Plutonium Finishing Plant

The U.S. Department of Energy and contractor CH2M HILL Plateau Remediation Company are demolishing the Plutonium Finishing Plant, one of the most complex nuclear decommissioning and demolition projects at the Hanford Site in southeast Washington state.

Background
Fifty years of plutonium production left the Plutonium Finishing Plant (PFP) heavily contaminated with chemical and radiological hazards. Demolishing PFP eliminates a significant hazard on the Hanford Site and frees up resources that may be used for additional cleanup. PFP is considered one of the most at-risk facilities on the Hanford Site in the event of a natural or man-made disaster. The cost of keeping the antiquated facility safe for employees, the public and the environment is considerable.

Mission
After operations ended in 1989, crews spent many years stabilizing and removing the remaining plutonium, decontaminating and removing the processing equipment, and preparing the complex for demolition. Of the more than 90 structures that once made up PFP, only the Main Processing Facility (234-5Z) remains and is mostly demolished.

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Aerial views of the Plutonium Finishing Plant from 2010 (left) and 2019 (right) show footprint reduction since demolition began in 2016.
**Waste Disposal**

The Plutonium Finishing Plant components have been thoroughly measured for radiological and chemical hazards. The most hazardous items were removed from the building prior to demolition and packaged for eventual off-site disposal.

When it wasn’t possible to safely remove high-hazard items from the building prior to demolition, like large glove boxes, the items were carefully prepared to be removed during demolition.

Low-level waste is disposed of in the regulated landfill on the center of the Hanford Site.

**Progress**

The only remaining structure at PFP, the Main Processing Facility (234-5Z), is mostly demolished. Demolition is expected to be complete in late 2019.

Since demolition began in 2016, crews have adjusted demolition practices, expanded radiological boundaries and added monitoring devices to control contamination to ensure employee and environmental safety.

A fogger is used to suppress dust during Plutonium Finishing Plant demolition.

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Crews package a glove box for eventual off-site disposal.

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Crews routinely apply a paint-like substance, called fixative, to limit the spread of radioactive contamination.

More than 100 sampling and monitoring devices, including monitors that alarm to indicate a spread of contamination, are located near the Plutonium Finishing Plant.

Workers near the demolition activities wear protective clothing and breathe filtered air.

Future

Demolition of the remaining portions of the main processing facility and cleanup will continue through 2019, with sampling and cover cap installation to follow. The cover cap will remain in place, as will a robust fence surrounding what once was the footprint of the complex, until decisions are made on cleanup of soil and piping beneath the PFP building.

This conceptual illustration shows the Plutonium Finishing Plant after demolition.