



DEPARTMENT OF  
**ECOLOGY**  
State of Washington

**STATEMENT OF BASIS**

**Proposed Permit Modification, 8C.2018.3D, of the  
*Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste  
Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste,*  
Part III, Operating Unit Group 10, Waste Treatment and Immobilization Plant,  
WA7890008967**

April 2018

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## STATEMENT OF BASIS

### **Proposed Permit Modification, 8C.2018.3D, of the Hanford Facility Resource Conservation and Recovery Act Permit, *Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste,* Part III, Operating Unit Group 10, Waste Treatment and Immobilization Plant, WA7890008967**

#### **Permittees**

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

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

The Washington State Department of Ecology (Ecology) developed this Statement of Basis to fulfill the requirements of Washington Administrative Code [WAC 173-303-840\(2\)\(f\)\(iv\)](#). Ecology chose to prepare a Statement of Basis as described in [WAC 173-303-840\(2\)\(f\)\(iv\)](#), rather than a Fact Sheet.

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

This Statement of Basis is divided into four sections:

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

This modification focuses on the proposed Low-Activity Waste (LAW) Environmental Performance Demonstration Test (EPDT) Plan; and, draft revised Part A and Permit Conditions in support of construction and eventual operations on the following regulated portions of the WTP:

- LAW Facility
- Laboratory (LAB) Facility
- Effluent Management Facility (EMF)

Ecology participated in two years of meetings with the Permittees to discuss the proposed EPDT Plan. The result was the proposed EPDT Plan and revisions to the Part A and Permit Conditions. Upon the completion of the public comment period, any significant comments will be responded to and changes may be made to the draft documents for eventual inclusion into the WTP Permit.

WTP Permit Condition III.10.H.3.a.ii of the WTP Permit requires that the EPDT Plan be resubmitted with additional details 180 days prior to the actual execution of the LAW Facility EPDT.

#### **1.0 HANFORD FACILITY RESOURCE CONSERVATION AND RECOVERY ACT PERMIT (SITE-WIDE PERMIT)**

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

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

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

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

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

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

## **2.0 THE WTP PERMITTING PROCESS**

We are using a phased (or stepped) approach to permit the WTP TSD Unit. The first phase was completed on September 25, 2002, with issuance of a final Dangerous Waste Permit allowing construction of the LAW Facility, Pretreatment Facility, High-Level Waste Facility, LAB Facility, and Balance of Facilities to start.

Currently, Ecology is actively permitting and incorporating the Direct Feed Low-Activity Waste (DFLAW) configuration into the WTP Permit. A new facility has been added to the WTP Facility called the EMF. Modifications to incorporate the new EMF design and permit documents into the WTP Permit have also been provided to the public for review and comments.

The second phase of permitting is included in the WTP Interim Compliance Schedules, and requires the Permittees to submit design and other information for Ecology approval before regulated portions of the WTP TSD Unit are constructed.

The WTP Interim Compliance Schedules for the United States Department of Energy provides Ecology additional detailed information addressing the submittal of design documents necessary to support construction of the rest of the WTP TSD Unit, and its eventual operation.

The third phase of permitting is implementation of the Interim Compliance Schedule. This requires updating portions of the Dangerous Waste Permit Application and then modifying the WTP Permit prior to facility start-up operations. These portions (for example, Contingency Plan, Closure Plan, and Training Plan) of the WTP Permit are operational in nature and will be completed as the design approaches completion and necessary technical information from the design is available.

One of the WTP Interim Compliance Schedule items is item number LAW-26, "Submit LAW Vitrification Environmental Performance Demonstration Test Plan for Ecology review and approval," which the Permittees formally submitted to Ecology prior to the agreed to Interim Compliance Date of January 30, 2018. The draft EPDT Plan is included in this permit modification along with a revised Part A form and proposed changes to the WTP Permit Conditions for public review and comment.

The current schedule is to perform the LAW Facility EPDT in calendar year 2021 with the shakedown periods on purchased material beginning approximately 70 days prior. During the shakedown period, this EPDT Plan describes feed and testing that are proposed to prepare the LAW Facility and its personnel for the final step in cold commissioning. This EPDT is designed to demonstrate that the LAW Facility can meet the performance standards enumerated in the DWP. The EPDT will also collect selected emission data for use in the human health and ecological risk assessment. The EPDT is scheduled to be performed at the end of the cold commissioning phase of the LAW Facility prior to hot commissioning, which is when Tank Farm waste supernatant would be fed via the Direct Feed Low-Activity Waste Facility. This EPDT will not be conducted on radioactive waste.

When the three phases of permitting are completed, the WTP TSD Unit will comply with all the applicable requirements of [WAC 173-303](#). Then, after receiving written permission from Ecology, the Permittees can begin treatment and storage of dangerous and mixed waste at the WTP.

### **3.0 PROCEDURES FOR REACHING A FINAL DECISION ON THE DRAFT WTP PERMIT MODIFICATION**

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

Regulatory requirements for public notice and involvement as part of an Agency Initiated permit modification are described in [WAC 173-303-840](#)(3) and (4). As required by [WAC 173-303-840](#)(3)(d), draft modifications to the WTP Permit will have at least a 45-day public comment period. The public comment period for this proposed permit modification, 8C.2018.3D, begins on **April 23, 2018** and ends on **June 8, 2018**.

Public comments received from this comment period will be addressed by Ecology in a *Response to Comments* document. Comments must be post-marked, received by e-mail, or hand delivered no later than close of business (5:00 P.M. PST) June 8, 2018. Direct all written comments by mail or hand-delivery to:

Daina McFadden  
Washington State Department of Ecology  
3100 Port of Benton Blvd  
Richland WA 99354

Electronic comments may be submitted at: <http://wt.ecology.commentinput.com/?id=rTRau>

In accordance with [WAC 173-303-840](#)(10)(c), when a permit is modified, only the conditions subject to modification are open for comment. All other aspects of the existing WTP Permit remain in effect for the duration of the modification.

Ecology will consider and respond to all written comments on this permit modification submitted by the deadline. Ecology will provide a *Response to Comments* document and a notification of the final permit decision to the Permittees and all others who commented. Once a final permit decision is made, it will become effective 30 days after Ecology provides notice of the decision to the Permittees. The final permit decision may be appealed within 30 days after issuance of that decision. If the final decision includes substantial changes to the WTP Permit because of public comment, we will initiate a new public comment period.

A public hearing is not scheduled, but if there is enough interest, we will consider holding one.

To request a hearing, contact:

Daina McFadden

509-372-7950

Copies of the WTP Permit, including the proposed permit modification, are available for review at the Administrative Record and the Hanford Public Information Repositories listed below.

This Statement of Basis and Public Notice for the proposed permit modification is also available online at <http://www.ecy.wa.gov/programs/nwp/commentperiods.htm>. If special accommodations are needed for public comment, contact Ecology, at (509) 372-7950 or [hanford@ecy.wa.gov](mailto:hanford@ecy.wa.gov).

## **Administrative Record**

### **Richland**

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

U.S. Department of Energy  
Administrative Record  
2440 Stevens Drive  
Richland, Washington 99354

## **Public Information Repositories**

### **Richland**

Washington State University Tri-Cities,  
Department of Energy Reading Room  
2770 Crimson Way, Room 101L  
Richland, Washington 99354

### **Seattle**

University of Washington  
Suzzallo Library  
4000 15<sup>th</sup> Avenue Northeast  
Seattle, Washington 98195

### **Portland**

Portland State University  
Branford Price Millar Library  
1875 Southwest Park Avenue  
Portland, Oregon 97201

### **Spokane**

Gonzaga University  
Foley Center Library  
502 East Boone Avenue  
Spokane, Washington 99258

#### 4.0 PROPOSED MODIFICATIONS TO THE WTP PERMIT

This Agency-Initiated modification (8C.2018.3D) focuses on proposed changes to the Part A, Permit Conditions, and to incorporate the EPDT Plan into the WTP Permit. It is one of many changes to the original WTP Permit. Periodic updates allow the Permittees to continue construction while designing other parts of the WTP. Ecology determines the class of each permit modification under [WAC 173-303-830](#).

The proposed change is in Part III, Operating Unit Group 10 of the Hanford Site-Wide Permit.

In accordance with [WAC 173-303-840](#)(10)(c), when a permit is modified, only the conditions subject to modification are open for comment. All other aspects of the existing Permit remain in effect for the duration of the modification.

According to WTP Permit Condition III.10.H, the Permittees have constructed and maintained the LAW Vitrification system to prepare for a short-term miscellaneous thermal treatment shakedown and demonstration test prior to operations. In addition, this proposed modification meets the requirement of WTP Interim Compliance Schedule item number LAW-26, "Submit LAW Vitrification Environmental Performance Demonstration Test Plan for Ecology review and approval," which the Permittees completed prior to January 1, 2018.

Proposed changes to the Permit Conditions include additions to the definitions and acronyms and to include additional detail on the demonstration test and the shakedown phase in WTP Permit Conditions III.10.H.2, III.10.H.3, and III.10.H.4. In addition, Table III.10.H.C, "LAW Vitrification System Process and Leak Detection System Instruments and Parameters" and Table III.10.H.D, "Maximum Feed-rates to LAW Vitrification System" are completed with more detail.

The draft EPDT Plan is included to provide information on the following:

- Background of the Engineering Description of the LAW Facility Melters and Offgas Systems and each of the components included in the system;
- The regulatory requirements and applicable performance standards that the LAW Facility must attain as miscellaneous units regulated under [WAC 173-303-680](#);
- The sampling, analysis and monitoring procedures during the demonstration test;
- The Demonstration Test protocol; the description, and planned operating conditions;
- The schedule of activities;
- The final LAW Facility operating conditions;
- Appendix A, "The Quality Assurance Project Plan for the LAW EPDT Plan";
- Appendix B, "Certificate of Analyses";
- Appendix C, "Carbon and Catalyst Life";
- Appendix D, "Continuous Monitoring System Performance Evaluation Plan";
- Appendix E, "Examples of Safety Data Sheet for Spiking Materials and Simulant";
- Appendix F, "Sampling Ports Drawings";
- Appendix G, "Mass and Energy Balance" references to existing final permitting documents;
- Appendix H, "Engineering White Papers"; and,
- Appendix I, "Final Report Outline" in preparation for the final EPDT Report in the post-demonstration phase.

The draft permit modification focuses on the information needed to bring the WTP Permit closer to the operations phase for the LAW Facility. The WTP Facility was originally planned to begin operations of all facilities at once with a single compliance date for beginning operations by December 30, 2018. Due to technical issues within the High-Level Waste and Pretreatment facilities, the project's focus has shifted to the design and development of the DFLAW configuration. The LAB Facility operational information was included in a recent modification to the WTP Permit and the LAW Facility operational information will be provided to the public in a future modification.

Initiation of the DFLAW configuration will allow for the treatment and vitrification of low-activity waste starting December 31, 2023. The High-Level Waste and Pretreatment facilities will begin operations December 31, 2033.

#### **4.1 Identifying Changes in this Proposed Permit Modification**

As the WTP TSD Unit is constructed, Ecology will modify the WTP Permit for many reasons, including to clarify text, modify the Interim Compliance Schedule, add/or delete new or existing Permit Conditions, correct errors, or add information. To communicate the changes, proposed permit modifications will include page changes showing all significant proposed changes to the WTP Permit. The text to be deleted will be struck-out with a single line, and the new text will be redlined. Only the text being changed in the current modification will be indicated by redlines and strikeouts. If a document appears with no redline or strikeout, then the document is new to the WTP Permit.

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