

DEPARTMENT OF
ECOLOGY
State of Washington

Fact Sheet

Proposed Permit Modification to Part V of the *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste, WA7890008967*, to add Closure Unit Group 6, Waste Encapsulation and Storage Facility Hot Cells A through F

March 2016

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Permittees

The permit is to be issued to Hanford's owner and operators. The U.S. Department of Energy (USDOE), as the owner and operator of the facility, is a permittee. USDOE is a single permittee, although it is listed below recognizing it has two offices in Richland, Washington. Hanford contractors are also permittees because they are the co-operators.

United States Department of Energy
Richland Operations Office
(Owner/Operator)
PO Box 550
Richland, Washington 99352

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

CH2M HILL Plateau Remediation Company
(Co-Operator)
PO Box 1600, MSIN: H7-30
Richland, Washington 99352

Washington River Protection Solutions, LLC
(Co-Operator)
PO Box 850, MSIN: H3-21
Richland, Washington 99352

Mission Support Alliance, LLC
(Co-Operator)
PO Box 650, MSIN: H1-30
Richland, Washington 99352

Pacific Northwest National Laboratory
(Co-Operator)
PO Box 999, MSIN: K1-46
Richland, Washington 99352

Bechtel National, Inc.
(Co-Operator)
2435 Stevens Center Place, MSIN: H4-02
Richland, Washington 99354

Washington Closure Hanford, LLC
(Co-Operator)
2620 Fermi Avenue, MSIN: H4-24
Richland, Washington 99354

The Washington State Department of Ecology (Ecology) is proposing a draft permit modification to Part V of the *Hanford Facility Resource Conservation and Recovery Act Permit, Dangerous Waste Portion, Revision 8C, for the Treatment, Storage, and Disposal of Dangerous Waste* (hereafter called the Hanford Site-wide Permit). This draft permit modification adds Closure Unit Group 6, Waste Encapsulation and Storage Facility (WESF) Hot Cells A through F to Part V of the Hanford Site-wide Permit. This draft permit modification consists of the Closure Unit Group 6 permit conditions, Part A form, and closure plan.

The proposed modifications also provide information on the requested Treatability Variance associated with the Hot Cells A through F.

Ecology developed this Fact Sheet to fulfill the requirements of Washington Administrative Code (WAC) 173-303-840(2)(f).

This Fact Sheet is divided into seven sections:

- 1.0 Hanford Site-Wide Permit Background
- 2.0 WESF Facility and Hot Cells A through F Dangerous Waste Management Unit Description
- 3.0 Class 3 Permit Modification Process for WESF Hot Cells A through F
- 4.0 Proposed Modification to Part V of the Hanford Site-wide Permit
- 5.0 Procedures for Reaching a Final Decision on the Draft Permit Modification
- 6.0 State Environmental Policy Act

1.0 Hanford Site-wide Permit Background

Ecology's Nuclear Waste Program (NWP) manages dangerous waste within the State by writing permits to regulate its treatment, storage, and disposal.

Ecology has the authority to regulate dangerous waste and the dangerous waste components of mixed (radioactive and dangerous) waste, under 70.105 RCW and WAC 173-303. The Hanford Site-wide Permit has requirements for the treatment, storage, and disposal of dangerous and mixed waste at Hanford. Ecology does not regulate waste that is solely radioactive. USDOE has the exclusive authority to regulate radioactive materials and radioactive waste at Hanford.

Ecology first issued the Hanford Site-wide Permit in 1994. The facility has been operating under that initial permit since then. Since 1994, the permit has been modified several times to incorporate changes or updates and to incorporate and closeout several dangerous waste management units (DWMUs).

The Hanford Site-wide Permit provides standard and general facility conditions, as well as unit group conditions for the operation, closure, and post-closure care of DWMUs at Hanford. These DWMUs are administratively grouped into operating, closure, or post-closure unit groups in the Site-wide Permit. Each unit group may contain one or more DWMU.

The Hanford Site-wide Permit is organized as follows:

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| Part I | Standard Conditions. |
| Part II | General Facility Conditions. |
| Part III | Operating Units. |
| Part IV | Corrective Action for Past Practice Units. |
| Part V | Closure Units. |
| Part VI | Post-Closure Units. |

In 2012, NWP issued Revision 9 of the Hanford Site-wide Permit with 37 unit groups and two Corrective Action units. The DWMUs within the unit groups are operating, in closure, or in post-closure. At this time, the State is reconciling the over 5,000 public, EPA, and permittee comments received on that Revision 9 draft. Until a new Revision 9 of the Hanford Site-wide

Permit is issued for a new public comment period, the legal and enforceable revision of the Hanford Site-wide Permit is Revision 8C.

This draft permit modification adds Closure Unit Group 6, WESF Hot Cells A through F to Part V of the Hanford Site-wide Permit. The Part V, Closure Unit Group 6 draft permit modification consists of the unit group permit conditions specific to closure of WESF Hot Cells A through F, Part A form, Closure Plan, the permittees treatability variance request and Ecology's approval of the treatability variance request. Adding the WESF Hot Cells A through F to Part V of the Hanford Site-wide Permit is a Class 3 permit modification.

2.0 WESF Facility and Hot Cells A through F Dangerous Waste Management Unit Description

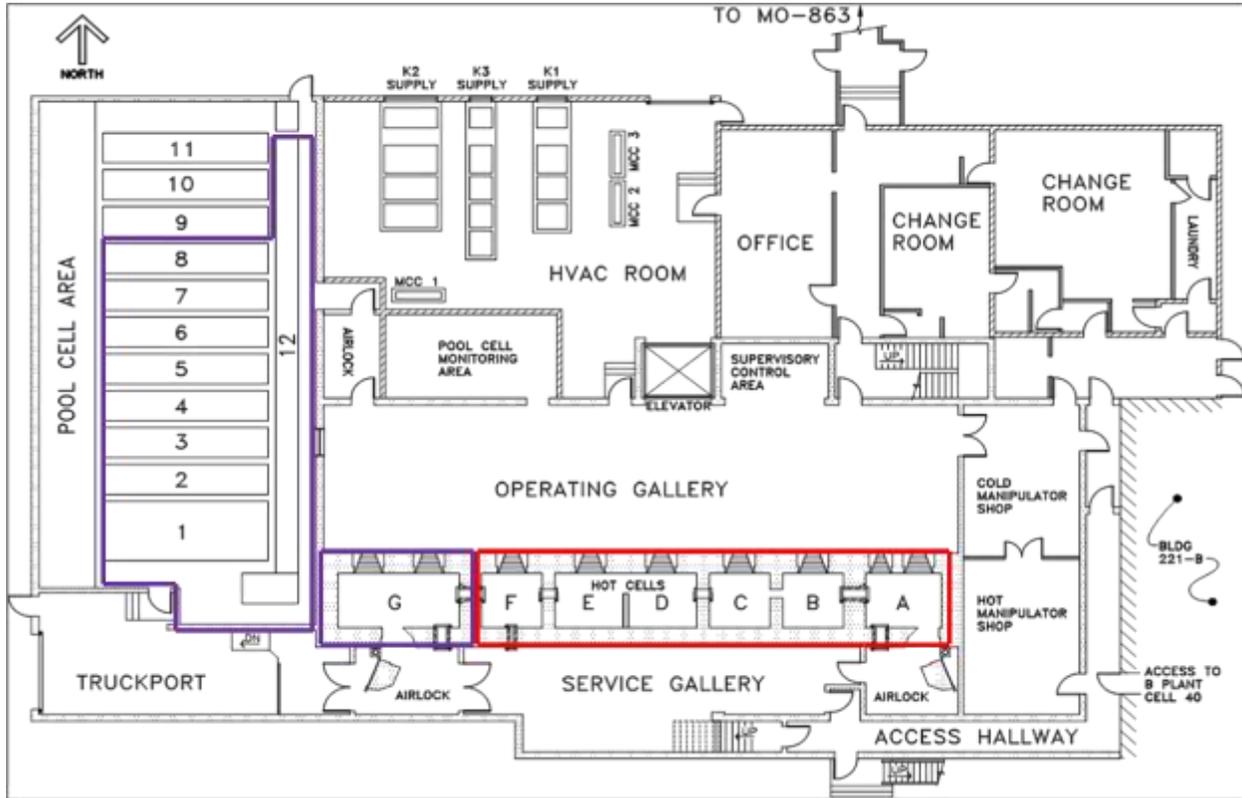
WESF was constructed on the west end of B Plant between 1971 and 1973 to encapsulate and store radioactive cesium-137 (Cs-137) and strontium-90 (Sr-90) that had been separated from plutonium production waste stored in underground storage tanks on the Hanford Facility. Separation of cesium and strontium from tank waste occurred at B Plant.

WESF consists of seven hot cells, the hot cell service area, operating areas, building service areas, and the pool cell area. WESF has three DWMUs: two operating (Hot Cell G and Pool Cells 1-8 and 12) and one initiating closure (Hot Cells A through F). These three DWMUs are miscellaneous units.

The hot cells, hot cell service area, operating areas, and building service areas supported encapsulation operations. Encapsulation included conversion of Cs-137 to cesium chloride and Sr-90 to strontium fluoride, placement of cesium chloride and strontium fluoride into double walled stainless steel capsules, and seal welding of the capsules. As a result of these activities, the hot cells became contaminated with a significant amount of Cs-137 and Sr-90, along with smaller amounts of dangerous constituents.

Large amounts of legacy contamination throughout some hot cells and the ventilation system require the stabilization of the contamination, as well as upgrades to the ventilation system. The proposed modifications are necessary to support replacement of the K3 ventilation exhaust system at WESF, which is permitted under the Hanford Air Operating Permit. The current filters are beyond their design life and are deteriorating. Therefore, a new ventilation exhaust system will be installed to ensure continued safe operations at WESF.

To replace the K3 ventilation system, USDOE must stabilize WESF hot cell contamination left over from prior waste processing activities by filling the cells with grout. The stabilization effort requires a revised Part A and Closure Plan as presented in this modification.



Waste Encapsulation and Storage Facility Pool and Process Cells

3.0 Class 3 Permit Modification Process for WESF Hot Cells A through F

On December 11, 2014, the permittees submitted a Class 3 permit modification request to Ecology for the WESF Hot Cells A through F, which included a draft Part A and a draft closure plan. The permittees held a public comment period from December 11, 2014 through February 12, 2015. The permittees also held a public meeting on January 7, 2015 at the Richland Public Library. The public comment period was subsequently extended to March 3, 2015 to give the public time to review the Petition for Site-Specific Variance from Land Disposal Restriction (LDR) Treatment Standards that was submitted to Ecology by the permittees.

After review of USDOE's Class 3 permit modification, Ecology issued a letter of incompleteness on March 25, 2015 in accordance with Washington Administrative Code (WAC) 173-303-830(4)(c)(vi) and WAC 173-303-840(1)(b). After working with the permittees to resolve the items of incompleteness and technical deficiencies Ecology issued a letter of completeness to the Class 3 permit modification on February 11, 2016. The same day Ecology also issued an approval to the permittees request for a Site-Specific Variance from Land Disposal Restriction (LDR) Treatment Standards.

Public comments from the permittees' comment period are addressed by Ecology in a response to comment document. Revision 8C of the Hanford Site-wide Permit will be modified by permit modification. In order to be complete and thorough in developing the draft permit, Ecology has also responded to WESF specific public comments that were received during the draft Revision 9 permit renewal public comment period (May 1, 2012 to October 22, 2012), in this response to

comment document. This response to comment document accompanies the draft permit modification. This response to comment document associated with the USDOE 60-day public comment period and the draft Revision 9 renewal public comment period is available online at <http://www.ecy.wa.gov/programs/nwp/commentperiods.htm>.

4.0 Proposed Modification to Part V of the Hanford Site-wide Permit

The proposed draft permit modification adds Closure Unit Group 6, WESF Hot Cells A through F to Part V of the Hanford Site-wide Permit. The draft permit modification consists of permit conditions, Part A, and a closure plan for initiating closure of WESF Hot Cells A through F.

The closure plan describes the steps that USDOE will take to perform clean closure of Hot Cells A through F. To support stabilization of the old ventilation system and Hot Cells A through F, USDOE will complete both initial and final closure activities. Initial closure activities will be site preparation, unit modification and evaluation prior to stabilization, and stabilization of the contamination within Hot Cells A through F. Following completion of the initial Hot Cell A through F closure activities, an extended closure period will begin prior to completion of final clean closure of the Hot Cells A through F DWMU. Final closure activities for Hot Cells A through F will be completed concurrent with closure activities for the remaining two operating DWMUs.

The unit group permit conditions and Addenda in Part V, Closure Unit Group 6 are intended to protect human health and the environment by ensuring the WESF Hot Cells A through F is closed according to the approved Addendum H, Closure Plan. Ecology reviewed the closure plan submittal for the WESF Hot Cells A through F and has included permit conditions to ensure the permittees comply with environmental standards, and modify the closure plan as needed during closure activities.

Permit Condition V.6.A is a standard permit condition that appears as the first permit condition for each unit group. It refers to the Hanford Site-wide Permit Attachment 9, Permit Applicability Matrix, which identifies which Part I and Part II Permit Conditions are applicable to DWMUs within Part III, V, or VI unit groups. The permit condition also prevents conflicts between the unit group permit conditions, and the Part I and II Permit Conditions.

Permit Condition V.6.B.1 requires the permittees to comply with all of the requirements set forth in the Addendum H, Closure Plan, and to close WESF Hot Cells A through F in accordance with the plan.

Permit Condition V.6.B.2 is intended to ensure sampling assumptions made in the Addendum H, Closure Plan, *Section H-A5.13, Sampling and Analysis Plan and Constituents to be Analyzed*, were met. If sampling assumptions were not met, the permit condition requires the permittees to submit a permit modification request to amend the closure plan to include a revised sampling design.

In addition to the proposed permit modifications and permit conditions, USDOE also submitted a request for a site-specific treatability variance from applicable LDR treatment standards (letter 15-AMRP-0070) for six containers of waste in Hot Cells B and C, in accordance with WAC 173-303-140. These six containers of waste contain floor sweepings with strontium fluoride and processing debris, including metal shavings, and other miscellaneous waste material produced

during operation of the hot cells. Four of the six containers are trays in the Hot Cell B furnace with approximately 0.6 kg of strontium fluoride floor sweepings, and two capped pipes in the southwest corner of Hot Cell C with approximately 1.2 kg of strontium fluoride floor sweepings.

Ecology approved USDOE's request for treatability variance on February 11, 2016 (letter number 16-NWP-010), which will allow stabilization by an alternative treatment method of macroencapsulation of these waste containers. This method will use grout to completely surround the waste, which will be protective of human health and the environment by reducing the leachability of contaminants and minimizing waste generation and potential radiological exposure to workers. The requested treatability variance and approval has detailed the justification and protectiveness of the alternative treatment.

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

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.

Part I, Part II, and Attachment 9 Permit Applicability Matrix will be modified after the public comment period when the permit modification becomes effective.

This draft permit modification was prepared according to the procedures in WAC 173-303-840(2). As required by WAC 173-303-840(3)(d), draft permits Ecology issues will have at least a 45-day public comment period. The public comment period for this draft permit begins on March 14, 2016 and ends on April 27, 2016.

Comments must be post-marked, received by e-mail, or hand-delivered no later than close of business (5:00 p.m. PST) April 27, 2016. Direct all written comments to:

Stephanie Schleif
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354
E-mail address: hanford@ecy.wa.gov

In accordance with WAC 173-303-840(10)(c), when a permit is modified, only those conditions to be modified will be reopened when a new draft permit is prepared. All other aspects of the existing Permit remain in effect for the duration of the modification.

Ecology will consider and respond to all written comments on this draft permit modification submitted by the deadline. Ecology will then issue a final permit modification that will become effective 30 days after the issuance date. If the final decision includes substantial changes to the draft permit modification because of public comment, we will consider initiating a new public comment period.

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

Dieter Bohrmann
Washington State Department of Ecology
(509) 372-7950
E-mail address: hanford@ecy.wa.gov

After completion of the 45-day public comment period, Ecology will issue the final Hanford Site-wide Permit with Part V, Closure Unit Group 6, WESF Hot Cells A through F to the permittees. NWP will also issue a Response to Comments document to the permittees. The final permit decision may be appealed within 30 days after issuance of that decision. If there is no appeal, the permit will stand as issued.

Copies of the Part V, Closure Unit Group 6, WESF Hot Cells A through F, conditions, Part A, closure plan and treatability variance approval are available for review at the NWP Resource Center, USDOE Administrative Record, and Hanford Public Information Repositories. For additional information call (509) 372-7950 or e-mail hanford@ecy.wa.gov.

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

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

Hanford Public Information Repositories

Richland

United States Department of Energy
Reading Room
2770 Crimson Way
Richland, Washington 99354
Contact: Janice Parthree (509) 372-7443

Portland

Portland State University
Branford Price Millar Library
1875 Southwest Park Avenue
Portland, Oregon 97201
Contact: Claudia Weston (503) 725-4542

Seattle

University of Washington Suzzallo Library
4000 15th Avenue Northeast
Seattle, Washington 98195
Contact: Emily Keller (206) 685-2660

Spokane

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

Information on 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's Nuclear Waste Program at (509)372-7950.

6.0 State Environmental Policy Act

In accordance with WAC 187-11-960, the Permittees provided a certified environmental checklist for WESF Hot Cells A through F. Ecology's review of the checklist resulted in a Determination of Significance/Adoption of the USDOE's *Hanford Defense High Level, Transuranic and Tank Wastes EIS* Record of Decision. A copy of the Determination of Significance/Adoption is available online at <http://www.ecy.wa.gov/programs/nwp/commentperiods.htm>