

PFP Recovery Update – March 5, 2018

Updated 12:50 p.m. PST

Updates since March 1, 2018 highlighted

The next scheduled update is March 8, 2018

Summary

The focus at the Plutonium Finishing Plant (PFP) is on the health and safety of the workforce, addressing worker concerns, ensuring the remaining PFP facility debris and rubble piles are stable, and mitigating the potential for any additional spread of contamination. CHPRC is not authorized to conduct any demolition work at PFP until DOE has been briefed on and approves a modified demolition approach. CHPRC is preparing to submit to the [DOE expert panel](#) a draft root cause evaluation report outlining causes of the spread of contamination and some initial corrective actions.

The PFP site remains stable. Access to the work control zone was restricted during a wind event on March 2; follow-up surveys detected no contamination. During the week of March 5, crews will begin moving previously packaged waste from PFP to the Central Waste Complex for storage.

Plant Status

System/Area	Status
PFP Workforce	<ul style="list-style-type: none">• No new safety issues.
PRF Area	<ul style="list-style-type: none">• The area remains stable with no contamination detected. Routine fixative applications continue.
PFP Property Area	<ul style="list-style-type: none">• The area remains stable with no contamination detected. Routine fixative applications continue.

Radiological Surveys, Sampling and Analysis

- Surface monitoring: metal plates, called “cookie sheets,” are placed throughout the work control area, usually near air monitors. The metal plates are checked with detectors, normally twice a day, for contamination. Any contamination detected is expressed in disintegrations per minute, a unit that measures how many radioactive atoms decay in a minute.
- Continuous air monitors (CAMs): stationary monitors are placed in or near the PFP demolition zone and provide real-time information about the level of airborne radioactivity. The monitors are set to alarm, allowing workers to take protective measures if there is an indication of airborne radioactivity. Filters may also be collected from the CAMs for analysis in a laboratory to provide additional information about any airborne radioactivity. Contamination values are expressed as derived air concentrations times hours (DAC-hours).
- Fixed air samplers: stationary monitors are placed around radiological boundaries to provide retrospective, not real-time, data about the presence and type of airborne radioactivity. The monitors are fitted with filters that are routinely collected for further analysis. Contamination values are expressed as derived air concentrations times hours (DAC-hours).

On-Site and Environmental:

Cookie Sheets (69 total)		
	March 5 Day Shift	March 4 Day Shift
Number Surveyed	55	69

Number Clean*	55	69
Number Contaminated (Note location and level)	0	0
*Clean = direct contamination < 500 dpm/100cm ² and removable contamination < 20 dpm/100cm ² (or < 100 dpm/100cm ² in a posted CA or HCA)		

- **Continuous air monitor (CAM)** readings (14 total): All CAMs reading less than 1 DAC-hr as of 12:45 p.m., March 5.
- **Fixed air samplers** (24 total): Air filters removed and analyzed with no indication of radioactivity as of March 4.

Bioassays: Bioassays are used when a person is potentially exposed to contamination to determine whether or not there has been an intake (e.g., inhalation or ingestion) of radioactive material and results include an estimated dose. The table below provides a summary of bioassay results following the spread of contamination in December. The data shows radiological doses to personnel in millirem (mrem) and is current as of **March 1 at 4:00 p.m.** This information will be updated as more results are received. Individual employees are briefed on their bioassay results as soon as the results are available.

Requested	282**
Negative	252
Preliminary Positive*	0
Positive with Initial Dose Estimate	1
Less than 1 mrem: 0	
1-10 mrem: 0	
10-20 mrem: 1	
Positive with Verified Dose Assigned	10
Less than 1 mrem: 2	
1-10 mrem: 7	
10-20 mrem: 1	

*Preliminary Positive: Initial indication from laboratory of positive result with no dose estimate. Subject to change (to negative) as additional analysis is completed.

**The number of employees requesting bioassays was adjusted down to 282 (from 294) on March 1. During follow-up conversations with workers who had not submitted a bioassay sample after the December 2017 contamination spread, 12 workers elected to withdraw their request for a bioassay.

- Doses are the expected dose over 50 years.
- DOE requirements for protecting individuals from ionizing radiation set an administrative control level, or dose limit, of 100 mrem/year for non-radiological workers and members of the public visiting DOE sites (DOE Order 458.1). The DOE administrative dose limit for radiological workers is 500 mrem/year.

External:

- **Department of Health Web Page:** The Washington State Department of Health has set up a [web page](#) with environmental monitoring information about Hanford.
- On March 2, the Washington State Departments of Ecology and Health (DOH) and U.S. EPA sent a joint response letter to the executive director of interest group Heart of America Northwest, Gerry Pollet (*Attachment 1*). The letter clarifies regulatory authorities, particularly for DOH, and the regulatory standard for ambient air and keeping exposure levels below 10 millirem per year for

members of the public. There is no indication that level was exceeded in the spread of contamination from PFP.

- **Government Vehicle Radiological Surveys:**

- On Feb. 23, crews surveyed two additional government vehicles that were in the vicinity of the PFP in December. No contamination was detected.
- On Feb. 22, follow-up interior surveys of 54 PFP-controlled government vehicles were completed. No contamination as detected.
- On Feb. 1, CHPRC completed requested surveys of four Hanford Fire Department (HFD) government vehicles. No contamination was detected.
- Surveys of PFP-controlled government vehicles were completed Jan. 23. Decontamination and dispositioning of 27 contaminated vehicles is ongoing. Those vehicles remain in a radiologically-controlled area.

	Total
PFP-Controlled government vehicles surveyed	97
Decontaminated and returned to service	2
Contaminated and awaiting disposition (held as radiologically-controlled vehicles or decontaminated)	27
No contamination found and returned to service	68

- **Personal Vehicle Radiological Surveys:**

- Personal vehicle survey summary:
 - Dec. 26: Seven personal vehicles identified as contaminated by close of business Dec. 19 were decontaminated, surveyed and released as of Dec. 26
 - Jan. 26: One of seven original personal vehicles surveyed and released Dec. 26 (and remained on site since that time) was found to be contaminated; vehicle was decontaminated Jan. 28.
 - Jan. 31: One of seven original personal vehicles surveyed and released Dec. 26 (rental car) was resurveyed and found to be free of contamination.
 - Feb. 1: Seven Hanford Fire Department personal vehicles surveyed; no contamination was detected.
 - Feb. 26: One employee's personal vehicle surveyed; no contamination was detected.
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- **Home Surveys:**

- There have been no new requests for home surveys since Feb. 5. Home survey summary:
 - Dec. 20: Seven originally-requested home surveys complete with no contamination found.
 - Feb. 6: Requested survey of PFP employee's home completed with no contamination found.

Expert Panel: Members of the PFP Expert Panel continue to meet. The panel consists of federal, officials with expertise in several scientific and technical disciplines who can consult with industry and academic leaders with similar expertise. The panel will evaluate CHPRC's recovery from the contamination event and its proposed technical approach for safely completing demolition of PFP. The panel will provide

observations and recommendations to CHPRC. The Expert Panel's charter and biographies of its members are available at www.Hanford.gov.

Workforce Management:

- The workforce remains committed to the current mission of hazard recognition and control despite the challenging situation.

Communications:

- PFP leadership has eight employee briefings scheduled over the next few weeks related to recovery and stabilization.
- On March 5, CHPRC distributed an all employee communication letting employees know of the upcoming shipments of previously-packaged waste from the PFP to the Central Waste Complex (*Attachment 2*). The purpose of this communication is to remind employees of approved activities related to stabilization.
- To answer questions about particle size, distribution and why continuous air monitors did not detect the contamination spread in December 2017, CHPRC drafted a white paper on March 5 describing the relationship between wind speed and particle size and the difference between respirable and non-respirable particles (*Attachment 3*).