Reports specified in Permit Conditions III.10.G.10.b. and III.10.G.10.c. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.G.10.d.ii. Design drawings (Process Flow Diagrams, Piping and Instrumentation Diagrams [including pressure control systems]) specifications and other information specific to equipment (these drawings should include all equipment such as pipe, valves, fittings, pumps, instruments, etc) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.G.10.d.iii. The Permittees ~~shall~~ will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the equipment [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(f), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.d.iv. A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil and water, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

III.10.G.10.d.v. Materials selection documentation for equipment (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

III.10.G.10.d.vi. Vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, for equipment ~~shall~~ will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(iv)];

III.10.G.10.d.vii. Miscellaneous unit, equipment, and leak detection system instrument control logic narrative description (e.g., software functional specifications, descriptions of fail-safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].

III.10.G.10.d.viii. System Descriptions ~~(process)~~ related to equipment and system descriptions related to leak detection systems, (including instrument control logic and narrative descriptions), for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

III.10.G.10.d.ix. A detailed description of how the equipment will be installed and tested [WAC 173-303-640(3)(c) through (e) and WAC 173-303-640(4)(b) and (c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.d.x. For process monitoring, control, and leak detection system instrumentation for the WTP Unit Miscellaneous Unit Systems as identified in Permit Table III.10.G.C, a detailed description of how the process monitoring, control, and leak detection system instrumentation will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi), and WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.d.xi. Mass and energy balance for projected normal operating conditions, used in developing the Piping and Instrumentation Diagrams and Process Flow Diagrams, including assumptions and formulas used to complete the mass and energy balance, so that they can be independently verified, for incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

III.10.G.10.d.xii. Documentation that miscellaneous units are designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)].

III.10.G.10.d.xiii. Leak detection system documentation (e.g. vendor information, etc.) consistent with information submitted under Permit Condition III.10.G.10.c.ii. and Permit Conditions III.10.G.10.d.ii., vii., viii., and x. above, ~~shall~~ will be submitted for incorporation into the Administrative Record.

III.10.G.10.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following as specified below for incorporation into Operating Unit 10, Appendix 8.15, except Permit Condition III.10.G.10.e.i., which will be incorporated into Operating Unit 10, Chapter 6.0, of this Permit. All information provided under this permit condition must be consistent with information provided pursuant to

Permit Conditions III.10.G.10.b., c., d., and e.; III.10.C.3.e., and III.10.C.11.b., as approved by Ecology.

III.10.G.10.e.i. Integrity assessment program and schedule for the Pretreatment Plant Miscellaneous Unit Systems ~~shall~~ will address the conducting of periodic integrity assessments on the Pretreatment Plant Miscellaneous Unit Systems over the life of the systems, as specified in Permit Condition III.10.G.10.b.ix. and WAC 173-303-640(3)(b), in accordance with WAC 173-303-680, and descriptions of procedures for addressing problems detected during integrity assessments. The schedule must be based on past integrity assessments, age of the system, materials of construction, characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of dangerous and/or mixed waste or accumulated liquid in the secondary containment system within twenty-four (24) hours WAC 173-303-640(4)(c)(iii). Detection of a leak of at least 0.1 gallons per hour within twenty-four (24) hours is defined as being able to detect a leak within twenty-four (24) hours. Any exceptions to this criteria must be approved by Ecology in accordance with WAC 173-303-680, WAC 173-303-640(4)(c)(iii), and WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and accumulated liquids can be removed from the secondary containment system within twenty-four (24) hours [WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices are in place to prevent spills and overflows from the Pretreatment Plant Miscellaneous Unit Systems, or containment systems, in compliance with WAC 173-303-640(5)(b)(i) through (iii), in accordance with WAC 173-303-680 [WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.e.v. Description of procedures for investigation and repair of the Pretreatment Plant Miscellaneous Unit Systems [WAC 173-303-640(6) and WAC 173-303-640(7)(e) and (f), in accordance with WAC 173-303-680, WAC 173-303-320, WAC 173-303-806(4)(a)(v), and WAC 173-303-806(4)(i)(i)(B)];

III.10.G.10.e.vi. Updated Chapter 4.0, Narrative Descriptions, Tables and Figures as identified in Permit Tables III.10.G.A and III.10.G.B., as modified pursuant to Permit Condition III.10.G.10.e.ix., and updated to identify routinely non-accessible Pretreatment Plant Miscellaneous Unit Systems [WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.G.10.e.vii. Descriptions of procedures for management of ignitable and reactive, and incompatible dangerous and/or mixed waste, in accordance with WAC 173-303-640(9) and (10), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B).

III.10.G.10.e.viii. A description of the tracking system used to track dangerous and/or mixed waste generated throughout the Pretreatment Plant Miscellaneous Unit Systems, pursuant to WAC 173-303-380.

III.10.G.10.e.ix. Permit Table III.10.G.A, amended as follows [WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)]:

A. Under column 1, update and complete list of dangerous and mixed waste Pretreatment Plant Miscellaneous Unit Systems, including plant items which comprise each system (listed by item number).

B. Under column 2, update and complete system designations.

C. Under column 3, replace the 'Reserved' with the Operating Unit 10, Appendix 8.0 subsections specific to miscellaneous unit systems as listed in column 1.

D. Under column 4, update and complete list of narrative description tables and figures.

E. Under column 5, update and complete maximum operating volume ~~maximum capacity~~ for each miscellaneous unit, as applicable.

F. Permit Table III.10.G.A.i., amended as follows:

1. Under column 1, update and complete list of plant items that comprise the Pretreatment Plant Vessel Vent System (listed by item number).
2. Under column 2, update and complete designations.
3. Under column 3, replace the 'Reserved' with the Operating Unit 10, Appendix 8.0, subsections (e.g., 9.1, 9.2, etc.) specific to systems as listed in column 1.
4. Under column 4, update and complete list of narrative description tables and figures.

III.10.G.10.e.x. Permit Table III.10.G.C. ~~shall~~ will be completed for Pretreatment Plant Miscellaneous Unit System process and leak detection system monitors and instruments (to include, but not be limited to: instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH, level, humidity, and emissions) to provide the information as specified in each column heading. Process and leak detection system monitors and instruments for critical systems as specified in Operating Unit 10, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b.and for operating parameters as required to comply with Permit Condition III.10.C.3.e.iii. ~~shall~~ will be addressed. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this permit condition [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

III.10.G.10.e.xi. Supporting documentation for operating trips and expected operating range as specified in Permit Table III.10.G.C., as approved pursuant to Permit Condition III.10.G.10.e.x. [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(B), WAC 173-303-806(4)(i)(iv), and WAC 173-303-806(4)(i)(v)];

III.10.G.10.e.xii. Documentation of process and leak detection instruments and monitors (as listed in Permit Table III.10.G.C.) for the Pretreatment Plant Miscellaneous Unit Systems to include, but not be limited to, the following [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)]:

A. Procurement Specifications

B. Location used

C. Range, precision, and accuracy

D. Detailed descriptions of calibration/functionality test procedures (e.g., method number [ASTM]) or provide a copy of manufacturer's recommended calibration procedures.

E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists, including justification for calibration, inspection and maintenance frequencies, criteria for identifying instruments found to be significantly out of calibration, and corrective action to be taken for instruments found to be significantly out of calibration (e.g., increasing frequency of calibration, instrument replacement, etc.)

F. Equipment instrument control logic narrative description (e.g., software functional specifications, descriptions of fail-safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].

Table III.10.G.A – Pretreatment Plant Miscellaneous Unit Systems

Miscellaneous Unit System Description[a]	Miscellaneous Unit System Designation	Description Drawings	Narrative Description, Tables, & Figures	~~Maximum Capacity~~ Maximum Operating Volume (gallons)
Waste Feed Evaporation Process System (FEP) [Comprised of the following miscellaneous units and equipment: Waste Feed Evaporator Feed Vessel- FEP-VSL- 00017A/B[b], Waste Feed Evaporator Separator Vessels- FEP-SEP-00001A/B,LAW Feed Evaporator Condensate ~~Pot~~Vessel- FEP-VSL-00005[b],	FEP	24590-PTF -M5-V17T-P0004001 -M5-V17T-P0004002 -M6-FEP-P0001 -M6-FEP-P0002 -M6-FEP-P0003 -M6-FEP-P0004 -M6-FEP-P0005 ~~-M6-FEP-P0006~~ ~~-M6-FEP-P0007~~ ~~-M6-FEP-P0008~~ -MVD-FEP-P0001 -MVD-FEP-P0002 -MVD-FEP-P0003 -MVD-FEP-P0006 -MVD-FEP-P0007 -MV-FEP-P0001 -MV-FEP-P0002 -N1D-FEP-P0002 -N1D-FEP-P0003 -N1D-FEP-P0004 -N1D-FEP-P0005 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0008 -P1-P01T-P0009	Section 4.1.2.2.; Figure 4A-1, 4A-2, and 4A-6 of Operating Unit 10, Chapter 4 of this Permit.	FEP-SEP-00001A = 21,240 FEP-SEP-00001B = 21,240

		-P1-P01T-P0015 -P1-P01T-P0016		
Waste Evaporator Primary Condensers FEP-COND-00001A-B, , Waste Evaporator Inter Condensers FEP-COND-00002A-B, Waste Evaporator After Condensers FEP-COND-00003A-B	FEP	**24590-PTF** -M5-V17T-P0004001 -M5-V17T-P0004002 -MED-FEP-P0003 -MED-FEP-P0004 -MED-FEP-P0005 -MED-FEP-P0006 -MED-FEP-P0007 -MED-FEP-P0008 -ME-FEP-COND-00001A/B -ME-FEP-COND-00002A/B ~~-MV-FEP-P0002~~ -N1D-FEP-P0008 -N1D-FEP-P0009 -N1D-FEP-P0010 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0015 -P1-P01T-P0016	Section 4.1.2.2.; Figure 4A-1, 4A-2, and 4A-6 of Operating Unit 10, Chapter 4 of this Permit.	RESERVED
Reboilers FEP-RBLR-00001A], ~~Demisters, and Pumps and associated equipment~~	FEP	**-24590-PTF** -M5-V17T-P0004001 -M5-V17T-P0004002 -MED-FEP-P0010 -N1D-FEP-P0007 -P1-P01T-P0001 -P1-P01T-P0002	Section 4.1.2.2.; Figure 4A-1, 4A-2, and 4A-6 of Operating Unit 10, Chapter 4 of this Permit.	RESERVED

		-P1-P01T-P0007 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0015 -P1-P01T-P0016		
Cesium Nitric Acid Recovery Process System (CNP)[Comprised of the following miscellaneous units and equipment: Cs Evaporator Separator Vessel (CNP-EVAP-00001) Eluate Contingency Storage Vessel- CNP-VSL-00003 [b], Cs Evaporator Recovered Nitric Acid Vessel- CNP- VSL-00004 [b], Cs Evaporator Eluant Lute Pot VSL-CNP-00001) [b],	CNP	**24590-PTF** -3PS-MEVV-T0001 -3PS-MEVV-T0002 -3PS-MEVV-TP0001 -3PS-MEVV-TP0002 -M5D-CNP-00001 -M5-V17T-P0014 -M6-CNP-P0001 -M6-CNP-P0002 ~~-M6-CNP-P0008~~ ~~-M6-CNP-P0010~~ ~~-MB-CNP-HX-00001~~ -ME-CNP-EVAP-00001 ~~-ME-CNP-HX-00002~~ ~~-ME-CNP-HX-00003~~ ~~-ME-CNP-HX-00004~~ ~~-MED-CNP-P0003~~ ~~-MED-CNP-P0004~~ ~~-MED-CNP-P0005~~ ~~-MED-CNP-P0010~~ ~~-MV-CNP-DISTC-00001~~ -MV-CNP-P0001 -MV-CNP-P0002 -MV-CNP-P0003 -MV-CNP-P0005 -MV-CNP-P0007 -MV-CNP-P0010 ~~-MV-CNP-VSL-00001~~	Section 4.1.2.6.; Figure 4A-1, 4A-2, and 4A-10 of Operating Unit 10, Chapter 4 of this Permit	CNP-EVAP-00001 = RESERVED

		~~-MV-CNP-VSL-00003~~ ~~-MV-CNP-VSL-00004~~ -MVD-CNP-P0003 ~~-MVD-CNP-P0006~~ ~~-MVD-CNP-P0007~~ -MVD-CNP-P0010 -MWD-CNP-P0001 -N1D-CNP-P0005 -N1D-CNP-P0006 -N1D-CNP-P0009 -N1D-CNP-P0011 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0015		
Cs Evaporator Concentrate Reboiler (CNP-HX-00001)	CNP	**24590-PTF** -M5D-CNP-00001 -M5-V17T-P0014 -M6-CNP-P0001 -M6-CNP-P0002 -MB-CNP-HX-00001 -ME-CNP-HX-00002 -ME-CNP-HX-00003 -ME-CNP-HX-00004 -MED-CNP-P0003 -MED-CNP-P0004 -MED-CNP-P0005 -MED-CNP-P0010 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003	Section 4.1.2.6.; Figure 4A-1, 4A-2, and 4A-10 of Operating Unit 10, Chapter 4 of this Permit	RESERVED

		-P1-P01T-P0004 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0015		
Cs Nitric Acid Rectifier Column (CNP-DISTC-00001), ~~Rectifier Overhead~~	CNP	**24590-PTF** ~~-M5D-CNP-00001~~ -M5-V17T-P0014 -MV-CNP-DISTC-00001 -N1D-CNP-P0001 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0015	Section 4.1.2.6.; Figure 4A-1, 4A-2, and 4A-10 of Operating Unit 10, Chapter 4 of this Permit	RESERVED
Treated LAW Evaporation Process System (TLP) [Comprised of the following miscellaneous units and equipment: Treated LAW Evaporator Separator Vessel -TLP-SEP 00001[a], Treated LAW Evaporator Condensate Vessel- TLP-VSL-00002,[b] ~~Process Condensate Hold Vessel V41013[b]~~, LAW SBS Condensate Receipt Vessel -TLP-VSL-00009A/B [b]~~, Reboiler TLP-RBLR-00001, Primary Condenser TLP-COND-00001, Intercondenser TLP-COND-00002, Aftercondenser TLP-COND-00003, Demister TLP-DMST-00001, Pumps and associated equipment)~~	TLP	**24590-PTF** -M5-V17T-P0005 -M6-TLP-P0001 -M6-TLP-P0002 -M6-TLP-P0003 ~~-M6-TLP-P0005~~ ~~-M6-TLP-P0006~~ ~~-M6-TLP-P0007~~ -MVD-TLP-P0001 -MVD-TLP-P0002 -MVD-TLP-P0004 -MVD-TLP-P0005 -MV-TLP-P0001 -MV-TLP-P0002 -N1D-TLP-P0001 -N1D-TLP-P0005 -N1D-TLP-P0006	Section 4.1.2.11; Figure 4A-1, 4A-2, and 4A-16 of Operating Unit 10, Chapter 4 of this Permit	TLP-SEP 00001= 21,240

		-P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0014		
Primary Condenser TLP-COND-00001, Intercondenser TLP-COND-00003, Aftercondenser TLP-COND-00002, ~~Demister TLP-DMST-00001~~	TLP	**24590-PTF** -M5-V17T-P0005 -M6-TLP-P0001 -M6-TLP-P0002 -M6-TLP-P0003 ~~-M6-TLP-P0005~~ ~~-M6-TLP-P0006~~ ~~-M6-TLP-P0007~~ -MED-TLP-P0001 -MED-TLP-P0002 -MED-TLP-P0003 -MV-TLP-P0001 -MV-TLP-P0002 -N1D-TLP-P0002 -N1D-TLP-P0003 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0014	Section 4.1.2.11; Figure 4A-1, 4A-2, and 4A-16 of Operating Unit 10, Chapter 4 of this Permit	RESERVED
	TLP	**24590-PTF** -M5-V17T-P0005 ~~-M6-TLP-P0001~~ ~~-M6-TLP-P0003~~ ~~-M6-TLP-P0005~~ ~~-M6-TLP-P0006~~ ~~-M6-TLP-P0007~~	Section 4.1.2.11; Figure 4A-1, 4A-2, and 4A-16 of Operating Unit 10, Chapter 4 of this Permit	RESERVED

		-MV-TLP-P0001 -MV-TLP-P0002 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0014		
Reboiler (TLP-RBLR-00001)]~~, Pumps and associated equipment~~	TLP	**24590-PTF** -M5-V17T-P0005 ~~-M6-TLP-P0001~~ ~~-M6-TLP-P0003~~ ~~-M6-TLP-P0005~~ ~~-M6-TLP-P0006~~ ~~-M6-TLP-P0007~~ -MV-TLP-P0001 -MV-TLP-P0002 -N1D-TLP-P0011 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0014	Section 4.1.2.11; Figure 4A-1, 4A-2, and 4A-16 of Operating Unit 10, Chapter 4 of this Permit	RESERVED

[a] The Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), Pulse Jet Mixer Exhaust System (PJV), and Pretreatment Treated LAW Evaporator Separator Vessel System (TLP) specified in Permit Table III.10.G.A.i is shared between the Pretreatment Plant Miscellaneous Unit Systems. Any references in this Permit to the individual Pretreatment Plant Miscellaneous Unit Systems are also a reference to the Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), Pulse Jet Mixer Exhaust System (PJV), and Pretreatment Treated LAW Evaporator Separator Vessel System (TLP) Systems. Any reference in this Permit to Permit Table III.10.G.A is also a reference to Permit Table III.10.G.A.i.

[b] Requirements pertaining to the tanks in the Pretreatment Plant Miscellaneous Unit Systems are specified in Section III.10.E. of this Permit.

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

Description	Designation	Description Drawings	Narrative Description, Tables & Figures
Pretreatment Vessel Vent Process System (PVP) [Comprised of the following: Vessel Vent Header Collection Vessel (PVP-VSL-00003[b]), ~~Condensate Collection Vessel (V15038[b]),~~ Caustic Scrubber (PVP-SCB-00002), ~~High Efficiency Mist Eliminators (HEME) (PVP-HEME-00001A/B/C),~~ Vessel Vent HEME Drain Collection Vessel (PVP-VSL-00001[b]) ~~Primary & Secondary High Efficiency Particulate Air Filters~~ ~~Heat Exchanger, Thermal Catalytic Oxidizer (PVP-OXID-00001)~~	PVP	**24590-PTF** -M5-V17T-P0021001 -M5-V17T-P0021004 -M6-PVP-P0002 -M6-PWD-P0044 -MKD-PVP-P0002 -MVD-PVP-P0001 -MV-PVP-P0002 -MV-PVP-P0004 -N1D-PVP-P0001 -N1D-PVP-P0003 -N1D-PVP-P0008 -N1D-PVP-P0009 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0013 -P1-P01T-P0014	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19 of ~~Attachment 51~~ Operating Unit 10, Chapter 4 of this Permit
Electric Heaters (PVP-HTR-00001A/1B/1C),	PVP	**24590-PTF** -M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0008	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit

		~~-P1-P01T-P0009~~ ~~-P1-P01T-P0013~~ ~~-P1-P01T-P0014~~	
High Efficiency Mist Eliminators (HEME) Filters (PVP-HEME-00001A/1B/1C)	PVP	**24590-PTF** -M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0013 -P1-P01T-P0014	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19 of ~~Attachment 51~~ Operating Unit 10, Chapter 4 of this Permit
~~Primary High Efficiency Particulate Air Filters (HEPA) (PVP-HEPA-00001A/1B/1C), Secondary High Efficiency Particulate Air Filters (HEPA) (PVP-HEPA-00002A/2B/2C), High Efficiency Particulate Air Filters (HEPA) (PVP-HEPA-00023/-00024/-00028/-00029/-00030/-00031/-00032/-00033/-00034/-00035)~~	PVP	**24590-PTF** -M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0013 -P1-P01T-P0014	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit
VOC Oxidizer (PVP-OXID-00001)	PVP	**24590-PTF** -M5-V17T-P0021001 -M5-V17T-P0021004 -M6-PVP-P00017 -M6-PVP-P00018 -MKD-PVP-00001 -N1D-PVP-P0002	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit

		-P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0013 -P1-P01T-P0014	
Vessel Vent Scrubbing Liquid Cooler ~~(PVP-HX-00002),~~ Aftercooler (PVP-CLR-00001)	PVP	**24590-PTF** -M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0013 -P1-P01T-P0014	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit
Vessel Vent Carbon Bed Absorbers (PVP-~~ABS~~ ADBR-00001A/B)	PVP	**24590-PTF** -M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0013 -P1-P01T-P0014	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit
Vessel Vent Adsorber Outlet Filter (PVP-FILT-00001A/~~1B~~)	PVP	**24590-PTF**	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19

		-M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0013 -P1-P01T-P0014	of Operating Unit 10, Chapter 4 of this Permit
Stack ~~Pumps~~, and associated equipment]	PVP	**24590-PTF** -M5-V17T-P0021001 -M5-V17T-P0021004 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0013 -P1-P01T-P0014	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit
Process Vessel Vent System (PVV) [Comprised of the following: High Efficiency Particulate Air Filters (HEPA) – Primary (PVV-HEPA-00001A/B), High Efficiency Particulate Air Filters (HEPA)– Secondary (PVV-HEPA-00002A/B)	PVV	**24590-PTF** RESERVED	RESERVED
Vessel Vent Exhaust Fans (PVV-FAN-00001A/B)	PVV	**24590-PTF** M5-V17T-P0021001 -M5-V17T-P0021004 ~~-M6-PVPP0004~~ -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004	Section 4.1.2.17; Figure 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit

		-P1-P01T-P0008 -P1-P01T-P0009 -P1-P01T-P0013 -P1-P01T-P0014	
~~Pumps~~, ~~Fans,~~ Vessel Vent Heaters	PVV	**24590-PTF** RESERVED	RESERVED
PVV Stack and associated equipment]	PVV	**24590-PTF** RESERVED	RESERVED
Pretreatment Pulse Jet Mixer Exhaust Vent System (PJV) Primary HEPA Filters PJV-HEPA-00001A/1B/1C/1D/1E/1F/1G); Secondary HEPA Filter s (PJV-HEPA-00002A/2B/2C/2D/2E/2F)	PJV	**24590-PTF** -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004 -MVD-PJV-P0003 -N1D-PJV-P0001 -P1-P01T-P0001	Section 4.1.2.17; and Figures 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit
~~Electric heaters (PJV-HTR-00002A, PJV-HTR-00003A)~~	PJV	**24590-PTF** -M6-PJV-00011	RESERVED
Exhaust Fans (PJV-FAN-00001A/1B/1C)	PJV	**24590-PTF** -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004 -MVD-PJV-P0003 -N1D-PJV-P0001 -P1-P01T-P0001	Section 4.1.2.17; and Figures 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit
Demisters (PJV-DMST-00002A/2B/2C)	PJV	**24590-PTF** -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004 -MVD-PJV-P0003 -N1D-PJV-P0001	Section 4.1.2.17; and Figures 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit

		-P1-P01T-P0001	
PJV Stack and associated equipment	PJV	**24590-PTF** -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004 -MVD-PJV-P0003 -N1D-PJV-P0001 -P1-P01T-P0001	Section 4.1.2.17; and Figures 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit
PJV Drain Collection Vessel (PJV-VSL-00002)[b]	PJV	**24590-PTF** -M5-V17T-P0021002 -M6-PJV-P0001 -M6-PJV-P0002 -M6-PJV-P0004 -MVD-PJV-P0003 -N1D-PJV-P0001 -P1-P01T-P0001	Section 4.1.2.17; and Figures 4A-1, 4A-2, and 4A-19 of Operating Unit 10, Chapter 4 of this Permit
Pretreatment Treated LAW Evaporator Separator Vessel System (TLP): [Comprised of the following: Treated LAW Evaporator Separator Vessel -TLP-SEP 00001, Treated LAW Evaporator Condensate Vessel- TLP-VSL-00002,[b] LAW SBS Condensate Receipt Vessel -TLP-VSL-00009A/B [b]	TLP	**24590-PTF** -M5-V17T-P0005 -M6-TLP-P0001 -M6-TLP-P0002 -M6-TLP-P0003 -MVD-TLP-P0001 -MVD-TLP-P0002 -MVD-TLP-P0004 -MVD-TLP-P0005 -MV-TLP-P0001 -MV-TLP-P0002 -N1D-TLP-P0001 -N1D-TLP-P0005 -N1D-TLP-P0006 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003	Section 4.1.2.11, Table 4-3 and 4-11; and Figures 4A-1, 4A-2, and 4A-16 of Operating Unit 10, Chapter 4 of this Permit

		-P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0014	
Reboiler TLP-RBLR-00001	TLP	**24590-PTF** -M5-V17T-P0005 -MED-TLP-P0004 -N1D-TLP-P0011 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0014	Section 4.1.2.11, Table 4-3 and 4-11; and Figures 4A-1, 4A-2, and 4A-16 of Operating Unit 10, Chapter 4 of this Permit
Primary Condenser TLP-COND-00001, Intercondenser Aftercondenser TLP-COND-00002, TLP-COND-00003	TLP	**24590-PTF** -M5-V17T-P0005 -MED-TLP-P0001 -MED-TLP-P0002 -MED-TLP-P0003 -N1D-TLP-P0002 -N1D-TLP-P0003 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0014	Section 4.1.2.11, Table 4-3 and 4-11; and Figures 4A-1, 4A-2, and 4A-16 of Operating Unit 10, Chapter 4 of this Permit
Cesium Nitric Acid Recovery System (CNP): [Comprised of the following: Cs Evaporator Primary Condenser (CNP-HX-00002), Cs Evaporator Secondary Condenser (CNP-HX-00003), Cs Evaporator After-Condenser (CNP-HX-00004)	CNP	**24590-PTF-** 3PS-MEVV-T0001 -3PS-MEVV-T0002 -M5D-CNP-00001 -M5-V17T-P0014 -M6-CNP-P0001 -M6-CNP-P0002 -M6-CNP-P0010	Section 4.1.2.6; Figure 4A-1, 4A-2, and 4A-10 of Operating Unit 10, Chapter 4 of this Permit

		-MB-CNP-HX-00001 -ME-CNP-EVAP-00001 -ME-CNP-HX-00002 -ME-CNP-HX-00003 -ME-CNP-HX-00004 -N1D-CNP-P0002 -N1D-CNP-P0003 -N1D-CNP-P0012 -P1-P01T-P0001 -P1-P01T-P0002 -P1-P01T-P0003 -P1-P01T-P0004 -P1-P01T-P0009 -P1-P01T-P0010 -P1-P01T-P0011 -3PS-MEVVTP001 -3PS-MEVVTP002	

[a] The Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), Pulse Jet Mixer Exhaust System (PJV), and Pretreatment Treated LAW Evaporator Separator Vessel System (TLP) specified in Permit Table III.10.G.A.i are shared between the Pretreatment Plant Miscellaneous Unit Systems. Any references in this Permit to the individual Pretreatment Plant Miscellaneous Unit Systems are also a reference to the Pretreatment Vessel Vent Process (PVP), Process Vessel Vent Systems (PVV), Pulse Jet Mixer Exhaust System (PJV), and Pretreatment Treated LAW Evaporator Separator Vessel System (TLP) Systems. Any reference in this Permit to Permit Table III.10.G.A is also a reference to Permit Table III.10.G.A.i.

[b] Requirements pertaining to the tanks in the Pretreatment Plant Miscellaneous Unit Systems are specified in Section III.10.E. of this Permit.

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

Sump, Bulge or Floor Drain I.D.# & Room Location	Maximum Sump/Bulge (gallons), or Drain Line (gallons per minute) Capacity	Sump Type/Nominal Operating Volume (gallons)	Sump, Bulge or Drain Line Dimensions (inches) & Materials of Construction	Engineering Description (Drawings No.'s, Specification No.'s etc.)
PVP-BULGE-00001 (Vessel Vent Caustic Scrubber Transfer Pump Bulge)	RESERVED	Dry Sump	RESERVED	**24590-PTF** -M6PVP-P0017 -P1-P10T-P0001
PVP-BULGE-00014 (Vessel Vent Heat Exchanger Bulge)	RESERVED	RESERVED	RESERVED	**24590-PTF** -M6PVP-P0017
P-0112	RESERVED	Dry Sump	RESERVED	**24590-PTF** -P1-P10T-P0001
P-0117	RESERVED	Dry Sump	RESERVED	**24590-PTF** -P1-P10T-P0001
CNP-BULGE-00008 (Cs Nitric Acid Recovery Bulge)	RESERVED	Dry Sump	RESERVED	**24590-PTF** -P1-P10T-P0002
UFP-BULGE-00001/2 (Ultra Filter Bulge)	RESERVED	Dry Sump	RESERVED	**24590-PTF** -P1-P10T-P0003
RESERVED	RESERVED		RESERVED	RESERVED

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

Miscellaneous Unit System Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Failure State	Expected Range	Instrument Accuracy	Operating Trips (Description & Numerical Limits)	Instrument Calibration Method No. and Range
~~PVP-BULGE-00001 (Vessel Vent Caustic Scrubber Transfer Pump Bulge)~~									
PVP-BULGE-00014 (Vessel Vent Heat Exchanger Bulge)	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
PWD-SUMP-00012 P-0117	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
CNP-BULGE-00008 (Cs Nitric Acid Recovery Bulge)	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED
UFP-BULGE-00001/2 (Ultra Filter	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Bulge)									
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.G.D. – Pretreatment Plant Miscellaneous Unit Systems Estimated Emission Rates

Chemicals	CAS Number	Emission Rates (grams /second)
RESERVED	RESERVED	RESERVED

III.10.H LAW Vitrification System – Short Term Miscellaneous Thermal Treatment Unit-Shakedown, Demonstration Test, and Post Demonstration Test

For purposes of Permit Section III.10.H, where reference is made to WAC 173-303-640, the following substitutions apply: substituting the terms "LAW Vitrification System" for "tank system(s)," "sub-system(s)" for "tank(s)," "sub-system equipment" for "ancillary equipment," and "sub-system(s) or sub-system equipment of a LAW Vitrification System" for "component(s)" in accordance with WAC 173-303-680.

III.10.H.1. General Conditions During Shakedown, Demonstration Test, and Post-Demonstration Test for LAW Vitrification System

III.10.H.1.a. Construction and Maintenance [WAC 173-303-640, in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-340].

III.10.H.1.a.i. The Permittees ~~shall~~ will construct the LAW Vitrification System (listed in Permit Tables III.10.H.A and B., as approved/modified pursuant to Permit Condition III.10.H.5.) as specified in Permit Condition III.10.H.1. and Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 9.1 through 9.15 and 9.17 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.a. through d., and III.10.H.5.f.

III.10.H.1.a.ii. The Permittees ~~shall~~ will construct all containment systems for the LAW Vitrification System as specified in Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 9.2 and 9.4 through 9.14 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.a. through d.

III.10.H.1.a.iii. The Permittees ~~shall~~ will ensure all certifications required by specialists (e.g., independent, qualified registered professional engineer, independent corrosion expert, independent, qualified installation inspector, etc.) use the following statement or equivalent pursuant to Permit Condition III.10.C.10.:

"I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new LAW Vitrification System or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector, testing for tightness, etc.), for the following LAW Vitrification System components (e.g., the venting piping, etc.), as required by the

Dangerous Waste Regulations, namely, WAC 173-303-640(3) (applicable paragraphs (i.e., (a) through (g)) in accordance with WAC 173-303-680).

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

III.10.H.1.a.iv. The Permittees must ensure that proper handling procedures are adhered to in order to prevent damage to the LAW Vitrification System during installation. Prior to covering, enclosing, or placing the new LAW Vitrification System or component in use, an independent, qualified, installation inspector or an independent, qualified, registered professional engineer, either of whom is trained and experienced in the proper installation of similar systems or components, must inspect the system for the presence of any of the following items:

A. Weld breaks;

B. Punctures;

C. Scrapes of protective coatings;

D. Cracks;

E. Corrosion;

F. Other structural damage or inadequate construction/installation.

All discrepancies must be remedied before the LAW Vitrification System is covered, enclosed, or placed in use [WAC 173-303-640(3)(c), in accordance with WAC 173-303-680(2) and (3)].

III.10.H.1.a.v. For the LAW Vitrification System or components that are placed underground and that are back-filled, the Permittees must provide a backfill material that is a non-corrosive, porous, homogeneous substance. The backfill must be installed so that it is placed completely around the LAW Vitrification System and compacted to ensure that the LAW Vitrification System is fully and uniformly supported [WAC 173-303-640(3)(d), in accordance with WAC 173-303-680(2) and (3)].

III.10.H.1.a.vi. The Permittees must test for tightness the LAW Vitrification System or components, prior to being covered, enclosed, or placed into use. If the LAW Vitrification System or components are found not to be tight, all repairs necessary to remedy the leak(s) in the system must be performed prior to the LAW Vitrification System being covered, enclosed, or placed in use [WAC 173-303-640(3)(e), in accordance with WAC 173-303-680(2) and (3)].

III.10.H.1.a.vii. The Permittees must ensure the LAW Vitrification System equipment is supported and protected against physical damage and excessive stress due to settlement, vibration, expansion, or contraction [WAC 173-303-640(3)(f), in accordance with WAC 173-303-680(2) and (3)].

III.10.H.1.a.viii. The Permittees must provide the type and degree of corrosion protection recommended by an independent corrosion expert, based on the information provided in Operating Unit 10, Appendices 9.9 and 9.11 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.b.i., III.10.H.5.b.iv., III.10.H.5.b.v., III.10.H.5.c.i., III.10.H.5.c.iv., III.10.H.5.c.v., III.10.H.5.d.i., III.10.H.5.d.iv., and III.10.H.5.d.v., or other corrosion protection if Ecology believes other corrosion protection is necessary to ensure the integrity of the LAW Vitrification System during use of the LAW Vitrification System. The installation of a corrosion protection system that is field fabricated must be supervised by an independent corrosion expert to ensure proper installation [WAC 173-303-640(3)(g), in accordance with WAC 173-303-680(2) and (3)].

III.10.H.1.a.ix. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will obtain and keep on file in the WTP Unit operating record, written statements by those persons required to certify the design of the LAW Vitrification System and supervise the installation of the LAW Vitrification System, as specified in WAC 173-303-640(3)(b), (c), (d), (e), (f), and (g), in accordance with WAC 173-303-680, attesting that the LAW Vitrification System and corresponding containment system listed in Permit Tables III.10.H.A and III.10.H.B, as approved/modified pursuant to Permit Condition III.10.H.5., were properly designed and installed, and that repairs, in accordance with WAC 173-303-640(3)(c) and (e) were performed [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(h), in accordance with WAC 173-303-680(3)].

III.10.H.1.a.x. The independent LAW Vitrification System installation inspection and subsequent written statements ~~shall~~ will be certified in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition III.10.H.1.a.iii., comply with all requirements of WAC 173-303-640(3)(h) in accordance with WAC 173-303-680, and ~~shall~~ will consider, but not be limited to, the following LAW Vitrification System installation documentation:

A. Field installation report with date of installation;

B. Approved welding procedures;

C. Welder qualification and certifications;

D. Hydro-test reports, as applicable, in accordance with the American Society of Mechanical Engineers Boiler and Pressure Vessel Code, Section VIII, Division 1; American Petroleum Institute (API) Standard 620, or Standard 650, as applicable;

E. Tester credentials;

F. Field inspector credentials;

G. Field inspector reports;

H. Field waiver reports; and

I. Non-compliance reports and corrective action (including field waiver reports) and repair reports.

III.10.H.1.a.xi. The Permittees ~~shall~~ will ensure periodic integrity assessments are conducted on the LAW Vitrification System, listed in Permit Table III.10.H.A, as approved/modified pursuant to Permit Condition III.10.H.5., over the term of this Permit in accordance with WAC 173-

303-680(2) and (3) as specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program and schedule in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c. Results of the integrity assessments ~~shall~~ will be included in the WTP Unit operating record until ten (10) years after post-closure, or corrective action is complete and certified, whichever is later.

III.10.H.1.a.xii. The Permittees ~~shall~~ will address problems detected during the LAW Vitrification System integrity assessments specified in Permit Condition III.10.H.1.a.xi. following the integrity assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c.

III.10.H.1.a.xiii. All process monitors/instruments, as specified in Permit Table III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5., ~~shall~~ will be equipped with operational alarms to warn of deviation, or imminent deviation from the limits specified in Permit Table III.10.H.F.

III.10.H.1.a.xiv. The Permittees ~~shall~~ will install and test all process and leak detection system monitors/instrumentation as specified in Permit Tables III.10.H.C and III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5, in accordance with Operating Unit 10, Appendices 9.1, 9.2, and 9.14 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.d.x. and III.10.H.5.f.xvi.

III.10.H.1.a.xv. No dangerous and/or mixed waste ~~shall~~ will be treated in the LAW Vitrification System unless the operating conditions, specified under Permit Condition III.10.H.1.c. are complied with.

III.10.H.1.a.xvi. The Permittees ~~shall~~ will not place dangerous and/or mixed waste, treatment reagents, or other materials in the LAW Vitrification System if these substances could cause the subsystem, subsystem equipment, or the containment system to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a), in accordance with WAC 173-303-680(2)]. This condition is not applicable to corrosion of LAW Vitrification System sub-system or sub-system equipment that are expected to be replaced as part of normal operations (e.g., melters).

III.10.H.1.a.xvii. The Permittees ~~shall~~ will operate the LAW Vitrification System to prevent spills and overflows using controls and practices as required under WAC 173-303-640(5)(b) described in Permit Condition III.10.C.5 and Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e. [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-806(4)(c)(ix)].

III.10.H.1.a.xviii. For routinely non-accessible LAW Vitrification System sub-systems, as specified in Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition III.10.H.5.e.vi., the Permittees ~~shall~~ will mark all routinely non-accessible LAW Vitrification System sub-systems access points with labels, or signs, to identify the waste contained in each LAW Vitrification System sub-system. The label, or sign, must be legible at a distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the

LAW Vitrification System sub-systems. For the purposes of this permit condition, "routinely non-accessible" means personnel are unable to enter these areas while waste is being managed in them [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

III.10.H.1.a.xix. For all LAW Vitrification System sub-systems not addressed in Permit Condition III.10.H.1.a.xviii., the Permittees ~~shall~~ will mark all these LAW Vitrification System sub-systems holding dangerous and/or mixed waste with labels, or signs, to identify the waste contained in the LAW Vitrification System sub-systems. The labels, or signs, must be legible at a distance of at least fifty (50) feet, and must bear a legend which identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the LAW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

III.10.H.1.a.xx. The Permittees ~~shall~~ will ensure that the secondary containment systems for the LAW Vitrification System sub-systems listed in Permit Tables III.10.H.A. and III.10.H.B, as approved/modified pursuant to Permit Condition III.10.H.5, are free of cracks or gaps to prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during use of the LAW Vitrification System sub-systems. Any indication that a crack or gap may exist in the containment systems ~~shall~~ will be investigated and repaired in accordance with Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e.v. [WAC 173-303-640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-320].

III.10.H.1.a.xxi. The Permittees must immediately, and safely, remove from service any LAW Vitrification System or secondary containment system which through an integrity assessment is found to be "unfit for use" as defined in WAC 173-303-040, following Permit Conditions III.10.H.1.a.xxiii.,A. through D., and F. The affected LAW Vitrification System or secondary containment system must be either repaired or closed in accordance with Permit Condition III.10.H.1.a.xxiii.E. [WAC 173-303-640(7)(e) and (f), WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

III.10.H.1.a.xxii. An impermeable coating, as specified in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.9, 9.11, and 9.12 of this Permit, as approved pursuant to Permit Condition III.10.H.5.b.v. ~~shall~~ will be maintained for all concrete containment systems and concrete portions of containment systems for each LAW Vitrification System sub-systems listed in Permit Tables III.10.H.A and III.10.H.B, as approved/modified pursuant to Permit Condition III.10.H.5 (concrete containment systems that do not have a liner, pursuant to WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and have construction joints, ~~shall~~ will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in accordance with WAC 173-303-680(2). The coating ~~shall~~ will prevent migration of any dangerous and mixed waste into the concrete. All coatings ~~shall~~ will meet the following performance standards:

A. The coating must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present;

B. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical damage to the coating or lining can be identified and remedied before dangerous and mixed waste could migrate from the system; and

C. The coating must be compatible with the dangerous and mixed waste, treatment reagents, or other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-806(4)(i)(i)(A)].

III.10.H.1.a.xxiii. The Permittees ~~shall~~ will inspect all secondary containment systems for the LAW Vitrification System sub-systems listed in Permit Tables III.10.H.A and III.10.H.B, as approved/modified pursuant to Permit Condition III.10.H.5., in accordance with the Inspection Schedule specified in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-806(4)(i)(i)(B)]:

A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the LAW Vitrification System sub-systems or secondary containment system.

B. Determine the source of the dangerous and/or mixed waste.

C. Remove the dangerous and/or mixed waste from the containment area in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(b). The dangerous and/or mixed waste removed from containment areas of the LAW Vitrification System sub-systems ~~shall~~ will be, as a minimum, managed as mixed waste.

D. If the cause of the release was a spill that has not damaged the integrity of the LAW Vitrification System sub-system, the Permittees may return the LAW Vitrification System sub-system to service in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees ~~shall~~ will take action to insure the incident that caused the dangerous and/or mixed waste to enter the containment system will not reoccur [WAC 173-303-320(3)].

E. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary LAW Vitrification System into the secondary containment system, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees ~~shall~~ will comply with the requirements of WAC 173-303-640(7) and take the following actions:

1. Close the LAW Vitrification System sub-system following procedures in WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680 and

Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8., or

2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition III.10.H.1.a.iii.) the LAW Vitrification System, in accordance with Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e.v., before the LAW Vitrification System is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

F. The Permittees ~~shall~~ will document in the operating record actions/procedures taken to comply with A. through E. above as specified in WAC 173-303-640(6)(d), in accordance with WAC 173-303-680(2) and (3).

G. In accordance with WAC 173-303-680(2) and WAC 173-303-680 (3), the Permittees ~~shall~~ will notify and report releases to the environment to Ecology as specified in WAC 173-303-640(7)(d).

III.10.H.1.a.xxiv. If liquids (e.g., dangerous and/or mixed waste leaks and spills, precipitation, fire water, liquids from damaged or broken pipes) cannot be removed from the secondary containment system within twenty-four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of discovery. The notification ~~shall~~ will provide the information in A, B, and C, listed below. The Permittees ~~shall~~ will provide Ecology with a written demonstration within seven (7) business days, identifying at a minimum [WAC 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-680(3) and WAC 173-303-806(4)(i)(i)(B)]:

A. Reasons for delayed removal;

B. Measures implemented to ensure continued protection of human health and the environment;

C Current actions being taken to remove liquids from secondary containment.

III.10.H.1.a.xxv. All air pollution control devices and capture systems in the LAW Vitrification System ~~shall~~ will be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants and to minimize process upsets. Procedures for ensuring that the air pollution control devices and capture systems in the LAW Vitrification System are properly operated and maintained so as to minimize the emission of air contaminants and process upsets ~~shall~~ will be established.

III.10.H.1.a.xxvi. In all future narrative permit submittals, the Permittees ~~shall~~ will include LAW Vitrification sub-system names with the sub-system designation.

III.10.H.1.a.xxvii. Modifications to approved design, plans, and specifications in Operating Unit 10 of this Permit for the LAW Vitrification System ~~shall~~ will be allowed only in accordance with Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g., III.10.C.9.d., III.10.C.9.e., and III.10.C.9.h.

III.10.H.1.a.xxviii. For any portion of the LAW Vitrification System which has the potential for formation and accumulation of hydrogen gases, the Permittees ~~shall~~ will operate the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

III.10.H.1.a.xxix. For each LAW Vitrification System sub-system holding dangerous waste which are acutely or chronically toxic by inhalation, the Permittees ~~shall~~ will operate the system to prevent escape of vapors, fumes or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].

III.10.H.1.b. Performance Standards

III.10.H.1.b.i. The LAW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99% for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1), 40CFR 63.1203(c)(2), in accordance with WAC 173-303-680(2)]:

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DRE in this permit condition ~~shall~~ will be calculated in accordance with the formula given below:

$DRE=[1-(W_{out}/W_{in})] \times 100\%$

Where:

W_{in}=mass feed-rate of one principal organic dangerous constituent (PODC) in a waste feedstream; and

W_{out}=mass emission rate of the same PODC present in exhaust emissions prior to release to the atmosphere.

III.10.H.1.b.ii. Particulate matter emissions from the LAW Vitrification System ~~shall~~ will not exceed 34 mg/dscm (0.015 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with WAC 173-303-680(2)].

III.10.H.1.b.iii. Hydrochloric acid and chlorine gas emissions from the LAW Vitrification System ~~shall~~ will not exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-303-680(2)].

III.10.H.1.b.iv. Dioxin and Furan TEQ emissions from the LAW Vitrification System ~~shall~~ will not exceed 0.2 nanograms (ng)/dscm [40 CFR §63.1203(b)(1), in accordance with WAC 173-303-680(2)].

III.10.H.1.b.v. Mercury emissions from the LAW Vitrification System ~~shall~~ will not exceed 45 µg/dscm [40 CFR §63.1203(b)(2), in accordance with WAC 173-303-680(2)].

III.10.H.1.b.vi. Lead and cadmium emissions from the LAW Vitrification System ~~shall~~ will not exceed 120 µg/dscm, combined [40 CFR §63.1203(b)(3), in accordance with WAC 173-303-680(2)].

III.10.H.1.b.vii. Arsenic, beryllium, and chromium emissions from the LAW Vitrification System ~~shall~~ will not exceed 97 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with WAC 173-303-680(2)].

III.10.H.1.b.viii. Carbon monoxide (CO) emission from the LAW Vitrification System ~~shall~~ will not exceed 100 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-303-680(2)].

III.10.H.1.b.ix. Hydrocarbon emission from the LAW Vitrification System ~~shall~~ will not exceed 10 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system during demonstration testing required by this Permit), dry basis, and reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC 173-303-680(2)].

III.10.H.1.b.x. If the emissions from the LAW Vitrification System exceed the emission rates listed in Permit Table III.10.H.E, as approved pursuant to Permit Condition III.10.C.11.b., the Permittees ~~shall~~ will notify Ecology in accordance with Permit Condition III.10.H.3.d.vii. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].

The emission limits specified in Permit Conditions III.10.H.1.b.i. through III.10.H.1.b.x. above, ~~shall~~ will be met for the LAW Vitrification System by limiting feed-rates as specified in Permit Tables III.10.H.D. and III.10.H.F., as approved/modified pursuant to Permit Condition III.10.H.5., compliance with operating conditions specified in Permit Condition III.10.H.1.c. (except as specified in Permit Condition III.10.H.1.b.xii.), and compliance with Permit Condition III.10.H.1.b.xi.

III.10.H.1.b.xi. Treatment effectiveness, feed-rates and operating rates for dangerous and mixed waste management units contained in the LAW Building, but not included in Permit Table III.10.H.A, as approved/modified pursuant to Permit Condition III.10.H.5., ~~shall~~ will be as specified in Permit Sections III.10.D, III.10.E, III.10.F and consistent with assumptions and basis which are reflected in Operating Unit 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating Unit 10, Appendix 6.3.1 ~~shall~~ will be superceded by Appendix 6.4.1 upon its approval pursuant to either Permit Conditions III.10.C.11.c. or III.10.C.11.d. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)].

III.10.H.1.b.xii. Compliance with the operating conditions specified in Permit Condition III.10.H.1.c., ~~shall~~ will be regarded as compliance with the required performance standards identified in Permit Conditions III.10.H.1.b.i. through x. However, if it is determined that during the effective period of this Permit that compliance with the operating conditions in Permit Condition III.10.H.1.c. is not sufficient to ensure compliance with the performance standards specified in Permit Conditions III.10.H.1.b.i. through x., the Permit may be modified, revoked, or reissued pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g.

III.10.H.1.c. Operating Conditions [WAC-303-670(6), in accordance with WAC 173-303-680(2) and (3)].

The Permittees ~~shall~~ will operate the LAW Vitrification System in accordance with Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition III.10.H.5.e.vi., Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e., and Operating Unit 10, Appendix 9.15 of this Permit, as

approved pursuant to Permit Condition III.10.H.5.f., except as modified pursuant to Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., III.10.H.4., and in accordance with the following:

III.10.H.1.c.i. The Permittees ~~shall~~ will operate the LAW Vitrification System in order to maintain the systems and process parameters listed in Permit Tables III.10.H.C and III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5., within the set-points specified in Permit Table III.10.H.F.

III.10.H.1.c.ii. The Permittees ~~shall~~ will operate the AWFCO systems, specified in Permit Table III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5., to automatically cut-off and/or lock-out the dangerous and mixed waste feed to the LAW Vitrification System when the monitored operating conditions deviate from the set-points specified in Permit Table III.10.H.F.

III.10.H.1.c.iii. The Permittees ~~shall~~ will operate the AWFCO systems, specified in Permit Table III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5., to automatically cut-off and/or lock-out the dangerous and mixed waste feed to the LAW Vitrification System when all instruments specified on Permit Table III.10.H.F for measuring the monitored parameter fail or exceed its span value.

III.10.H.1.c.iv. The Permittees ~~shall~~ will operate the AWFCO systems, specified in Permit Table III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5., to automatically cut-off and/or lock out the dangerous and/or mixed waste feed to the LAW Vitrification System when any portion of the LAW Vitrification System is bypassed. The terms "bypassed" and "bypass event" as used in Permit Sections III.10.H and III.10.I ~~shall~~ will mean if any portion of the LAW Vitrification System is bypassed so that gases are not treated as during the Demonstration Test.

III.10.H.1.c.v. In the event of a malfunction of the AWFCO systems listed in Permit Table III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5., the Permittees ~~shall~~ will immediately, manually cut-off the dangerous and mixed waste feed to the LAW Vitrification System. The Permittees ~~shall~~ will not restart the dangerous and/or mixed waste feed until the problem causing the malfunction has been identified and corrected.

III.10.H.1.c.vi. The Permittees ~~shall~~ will manually cut-off the dangerous and mixed waste feed to the LAW Vitrification System when the operating conditions deviate from the limits specified in Permit Condition III.10.H.1.c.i., unless the deviation automatically activates the waste feed cut-off sequence specified in Permit Conditions III.10.H.1.c.ii., III.10.H.1.c.iii., and/or III.10.H.1.c.iv.

III.10.H.1.c.vii. If greater than thirty (30) dangerous and mixed waste feed cut-off, combined, to the LAW Vitrification System occur due to deviations from Permit Table III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5., within a sixty (60) day period, the Permittees ~~shall~~ will submit a written report to Ecology within five (5) calendar days of the thirty-first exceedence including the information specified below. These dangerous and mixed waste feed cut-offs to the LAW Vitrification System, whether automatically or manually activated, are counted if the specified set points are deviated from while dangerous waste, mixed waste, and waste residues continue to be processed in

the LAW Vitrification System. A cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified on Permit Table III.10.H.F, from which the set-point is deviated:

A. The parameter(s) that deviated from the set-point(s) in Permit Table III.10.H.F;

B. The magnitude, dates, and duration of the deviations;

C. Results of the investigation of the cause of the deviations; and

D. Corrective measures taken to minimize future occurrences of the deviations.

III.10.H.1.c.viii. If any portion of the LAW Vitrification System is bypassed while treating dangerous and/or mixed waste it ~~shall~~ will be regarded as non-compliance with the operating conditions specified in Permit Condition III.10.H.1.c. and the performance standards specified in Permit Condition III.10.H.1.b. After such a bypass event, the Permittees ~~shall~~ will perform the following actions:

A. Investigate the cause of the bypass event;

B. Take appropriate corrective measures to minimize future bypasses;

C. Record the investigation findings and corrective measures in the operating record; and

D. Submit a written report to Ecology within five (5) days of the bypass event documenting the result of the investigation and corrective measures.

III.10.H.1.c.ix. The Permittees ~~shall~~ will control fugitive emissions from the LAW Vitrification System by maintaining the melters under negative pressure.

III.10.H.1.c.x. Compliance with the operating conditions specified in Permit Condition III.10.H.1.c. ~~shall~~ will be regarded as compliance with the required performance standards identified in Permit Condition III.10.H.1.b. However, evidence that compliance with these operating conditions is insufficient to ensure compliance with the performance standards, ~~shall~~ will justify modification, revocation, or re-issuance of this Permit, in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g.

III.10.H.1.d. Inspection Requirements [WAC 173-303-680(3)]

III.10.H.1.d.i. The Permittees ~~shall~~ will inspect the LAW Vitrification System in accordance with the Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in accordance with Permit Condition III.10.C.5.c.

III.10.H.1.d.ii. The inspection data for LAW Vitrification System ~~shall~~ will be recorded, and the records ~~shall~~ will be placed in the WTP Unit operating record for the LAW Vitrification System, in accordance with Permit Condition III.10.C.4.

III.10.H.1.d.iii. The Permittees ~~shall~~ will comply with the inspection requirements specified in Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., and as modified by Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., and III.10.H.4.

III.10.H.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-670(7) and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]

III.10.H.1.e.i. Upon receipt of a written request from Ecology, the Permittees ~~shall~~ will perform sampling and analysis of the dangerous and mixed waste and exhaust emissions to verify that the operating requirements established in the Permit achieve the performance standards delineated in this Permit.

III.10.H.1.e.ii. The Permittees ~~shall~~ will comply with the monitoring requirements specified in Operating Unit 10, Appendices 9.2, 9.3, 9.7, 9.13, 9.15 and 9.18 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.c., III.10.H.5.d., III.10.H.5.e., and III.10.H.5.f., as modified by Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., and III.10.H.4.

III.10.H.1.e.iii. The Permittees ~~shall~~ will operate, calibrate, and maintain the carbon monoxide and hydrocarbon continuous emission monitors (CEM) specified in this Permit in accordance with Performance Specification 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart EEE of 40 CFR Part 63, and Operating Unit 10 Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., and as modified by Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., and III.10.H.4.

III.10.H.1.e.iv. The Permittees ~~shall~~ will operate, calibrate, and maintain the instruments specified on Permit Tables III.10.H.C. and F. as approved/modified pursuant to Permit Condition III.10.H.5., in accordance with Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., and as modified by Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., and III.10.H.4.

III.10.H.1.f. Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]

III.10.H.1.f.i. The Permittees ~~shall~~ will record and maintain in the WTP Unit operating record for the LAW Vitrification System, all monitoring, calibration, maintenance, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Conditions III.10.C.4. and III.10.C.5., as modified by Permit Conditions III.10.H.1.b.xii., III.10.H.2., III.10.H.3., and III.10.H.4.

III.10.H.1.f.ii. The Permittees ~~shall~~ will record in the WTP Unit operating record the date, time, and duration of all automatic waste feed cutoffs and/or lockouts, including the triggering parameters, reason for the deviation, and recurrence of the incident. The Permittees ~~shall~~ will also record all incidents of AWFCO system function failures, including the corrective measures taken to correct the condition that caused the failure.

III.10.H.1.f.iii. The Permittees ~~shall~~ will submit to Ecology a report semi-annually the first calendar year, and annually thereafter each calendar year within ninety (90) days following the end of the year. The report will include the following information:

A. Total dangerous and mixed waste feed processing time for the LAW Vitrification System;

B. Date/Time of all LAW Vitrification System startups and shutdowns;

C. Date/Time/Duration/Cause/Corrective Action taken for all LAW Vitrification System shutdowns caused by malfunction of either process or control equipment; and

D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or mixed waste feed cut-off due to deviations from Permit Table III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5.

III.10.H.1.f.iv. The Permittees ~~shall~~ will submit an annual report to Ecology each calendar year within ninety (90) days following the end of the year of all quarterly CEM Calibration Error and Annual CEM Performance Specification Tests conducted in accordance with Permit Condition III.10.H.1.e.iii.

III.10.H.1.g. Closure

The Permittees ~~shall~~ will close the LAW Vitrification System in accordance with Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.

III.10.H.2. Shakedown Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC -173-303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)].

III.10.H.2.a. The shakedown period for the LAW Vitrification System ~~shall~~ will be conducted in accordance with Permit Condition III.10.H.1., Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., and as modified in accordance with Permit Conditions III.10.H.1.b.xii., III.10.H.2., and III.10.H.3.

III.10.H.2.b. Duration of the Shakedown Period

III.10.H.2.b.i. The shakedown period for the LAW Vitrification System ~~shall~~ will begin with the initial introduction of dangerous waste in the LAW Vitrification System following construction and ~~shall~~ will end with the start of the demonstration test.

III.10.H.2.b.ii. The shakedown period ~~shall~~ will not exceed the following limits, as defined by hours of operation of the LAW Vitrification System with dangerous waste. The Permittees may petition Ecology for one extension of each shakedown phase for seven hundred and twenty (720) additional operating hours in accordance with Permit modification procedures specified in Permit Conditions III.10.C.2.e. and III.10.C.2.f.

Shakedown Phase 1: 720 hours

Shakedown Phase 2: 720 hours

III.10.H.2.b.iii. Shakedown Phase 2 ~~shall~~ will not be commenced until documentation has been submitted to Ecology verifying that the LAW Vitrification System has operated at a minimum of 75% of the shakedown Phase 1 feed-rate limit for two (2) separate eight (8) consecutive hour periods with no AWFCOs.

III.10.H.2.c. Allowable Waste Feed During the Shakedown Period

III.10.H.2.c.i. The Permittees may feed the dangerous waste specified for the LAW Vitrification System on the Part A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those wastes outside the waste acceptance criteria specified in the WAP, Attachment 1, Chapter 3.0 of this Permit, as approved pursuant to Permit Condition III.10.C.3., except Permit Conditions III.10.H.2.c.ii. through v. also apply.

III.10.H.2.c.ii. The Permittees ~~shall~~ will not feed the following wastes to the LAW Vitrification System during Shakedown Phase 1:

A. Acutely toxic dangerous waste listed in WAC 173-303-081(a)(2)(a)(i).

B. Mixed waste

III.10.H.2.c.iii. The Permittees ~~shall~~ will not feed the following waste to the LAW Vitrification System during Shakedown Phase 2:

A. Mixed waste

III.10.H.2.c.iv. The feed-rates to the LAW Vitrification System ~~shall~~ will not exceed the limits in Permit Tables III.10.H.D and III.10.H.F, as approved/modified pursuant to Permit Condition III.10.H.5.

III.10.H.2.c.v. The Permittees ~~shall~~ will conduct sufficient analysis of the dangerous waste treated in the LAW Vitrification System to verify that the waste feed is within the physical and chemical composition limits specified in this Permit.

III.10.H.3. Demonstration Test Period [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)].

III.10.H.3.a. Demonstration Test Period

III.10.H.3.a.i. The Permittees ~~shall~~ will operate, monitor, and maintain the LAW Vitrification System as specified in Permit Condition III.10.H.1., and Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., except as modified in accordance with Permit Conditions III.10.H.1.b.xii., and III.10.H.3.

III.10.H.3.a.ii. Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., ~~shall~~ will be resubmitted to Ecology for approval by the Permittees as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. at least one hundred and eighty (180) days prior to the start date of the demonstration test. The revised Demonstration Test Plan ~~shall~~ will include applicable EPA promulgated test methods and procedures in effect at the time of the re-submittal and projected commencement and completion dates for the Demonstration Test.

III.10.H.3.a.iii. The Permittees ~~shall~~ will not commence the demonstration test period until documentation has been submitted to Ecology verifying that the LAW Vitrification System has operated at a minimum of 90% of the demonstration test period feed-rate limit for a minimum of an eight (8) consecutive hours period on two (2) consecutive days.

III.10.H.3.b. Performance Standards

The Permittees ~~shall~~ will demonstrate compliance with the performance standards specified in Permit Condition III.10.H.1.b. during the Demonstration Test Period.

III.10.H.3.c. Allowable Waste Feed During the Demonstration Test Period

III.10.H.3.c.i. The Permittees may feed the dangerous waste specified for the LAW Vitrification System in Part A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those waste

outside the waste acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved pursuant to Permit Condition III.10.C.3., except Permit Conditions III.10.H.3.c.ii. through iv. also apply.

III.10.H.3.c.ii. The Permittees ~~shall~~ will not feed mixed waste to the LAW Vitrification System.

III.10.H.3.c.iii. The dangerous waste feed-rates to the LAW Vitrification System ~~shall~~ will not exceed the limits in Permit Tables III.10.H.D and F, as approved/modified pursuant to Permit Condition III.10.H.5.

III.10.H.3.c.iv. The Permittees ~~shall~~ will conduct sufficient analysis of the dangerous waste treated in the LAW Vitrification System to verify that the dangerous waste is within the physical and chemical composition limits specified in this Permit.

III.10.H.3.d. Demonstration Data Submissions and Certifications

III.10.H.3.d.i. The Permittees ~~shall~~ will submit to Ecology a complete demonstration test report within one-hundred twenty (120) calendar days of completion of the Demonstration Test including all data collected during the Demonstration Test and updated Permit Tables III.10.I.D, III.10.I.E and III.10.I.F.

III.10.H.3.d.ii. The Permittees must submit the following information to Ecology prior to receiving Ecology's approval to commence feed of dangerous waste and mixed waste to the LAW Vitrification System:

A. The Permittees ~~shall~~ will submit a summary of data collected as required by the Demonstration Test Plan to Ecology upon completion of the Demonstration Test.

B. A certification that the Demonstration Test has been carried out in accordance with the approved Demonstration Test Plan and approved modifications within thirty (30) days of the completion of the Demonstration Test [WAC 173-303-807(8)].

C. Calculations and analytical data showing compliance with the performance standards specified in Permit Conditions III.10.H.1.b.i, III.10.H.1.b.iv, III.10.H.1.b.v, III.10.H.1.b.vi, and III.10.H.1.b.vii

D. Laboratory data QA/QC summary for the information provided in III.10.H.3.d.ii.C.

III.10.H.3.d.iii. After successful completion of the Demonstration Test and receipt of Ecology's approval, the Permittees ~~shall~~ will be authorized to commence feed of dangerous waste and mixed waste to the LAW Vitrification System for the post-demonstration test period indicated in Permit Tables III.10.H.D and F, as approved/modified pursuant to Permit Condition III.10.H.5., in compliance with the operating requirements specified in Permit Condition III.10.H.1.c. and within the limitations specified in Permit Condition III.10.C.14.

III.10.H.3.d.iv. RESERVED

III.10.H.3.d.v. After successful completion of the Demonstration Test, Permittees submittal of the following to Ecology and the Permittees receipt of approval of the following in writing, the Permittees ~~shall~~ will be authorized to feed dangerous waste and mixed waste to the LAW Vitrification System pursuant to Permit Section III.10.I.

A. A complete Demonstration Test Report for the LAW Vitrification System and updated Permit Tables III.10.I.D, III.10.I.E, and III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.C.11.c or III.10.C.11.d. The test report ~~shall~~ will be certified in accordance with WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).

B. A Final Risk Assessment Report completed pursuant to Permit Conditions III.10.C.11.c. or III.10.C.11.d.

III.10.H.3.d.vi. If any calculations or testing results show that one or more of the performance standards listed in Permit Condition III.10.H.1.b., with the exception of Permit Condition III.10.H.1.b.x., for the LAW Vitrification System were not met during the Demonstration Test, the Permittees ~~shall~~ will perform the following actions:

A. Immediately stop dangerous and mixed waste feed to the LAW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s).

B. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the performance standard(s) as specified in Permit Condition I.E.21.

C. Investigate the cause of the failure and submit a report of the investigation findings to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s).

D. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s), documentation supporting a mode of operation where all performance standards listed in Permit Condition III.10.H.1.b., with the exception of Permit Condition III.10.H.1.b.x., for the LAW Vitrification System were met during the demonstration test, if any such mode was demonstrated.

E. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.H.3.d.vi.A through D above, and any additional information, Ecology may ~~submit~~ provide in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification System and/or amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of a compliance schedule and/or revised Demonstration Test Plan pursuant to Permit Conditions III.10.H.3.d.vi.F and G.

F. If the performance standard listed in Permit Condition III.10.H.1.b.i. was not met during the Demonstration Test, the Permittees ~~shall~~ will submit within one hundred and twenty (120) days of discovery of not meeting the performance standard, a revised Demonstration Test Plan (if appropriate), and a compliance schedule for Ecology approval to address this deficiency. If a revised Demonstration Test Plan is submitted, it ~~shall~~ will be accompanied by a request for approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. The revised Demonstration Test Plan (if submitted) must include substantive changes to prevent failure from reoccurring.

G. If any of the performance standards listed in Permit Condition III.10.H.1.b., with the exception of Permit Conditions III.10.H.1.b.i. or III.10.H.1.b.x., were not met during

the Demonstration Test the Permittees ~~shall~~ will submit to Ecology within one hundred twenty (120) days of discovery of not meeting the performance standard(s), a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring.

III.10.H.3.d.vii. If any calculations or testing results show that any emission rate for any constituent listed in Permit Table III.10.H.E, as approved pursuant to Permit Condition III.10.C.11.b., is exceeded for LAW Vitrification System during the Demonstration Test, the Permittees ~~shall~~ will perform the following actions:

A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the emission rate(s) as specified in Permit Condition I.E.21.

B. Submit to Ecology additional risk information to indicate that the increased emissions impact is offset by decreased emission impact from one or more constituents expected to be emitted at the same time, and/or investigate the cause and impact of the exceedence of the emission rate(s) and submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery of exceeding the emission rate(s); and

C. Based on the notification and any additional information, Ecology may ~~submit~~ provide, in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and III.10.C.2.f., or III.10.C.2.g. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring.

III.10.H.4. Post Demonstration Test Period [WAC 173-303-670(5), WAC 173-303-670(6), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)]

III.10.H.4.a. The Permittees ~~shall~~ will operate, monitor, and maintain the LAW Vitrification System as specified in Permit Condition III.10.H.1. and Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5., except as modified in accordance with Permit Conditions III.10.H.1.b.xii., III.10.H.3., and III.10.H.4.

III.10.H.4.b. Allowable Waste Feed During the Post-Demonstration Test Period

III.10.H.4.b.i. The Permittees may feed the dangerous and/or mixed waste specified for the LAW Vitrification System on the Part A Forms (Operating Unit 10, Chapter 1.0 of this Permit), except for those wastes outside the waste acceptance criteria specified in the WAP, Operating Unit 10, Chapter 3.0 of this Permit, as approved pursuant to Permit Condition III.10.C.3., and except Permit Conditions III.10.H.4.b.ii. and III.10.H.4.b.iii. also apply.

III.10.H.4.b.ii. The dangerous waste and mixed waste feed-rates to the LAW Vitrification System ~~shall~~ will not exceed the limits in Permit Tables III.10.H.D and F, as approved/modified pursuant to Permit Condition III.10.H.5., or in Permit Condition III.10.H.3

III.10.H.4.b.iii. The Permittees ~~shall~~ will conduct sufficient analysis of the dangerous waste and mixed waste treated in LAW Vitrification System to verify that the waste feed is within the physical and chemical composition limits specified in this Permit.

III.10.H.5. Compliance Schedules

III.10.H.5.a. All information identified for submittal to Ecology in a. through f. of this compliance schedule must be signed and certified in accordance with requirements in WAC 173-303-810(12), as modified in accordance with Permit Condition III.10.H.1.a.iii. [WAC 173-303-806(4)].

III.10.H.5.b. The Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III. 10.C.9.f., prior to construction of each secondary containment and leak detection system for the LAW Vitrification System (per level) as identified in Permit Tables III.10.H.A and III.10.H.B, engineering information as specified below, for incorporation into Operating Unit 10, Appendices 9.2, 9.4, 9.5, 9.7, 9.8, 9.9, 9.11, and 9.12 of this Permit. At a minimum, engineering information specified below will show the following as described in WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings and information on sumps and floor drains):

III.10.H.5.b.i. IQRPE Reports (specific to foundation, secondary containment, and leak detection system) ~~shall~~ will include review of design drawings, calculations, and other information on which the certification report is based and ~~shall~~ will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 9.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. IQRPE Reports ~~shall~~ will be consistent with the information separately provided in ii. through ix. below [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];

III.10.H.5.b.ii. Design drawings (General Arrangement Drawings, in plan and cross sections) and specifications for the foundation, secondary containment including liner installation details, and leak detection methodology. These items should show the dimensions, volume calculations, and location of the secondary containment system, and should include items such as floor/pipe slopes to sumps, tanks, floor drains [WAC 173-303-640(4)(b) through (f) and WAC 173-303-640(3)(a), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)];

III.10.H.5.b.iii. The Permittees ~~shall~~ will provide the design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the secondary containment system. This information ~~shall~~ will demonstrate the foundation will be capable of providing support to the secondary containment system, resistance to pressure gradients above and below the system, and capable of preventing failure due to settlement, compression, or uplift [WAC 173-303-640(4)(c)(ii), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

III.10.H.5.b.iv. A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.H.5.b.v. Secondary containment/foundation, and leak detection system, materials selection documentation (including, but not limited to, concrete coatings and water stops, and liner materials) as applicable [WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.H.5.b.vi. Detailed description of how the secondary containment for the LAW Vitrification System will be installed in compliance with WAC 173-303-640(3)(c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B);

III.10.H.5.b.vii. Submit Permit Tables III.10.H.B and III.10.I.B completed to provide for all secondary containment sumps and floor drains the information as specified in each column heading consistent with information to be provided in i. through vi., above;

III.10.H.5.b.viii. Documentation that secondary containment and leak detection systems will not accumulate hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

III.10.H.5.b.ix. A detailed description of how LAW Vitrification System design provides access for conducting future LAW Vitrification System integrity assessments [WAC 173-303-640(3)(b) and WAC 173-303-806(4)(i)(i)(B)].

III.10.H.5.c. The Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to installation of each sub-system as identified in Permit Table III.10.H.A, engineering information as specified below, for incorporation into Operating Unit 10, Appendices 9.1 through 9.14, and 9.17 of this Permit. At a minimum, engineering information specified below will show the following, as required pursuant to WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

III.10.H.5.c.i. IQRPE Reports (specific to sub-system) ~~shall~~ will include review of design drawings, calculations, and other information on which the certification report is based and ~~shall~~ will include as applicable, but not limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 9.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports ~~shall~~ will be consistent with the information separately provided in ii. through xii. below, and the IQRPE Report specified in Permit Condition III.10.H.5.b. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

III.10.H.5.c.ii. Design drawings [General Arrangement Drawings in plan and cross section, Process Flow Diagrams, Piping and Instrumentation Diagrams (including pressure control systems), Mechanical Drawings, and specifications, and other information specific to subsystems (to show location and physical attributes of each subsystem)] [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)];

III.10.H.5.c.iii. Sub-system design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details to support the subsystems. Structural support calculations specific to off-specification, non-standard and field fabricated subsystems ~~shall~~ will be submitted for incorporation into the Administrative Record. Documentation ~~shall~~ will include but not limited to, supporting specifications, test data, treatment effectiveness report, etc. supporting projected operational capability (e.g., WESP projected removal efficiency for individual metals, halogens, particulates, etc.) and compliance with performance standards specified in Permit Condition III.10.H.1.b [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

III.10.H.5.c.iv. A description of materials and equipment used to provide corrosion protection for external metal components in contact with water, including factors affecting the potential for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.H.5.c.v. Sub-system materials selection documentation (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

III.10.H.5.c.vi. Sub-system vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, ~~shall~~ will be submitted for incorporation into the Administrative Record [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

III.10.H.5.c.vii. System descriptions ~~(process)~~ related to sub-system units ~~shall~~ will be submitted for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

III.10.H.5.c.viii. Mass and energy balance for normal projected operating conditions used in developing the Piping and Instrumentation Diagrams and Process Flow Diagrams, including assumptions and formulas used to complete the mass and energy balance, so that they can be independently verified for incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

III.10.H.5.c.ix. Detailed description of all potential LAW Vitrification System bypass events including:

A. A report which includes an analysis of credible potential bypass events and recommendations for prevention/minimization of the potential, impact, and frequency of the bypass event to include at a minimum:

1. Operating procedures
2. Maintenance procedures
3. Redundant equipment
4. Redundant instrumentation
5. Alternate equipment

6. Alternate materials of construction

III.10.H.5.c.x. A detailed description of how the sub-systems will be installed in compliance with WAC 173-303-640(3)(c), (d), and (e), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B);

III.10.H.5.c.xi. Sub-system design to prevent escape of vapors and emissions of acutely or chronically toxic (upon inhalation) EHW, for incorporation into the Administrative Record [WAC 173-303-640(5)(e), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(B)];

III.10.H.5.c.xii. Documentation that sub-systems are designed to prevent the accumulation of hydrogen gases levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)].

III.10.H.5.d. The Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f, prior to installation of equipment for each sub-system as identified in Permit Tables III.10.H.A and III.10.H.B, not addressed in Permit Conditions III.10.H.5.b. or III.10.H.5.c., engineering information as specified below, for incorporation into Operating Unit 10, Appendices 9.1 through 9.14 of this Permit. At a minimum, engineering information specified below will show the following as required pursuant to WAC 173-303-640, in accordance with WAC 173-303-680 (the information specified below will include dimensioned engineering drawings):

III.10.H.5.d.i. IQRPE Reports (specific to sub-system equipment) ~~shall~~ will include a review of design drawings, calculations, and other information as applicable on which the certification report is based. The reports ~~shall~~ will include, but not be limited to, review of such information described below. Information (drawings, specifications, etc.) already included in Operating Unit 10, Appendix 9.0 of this Permit, may be included in the report by reference and should include drawing and document numbers. The IQRPE Reports ~~shall~~ will be consistent with the information provided separately in ii. through xiii. below and the IQRPE Reports specified in Permit Conditions III.10.H.5.b. and III.10.H.5.c. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.H.5.d.ii. Design drawings [Process Flow Diagrams, Piping and Instrumentation Diagrams (including pressure control systems), specifications and other information specific to equipment (these drawings should include all equipment such as pipes, valves, fittings, pumps, instruments, etc.)] [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A) through (B)];

III.10.H.5.d.iii. Sub-system equipment design criteria (references to codes and standards, load definitions, and load combinations, materials of construction, and analysis/design methodology) and typical design details for the support of the sub-system equipment [WAC 173-303-640(3)(a) and WAC 173-303-640(3)(f), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

III.10.H.5.d.iv. A description of materials and equipment used to provide corrosion protection for external metal components in contact with soil and water, including factors affecting the potential

for corrosion [WAC 173-303-640(3)(a)(iii)(B), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

III.10.H.5.d.v. Materials selection documentation for equipment for each sub-system (e.g., physical and chemical tolerances) [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2) and WAC 173-303-806(4)(i)(i)(A)];

III.10.H.5.d.vi. Vendor information (including, but not limited to, required performance warranties, as available), consistent with information submitted under ii. above, for sub-system equipment ~~shall~~ will be submitted for incorporation into the Administrative Record. [WAC 173-303-640(3)(a), in accordance with WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(iv)];

III.10.H.5.d.vii. Sub-system, sub-system equipment, and leak detection system instrument control logic narrative description (e.g., software functional specifications, descriptions of fail-safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].

III.10.H.5.d.viii. System description ~~(process)~~ related to sub-system equipment, and system descriptions related to leak detection systems, (including instrument control logic and narrative descriptions), for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

III.10.H.5.d.ix. A detailed description of how the sub-system equipment will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)];

III.10.H.5.d.x. For process monitoring, control, and leak detection system instrumentation for the LAW Vitrification System as identified in Permit Tables III.10.H.C. and III.10.H. F., a detailed description of how the process monitoring, control, and leak detection system instrumentation, will be installed and tested [WAC 173-303-640(3)(c) through (e), WAC 173-303-640(4)(b) and (c), WAC 173-303-806(4)(c)(vi), and WAC 173-303-806(4)(i)(i)(B)];

III.10.H.5.d.xi. Mass and energy balance for projected normal operating conditions used in developing the Piping and Instrumentation Diagrams and Process Flow Diagrams, including assumptions and formulas used to complete the mass and energy balance, so that they can be independently verified, for incorporation into the Administrative Record [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)];

III.10.H.5.d.xii. Documentation that sub-systems equipment are designed to prevent the accumulation of hydrogen gas levels above the lower explosive limit for incorporation into the Administrative Record [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A), and WAC 173-303-806(4)(i)(v)];

III.10.H.5.d.xiii. Leak detection system documentation (e.g. vendor information, etc.) consistent with information submitted under Permit Condition III.10.H.5.c.ii. and Permit Conditions III.10.H.5.d.ii., vii., viii., and x. above, ~~shall~~ will be submitted for incorporation into the Administrative Record.

III.10.H.5.e. Prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will submit to Ecology, pursuant to Permit Condition III.10.C.9.f., the following as specified below for incorporation into Operating Unit 10, Appendix 9.18 of this Permit, except Permit Condition III.10.H.5.e.i., which will be incorporated into Operating Unit 10, Chapter 6.0 of this Permit. All information provided under this permit condition must be consistent with information provided pursuant to Permit Conditions III.10.H.5.b., c., d., e., and f., III.10.C.3.e. and III.10.C.11.b., as approved by Ecology:

III.10.H.5.e.i. Integrity assessment program and schedule for the LAW Vitrification System ~~shall~~ will address the conducting of periodic integrity assessments on the LAW Vitrification System over the life of the system, as specified in Permit Condition III.10.H.5.b.ix. and WAC 173-303-640(3)(b), in accordance with WAC 173-303-680, and descriptions of procedures for addressing problems detected during integrity assessments. The schedule must be based on past integrity assessments, age of the system, materials of construction, characteristics of the waste, and any other relevant factors [WAC 173-303-640(3)(b), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B)].

III.10.H.5.e.ii. Detailed plans and descriptions, demonstrating the leak detection system is operated so that it will detect the failure of either the primary or secondary containment structure or the presence of any release of dangerous and/or mixed waste or accumulated liquid in the secondary containment system within twenty-four (24) hours [WAC 173-303-640(4)(c)(iii)]. Detection of a leak of at least 0.1 gallons per hour within twenty-four (24) hours is defined as being able to detect a leak within twenty-four (24) hours. Any exceptions to this criteria must be approved by Ecology in accordance with WAC 173-303-680, WAC 173-303-640(4)(c)(iii), and WAC 173-303-806(4)(i)(i)(b).

III.10.H.5.e.iii. Detailed operational plans and descriptions, demonstrating that spilled or leaked waste and accumulated liquids can be removed from the secondary containment system within twenty-four (24) hours [WAC 173-303-806(4)(i)(i)(B)].

III.10.H.5.e.iv. Descriptions of operational procedures demonstrating appropriate controls and practices are in place to prevent spills and overflows from the LAW Vitrification System or containment systems in compliance with WAC 173-303-640(5)(b)(i) through (iii), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B);

III.10.H.5.e.v. Description of procedures for investigation and repair of the LAW Vitrification System [WAC 173-303-640(6) and WAC 173-303-640(7)(e) and (f), in accordance with WAC 173-303-680, WAC 173-303-320, WAC 173-303-806(4)(a)(v), and WAC 173-303-806(4)(a)(ii)(B)].

III.10.H.5.e.vi. Updated Chapter 4.0, Narrative Description, Tables and Figures as identified in Permit Tables III.10.H.A and III.10.H.B, as modified pursuant to Permit Condition III.10.H.5.e.x. and updated to identify routinely non-accessible LAW Vitrification sub-systems.

III.10.H.5.e.vii. Description of procedures for management of ignitable and reactive, and incompatible dangerous and/or mixed waste as specified in WAC 173-303-640(9) and (10), in accordance with WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(B).

III.10.H.5.e.viii. A description of the tracking system used to track dangerous and/or mixed waste generated throughout the LAW Vitrification system, pursuant to WAC 173-303-380.

III.10.H.5.e.ix. Permit Tables III.10.H.C and III.10.I.C ~~shall~~ will be completed for LAW Vitrification System process and leak detection system monitors and instruments (to include, but not be limited to: instruments and monitors measuring and/or controlling flow, pressure, temperature, density, pH, level, humidity, and emissions) to provide the information as specified in each column heading. Process and leak detection system monitors and instruments for critical systems as specified in Operating Unit 10, Appendix 2.0 and as updated pursuant to Permit Condition III.10.C.9.b., and for operating parameters as required to comply with Permit Condition III.10.C.3.e.iii. ~~shall~~ will be addressed. Process monitors and instruments for non-waste management operations (e.g., utilities, raw chemical storage, non-contact cooling waters, etc.) are excluded from this permit condition [WAC 173-303-680, WAC 173-303-806(4)(i)(i)(A) through (B), and WAC 173-303-806(4)(i)(v)];

III.10.H.5.e.x. Permit Tables III.10.H.A and III.10.I.A amended as follows [WAC 173-303-680 and WAC 173-303-806(4)(i)(i)(A) through (B)]:

A. Under column 1, update and complete list of dangerous and mixed waste LAW Vitrification System sub-systems, including plant items that comprise each system (listed by item number).

B. Under column 2, update and complete system designations.

C. Under column 3, replace the 'Reserved' with Operating Unit 10, Appendix 9.0 subsections (e.g., 9.1, 9.2, etc.) designated in Permit Conditions III.10.H.5.b., c., and d. specific to LAW Vitrification System sub-system as listed in column 1.

D. Under column 4, update and complete list of narrative description, tables, and figures.

III.10.H.5.f. One hundred and eighty (180) days prior to initial receipt of dangerous and/or mixed waste in the WTP Unit, the Permittees ~~shall~~ will submit for review and receive approval for incorporation into Operating Unit 10, Appendix 9.15 of this Permit, a Demonstration Test Plan for the LAW Vitrification System to demonstrate that the LAW Vitrification Systems meets the performance standards specified in Permit Condition III.10.H.1.b. In order to incorporate the Demonstration Test Plan for the LAW Vitrification System into Operating Unit 10, Appendix 9.15, Permit Condition III.10.C.2.g. process will be followed. The Demonstration Test Plan ~~shall~~ will include, but not be limited to, the following information. The Demonstration Test Plan ~~shall~~ will also be consistent with the information provided pursuant to Permit Conditions III.10.H.5.b., c., d., and e., III.10.C.3.e., and III.10.C.11.b., as approved by Ecology and consistent with the schedule described in Operating Unit 10, Appendix 1.0 of this Permit. The documentation required pursuant to Permit Condition III.10.H.5.f.x., in addition to being incorporated into Operating Unit 10, Appendix 9.15, ~~shall~~ will be incorporated by reference in Operating Unit 10, Chapter 6.0 of this Permit.

Notes: (1) The following should be consulted to prepare this Demonstration Test Plan: "Guidance on Setting Permit Conditions and Reporting Trial Burn Results Volume II of the Hazardous Waste Incineration Guidance Series," (EPA/625/6-89/019) and Risk Burn Guidance For Hazardous Waste Combustion Facilities," (EPA-R-01-001, July 2001),

WAC 173-303-807(2), WAC 173-303-670(5), WAC 173-303-670(6), 40 CFR §63.1207(f)(2), 40 CFR §63.1209, and Appendix to 40 CFR Part 63 EEE.

(2) Cross-referencing to the information provided pursuant to permit Conditions III.H.5.b., c., d., e., and III.10.C.3.e.v., as approved by Ecology, that are redundant to elements of the Demonstration Test Plan for the LAW Vitrification System is acceptable.

III.10.H.5.f.i. Analysis of each feed-stream to be fed during the demonstration test, including dangerous waste, glass formers and reductants, process streams (e.g., volumes of air leakage including, control air, process air, steam, sparge bubbler air, air in-leakage from melter cave, and gases from LAW Vitrification Vessel Ventilation System, process water, etc.) that includes:

A. Levels of ash, metals, total chlorine (organic and inorganic), other halogens and radionuclide surrogates;

B. Description of the physical form of the feed-streams;

C. An identification and quantification of organics that are present in the feed-stream, including constituents proposed for DRE demonstration;

A comparison of the proposed demonstration test feed streams to the mixed waste feed envelopes to be processed in the melters must be provided that documents that the proposed demonstration test feed streams will serve as worst case surrogates for organic destruction, formation of products of incomplete oxidation, and metals, total chlorine (organic and inorganic), other halogens, particulate formation, and radionuclides.

III.10.H.5.f.ii. Specification of trial principal organic dangerous constituents (PODCs) for which destruction and removal efficiencies are proposed to be calculated during the demonstration test and for inclusion in Permit Conditions III.10.H.1.b.i. and III.10.I.1.b.i. These trial PODCs ~~shall~~ will be specified based on destructibility, concentration or mass in the waste and the dangerous waste constituents or constituents in WAC 173-303-9905;

III.10.H.5.f.iii. A description of the blending procedures, prior to introducing the feed-streams into the melter, including analysis of the materials prior to blending, and blending ratios;

III.10.H.5.f.iv. A description of how the surrogate feeds are to be introduced for the demonstration. This description should clearly identify the differences and justify how any of differences would impact the surrogate feed introduction as representative of how mixed waste feeds will be introduced;

III.10.H.5.f.v. A detailed engineering description of the LAW Vitrification System, including:

A. Manufacturer's name and model number for each sub-system;

B. Design capacity of each sub-system including documentation (engineering calculations, manufacturer/vendor specifications, operating data, etc.) supporting projected operational efficiencies (e.g., WESP projected removal efficiency for individual metals, halogens, particulates, etc.) and compliance with performance standards specified in Permit Condition III.10.H.1.b.;

C. Detailed scaled engineering drawings, including Process Flow Diagrams, Piping and Instrumentation Diagrams, Vessel Drawings (plan, and elevation with cross sections) and General Arrangement Drawings;

D. Process Engineering Descriptions;

E. Mass and energy balance for each projected operating condition and each demonstration test condition, including assumptions and formulas used to complete the mass and energy balance, so that they can be independently verified for incorporation into the Administrative Record;

F. Engineering Specifications/data sheets (materials of construction, physical and chemical tolerances of equipment, and fan curves);

G. Detailed Description of Automatic Waste Feed Cutoff System addressing critical operating parameters for all performance standards specified in Permit Condition III.10.H.1.b.;

H. Documentation to support compliance with performance standards specified in Permit Condition III.10.H.1.b., including engineering calculations, test data, and manufacturer/vendor's warranties, etc.;

I. Detailed description of the design, operation, and maintenance practices for air pollution control system;

J. Detailed description of the design, operation, and maintenance practices of any stack gas monitoring and pollution control monitoring system;

K. Documentation based on current WTP Unit design either confirming the Permittees' demonstration that it is not technically appropriate to correct standards listed in Permit Conditions III.10.H.1.b.ii. through III.10.H.1.b.ix. to seven (7) percent oxygen,. or a request, pursuant to Permit Conditions III.10.C.9.e. and III.10.C.9.f., to update Permit Conditions III.10.H.1.b.ii. through III.10.H.1.b.ix., III.10.I.b.ii. through III.10.I.b.ix., III.10.I.1.e.iii., and III.10.H.1.e.iii., Permit Tables III.10.H.C, III.10.H.F, III.10.I.C., III.10.I.F.and Operating Unit 10, Appendix 9.0 to reflect the addition of an oxygen monitor and the correction of the standards to seven percent (7%) oxygen.

III.10.H.5.f.vi. Detailed description of sampling and monitoring procedures including sampling and monitoring locations in the system, the equipment to be used, sampling and monitoring frequency, and planned analytical procedures for sample analysis including, but not limited to:

A. A short summary narrative description of each stack sample method should be included within the main body of the demonstration test plan, which references an appendix to the plan that would include for each sampling train: (1) detailed sample method procedures, (2) sampling train configuration schematic, (3) sampling recovery flow sheet, (4) detailed analytical method procedures, and (5) sampling preparation and analysis flow sheet. The detailed procedures should clearly flag where the method has provided decision points (e.g., choices of equipment materials of construction, choices of clean-up procedures or whether additional clean-up procedures will be incorporated, whether pretest surveys or laboratory validation work

will be performed, enhancements to train to accommodate high moisture content in stack gas, etc.) and what is being proposed along with the basis for the decision.

B. A short summary narrative description of the feed and residue sampling methods should be included within the main body of the demonstration test plan, which references an appendix that would include for each sample type: (1) detailed sample method procedures, (2) sampling recovery/compositing procedures, and (3) detailed analytical method procedures. The detailed procedures should clearly flag where the method has provided decision points (e.g., choices of equipment materials of construction, choices of clean-up procedures or whether additional clean-up procedures will be incorporated, whether pretest surveys or laboratory validation work will be performed, etc.) and what is being proposed along with the basis for the decision

III.10.H.5.f.vii. A detailed test schedule for each condition for which the demonstration test is planned, including projected date(s), duration, quantity of dangerous waste to be fed, and other relevant factors;

III.10.H.5.f.viii. A detailed test protocol including, for each test condition, the ranges of feed-rate for each feed system, and all other relevant parameters that may affect the ability of the LAW Vitrification System to meet performance standards specified in Permit Condition III.10.H.1.b.;

III.10.H.5.f.ix. A detailed description of planned operating conditions for each demonstration test condition, including operating conditions for shakedown, demonstration test, post-demonstration test and normal operations. This information ~~shall~~ will also include submittal of Permit Tables III.10.H.D, III.10.H.F, III.10.I.D, and III.10.I.F completed with the information as specified in each column heading for each LAW Vitrification System waste feed cutoff parameter and submittal of supporting documentation for Permit Tables III.10.H.D, III.10.H.F, III.10.I.D, and III.10.I.F set-point values;

III.10.H.5.f.x. The test conditions proposed must demonstrate meeting the performance standards specified in Permit Condition III.10.H.1.b. with the simultaneous operation of ~~all three (3)~~ both melters at capacity and input from the LAW Vitrification Vessel Ventilation System at capacity to simulate maximum loading to the LAW Vitrification System off-gas treatment system and to establish the corresponding operating parameter ranges. To the extent that operation of one (1) melter or two (2) melters can not be sustained within the operating parameter range established at this maximum load, additional demonstration test conditions must be included in the plan and performed to establish operating parameter ranges for each proposed operating mode while demonstrating meeting the performance standards specified in Permit Condition III.10.H.1.b.;

III.10.H.5.f.xi. Detailed description of procedures for start-up and shutdown of waste feed and controlling emissions in the event of an equipment malfunction, including off-normal and emergency shutdown procedures;

III.10.H.5.f.xii. A calculation of waste residence time;

III.10.H.5.f.xiii. Any request to extrapolate metal feed-rate limits from Demonstration Test levels must include:

A. A description of the extrapolation methodology and rationale for how the approach ensures compliance with the performance standards as specified in Permit Condition III.10.H.1.b.

B. Documentation of the historical range of normal metal feed-rates for each feedstream.

C. Documentation that the level of spiking recommended during the demonstration test will mask sampling and analysis imprecision and inaccuracy to the extent that extrapolation of feed-rates and emission rates from the Demonstration Test data will be as accurate and precise as if full spiking were used.

III.10.H.5.f.xiv. Documentation of the expected levels of constituents in LAW Vitrification System input streams including, but not limited to, waste feed, glass former and reactants, control air, process air, steam, sparge bubbler air, air in-Leakage from melter cave, gases from LAW Vitrification Vessel Ventilation System, and process water.

III.10.H.5.f.xv. Documentation justifying the duration of the conditioning required to ensure the LAW Vitrification System had achieved steady-state operations under Demonstration Test operating conditions.

III.10.H.5.f.xvi. Documentation of LAW Vitrification System process and leak detection system instruments and monitors as listed on Permit Tables III.10.H.C, III.10.H.F, III.10.I.C, and III.10.I.F to include:

A. Procurement specifications;

B. Location used;

C. Range, precision, and accuracy;

D. Detailed descriptions of calibration/functionality test procedures (either method number ASTM) or provide a copy of manufacturer's recommended calibration procedures;

E. Calibration/functionality test, inspection, and routine maintenance schedules and checklists, including justification for calibration, inspection and maintenance frequencies, criteria for identifying instruments found to be significantly out of calibration, and corrective action to be taken for instruments found to be significantly out of calibration (e.g., increasing frequency of calibration, instrument replacement, etc.);

F. Equipment instrument control logic narrative description (e.g., software functional specifications, descriptions of fail safe conditions, etc.) [WAC 173-303-680(2), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-806(4)(i)(v)].

III.10.H.5.f.xvii. Outline of demonstration test report.

Table III.10.H.A - LAW Vitrification System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
~~LAW Concentrate Receipt Process System (Comprised of the following equipment: Melter 1/2 Concentrate Receipt Vessels LCP-VSL-00001/2[b])~~	~~LCP~~	~~24590-LAW-M6-LCP-P0001~~ ~~-M6-LCP-P0002~~ ~~-M6-LCP-P0003~~ ~~-MV-LCP-P0001~~ ~~-MV-LCP-P0002~~ ~~-MV-LCP-P0004~~ ~~-MV-LCP-P0005~~	~~RESERVED~~
~~LAW Melter Feed Process System (Comprised of the following equipment: Melter 1 Feed Preparation Vessel LFP-VSL-00001[a], Melter 1 Feed Vessel LFP-VSL-00002[a], Melter 2 Feed Preparation Vessel LFP-VSL-00003[a], Melter 2 Feed Vessel LFP-VSL-00004[a], Melter 3 Feed Preparation Vessel V21301[a], Melter 3 Feed Vessel V21302[a])~~	~~LFP~~ ~~LCP~~	~~24590-LAW-M5-V17T-P0001~~ ~~-M5-V17T-P0002~~ ~~-P1-P01T-P0002~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~ ~~-M6-LCP-P0001~~ ~~-M6-LCP-P0002~~ ~~-M6-LCP-P0003~~ ~~-MV-LCP-P0001~~ ~~-MV-LCP-P0002~~ ~~-MV-LCP-P0004~~ ~~-MV-LCP-P0005~~	~~Section 4.1.3 & 4.1.3.1, Tables 4-4 and 4-11, and Figures 4A-1, 4A-3, and 4A-20 of Operating Unit 10, Chapter 4 of this Permit~~

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
LAW Melter Process System [Comprised of the following equipment: LAW Melters LMP-MLTR-00001/2]	LMP	24590-LAW -P1-P01T-P0007 -P1-P01T-P0002 -P1-P01T-P0009	Section 4.2.3.2; Tables 4-4, and Figure 4A-21 of Operating Unit 10, Chapter 4 of this Permit
~~LAW Glass Product Systems Melter 1& 2-3~~	~~LMP~~	~~24590-LAW~~ ~~-P1-P01T-P0007~~ ~~-P1-P01T-P0009~~	~~Section 4.2.3.2 of Operating Unit 10, Chapter 4 of this Permit~~
LAW Primary Offgas Process System (Comprised of the following equipment: Primary & ~~Secondary~~ Standby Film Coolers-Melter 1& 2) ~~3~~	LOP	24590-LAW -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0009 -M6-LOP-P0001 -M6-LOP-P0002	Section 4.1.3.3 and Figure 4A-21 of Operating Unit 10, Chapter 4 of this Permit
LAW Primary Offgas Process System [Comprised of the following equipment: Melter 1 & 2 Submerged Bed Scrubbers LOP-SCB-00001/2	LOP	24590-LAW ~~-M5-V17T-P0001~~ -M5-V17T-P0007 -M5-V17T-P0008 -M6-LOP-P0001 -M6-LOP-P0002 -MK-LOP-P0001001 -MK-LOP-P0001002 -MK-LOP-P0001003 -MKD-LOP-P0008 ~~-MKD-LOP-P0004~~ ~~-LOP-P0002~~ -NID-LOP-P0001 -P1-P01T-P0002 -P1-P01T-P0007	Section 4.1.3.3; Tables 4-4 and 4-11, and Figure 4A-22 of Operating Unit 10, Chapter 4 of this Permit

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
		-P1-P01T-P0010 ~~-P1-P01T-P0011~~	
~~Melter 1/2 SBS Condensate Vessels -VSL-00001/2[a]] Submerged Bed Scrubbers/Condensate Vessels[a] -Melter 1 & 2 3~~	~~LOP~~	~~24590-LAW~~ ~~-M5-V17T-P0007~~ ~~-M5-V17T-P0008~~ ~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~ ~~-MK-LOP-P001001~~ ~~-MK-LOP-P001002~~ ~~-MK-LOP-P001003~~ ~~-MKD-LOP-P0002~~ ~~-MKD-LOP-P0004~~ ~~-MKD-LOP-P0008~~ ~~-MV-LOP-P0001~~ ~~-MV-LOP-P0002~~ ~~-MVD-LOP-P0004~~ ~~-MVD-LOP-P0005~~ ~~-N1D-LOP-P0001~~ ~~-N1D-LOP-P0002~~ ~~-N1D-LOP-P0003~~ ~~-P1-P01T-P0002~~ ~~-P1-P01T-P0007~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~	~~Section 4.1.3.3; Tables 4-4 and 4-11, and Figure 4A-22 of Operating Unit 10, Chapter 4 of this Permit~~
LAW Primary Offgas Process System [Comprised of the following equipment: Wet electrostatic Precipitators-Melter 1 & 2 ~~3-~~	LOP	24590-LAW -M5-V17-P0007 -M5-V17-P0008	Section 4.1.3.3 and Figure 4A-22 of Operating Unit 10, Chapter 4 of this Permit

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
LOP-WESP-00001/2]		-M6-LOP-P0001 -M6-LOP-P0002 ~~-MKD-LOP-P0008~~ ~~-MV-LOP-P0001~~ ~~-MV-LOP-P0002~~	
		~~-MVD-LOP-P0004~~ ~~-MVD-LOP-P0005~~ ~~-NID-LOP-P0001~~ ~~-NID-LOP-P0002~~ -NID-LOP-P0003	
		-P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0011 24590-WTP-3PS-MKE0-TP001	
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: High Efficiency Particulate Air Filters ~~LCP-HEPA-00001/2/3, LCP-BULGE-00002, LFP_HEPA-00001/2, LOP-HEPA-00001/2,~~ LVP-HEPA-00001A/B, LVP-HEPA-00002A/B, LVP-HEPA-00003A]	~~LCP/LFP/LOP~~ /LVP	24590-LAW -M5-LVP-P0010 ~~-M6-LCP-P0001/2~~ ~~-M6-LFP-P0001~~ ~~-M6-LFP-P0003~~ ~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~ ~~-M6-LVP-P0001~~ -M6-LVP-P0003 ~~-M6-LVP-P0002~~	Section 4.1.3, 4.1.3.1, & 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit.
		~~-M6-LVP-P0004~~ ~~-M6-LVP-P0005~~	

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: Thermal Catalytical Oxidation Unit-LVP-SCO-00001 [located on LVP-SKID-00002]	LVP	RESERVED	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: Selective Catalytical Reduction Units-LVP-SCR-00001~~/2~~ [located on LVP-SKID-00002]	LVP	RESERVED	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: ~~Carbon~~ Offgas Mercury Absorbers- LVP-ADBR-00001A/B [located on LVP-SKID-00001]	LVP	RESERVED	RESERVED
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: LAW Caustic Collection Tank[a] LVP-TK-00001] ~~LVP-SKID-00001~~ ~~LVP-SKID-00002~~	LVP	**24590-LAW** -M5-V17T-P0011 -M6-LVP-P0002 ~~-M6-LVP-P0004~~ ~~-M6-LVP-P0005~~ -MT-LVP-P0004 -MTD-LVP-P0001 -NID-LVP-P0002 -P1-P01T-P0007 -P1-P01T-P0009	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
~~Caustic Scrubber/Blowdown Vessel[a] LVP-TK-0001~~ **LAW Secondary Offgas/Vessel Vent Process**	LVP	**24590-LAW** -P1-P01T-P0004 -P1-P01T-P0009	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
System [Comprised of the following equipment: LAW Melter Offgas Caustic Scrubber –LVP-SCB-00001]		-M6-LVP-P0002	
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: Electric Heaters ~~LOP-HTR-00001/2,~~ LVP-HTR-00001A/B, LVP-HTR-00002]	~~LOP~~/LVP	24590-LAW -M5-LVP-P0010 ~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~ -M6-LVP-P0001 -M6-LVP-P0005	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: Heat Exchanger-LVP-HX-00001[located on LVP-SKID-00002]	LVP	RESERVED	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
~~Pumps-LOP-EDUC-00001/2~~	~~LOP/LVP~~	~~24590-LAW~~ ~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~	~~Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit~~
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: ~~Exhaust Fans-LOP-BLWS-Melter~~ Offgas Exhausters-LVP-EXHR-00001A/1B/1C ~~-00001/2/3/4/5/6/7/8/9/10~~]	~~LOP~~/LVP	24590-LAW ~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~ -M5-LVP-P0010 -M6-LVP-P0001	Section 4.1.3.3 of Operating Unit 10, Chapter 4 of this Permit
~~Mist Eliminators~~	~~LVP~~	~~RESERVED~~	~~Section 4.1.3.3 of Operating Unit 10, Chapter 4 of this Permit~~

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos., Specification Nos., etc.)	Narrative Description, Tables and Figures
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: LAW Stack]	LVP	RESERVED	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit

[a] Requirements pertaining to the tanks in ~~LAW Vitrification System Melter 1 & 2 Concentrate Receipt Vessels, Melter Feed/Feed Preparation~~ Vessels ~~System~~, ~~Submerged Bed Scrubbers/~~ SBS Condensate Vessels, and Caustic Collection Tank ~~Scrubber/Blowdown Vessel~~ are specified in Permit Section III.10.E.

Table III.10.H.B - LAW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing Nos., Specification Nos., etc.)
Floor Drain LVP-FD-00001	RESERVED	RESERVED	RESERVED
RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.H.C - LAW Vitrification System Process and Leak Detection System Instruments and Parameters

Sub-system Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Failure State	Expected Range	Instrument Accuracy	Instrument Calibration Method No. and Range
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.H.D - Maximum Feed-rates to LAW Vitrification System (RESERVED)

Description of Waste	Shakedown 1 and Post Demonstration Test	Shakedown 2 and Demonstration Test
Dangerous and Mixed Waste Feed-rate		
Total Chlorine/Chloride Feed-rate		
Total Metal Feed-rates		
Total Ash Feed-rate		

Table III.10.H.E - LAW Vitrification System Estimated Emission Rates (RESERVED)

Chemicals	CAS Number	Emission Rates (grams /second)

TABLE III.10.H.F - LAW Vitrification System Waste Feed Cutoff Parameters*[1] (RESERVED)

Sub-system Designation	Instrument Tag Number	Parameter Description	Setpoints During Shakedown 1 and Post Demonstration Test	Setpoints During Shakedown 2 and Demonstration Test

* A continuous monitoring system ~~shall~~ will be used as defined in Permit Section III.10.C.1.
[1] Maximum Feed-rate ~~shall~~ will be set based on not exceeding any of the constituent (e.g., ash, metals, and chlorine/chloride) feed limits specified on Table III.10.H.D. of this Permit

III.10.I LAW Vitrification System – Long Term Miscellaneous Thermal Treatment Unit

For purposes of Permit Section III.10.I, where reference is made to WAC 173-303-640, the following substitutions apply: substitute the terms "LAW Vitrification System" for "tank system(s)," "sub-system(s)" for "tank(s)," "sub-system equipment" for "ancillary equipment," and "sub-system(s) or sub-system equipment of a LAW Vitrification System" for "component(s)," in accordance with WAC 173-303-680.

III.10.I.1 Requirements For LAW Vitrification System Beginning Normal Operation

Prior to commencing normal operations provided in Permit Section III.10.I, all requirements in Permit Section III.10.H ~~shall~~ will have been met by the Permittees and approved by Ecology, including the following: The LAW Vitrification System Demonstration Test results and the revised Final Risk Assessment provided for in Permit Condition III.10.C.11.c. or III.10.C.11.d. and Permit Section III.10.H, ~~shall~~ will have been evaluated and approved by Ecology; Permit Tables III.10.I.D and E, as approved/modified pursuant to Permit Condition III.10.H.5., ~~shall~~ will have been completed, submitted and approved pursuant to Permit Condition III.10.H.3.d.v. and

Permit Table III.10.I.E, as approved/modified pursuant to Permit Condition III.10.H.5, ~~shall~~ will have been completed, submitted and approved pursuant to Permit Condition III.10.C.11.c. or d.

III.10.I.1.a. Construction and Maintenance [WAC 173-303-640, in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-340].

III.10.I.1.a.i. The Permittees ~~shall~~ will maintain the design and construction of the LAW Vitrification System as specified in Permit Condition III.10.I.1., Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 9.1 through 9.17 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.a. through d. and III.10.H.5.f.

III.10.I.1.a.ii. The Permittees ~~shall~~ will maintain the design and construction of all containment systems for the LAW Vitrification System, as specified in Operating Unit 10, Chapter 4.0 of this Permit, and Operating Unit 10, Appendices 9.2 and 9.4 through 9.14 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.a. through d.

III.10.I.1.a.iii. Modifications to approved design, plans, and specifications in Operating Unit 10 of this Permit for the LAW Vitrification System ~~shall~~ will be allowed only in accordance with Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g., III.10.C.9.d., e., and h.

III.10.I.1.a.iv. The Permittees ~~shall~~ will ensure all certifications required by specialists (e.g., independent, qualified, registered professional engineer; registered professional engineer; independent corrosion expert; independent, qualified installation inspector; installation inspector; etc.) use the following statement or equivalent pursuant to Permit Condition III.10.C.10:

"I, (Insert Name) have (choose one or more of the following: overseen, supervised, reviewed, and/or certified) a portion of the design or installation of a new LAW Vitrification system or component located at (address), and owned/operated by (name(s)). My duties were: (e.g., installation inspector, testing for tightness, etc.), for the following LAW Vitrification System components (e.g., the venting piping, etc.), as required by the Dangerous Waste Regulations, namely, WAC 173-303-640(3) (applicable paragraphs [i.e., (a) through (g)], in accordance with WAC 173-303-680.

"I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment."

III.10.I.1.a.v. The Permittees ~~shall~~ will ensure periodic integrity assessments are conducted on the LAW Vitrification System listed in Permit Table III.10.I.A, as approved/modified pursuant to Permit Condition III.10.H.5, over the term of this Permit in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(3)(b), following the description of the integrity assessment program and schedule in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c. Results of the integrity assessments ~~shall~~ will be included in the WTP Unit

operating record until ten (10) years after post closure, or corrective action is complete and certified, whichever is later.

III.10.I.1.a.vi. The Permittees ~~shall~~ will address problems detected during the LAW Vitrification System integrity assessments specified in Permit Condition III.10.I.1.a.v. following the description of the integrity assessment program in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c.

III.10.I.1.a.vii. All process monitors/instruments as specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., ~~shall~~ will be equipped with operational alarms to warn of deviation, or imminent deviation from the limits specified in Permit Table III.10.I.F.

III.10.I.1.a.viii. The Permittees ~~shall~~ will install and test all process and leak detection system monitors/instruments, as specified in Permit Tables III.10.I.C and III.10.I.F, as approved/modified pursuant to Permit Condition III.10.H.5 and III.10.H.3.d.v., in accordance with Operating Unit 10, Appendices 9.1, 9.2, and 9.14 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.d.x. and III.10.H.5.f..xvi.

III.10.I.1.a.ix. No dangerous and/or mixed waste ~~shall~~ will be treated in the LAW Vitrification System unless the operating conditions, specified under Permit Condition III.10.I.1.c. are complied with.

III.10.I.1.a.x. The Permittees ~~shall~~ will not place dangerous and/or mixed waste, treatment reagents, or other materials in the LAW Vitrification System if these substances could cause the sub-system, sub-system equipment, or the containment system to rupture, leak, corrode, or otherwise fail [WAC 173-303-640(5)(a), in accordance with WAC 173-303-680(2)]. This condition is not applicable to corrosion of LAW Vitrification System sub-system or sub-system equipment that are expected to be replaced as part of normal operations (e.g., melters).

III.10.I.1.a.xi. The Permittees ~~shall~~ will operate the LAW Vitrification System to prevent spills and overflows using description of controls and practices as required under WAC 173-303-640(5)(b), described in Permit Condition III.10.C.5 and Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e. [WAC 173-303-640(5)(b), in accordance with WAC 173-303-680(2) and (3), and WAC 173-303-806(4)(c)(ix)].

III.10.I.1.a.xii. For routinely non-accessible LAW Vitrification System sub-systems, as specified in Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition III.10.H.5.e.vi., the Permittees ~~shall~~ will mark all routinely non-accessible LAW Vitrification System sub-systems access points with labels or signs to identify the waste contained in each LAW Vitrification System sub-system. The label, or sign, must be legible at a distance of at least fifty (50) feet and must bear a legend which identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the LAW Vitrification System sub-systems. For the purposes of this permit condition, "routinely non-accessible" means personnel are unable to enter these areas while waste is

being managed in them [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

III.10.I.1.a.xiii. For the LAW Vitrification System sub-systems not addressed in Permit Condition III.10.I.1.a.xii., the Permittees ~~shall~~ will mark these LAW Vitrification System sub-systems holding dangerous and/or mixed waste with labels or signs to identify the waste contained in the LAW Vitrification System sub-systems. The labels, or signs, must be legible at a distance of at least fifty (50) feet and must bear a legend which identifies the waste in a manner which adequately warns employees, emergency response personnel, and the public of the major risk(s) associated with the waste being stored or treated in the LAW Vitrification System sub-systems [WAC 173-303-640(5)(d), in accordance with WAC 173-303-680(2)].

III.10.I.1.a.xiv. The Permittees ~~shall~~ will ensure that the secondary containment systems for the LAW Vitrification System sub-systems listed in Permit Tables III.10.I.A and III.10.I.B, as approved/modified pursuant to Permit Condition III.10.H.5, are free of cracks or gaps to prevent any migration of dangerous and/or mixed waste or accumulated liquid out of the system to the soil, groundwater, or surface water at any time during use of the LAW Vitrification System sub-systems. Any indication that a crack or gap may exist in the containment systems ~~shall~~ will be investigated and repaired in accordance with Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e.v. [WAC 173-303–640(4)(b)(i), WAC 173-303-640(4)(e)(i)(C), and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-806(4)(i)(i)(B), and WAC 173-303-320].

III.10.I.1.a.xv. The Permittees must immediately, and safely, remove from service any LAW Vitrification System or secondary containment system which through an integrity assessment is found to be "unfit for use" as defined in WAC 173-303-040, following Permit Condition III.10.I.1.a.xvii. A through D, and F. The affected LAW Vitrification System or secondary containment system must be either repaired or closed in accordance with Permit Condition III.10.I.1.a.xvii.E [WAC 173-303-640(7)(e) and (f) and WAC 173-303-640(8), in accordance with WAC 173-303-680(3)].

III.10.I.1.a.xvi. An impermeable coating, as specified in Operating Unit 10, Appendices 9.4, 9.5, 9.7, 9.9, 9.11, and 9.12 of this Permit, as approved pursuant to Permit Condition III.10.H.5.b.v., ~~shall~~ will be maintained for all concrete containment systems and concrete portions of containment systems for the LAW Vitrification System sub-systems listed in Permit Tables III.10.I.A and III.10.I.B, as approved/modified pursuant to Permit Condition III.10.H.5 (concrete containment systems that do not have a liner, pursuant to WAC 173-303-640(4)(e)(i), in accordance with WAC 173-303-680(2), and have construction joints, ~~shall~~ will meet the requirements of WAC 173-303-640(4)(e)(ii)(C), in accordance with WAC 173-303-680(2). The coating ~~shall~~ will prevent migration of any dangerous and/or mixed waste into the concrete. All coatings ~~shall~~ will meet the following performance standards:

A. The coating must seal the containment surface such that no cracks, seams, or other avenues through which liquid could migrate are present;

B. The coating must be of adequate thickness and strength to withstand the normal operation of equipment and personnel within the given area such that degradation or physical damage to the coating or lining can be identified and remedied before dangerous and mixed waste could migrate from the system; and

C. The coating must be compatible with the dangerous and/or mixed waste, treatment reagents, or other materials managed in the containment system [WAC 173-303-640(4)(e)(ii)(D), in accordance with WAC 173-303-680(2) and (3) and WAC 173-303-806(4)(i)(i)(A)].

III.10.I.1.a.xvii. The Permittees ~~shall~~ will inspect all secondary containment systems for the LAW Vitrification System sub-systems listed in Permit Tables III.10.I.A and III.10.I.B, as approved/modified pursuant to Permit Condition III.10.H.5, in accordance with the Inspection Schedule specified in Operating Unit 10, Chapter 6.0 of this Permit, as approved pursuant to Permit Conditions III.10.H.5.e.i. and III.10.C.5.c., and take the following actions if a leak or spill of dangerous and/or mixed waste is detected in these containment systems [WAC 173-303-640(5)(c) and WAC 173-303-640(6), in accordance with WAC 173-303-680(2) and (3), WAC 173-303-320, and WAC 173-303-806(4)(i)(i)(B)].

A. Immediately, and safely, stop the flow of dangerous and/or mixed waste into the LAW Vitrification System sub-systems or secondary containment system.

B. Determine the source of the dangerous and/or mixed waste.

C. Remove the waste from the containment area in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(b). The waste removed from containment areas of the LAW Vitrification System sub-systems ~~shall~~ will be, as a minimum, managed as dangerous and/or mixed waste.

D. If the cause of the release was a spill that has not damaged the integrity of the LAW Vitrification System sub-system, the Permittees may return the LAW Vitrification System sub-system to service in accordance with WAC 173-303-680(2) and (3) as specified in WAC 173-303-640(7)(e)(ii). In such case, the Permittees ~~shall~~ will take action to ensure the incident that caused the dangerous and/or mixed waste to enter the containment system will not reoccur.

E. If the source of the dangerous and/or mixed waste is determined to be a leak from the primary LAW Vitrification System into the secondary containment system, or the system is unfit for use as determined through an integrity assessment or other inspection, the Permittees ~~shall~~ will comply with the requirements of WAC 173-303-640(7) and take the following actions:

1. Close the LAW Vitrification System sub-system following procedures in WAC 173-303-640(7)(e)(i), in accordance with WAC 173-303-680 and Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8; or

2. Repair and re-certify (in accordance with WAC 173-303-810(13)(a), as modified pursuant to Permit Condition III.10.I.1.a.iii.) the LAW Vitrification System in accordance with Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e.v., before the LAW Vitrification System is placed back into service [WAC 173-303-640(7)(e)(iii) and WAC 173-303-640(7)(f), in accordance with WAC 173-303-680].

F. The Permittees ~~shall~~ will document in the WTP Unit operating record actions/procedures taken to comply with A through E above, as specified in WAC 173-303-640(6)(d), in accordance with WAC 173-303-680(2) and (3).

G. In accordance with WAC 173-303-680(2) and (3), the Permittees ~~shall~~ will notify and report releases to the environment to Ecology, as specified in WAC 173-303-640(7)(d).

III.10.I.1.a.xviii. If liquids (e.g., dangerous and/or mixed waste, leaks and spills, precipitation, fire water, liquids from damaged or broken pipes) cannot be removed from the secondary containment system within twenty-four (24) hours, Ecology will be verbally notified within twenty-four (24) hours of discovery. The notification ~~shall~~ will provide the information in A, B, and C, listed below. The Permittees ~~shall~~ will provide Ecology with a written demonstration within seven (7) business days, identifying at a minimum [WAC 173-303-640(4)(c)(iv) and WAC 173-303-640(7)(b)(ii), in accordance with WAC 173-303-680(3) and WAC 173-303-806(4)(i)(i)(B)]:

A. Reasons for delayed removal;

B. Measures implemented to ensure continued protection of human health and the environment;

C. Current actions being taken to remove liquids from secondary containment.

III.10.I.1.a.xix. All air pollution control devices and capture systems in the LAW Vitrification System ~~shall~~ will be maintained and operated at all times in a manner so as to minimize the emissions of air contaminants and to minimize process upsets. Procedures for ensuring that the air pollution control devices and capture systems in the LAW Vitrification System are properly operated and maintained so as to minimize the emission of air contaminants and process upsets ~~shall~~ will be established.

III.10.I.1.a.xx. In all future narrative permit submittals, the Permittees ~~shall~~ will include LAW Vitrification sub-system names with the sub-system designation.

III.10.I.1.a.xxi. For any portion of the LAW Vitrification System that has the potential for formation and accumulation of hydrogen gases, the Permittees ~~shall~~ will operate the portion to maintain hydrogen levels below the lower explosive limit [WAC 173-303-815(2)(b)(ii)].

III.10.I.1.a.xxii. For each LAW Vitrification System sub-system holding dangerous and/or mixed waste that are acutely or chronically toxic by inhalation, the Permittees ~~shall~~ will operate the system to prevent escape of vapors, fumes, or other emissions into the air [WAC 173-303-806(4)(i)(i)(B) and WAC 173-303-640(5)(e), in accordance with WAC 173-303-680].

III.10.I.1.a.xxiii The esisting 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 "process cell design" that could preclude later melter installation.

III.10.I.1.b. Performance Standards

III.10.I.1.b.i. The LAW Vitrification System must achieve a destruction and removal efficiency (DRE) of 99.99% for the principal organic dangerous constituents (PODCs) listed below [40 CFR §63.1203(c)(1) and 40CFR §63.1203(c)(2), in accordance with WAC 173-303-680(2)]:

RESERVED

DRE in this permit condition ~~shall~~ will be calculated in accordance with the formula given below:

DRE=[1-(Wout/Win)] x 100%

Where:

Win=mass feedrate of one principal organic dangerous constituent (PODC) in a waste feedstream; and

Wout=mass emission rate of the same PODC present in exhaust emissions prior to release to the atmosphere.

III.10.I.1.b.ii. Particulate matter emissions from the LAW Vitrification System ~~shall~~ will not exceed 34 mg/dscm (0.015 grains/dscf) [40 CFR §63.1203(b)(7), in accordance with WAC 173-303-680(2)];

III.10.I.1.b.iii. Hydrochloric acid and chlorine gas emissions from the LAW Vitrification System ~~shall~~ will not exceed 21 ppmv, combined [40 CFR §63.1203(b)(6), in accordance with WAC 173-303-680(2)];

III.10.I.1.b.iv. Dioxin and Furan TEQ emissions from the LAW Vitrification System ~~shall~~ will not exceed 0.2 nanograms (ng)/dscm, [40 CFR §63.1203(b)(1), in accordance with WAC 173-303-680(2)];

III.10.I.1.b.v. Mercury emissions from the LAW Vitrification System ~~shall~~ will not exceed 45 µg/dscm [40 CFR §63.1203(b)(2), in accordance with WAC 173-303-680(2)];

III.10.I.1.b.vi. Lead and cadmium emissions from the LAW Vitrification System ~~shall~~ will not exceed 120 µg/dscm, combined [40 CFR §63.1203(b)(3), in accordance with WAC 173-303-680(2)];

III.10.I.1.b.vii. Arsenic, beryllium, and chromium emissions from the LAW Vitrification System ~~shall~~ will not exceed 97 µg/dscm, combined [40 CFR §63.1203(b)(4), in accordance with WAC 173-303-680(2)];

III.10.I.1.b.viii. Carbon monoxide (CO) emission from the LAW Vitrification System ~~shall~~ will not exceed 100 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system), dry basis [40 CFR §63.1203(b)(5)(i), in accordance with WAC 173-303-680(2) and (3)];

III.10.I.1.b.ix. Hydrocarbon emission from the LAW Vitrification System ~~shall~~ will not exceed 10 parts per million (ppm) by volume, over an hourly rolling average (as measured and recorded by the continuous monitoring system during demonstration testing required by this Permit), dry basis and reported as propane [40 CFR §63.1203(b)(5)(ii), in accordance with WAC 173-303-680(2) and (3)];

III.10.I.1.b.x. If the emissions from the LAW Vitrification System exceed the emission rates listed in Permit Table III.10.I.E, as approved pursuant to Permit Condition III.10.C.11.c. or d., the Permittees ~~shall~~ will perform the following actions [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)]:

A. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the emission rate(s) as specified in Permit Condition I.E.21.

B. Submit to Ecology additional risk information to indicate that the increased emissions impact is offset by decreased emission impact from one or more constituents expected to be emitted at the same time, and/or investigate the cause and impact of the exceedence of the emission rate(s) and submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery of exceeding the emission rate(s); and

C. Based on the notification and any additional information, Ecology may ~~submit~~ provide, in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. through g. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring.

The emission limits specified in Permit Conditions III.10.I.1.b.i. through x. above, ~~shall~~ will be met for the LAW Vitrification System by limiting feed rates as specified in Permit Tables III.10.I.D and III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5. and III.10.H.3.d.v.; compliance with operating conditions specified in Permit Condition III.10.I.1.c. (except as specified in Permit Condition III.10.I.1.b.xii.), and compliance with Permit Condition III.10.I.1.b.xi.;

III.10.I.1.b.xi. Treatment effectiveness, feed-rates and operating rates for dangerous and/or mixed waste management units contained in the LAW Building, but not included in Permit Table III.10.I.A, as approved/modified pursuant to Permit Condition III.10.H.5, ~~shall~~ will be as specified in Permit Sections III.10.D through F and consistent with assumptions and basis which are reflected in Operating Unit 10, Appendix 6.3.1 of this Permit, as approved pursuant to Permit Condition III.10.C.11.b. For the purposes of this permit condition, Operating Unit 10, Appendix 6.3.1 ~~shall~~ will be superceded by Appendix 6.4.1 upon its approval pursuant to either Permit Condition III.10.C.11.c or III.10.C.11.d. [WAC 173-303-680(2) and (3), and WAC 173-303-815(2)(b)(ii)];

III.10.I.1.b.xii. Compliance with the operating conditions specified in Permit Condition III.10.I.1.c., ~~shall~~ will be regarded as compliance with the required performance standards identified in Permit Conditions III.10.I.1.b.i. through x. However, if it is determined that during the

effective period of this Permit that compliance with the operating conditions in Permit Condition III.10.I.1.c. is not sufficient to ensure compliance with the performance standards specified in Permit Conditions III.10.I.1.b.i. through x., the Permit may be modified, revoked, or reissued pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g.

III.10.I.1.c. Operating Conditions [WAC-303-670(6), in accordance with WAC 173-303-680(2) and (3)]:

The Permittees ~~shall~~ will operate the LAW Vitrification System in accordance with Operating Unit 10, Chapter 4.0 of this Permit, as updated pursuant to Permit Condition III.10.H.5.e.vi. and Operating Unit 10, Appendix 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5.e., and Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., except as modified pursuant to Permit Conditions III.10.H.3, III.10.I.1.b.x., III.10.I.1.b.xii., III.10.I.1.h., and in accordance with and the following:

III.10.I.1.c.i. The Permittees ~~shall~~ will operate the LAW Vitrification System in order to maintain the systems and process parameters listed in Permit Tables III.10.I.C and III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., within the set-points specified in Permit Table III.10.I.F.

III.10.I.1.c.ii. The Permittees ~~shall~~ will operate the AWFCO systems, specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., to automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to LAW Vitrification System when the monitored operating conditions deviate from the set-points specified in Permit Table III.10.I.F.

III.10.I.1.c.iii. The Permittees ~~shall~~ will operate the AWFCO systems, specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., to automatically cut-off and/or lock-out the dangerous and/or mixed waste feed to LAW Vitrification System when all instruments specified in Permit Table III.10.H.F for measuring the monitored parameters fails or exceeds its span value.

III.10.I.1.c.iv. The Permittees ~~shall~~ will operate the AWFCO systems, specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., to automatically cut-off and/or lock out the dangerous waste and/or mixed waste feed to the LAW Vitrification System when any portion of the LAW Vitrification System is bypassed. The terms "bypassed" and "bypass event," as used in Permit Sections III.10.H and III.10.I, ~~shall~~ will mean if any portion of the LAW Vitrification System is bypassed so that gases are not treated as during the Demonstration Test.

III.10.I.1.c.v. In the event of a malfunction of the AWFCO systems listed in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., the Permittees ~~shall~~ will immediately, manually cut-off the dangerous and/or mixed waste feed to the LAW Vitrification System. The Permittees ~~shall~~ will not restart the dangerous and/or mixed waste feed until the problem causing the malfunction has been identified and corrected.

III.10.I.1.c.vi. The Permittees ~~shall~~ will manually cut-off the dangerous and/or mixed waste feed to the LAW Vitrification System when the operating conditions deviate from the limits specified in Permit Condition III.10.I.1.c.i., unless the deviation automatically activates the waste feed cut-off sequence specified in Permit Conditions III.10.I.1.c.ii., iii., and/or iv.

III.10.I.1.c.vii. If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the LAW Vitrification System occur due to deviations from Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., within a sixty (60) day period, the Permittees ~~shall~~ will submit a written report to Ecology within five (5) calendar days of the thirty-first exceedence, including the information specified below. These dangerous and/or mixed waste feed cut-offs to the LAW Vitrification System, whether automatically or manually activated, are counted if the specified set-points are deviated from while dangerous and/or mixed waste and waste residues continue to be processed in the LAW Vitrification System. A cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified in Permit Table III.10.I.F, from which the set-point is deviated:

A. The parameter(s) that deviated from the set-point(s) in Permit Table III.10.I.F;

B. The magnitude, dates, and duration of the deviations;

C. Results of the investigation of the cause of the deviations; and

D. Corrective measures taken to minimize future occurrences of the deviations.

III.10.I.1.c.viii. If greater than thirty (30) dangerous and/or mixed waste feed cut-off, combined, to the LAW Vitrification System occur due to deviations from Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., within a thirty (30) day period, the Permittees ~~shall~~ will submit the written report required to be submitted pursuant to Permit Condition III.10.I.1.c.vii. to Ecology on the first business day following the thirty-first exceedence. These dangerous and/or mixed waste feed cut-offs to the LAW Vitrification System, whether automatically or manually activated, are counted if the specified set-points are deviated from while dangerous and/or mixed waste and waste residues continue to be processed in the LAW Vitrification System. A cascade event is counted at a frequency of one (1) towards the first waste feed cut-off parameter, specified on Permit Table III.10.I.F, from which the set-point is deviated:

In accordance with WAC 173-303-680(2) and (3), the Permittees may not resume dangerous and/or mixed waste feed to the LAW Vitrification System until this written report has been submitted, and

A. Ecology has authorized the Permittees, in writing, to resume dangerous and/or mixed waste feed, or

B. Ecology has not, within seven (7) days, notified the Permittees in writing of the following:

1. The Permittees written report does not document that the corrective measures taken will minimize future exceedances; and

2. The Permittees must take further corrective measures and document that these further corrective measures will minimize future exceedances.

III.10.I.1.c.ix. If any portion of the LAW Vitrification System is bypassed while treating dangerous and/or mixed waste, it ~~shall~~ will be regarded as non-compliance with the operating conditions specified in Permit Condition III.10.I.1.c. and the performance standards specified in Permit Condition III.10.I.1.b. After such a bypass event, the Permittees ~~shall~~ will perform the following actions:

A. Investigate the cause of the bypass event;

B. Take appropriate corrective measures to minimize future bypasses;

C. Record the investigation findings and corrective measures in the WTP Unit operating record; and

D. Submit a written report to Ecology within five (5) days of the bypass event documenting the result of the investigation and corrective measures.

III.10.I.1.c.x. The Permittees ~~shall~~ will control fugitive emissions from the LAW Vitrification System by maintaining the melters under negative pressure.

III.10.I.1.c.xi. Compliance with the operating conditions specified in Permit Condition III.10.I.1.c. ~~shall~~ will be regarded as compliance with the required performance standards identified in Permit Condition III.10.I.1.b. However, evidence that compliance with these operating conditions is insufficient to ensure compliance with the performance standards, ~~shall~~ will justify modification, revocation, or re-issuance of this Permit, in accordance with Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g.

III.10.I.1.d. Inspection Requirements [WAC 173-303-680(3)]

III.10.I.1.d.i. The Permittees ~~shall~~ will inspect the LAW Vitrification System in accordance with the Inspection Schedules in Operating Unit 10, Chapter 6.0 of this Permit, as modified in accordance with Permit Condition III.10.C.5.c.

III.10.I.1.d.ii. The inspection data for LAW Vitrification System ~~shall~~ will be recorded, and the records ~~shall~~ will be placed in the WTP Unit operating record for LAW Vitrification System, in accordance with Permit Condition III.10.C.4.

III.10.I.1.d.iii. The Permittees ~~shall~~ will comply with the inspection requirements specified in Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f. and as modified by Permit Conditions III.10.H.3, III.10.I.1.b.x., III.10.I.1.b.xii., and III.10.I.1.h.

III.10.I.1.e. Monitoring Requirements [WAC 173-303-670(5), WAC 173-303-670(6), WAC 173-303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(3)]

III.10.I.1.e.i. Upon receipt of a written request from Ecology, the Permittees ~~shall~~ will perform sampling and analysis of the dangerous and/or mixed waste and exhaust emissions to verify that the operating requirements established in the Permit achieve the performance standards delineated in this Permit.

III.10.I.1.e.ii. The Permittees ~~shall~~ will comply with the monitoring requirements specified in the Operating Unit 10, Appendices 9.2, 9.3, 9.7, 9.13, 9.15 and 9.18 of this Permit, as approved pursuant to Permit Condition III.10.H.5, and as modified by Permit Conditions III.10.H.3, III.10.I.1.h., III.10.I.1.b.x., and III.10.I.1.b.xii.

III.10.I.1.e.iii. The Permittees ~~shall~~ will operate, calibrate, and maintain the carbon monoxide and hydrocarbon continuous emission monitors (CEM) specified in this Permit in accordance with Performance Specifications 4B and 8A of 40 CFR Part 60, Appendix B, in accordance with Appendix to Subpart EEE of 40 CFR Part 63, and Operating Unit 10 Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., and as modified by Permit Conditions III.10.H.3, III.10.I.1.h., III.10.I.1.b.x., and III.10.I.1.b.xii.

III.10.I.1.e.iv. The Permittees ~~shall~~ will operate, calibrate, and maintain the instruments specified in Permit Tables III.10.I.C and F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v., in accordance with Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.5.f., and as modified by Permit Conditions III.10.H.3, III.10.I.1.h., III.10.I.1.b.x., and III.10.I.1.b.xii.

III.10.I.1.f. Recordkeeping Requirements [WAC 173-303-380 and WAC 173-303-680(3)]

III.10.I.1.f.i. The Permittees ~~shall~~ will record and maintain in the WTP Unit operating record for the LAW Vitrification System, all monitoring, calibration, maintenance, test data, and inspection data compiled under the conditions of this Permit, in accordance with Permit Conditions III.10.C.4 and 5, as modified by Permit Conditions III.10.H.3, III.10.I.1.h., III.10.I.1.b.x., and III.10.I.1.b.xii.

III.10.I.1.f.ii. The Permittees ~~shall~~ will record in the WTP Unit operating record the date, time, and duration of all automatic waste feed cutoffs and/or lockouts, including the triggering parameters, reason for the deviation, and recurrence of the incident. The Permittees ~~shall~~ will also record all incidents of AWFCO system function failures, including the corrective measures taken to correct the condition that caused the failure.

III.10.I.1.f.iii. The Permittees ~~shall~~ will submit to Ecology an annual report each calendar year within ninety (90) days following the end of the year. The report will include the following information:

A. Total dangerous and/or mixed waste feed processing time for the LAW Vitrification System;

B. Date/Time of all LAW Vitrification System startups and shutdowns;

C. Date/Time/Duration/Cause/Corrective Action taken for all LAW Vitrification System shutdowns caused by malfunction of either process or control equipment; and

D. Date/Time/Duration/Cause/Corrective Action taken for all instances of dangerous and/or mixed waste feed cut-off due to deviations from Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v.

III.10.I.1.f.iv. The Permittees ~~shall~~ will submit an annual report to Ecology each calendar year within ninety (90) days following the end of the year of all quarterly CEM Calibration Error and Annual CEM Performance Specification Tests conducted, in accordance with Permit Condition III.10.I.1.e.iii.

III.10.I.1.g. Closure

The Permittees ~~shall~~ will close the LAW Vitrification System in accordance with Operating Unit 10, Chapter 11.0 of this Permit, as approved pursuant to Permit Condition III.10.C.8.

III.10.I.1.h. Periodic Emission Re-testing Requirements [WAC 173-303-670(5), WAC 173-303-670(7), and WAC 173-303-807(2), in accordance with WAC 173-303-680(2) and (3)]

III.10.I.1.h.i. Dioxin and Furan Emission Testing

A. Within eighteen (18) months of commencing operation pursuant to Permit Section III.10.I, the Permittees ~~shall~~ will submit to Ecology for approval, a Dioxin and Furan Emission Test Plan (DFETP) for the performance of emission testing of the LAW Vitrification System gases for dioxin and furans during "Normal Operating Conditions" as a permit modification in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f. The DFETP ~~shall~~ will include all elements applicable to dioxin and furan emission testing included in the "Previously Approved Demonstration Test Plan," applicable EPA promulgated test methods and procedures in effect at the time of the submittal, and projected commencement and completion dates for dioxin and furan emission test. "Normal Operating Conditions" ~~shall~~ will be defined for the purposes of this permit condition as follows:

1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-off parameters specified in Permit Table III.10.I.F (as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v.), that were established to maintain compliance with Permit Condition III.10.I.1.b.iv. as specified in Operating Unit 10, Appendix 9.15 of this Permit (as approved pursuant to Permit Condition III.10.H.3.d., and in accordance with III.10.I.1.b.xii. and III.10.I.1.c.xi.), are held within the range of the average value over the previous twelve (12) months and the set-point value specified in Permit Table III.10.I.F. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value ~~shall~~ will not include calibration data, malfunction data, and data obtained when not processing dangerous and/or mixed waste; and

2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.I.D (as approved/modified pursuant to Permit Conditions III.10.H.5 and III.10.H.3.d.v.). Feed-rate of organics as measured by TOC are held within the range of the average value over the previous twelve (12) months. The average value is defined as the sum of the

rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value ~~shall~~ will not include data obtained when not processing dangerous and/or mixed waste.

For purposes of this permit condition, the "Previously Approved Demonstration Test Plan" is defined to include the Demonstration Test Plan approved pursuant to Permit Condition III.10.H.5.f.

B. Within sixty (60) days of Ecology's approval of the DFETP, or within thirty-one (31) months of commencing operation pursuant to Permit Section III.10.I, whichever is later, the Permittees ~~shall~~ will implement the DFETP approved pursuant to Permit Condition III.10.I.1.h.i.A.

C. The Permittees ~~shall~~ will resubmit the DFETP, approved pursuant to Permit Condition III.10.I.1.h.i.A, revised to include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, and projected commencement and completion dates for dioxin and furan emission test as a permit modification in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2.f. at twenty-four (24) months from the implementation date of the testing required pursuant to Permit Condition III.10.I.1.h.i.A and at reoccurring eighteen (18) month intervals from the implementation date of the previously approved DFETP. The Permittees ~~shall~~ will implement these newly approved revised DFETPs, every thirty-one (31) months from the previous approved DFETP implementation date or within sixty (60) days of the newly Ecology approved revised DFETP, whichever is later, for the duration of this Permit.

D. The Permittees ~~shall~~ will submit a summary of operating data collected pursuant to the DFETPs in accordance with Permit Conditions III.10.I.1.h.i.A and C to Ecology upon completion of the tests. The Permittees ~~shall~~ will submit to Ecology the complete test report within ninety (90) calendar days of completion of the testing. The test reports ~~shall~~ will be certified as specified in WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).

E. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit Conditions III.10.I.1.h.i.A and C. show that one or more of the performance standards listed in Permit Condition III.10.I.1.b., with the exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were not met during the emission test, the Permittees ~~shall~~ will perform the following actions:

1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s);

2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the performance standard(s), as specified in Permit Condition I.E.21;

3. Investigate the cause of the failure and submit a report of the investigation findings to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s);

4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s) documentation supporting a mode of operation where all performance standards listed in Permit Condition III.I.1.b., with the exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were met during the demonstration test, if any such mode was demonstrated;

5. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.I.1.h.i.E.1 through 4 above, and any additional information, Ecology may ~~submit~~ provide in writing, direction to the Permittees to stop dangerous waste and mixed waste feed to the LAW Vitrification System and/or amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of the revised Demonstration Test Plan pursuant to Permit Condition III.10. I.1.h.i.E.6; and

6. Submit to Ecology within one hundred and twenty (120) days of discovery of not meeting the performance standard(s) a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e.and III.10.C.2.f. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring reflecting performance under operating conditions representative of the extreme range of normal conditions, and include revisions to Permit Tables III.10.I.D and F.

F. If any calculations or testing results collected pursuant to the DFETPs in accordance with Permit Conditions III.10.I.1.h.i.A and C show that any emission rate for any constituent listed in Permit Table III.10.I.E, as approved/modified pursuant to Permit Conditions III.10.C.11.c. or d. is exceeded for LAW Vitrification System during the emission test, the Permittees ~~shall~~ will perform the following actions:

1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the emission rate(s), as specified in Permit Condition I.E.21;

2. Submit to Ecology additional risk information to indicate that the increased emissions impact is off-set by decreased emission impact from one or more constituents expected to be emitted at the same time, and/or investigate the cause and impact of the exceedence and submit a report of the investigation findings to Ecology within fifteen (15) days of this discovery of exceeding the emission rate(s); and

3. Based on the notification and any additional information, Ecology may ~~submit~~ provide, in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to Permit

Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring reflecting performance under operating conditions representative of the extreme range of normal conditions, and include revisions to Permit Tables III.10.I.D and III.10.I.F.

III.10.I.1.h.ii. Non-organic Emission Testing

A. Within forty-eight (48) months of commencing operation pursuant to Permit Section III.10.I, the Permittees ~~shall~~ will resubmit to Ecology for approval the "Previously Approved Demonstration Test Plan" revised as a permit modification in accordance with Permit Conditions III.10.C.2.e. and III.10.C.2f. The revised Demonstration Test Plan (RDTP) ~~shall~~ will include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, projected commencement and completion dates for emission testing to demonstrate performance standards specified in Permit Conditions III.10.I.1.b.ii., iii., v., vi., and vii.; and non-organic emissions as specified in Permit Table III.10.I.E, as approved/modified pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d., under "Normal Operating Conditions." "Normal Operating Conditions" ~~shall~~ will be defined for the purposes of this permit condition as follows:

1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-off parameters specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d., that were established to maintain compliance with Permit Conditions III.10.I.1.b.ii., iii., v., vi., and vii.; and non-organic emissions, as specified in Permit Table III.10.I.E, as specified in Operating Unit 10, Appendix 9.15 of this Permit (as approved pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d.), are held within the range of the average value over the previous twelve (12) months and the set-point value specified in Permit Table III.10.I.F. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value ~~shall~~ will not include calibration data, malfunction data, and data obtained when not processing dangerous or mixed waste; and

2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average value over the previous twelve (12) months and the set-point value specified in Permit Table III.10.I.D, as approved/modified pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d. The average value is defined as the sum of all rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value ~~shall~~ will not include data obtained when not processing dangerous or mixed waste.

For purposes of this permit condition, the "Previously Approved Demonstration Test Plan" is defined to include the Demonstration Test Plan approved pursuant to Permit Condition III.10.H.5.f.

B. Within sixty (60) days of Ecology's approval of the RDTP, or within sixty (60) months of commencing operation pursuant to Permit Section III.10.I, whichever is later, the Permittees ~~shall~~ will implement the RDTP approved pursuant to Permit Condition III.10.I.1.h.ii.A.

C. The Permittees ~~shall~~ will resubmit the RDTP, approved pursuant to Permit Condition III.10.I.1.h.ii.A, revised to include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, and projected commencement and completion dates for emission test as a permit modification in accordance with Permit Conditions III.10.C.2.e. and f. at forty-eight (48) months from the implementation date of the testing required pursuant to Permit Condition III.10.I.1.h.ii.A and at reoccurring forty-eight (48) month intervals from the implementation date of the previously approved RDTP. The Permittees ~~shall~~ will implement these newly approved revised RDTP, every sixty (60) months from the previous approved RDTP implementation date or within sixty (60) days of the newly Ecology approved revised RDTP, whichever is later, for the duration of this Permit.

D. The Permittees ~~shall~~ will submit a summary of operating data collected pursuant to the RDTPs in accordance with Permit Conditions III.10.I.1.h.ii.A and C to Ecology upon completion of the tests. The Permittees ~~shall~~ will submit to Ecology the complete test report within ninety (90) calendar days of completion of the testing. The test reports ~~shall~~ will be certified pursuant to WAC 173-303-807(8), in accordance with WAC 173-303-680(2) and (3).

E. If any calculations or testing results collected pursuant to the ~~DFETPs~~ RDTPs in accordance with Permit Conditions III.10.I.1.h.ii.A and C show that any emission rate for any constituent listed in Permit Table III.10.I.E, as approved/modified pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d., is exceeded for LAW Vitrification System during the emission test, the Permittees ~~shall~~ will perform the following actions:

1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the emission rate(s), as specified in Permit condition I.E.21;

2. Submit to Ecology additional risk information to indicate that the increased emissions impact is off-set by decreased emission impact from one or more constituents expected to be emitted at the same time, and/or investigate the cause and impact of the exceedence and submit a report of the investigation findings to Ecology within fifteen (15) days of this discovery of exceeding the emission rate(s); and

3. Based on the notification and any additional information, Ecology may ~~submit~~ provide, in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification System and/or to submit a

revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring reflecting performance under operating conditions representative of the extreme range of normal conditions, and include revisions to Permit Tables III.10.I.D and III.10.I.F.

F. If any calculations or testing results collected pursuant to the ~~DFETPs~~ RDTPs in accordance with Permit Conditions III.10.I.1.h.ii.A and C show that one or more of the performance standards listed in Permit Condition III.10.I.1.b., with the exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were not met during the emission test, the Permittees ~~shall~~ will perform the following actions:

1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s);

2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the performance standard(s), as specified in Permit condition I.E.21;

3. Investigate the cause of the failure and submit a report of the investigation findings to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s);

4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s) documentation supporting a mode of operation where all performance standards listed in Permit Condition III.I.1.b., with the exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were met during the demonstration test, if any such mode was demonstrated;

5. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.I.1.h.ii.F.1 through 4 above, and any additional information, Ecology may ~~submit~~ provide in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification System and/or amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of the revised Demonstration Test Plan pursuant to Permit Condition III.10.I.1.h.ii.F.6; and

6. Submit to Ecology within one hundred and twenty (120) days of discovery of not meeting the performance standard(s) a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring reflecting performance under operating conditions representative of the extreme range of normal conditions, and include revisions to Permit Tables III.10.I.D and F.

III.10.I.1.h.iii. Other Emission Testing

A. Within seventy-eight (78) months of commencing operation pursuant to Permit Section III.10.I, the Permittees ~~shall~~ will resubmit to Ecology for approval the "Previously Approved Demonstration Test Plan" revised as a permit modification in accordance with Permit Conditions III.10.C.2.e. and f. The ~~r~~Revised Demonstration Test Plan (RDTP) ~~shall~~ will include applicable EPA promulgated test methods and procedures in effect at the time of the submittal, projected commencement and completion dates for emission testing to demonstrate performance standards as specified in Permit Conditions III.10.I.1.b.viii. and ix., and emissions as specified in Permit Table III.10.I.E, as approved/modified pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d., not addressed under Permit Conditions III.10.I.1.h.i. or ii. under "Normal Operating Conditions." "Normal Operating Conditions" ~~shall~~ will be defined for the purposes of this permit condition as follows:

1. Carbon monoxide emissions, dangerous and/or mixed waste feed-rate, and automatic waste feed cut-off parameters specified in Permit Table III.10.I.F, as approved/modified pursuant to Permit Condition III.10.H.3.d. and III.10.C.11.c. or d., that were established to maintain compliance with Permit Conditions III.10.I.1.b.viii. and ix., and emissions as specified in Permit Table III.10.I.E, not addressed under Permit Conditions III.10.I.1.h.i. or ii. as specified in Operating Unit 10, Appendix 9.15 of this Permit, as approved pursuant to Permit Condition III.10.H.3.d. and in accordance with Permit Conditions III.10.I.1.b.xii. and III.10.I.1.c.xi. are held within the range of the average value over the previous twelve (12) months and the set-point value specified on Permit Table III.10.I.F. The average value is defined as the sum of all rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value ~~shall~~ will not include calibration data, malfunction data, and data obtained when not processing dangerous and/or mixed waste; and

2. Feed-rate of metals, ash, and chlorine/chloride are held within the range of the average value over the previous twelve (12) months and the set-point value specified in Permit Table III.10.I.D, as approved/modified pursuant to Permit Conditions III.10.H.3.d. and III.10.C.11.c. or d. Feed-rate of organics as measured by TOC are held within the range of the average value over the previous twelve (12) months. The average value is defined as the sum of the rolling average values recorded over the previous twelve (12) months divided by the number of rolling averages recorded during that time. The average value ~~shall~~ will not include data obtained when not processing dangerous and/or mixed waste.

For purposes of this permit condition, the "Previously Approved Demonstration Test Plan" is defined to include the Demonstration Test Plan approved pursuant to Permit Condition III.10.H.5.f.

B. Within sixty (60) days of Ecology's approval of the RDTP, or within ninety-one (91) months of commencing operation pursuant to Permit Section III.10.I, whichever is

later, the Permittees ~~shall~~ will implement the RDTP approved pursuant to Permit Condition III.10.I.1.h.iii.A.

C. The Permittees ~~shall~~ will submit a summary of operating data collected pursuant to the RDTPs in accordance with Permit Condition III.10.I.1.h.iii.A to Ecology upon completion of the tests. The Permittees ~~shall~~ will submit to Ecology the complete test report within ninety (90) calendar days of completion of the testing. The test reports ~~shall~~ will be certified as specified in WAC 173-303-807(8), in accordance with Permit Condition WAC 173-303-680(2) and (3).

D. If any calculations or testing results show that one or more of the performance standards listed in Permit Condition III.10.I.1.b., with the exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were not met during the emission test, the Permittees ~~shall~~ will perform the following actions:

1. Immediately stop dangerous and/or mixed waste feed to the LAW Vitrification System under the mode of operation that resulted in not meeting the performance standard(s);

2. Verbally notify Ecology within twenty-four (24) hours of discovery of not meeting the performance standard(s), as specified in Permit Condition I.E.21;

3. Investigate the cause of the failure and submit a report of the investigation findings to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s);

4. Submit to Ecology within fifteen (15) days of discovery of not meeting the performance standard(s) documentation supporting a mode of operation where all performance standards listed in Permit Condition III.I.1.b., with the exception of Permit Condition III.10.I.1.b.x., for the LAW Vitrification System were met during the demonstration test, if any such mode was demonstrated;

5. Based on the information provided to Ecology by the Permittees pursuant to Permit Conditions III.10.I.1.h.iii.D.1 through 4 above, and any additional information, Ecology may ~~submit~~ provide in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification System and/or amend the mode of operation the Permittees are allowed to continue operations prior to Ecology approval of the revised Demonstration Test Plan, pursuant to Permit Condition III.10. I.h.1.iii.D.6.; and

6. Submit to Ecology within one hundred and twenty (120) days of discovery of not meeting the performance standard(s) a revised Demonstration Test Plan requesting approval to retest as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring reflecting performance under operating conditions representative of the extreme range

of normal conditions, and include revisions to Permit Tables III.10.I.D and III.10.I.F.

E. If any calculations or testing results show that any emission rate for any constituent listed in Permit Table III.10.I.E, as approved/modified pursuant to Permit Conditions III.10.C.11.c. or d., is exceeded for LAW Vitrification System during the emission test, the Permittees ~~shall~~ will perform the following actions:

1. Verbally notify Ecology within twenty-four (24) hours of the discovery of exceeding the emission rate(s), as specified in Permit Condition I.E.21;

2. Submit to Ecology additional risk information to indicate that the increased emissions impact is off-set by decreased emission impact from one or more constituents expected to be emitted at the same time, and/or investigate the cause and impact of the exceedence of the emission rate(s) and submit a report of the investigation findings to Ecology within fifteen (15) days of the discovery of the exceedence of the emission rate(s); and

3. Based on the notification and any additional information, Ecology may ~~submit~~ provide, in writing, direction to the Permittees to stop dangerous and/or mixed waste feed to the LAW Vitrification System and/or to submit a revised Demonstration Test Plan as a permit modification pursuant to Permit Conditions III.10.C.2.e. and f., or III.10.C.2.g. The revised Demonstration Test Plan must include substantive changes to prevent failure from reoccurring reflecting performance under operating conditions representative of the extreme range of normal conditions, and include revisions to Permit Tables III.10.I.D and F.

Table III.10.I.A - LAW Vitrification System Description

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables and Figures
~~**LAW Concentrate Receipt Process System** (Comprised of the following equipment: Melter 1/2 Concentrate Receipt Vessels LCP-VSL-00001/2[b])~~	~~LCP~~	~~24590-LAW-M6-LCP-P0001~~ ~~-M6-LCP-P0002~~ ~~-M6-LCP-P0003~~ ~~-MV-LCP-P0001~~ ~~-MV-LCP-P0002~~ ~~-MV-LCP-P0004~~ ~~-MV-LCP-P0005~~	
~~**LAW Melter Feed Process System** (Comprised of the following equipment: Melter 1 Feed Preparation Vessel LFP-VSL-00001[a], Melter 1 Feed Vessel LFP-VSL-00002[a], Melter 2 Feed Preparation Vessel LFP-VSL-00003[a], Melter 2 Feed Vessel LFP-VSL-00004[a]), Melter 3 Feed Preparation Vessel V21301[a], Melter 3 Feed Vessel V21302[a]~~	~~LFP~~ ~~LCP~~ ~~GFR~~	~~24590-LAW-M5-V17T-P0001~~ ~~-M5-V17T-P0002~~ ~~-M6-LCP-P0001~~ ~~-M6-LCP-P0002~~ ~~-M6-LCP-P0003~~ ~~-MV-LCP-P0001~~ ~~-MV-LCP-P0002~~ ~~-MV-LCP-P0004~~ ~~-MV-LCP-P0005~~ ~~-P1-P01T-P0002~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~	~~Section 4.1.3.1; Tables 4-4 and 4-11, and Figures 4A-1, 4A-3, and 4A-20 of Operating Unit 10, Chapter 4 of this Permit~~
LAW Melter Process System [Comprised of the following equipment: LAW Melters LMP-MLTR-00001/2]	LMP	24590-LAW -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0009	Section 4.2.3.2; Tables 4-4, and Figure 4A-21 of Operating Unit 10, Chapter 4 of this Permit

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables and Figures
~~LAW Glass Product Systems Melter 1,2, & 3~~	~~LMP~~	~~24590-LAW~~ ~~-P1-P01T-P0007~~ ~~-P1-P01T-P0009~~	~~Section 4.2.3.2 of Operating Unit 10, Chapter 4 of this Permit~~
LAW Primary Offgas Process System [Comprised of the following equipment: Primary & ~~Secondary~~ Stand by Film Coolers-Melter 1 & 2] ~~3;~~	LOP	24590-LAW -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0009 -M6-LOP-P0001 -M6-LOP-P0002	Section 4.1.3.3 ~~and Figure 4A-21 of Operating Unit 10, Chapter 4 of this Permit~~
LAW Primary Offgas Process System [Comprised of the following equipment: Melter 1/2 Submerged Bed Scrubbers LOP-SCB-00001/2	LOP	24590-LAW ~~-M5-V17T-P0001~~ -M5-V17T-P0007 -M5-V17T-P0008 -M6-LOP-P0001 -M6-LOP-P0002 -MK-LOP-P0001001 -MK-LOP-P0001002 -MK-LOP-P0001003 -MKD-LOP-P0008 ~~-MKD-LOP-P0004~~ ~~-LOP-P0002~~ -NID-LOP-P0001 -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0010 ~~-P1-P01T-P0011~~	Section 4.1.3.3; Tables 4-4 and 4-11, and Figure 4A-22 of Operating Unit 10, Chapter 4 of this Permit

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables and Figures
~~, Submerged Bed Scrubbers/Condensate Vessels~~ ~~[a] Melter 1, 2, & 3~~	~~LOP~~	~~24590-LAW~~ ~~-M5-V17T-P0007~~ ~~-M5-V17T-P0008~~ ~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~ ~~-MK-LOP-P001001~~ ~~-MK-LOP-P001002~~ ~~-MK-LOP-P001003~~ ~~-MKD-LOP-P0002~~ ~~-MKD-LOP-P0004~~ ~~-MKD-LOP-P0008~~ ~~-MV-LOP-P0001~~ ~~-MV-LOP-P0002~~ ~~-MVD-LOP-P0004~~ ~~-MVD-LOP-P0005~~ ~~-N1D-LOP-P0001~~ ~~-N1D-LOP-P0002~~ ~~-N1D-LOP-P0003~~ ~~-P1-P01T-P0002~~ ~~-P1-P01T-P0007~~ ~~-P1-P01T-P0010~~ ~~-P1-P01T-P0011~~	~~Section 4.1.3.3; Tables 4-4 and 4-11, and Figure 4A-22 of Operating Unit 10, Chapter 4 of this Permit~~
Wet electrostatic Precipitators-Melter 1 & 2 ~~3~~-LOP-WESP-00001/2]	LOP	24590-LAW -M5-V17-P0007 -M5-V17-P0008 -M6-LOP-P0001 -M6-LOP-P0002 ~~-MKD-LOP-P0008~~	Section 4.1.3.3 and Figure 4A-22 of Operating Unit 10, Chapter 4 of this Permit

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables and Figures
		~~-MV-LOP-P0001~~ ~~-MV-LOP-P0002~~ ~~-MVD-LOP-P0004~~ ~~-MVD-LOP-P0005~~ ~~-NID-LOP-P0001~~ ~~-NID-LOP-P0002~~ -NID-LOP-P0003 -P1-P01T-P0002 -P1-P01T-P0007 -P1-P01T-P0011 24590-WTP-3PS-MKE0-TP001	
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: High Efficiency Particulate Air Filters-~~LCP-HEPA-00001/2/3, LCP-BULGE-00002, LFP-HEPA-00001/2,~~ ~~LOP-HEPA-00001/2~~, LVP-HEPA-00001A/B, LVP-HEPA-00002A/B. LVP-HEPA-00003A]	~~LCP/LFP/LOP~~ /LVP	**24590-LAW** -M5-~~LVP~~-V17T-P0010 ~~-M6-LCP-P0001/2~~ ~~-M6-LFP-P0001~~ ~~-M6-LFP-P0003~~ ~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~ ~~-M6-LVP-P0001~~ -M6-LVP-P0003 ~~-M6-LVP-P0002~~ ~~-M6-LVP-P0004~~ ~~-M6-LVP-P0005~~	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: Thermal Catalytical Oxidation Unit-LVP-SCO-	LVP	RESERVED	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables and Figures
00001 [located on LVP-SKID-00002]			
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: Selective Catalytical Reduction Units-LVP-SCR-00001 [located on LVP-SKID-00002]	LVP	RESERVED	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: ~~Carbon~~ Offgas Mercury Absorbers- LVP-ADBR-00001A/B [located on LVP-SKID-00001]	LVP	RESERVED	RESERVED
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: LAW Caustic Collection Tank[a] LVP-TK-00001] ~~LVP-SKID-00001~~ ~~LVP-SKID-00002~~	LVP	24590-LAW -M5-V17T-P0011 -M6-LVP-P0002 ~~-M6-LVP-P0004~~ ~~-M6-LVP-P0005~~ -MT-LVP-P0004 -MTD-LVP-P0001 -N1D-LVP-P0002 -P1-P01T-P0007 -P1-P01T-P0009	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
LAW Secondary Offgas/Vessel Vent Process System[(Comprised of the following equipment: ~~Caustic Scrubber/Blowdown Vessel[a] LVP-TK-0001~~ LAW Melter Offgas Caustic Scrubber-LVP-SCB-00001]	LVP	24590-LAW -P1-P01T-P0002 -P1-P01T-P0010 -M6-LVP-P0002	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment:	~~LOP~~/LVP	24590-LAW -M5-V17T-P0010	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit

Sub-system Description	Sub-system Designation	Engineering Description (Drawing Nos, Specification Nos, etc.)	Narrative Description, Tables and Figures
ElectricHeaters-~~LOP-HTR-00001/2,~~ LVP-HTR-00001A/B, LVP-HTR-00002]		~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~ -M6-LVP-P0001 -M6-LVP-P0005	
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: Heat Exchanger-LVP-HX-00001 [located on LVP-SKID-00002]	LVP	RESERVED	Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit
~~**LAW Secondary Offgas/Vessel Vent Process System** (Comprised of the following equipment: Pumps-LOP-EDUC-00001/2, , LVP-PMP-00001A/B, LVP-PMP-00002A/B,~~	~~LOP/LVP~~	~~24590-LAW~~ ~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~ ~~-M6-LVP-P0002~~	~~Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit~~
LAW Secondary Offgas/Vessel Vent Process System [Comprised of the following equipment: ~~ExhaustFans-LOP-BLWS-00001/2/3/4/5/6/7/8/9/10,~~ ~~Melter~~ Offgas Exhausters LVP-EXHR-00001A/B/C]	~~LOP~~/LVP	24590-LAW -M5-V17T-P0010 ~~-M6-LOP-P0001~~ ~~-M6-LOP-P0002~~ -M6-V17T-P0001	Section 4.1.3.3 of Operating Unit 10, Chapter 4 of this Permit
~~Mist Eliminators~~	~~LVP~~	~~RESERVED~~	~~Section 4.1.3.3 of Operating Unit 10, Chapter 4 of this Permit~~
~~**LAW Secondary Offgas/Vessel Vent Process System** [Comprised of the following equipment: LAW Stack]~~	~~LVP~~	~~RESERVED~~	~~Section 4.1.3.3 and Figure 4A-23 of Operating Unit 10, Chapter 4 of this Permit~~

[a] Requirements pertaining to the tanks in LAW Vitrification System Melter 1 & 2 Concentrate Receipt Vessels, Melter Feed/Feed Preparation Vessels System , Submerged Bed Scrubbers/ SBS Condensate Vessels, and Caustic Collection Tank ~~Scrubber/Blowdown Vessel~~ are specified in Permit Section III.10.E.

Table III.10.I.B - LAW Vitrification System Secondary Containment Systems Including Sumps and Floor Drains

Sump/Floor Drain I.D.# & Room Location	Maximum Sump Capacity (gallons)	Sump Dimensions (feet) & Materials of Construction	Engineering Description (Drawing Nos, Specification Nos, etc.)
RESERVED	RESERVED	RESERVED	RESERVED

Table III.10.I.C - LAW Vitrification Systems Process and Leak Detection System Instruments and Parameters

Sub-system Locator and Name (including P&ID)	Control Parameter	Type of Measuring or Leak Detection Instrument	Location of Measuring Instrument (Tag No.)	Instrument Range	Failure State	Expected Range	Instrument Accuracy	Instrument Calibration Method No. and Range
RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED	RESERVED