THE HANFORD SITE

Permit Modification for the Waste Treatment and Immobilization Plant Dangerous Waste Permit Inspection Plan

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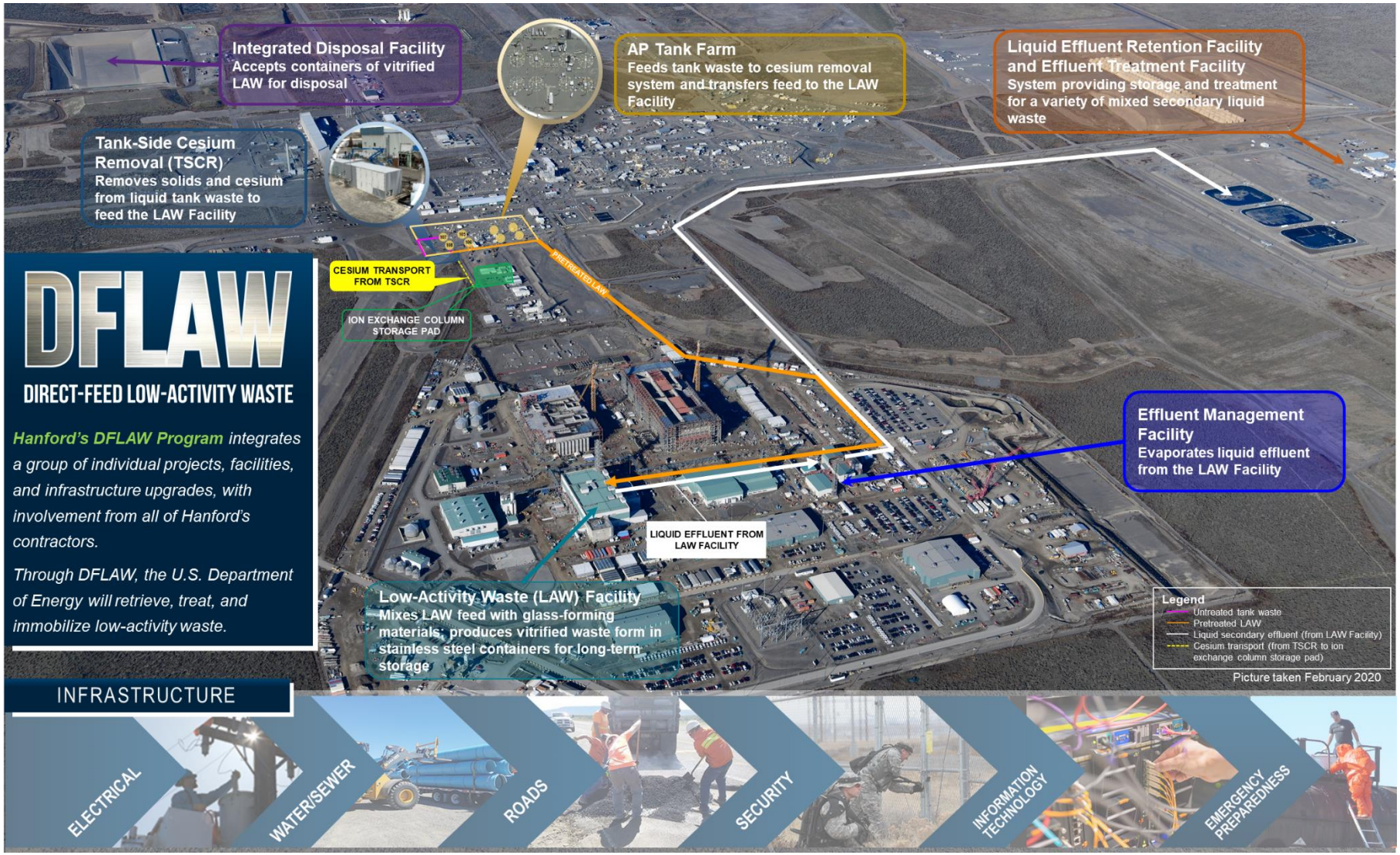
Overview

- Meeting Objective: Present planned modifications to the Waste Treatment and Immobilization Plant (WTP) section of the Hanford Dangerous Waste Permit, Chapter 6A, “Inspection Plan”
- Agenda
  - Hanford Direct-Feed Low-Activity Waste configuration
  - Regulatory framework and permitting action
  - Purpose and content of the permit modification
  - Permit modification public process overview
  - Questions and answers

Direct-Feed Low-Activity Waste Configuration



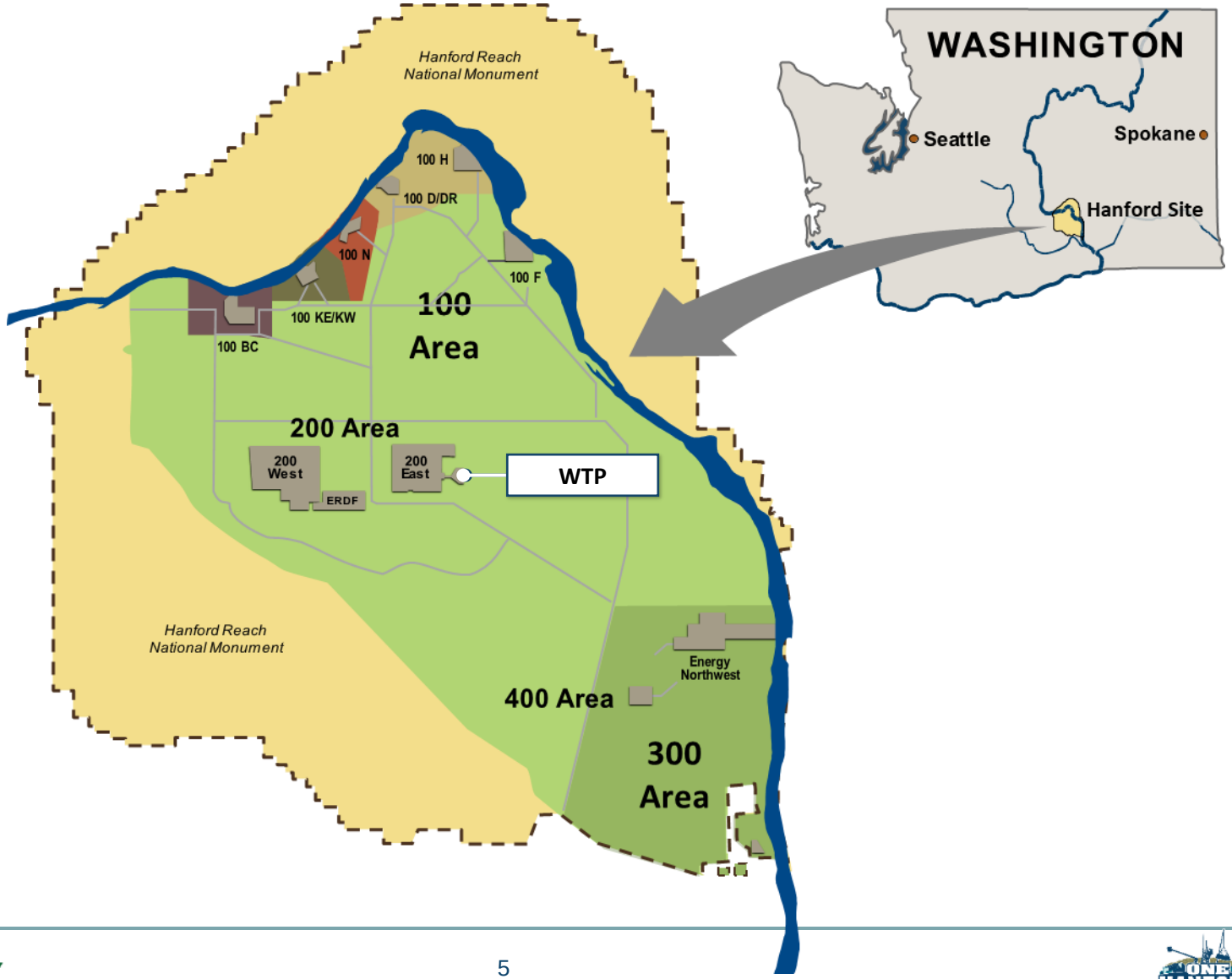
Direct-Feed Low-Activity Waste Configuration (cont.)

- The Direct-Feed Low-Activity Waste (DFLAW) configuration allows for the operation of the WTP Low-Activity Waste (LAW) Vitrification Facility and Analytical Laboratory (LAB)

- In the DFLAW configuration, pretreated low-activity waste is fed directly from the Hanford Tank Farms to the LAW Vitrification Facility

- The Effluent Management Facility will manage and treat the liquid effluent from the LAW Vitrification Facility Radioactive Liquid Waste Disposal (RLD) System and the LAB RLD System and manage the effluent from the LAW Secondary Offgas / Vessel Vent Process System

Hanford Site Map



Waste Treatment and Immobilization Plant

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Regulatory Framework for Permitting Action

- The *Resource Conservation and Recovery Act* Hanford Dangerous Waste Permit governs dangerous waste treatment, storage and disposal at the Hanford Site
- The Washington State Department of Ecology (the regulator) issued the current Hanford Sitewide permit (Revision 8C), which governs hazardous tank waste treatment, storage and disposal
- The permittees (DOE and Bechtel National, Inc.) are proposing a Class 2 permit modification to the WTP Operating Unit Group 10, Chapter 6A, “Inspection Plan”

Purpose of the Permit Modification

- WTP section, Chapter 6A, “Inspection Plan”
  - Describes the facility’s approach to preventing and detecting indications of malfunction, deterioration and discharges for permit-affecting structures, systems and components (SSC)
  - Identifies the SSC subject to inspection and assessment, including the inspection criteria, frequency and methods
  - Identifies required recordkeeping and reporting

Purpose of the Permit Modification (cont.)

Proposed modifications will:

- Update the inspection methods for routinely non-accessible areas
- Add rooms associated with the following areas to the category of “routinely non-accessible” locations*:
  - Melter pour cave
  - Immobilized Low-Activity Waste (ILAW) container buffer storage and rework areas

* Inspection methods for these areas will also be updated

Proposed Permit Modifications

Factors Determining “Routinely Non-Accessible” Areas

- ALARA Principles: **A**s **L**ow **A**s **R**easonably **A**chievable with regard to occupational exposure to radiation or radioactive materials
- Confined Space: Risk of hazardous atmosphere and/or other physical hazards

Proposed Permit Modifications (cont.)

- Existing permit Chapter 6A tables:
  - Currently include several inspection methods for each identified structure or component
  - Approach allowed the evolution of inspection capabilities during design and construction
- Proposed permit modification will refine the inspection methods to reflect the WTP facility as-built condition and address related worker safety and health considerations
- Maintains compliance with the permit and the underpinning Washington Administrative Code requirements

Proposed Permit Modifications (cont.)

Permitted Methods of Inspection	
Physical	An inspection conducted physically in person. A physical inspection requires the physical presence of the inspector at the item of inspection and is not to be confused with a remote inspection. Due to accessibility limitation, physical inspections may be conducted with the aid of instruments (e.g., borescope, mirrors).
Remote	An inspection conducted by closed-circuit television, observation windows, control panels, process control system, or any other inspection that is not conducted physically in person.
Functional	An inspection conducted by operating or testing the item being inspected to determine if equipment/instrument is operating correctly and capable of performing its function.

Proposed Permit Modifications (cont.)

General Updates to Inspection Methods

- Overall refinement and specification of inspection methods
- Revision of physical inspections for routinely non-accessible areas for the required inspection frequencies*
- Revised the closed-circuit television inspection method where not available
- Specification of control panel and control room system monitoring for inspection where necessary
- Specification of physical inspection method where acceptable

*Note: Detailed physical inspections coinciding with outages or other requisite maintenance entries will also be performed for routinely non-accessible areas

Proposed Permit Modifications (cont.)

Routinely Non-accessible Areas and ALARA: Radiological (R1-R5) and Contamination (C1-C5) classification areas have been identified for each room throughout the DFLAW facilities. Any area with potential contamination >100,000 dpm/100cm^2 is classified as a C5 area.

Proposed Permit Modifications (cont.)

Radiation Classifications (R1-R5)

Classification	Maximum Equivalent Dose Rate (mrem/hr)	Type of Access Control
R1, Radiological controlled area	0.050	No limit on occupancy for general employees
R2, Radiological buffer area	0.500	No limit on occupancy for general employees. A thermoluminescent dosimeter (TLD) and Rad Worker I training required for entry.
R3, Average radiation area	10	Entry only to carry out prescribed tasks in accordance with normal procedures and a Radiation Work Permit. TLD and Rad Worker I training required for entry into Radiation Areas.
R4, Maximum radiation area	100	Entry only to carry out prescribed tasks in accordance with normal procedures and a Radiation Work Permit. TLD and Rad Worker I training required for entry into Radiation Areas.
R5, High and very high radiation area	>100	Normally locked. Entry is unusual and requires management approval. Supplemental dosimetry, a specific Radiological Worker Program, and approved procedures are also required.

Proposed Permit Modifications (cont.)

Surface Contamination Limits (C1-C5)

Classification	Surface Contamination Limit (dpm/100cm^2) β/γ	Description
C1 Radiological Controlled Area	<1000	The C1 area has low potential to be contaminated because there are no direct interfaces with contaminated areas. C1 areas are typically administrative offices, control rooms, conference rooms, locker rooms, rest rooms, equipment rooms, truck bays, and noncontiguous support facilities.
C2 Radiological Buffer Area	<1000	C2 area are operating areas of the process buildings. C2 areas have direct interfaces with contaminated areas and have the potential to be contaminated. C2 contamination surveys are performed regularly with frequencies as determined by facility trends.
C3 Contamination Area	≥100 but <100,000	C3 areas are the process areas where the potential for direct contact with radioactive material, contaminated systems and components, or both, exists.
C4 High Contamination Area	≥100,000 but < ≈ 500,000	C4 areas are highly contaminated as a result of the breaching large, highly contaminated systems or components when use of a glove bag is impractical. **NOTE: This classification is not used**
C5 Airborne Radioactivity Area	≥ ≈ 500,000	C5 areas are highly contaminated or airborne areas that require total enclosure to ensure contamination control.

Proposed Permit Modifications (cont.)

- Additional routinely Non-accessible areas
  - Melter pour cave
  - ILAW container buffer storage and rework areas
- Additional areas classified as R5, R3 or C5
- Update the inspection methods for these areas to remote inspections

Proposed Permit Modifications (cont.)

Summary of Modifications

- Proposed changes to inspection methods reflect appropriate strategy for protecting worker health and safety while assuring system function and integrity
- Modifications to inspection methods are within the scope and intent of the permit and Washington Administrative Code
- Inspection frequencies will remain consistent with the current requirements

Permit Modification Public Process

WTP section Class 2 Permit Modification

60-day public comment period is open through Dec. 17

Submit comments via mail or electronically (preferred) to the Washington State Department of Ecology at the address below:

Daina McFadden
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, WA 99354
http://nw.ecology.commentinput.com/?id=MWf3Y

Questions?
The Hanford Reach
White Bluffs Overlooking the Columbia River