



Alternatives Evaluated for the Plutonium Finishing Plant Above-Grade Structures

U.S. Department of Energy - Washington State Department of Ecology - U.S. Environmental Protection Agency

The U.S. Department of Energy, Washington State Department of Ecology, and the U.S. Environmental Protection Agency (Tri-Party Agreement agencies) would like your input on an Engineering Evaluation/Cost Analysis for the Plutonium Finishing Plant (PFP) Above-Grade Structures.

Background

The Plutonium Finishing Plant (PFP) facility is located on the Hanford Site in the 200 West Area located northwest of Richland, Washington. The PFP facility was used in plutonium processing, storage, and support operations, e.g., plutonium recovery, plutonium conversion, special nuclear material handling and storage. In 1996, a Record of Decision outlined how all plutonium-bearing residues would be stabilized and PFP buildings and structures would be cleaned out.

This Engineering Evaluation/Cost Analysis (EE/CA) evaluates alternatives for over 50 above-grade structures that cover approximately a 58 acre area. These facilities were processing, support, and/or administrative buildings. Due to past plutonium production operations many of these facilities are potentially contaminated.

“Above-grade” is defined as structures/elements that are above or on the elevation of the surrounding ground (e.g., a building or concrete slab). Portions of above-grade structures that are below the elevation of the surrounding ground but not completely covered by soil are also included within the scope of the EE/CA. For example, the basements, tunnels, vaults, etc. of above-grade structures are included. Not included in this EE/CA, unless specifically called out, are "sub-grade" structures/elements that are completely covered by soil or other covering that is not readily removed (e.g., a floor slab, piping that is buried under a building).



Plutonium Finishing Plant Complex

The PFP Above-Grade Structures EE/CA represents the second of four removal action documents on which the public will be asked to comment. Public comment was requested previously on the 232-Z Contaminated Waste Recovery Process Facility EE/CA. Future public comment periods will be held on two other EE/CAs: 1) PFP Sub-Grade Structures EE/CA that will address buried contaminated process piping, waste lines, vents, etc., and 2) the 241-Z-361 Settling Tank EE/CA that will identify alternatives for this tank contaminated with plutonium waste.

Some of the key structures in this EE/CA include:

- 216-Z-9 Contaminated Soil Removal Building, Operator’s Cubical, and Mining Apparatus Enclosure (216-Z-9A, 9B, and 9C)
- Plutonium Fabrication Facility (234-5Z)
- Plutonium Reclamation Facility (236-Z)
- Waste Storage and Treatment Facility (241-Z)
- Waste Treatment Facility (242-Z)

Public Comment

The Tri-Party agencies want your feedback on the Plutonium Finishing Plant Above-Grade Structures EE/CA. The public comment period runs from **October 11 through November 10, 2004.**



Fact Sheet

- Liquid Low Level Waste Treatment Facility (243-Z)
- Plutonium Storage and Storage Support Facilities (2736-Z/ZB)
- Exhaust Air Filter Stack Building and Stack (291-Z and 291-Z-001)

What is an Engineering Evaluation/Cost Analysis?

An EE/CA evaluates feasible and cost-effective alternatives for proposed removal actions, and recommends a specific removal action under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

A removal action is an immediate action taken over the short term to address a release or threatened release of hazardous substances. The PFP above-grade structures will be addressed as non-time critical removal actions. This EE/CA identifies the goals of a non-time critical removal action, identifies and evaluates the various removal alternatives and recommends a given alternative for these facilities.

What removal actions were evaluated?

The removal action for the PFP above-grade structures must protect human health and the environment, and meet the removal action objectives identified in the evaluation. Below is a brief summary of the removal action alternatives that were evaluated. The EE/CA contains a detailed description of all the activities included in each alternative.

- No Action: Complete disposition activities for plutonium holdup material with approximately 20-50 kg of residual contamination remaining. No other stabilization activities would be done and the structures would continue to deteriorate.
- Surveillance and Maintenance: Complete disposition activities for plutonium holdup material with approximately 20-50 kg of residual contamination remaining. Maintain structures in a safe surveillance and maintenance condition until final PFP decommissioning.
- Deactivation/Stabilization: Complete disposition activities for plutonium holdup material with

approximately 5-30 kg of residual contamination remaining. The above-grade structures would be deactivated and transitioned to long-term surveillance and maintenance.

- Slab-on-Grade: Disposition above-grade structures and complete plutonium holdup material disposition activities. Remove above-grade equipment, and as needed, equipment in any basement, tunnel, vault, etc. Demolish above-grade structures to grade. Significantly less than 1 kg of residual contamination would remain after completion of slab-on-grade activities. Piping entering or exiting a structure below-grade would be plugged or grouted.
- Entombment: Twelve above-grade structures would be cleaned out sufficiently to be designated as low-level waste (LLW) units. The structures would be entombed (partial or total) in concrete. Applicable buried radioactive pipes and ducts would be plugged or grouted. The slab-on-grade alternative would be applied to the remaining above-grade structures.
- Collapse and Cover: Fourteen above-grade structures would be cleaned up to meet LLW standards and collapsed in place. Parts of the structures and debris meeting LLW standards would remain within the engineered cover to be built over each collapsed structure. Applicable buried radioactive pipes and ducts would be plugged or grouted. The slab-on-grade alternative would be applied to the remaining above-grade structures.

The recommended alternative is slab-on-grade. The above-grade structures would be decontaminated and removed (demolished) leaving the slab and foundation intact. If the structures have basements, vaults, and/or tunnels, then the below-grade slab, foundation and walls are left intact. Environmental sampling will be conducted in conjunction with, or following, decontamination and demolition activities in order to assess whether cleanup and stabilization objectives were achieved. The estimated cost for the recommended alternative is \$605.7 million.

The proposed end point of removing the PFP above-grade structures to slab-on-grade is only one part of the overall CERCLA removal actions planned for the PFP Complex. Contamination remaining below and around the building slab and foundation and in sub-grade structures (e.g., buried contaminated process piping) will be addressed as part of future EE/CAs or the Central Plateau remedial action.

To request a copy of the document, call the Hanford Cleanup Line 800-321-02008.

**The EE/CA can be viewed on line at <http://www.hanford.gov/calendar>
(under the Public Comment Period Section)**

How you can become involved

A 30-day public comment period on the PFP Above-Grade Structures EE/CA will run from **October 11 through November 10, 2004**. The Tri-Party agencies would like your feedback on this document and will consider all comments before finalizing it.

Please submit comments to:



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