

**PFM Recovery Update – February 20, 2018**

**Updated 2:00 p.m. PST**

**Updates since Feb. 15, 2018 highlighted**

**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. Prior to CHPRC requesting that authorization, CHPRC will present its analysis of causes of the spread of contamination in the form of a *Root Cause Evaluation Report* that will also include some initial corrective actions. The [expert panel](#) will review the report and provide feedback.

**Plant Status**

System/Area	Status
PFP Workforce	<ul style="list-style-type: none"><li>• No new safety issues.</li></ul>
PRF Area	<ul style="list-style-type: none"><li>• Over the weekend, the local area experienced very high winds, including gusts of nearly 60 mph. On Feb. 18, a continuous air monitor (CAM) located in an airborne radioactivity area at the PFP read 5.1 DAC-hrs. This is an area where airborne radioactivity is expected. It is set to alarm at 24 DAC-hrs. The filter paper on the CAM had a large amount of dust on it; the CAM showed no elevated reading after the filter paper was exchanged. The filter paper will be analyzed for the presence of radioactivity.</li><li>• On Feb. 19, contamination was identified on two cookie sheets located in the high contamination area at the PFP. This is an area where contamination is expected; the contamination likely is the result of very strong winds. Additional surveys on additional cookie sheets did not identify any additional contamination.</li></ul>
PFP Property Area	<ul style="list-style-type: none"><li>• On Feb. 19-Feb. 20, crews completed post-wind surveys and began wind recovery efforts. No contamination was detected (other than the two cookie sheets described above). Strong winds damaged signs, barriers, light poles and portable restrooms.</li><li>• On Feb. 19, crews conducted routine fixative application throughout the PFP area.</li></ul>

**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:**

<b>Cookie Sheets (69 total)</b>		
	<b>Feb. 19 Day Shift</b>	<b>Feb. 19 Swing Shift</b>
<b>Number Surveyed</b>	69	69
<b>Number Clean*</b>	67	69
<b>Number Contaminated (Note location and level)</b>	Two cookie sheets found contaminated inside the high contamination area: <ul style="list-style-type: none"> <li>#77: 200 dpm/100cm<sup>2</sup> direct; 120 dpm/100cm<sup>2</sup> removable</li> <li>#33: 1,520 dpm/100cm<sup>2</sup> direct; no removable</li> </ul>	0
*Clean = direct contamination < 500 dpm/100cm <sup>2</sup> and removable contamination < 20 dpm/100cm <sup>2</sup> (or < 100 dpm/100cm <sup>2</sup> in a posted CA or HCA)		

- Continuous air monitor (CAM) readings (14 total):** All CAMs reading less than 1 DAC-hr as of 11:30 a.m., Feb. 20.
- Fixed air samplers (24 total):** Air filters removed and analyzed with no indication of radioactivity as of Feb. 19.

**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 Feb. 20 at 1 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	229
Preliminary Positive*	2
Positive with Initial Dose Estimate	4
Less than 1 mrem: 0	
1-10 mrem: 4	
10-20 mrem: 0	
Positive with Verified Dose Assigned	4
Less than 1 mrem: 2	
1-10 mrem: 2	
10-20 mrem: 0	

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

- 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.
- **Government Vehicle Radiological Surveys:**
  - As of 2:00 p.m. on Feb. 20, crews had surveyed the inside 23 of 44 PFP-controlled government vehicles to verify the interiors are contamination free, with no contamination detected. The surveying of the 44 vehicles is occurring in response to a stop work an employee issued on Feb. 20 on the use of those vehicles until those surveys were complete.
    - The exteriors of these government vehicles were surveyed in December and January with no contamination detected.
    - PFP surveyed the engine air filters and/or cabin air filters of two government and one personal vehicles that had the greatest exterior contamination following the December 2017 contamination spread and found no contamination on those filters. (Some vehicles did not have cabin air filters.)
    - The survey equipment and processes are designed to detect contamination levels well below regulatory and worker-protection requirements.
  - On Feb. 1, CHPRC completed requested surveys of four Hanford Fire Department (HFD) government vehicles. No contamination was detected.

	Total
<b>PFP-Controlled government vehicles surveyed</b>	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:**
  - A Seattle-based interest group issued a press release today stating that laboratory analysis of air filters from 2 personal vehicles that had been parked at PFP detected americium-241. Neither CHPRC nor DOE were given the opportunity to conduct split sampling or analysis. The press release does not provide the levels of americium-241 detected in the air filters.
  - Processes for surveying vehicles have been established and used extensively to survey both the exterior and interior of vehicles when requested by employees.
  - Follow-up surveys of personal vehicles conducted as part of requested home surveys found no contamination in vehicle air filters. Resurveys of personal vehicles conducted in January found no contamination in air filters.
  - There have been no new requests for personal vehicle surveys since Feb. 1. 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 found
- **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](http://www.Hanford.gov).

**Causal Analysis:** CHPRC is in the process of completing a root cause evaluation report that will identify the factors that led to the spread of contamination and that will propose corrective actions to reduce the likelihood of recurrence. Input from workers and Jacobs Engineering will be included in the root cause analysis.

**Workforce Management:**

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

**Communications:**

- On Feb 20, CHPRC distributed a message notifying employees of additional work activities at the PFP to further stabilize the demolition area and reduce the potential for spread of contamination (*Attachment 1*). The message is meant to help avoid a misunderstanding and clarify those activities are not demolition activities.
- During the week of Feb. 19, CHPRC leadership will brief workers from Washington River Protection Solutions and CHPRC's functional organizations on recent PFP events.