West Valley DEMONSTRATION PROJECT (WVDP)

Protecting the health and safety of our employees, the surrounding community and our environment remains our top priority.

Quick Facts

CURRENT STATUS

The U.S. Department of Energy (DOE) deconstructed the Main Plant Process Building (MPPB) and disposed of the waste generated during the deconstruction work at licensed disposal facilities as part of our ongoing cleanup efforts at the West Valley Demonstration Project (WVDP) site. Deconstruction of the MPPB started in September 2022 and was completed in June 2025.

WHAT WAS THE MAIN PLANT PROCESS BUILDING (MPPB)?

The MPPB was a 35,100 square-foot building that operated as a commercial reprocessing facility, recovering reusable plutonium and uranium from spent nuclear reactor fuel. The MPPB was in operation from 1966 to 1972. The Department deconstructed the MPPB as part of the decommissioning project at the WVDP. This was the last major above-ground structure remaining to be deconstructed at this site. Weather protective covering is placed over the former MPPB footprint until the start of the next phase underground work.

DECONSTRUCTION PREPARATION

Significant work was conducted over the two decades prior to the MPPB deconstruction for removal of the structure in a manner that is protective of human health and the surrounding environment.

During that time, the site worked to reduce the remaining radioactivity in the MPPB facility by 98%, through the removal of more than 7 miles of contaminated piping, and over 50 tons of contaminated equipment. These efforts were made to ensure that the deconstruction will be done safely, being protective of the surrounding community. An extensive modeling and air monitoring system was established to ensure that any potential radiological exposure from the removal activities was kept well below regulatory levels.

NEXT PHASE

DOE is preparing for the next phase of decommissioning work at the WVDP. The next phase of work will mostly involve underground cleanup such as the MPPB underground structure removal and waste tank removal. DOE and its cleanup contractor at the WVDP are committed to keeping state and local officials, nearby residents, and other stakeholders informed of work projects in the next phase, as they have done throughout the MPPB deconstruction.

ONGOING MONITORING

The WVDP developed comprehensive monitoring plans that were strictly adhered to during the deconstruction of the MPPB to protect the health and safety of the workforce, the nearby community, and the environment. The environmental monitoring programs will be kept in place after the MPPB deconstruction. Experienced radiological personnel will continue monitoring the surrounding environment, responding to any changes in environmental qualities and informing nearby communities immediately when any changes are detected.

REGULATORY STRUCTURE

The WVDP will continue working closely with the U.S. Environmental Protection Agency (EPA), the U.S. Nuclear Regulatory Commission (NRC), and both local and State agencies.

QUARTERLY AMBIENT AIR MONITORING REPORT
Fourth Quarter 2025

Summary of Latest Monitoring Results

In the third and fourth quarters of 2025, no positive results were observed on the ambient air monitoring filters. The airborne quarterly doses in these quarters were zero.

WVDP Air Monitoring Systems

The WVDP permissible limit (measured in dose) from air emissions to a member of the public is 10 mrem per year. This means that the WVDP site may not release a concentration of airborne radioactivity that would cause an individual living at the site boundary 24 hours/day, 365 days/year to receive a radiological dose above 10 mrem per year, or, on average, more than 0.833 mrem/month.

On-Site Air Monitoring

Real-time on-site air monitoring, known as continuous air monitors (CAMs) ensures worker and community protection and provides early warning of a potential change in work area conditions.

Off-Site Ambient Air Monitoring

The WVDP Ambient Air Monitoring Network (AAMN) is an EPA-approved ambient air monitoring system. In 2012, the WVDP placed sixteen (16) ambient air samplers, one in each 16 compass sectors within approximately 1 to 2 miles of the MPPB. The locations are in proximity to our nearest residents in each sector. This network of off-site continuous air samplers is used to demonstrate annual compliance with the NESHAP, established by the EPA.

The samples are collected every two weeks, composited, and analyzed on a quarterly basis. The resulting composite is utilized to evaluate trending and to validate that WVDP air emissions remain well below the EPA dose limit. This off-site monitoring system has effectively monitored the air quality surrounding the site during deconstruction activities. The network's detection limit meets (and is lower than) the required EPA detection limits. The system operates continuously and is used to demonstrate compliance with the EPA annual dose standard in the air.

The ambient air monitoring system consists of samplers that continuously pull the air across filters that capture small particulates. Samples are sent to a qualified off-site laboratory where radioactive materials are analyzed by highly sensitive instruments. Their analytical processes provide detection sensitivity for low levels of airborne radioactivity—up to one million times more sensitive than real-time monitors.

QUARTERLY OFF-SITE SURFACE WATER MONITORING REPORT
Fourth Quarter 2025

Summary of Latest Monitoring Results

In the fourth quarter of 2025, monthly samples were collected at WFFELBR, and semiannual samples were collected at WFBCBKG and WFBCTCB. A very low level of cesium-137 was detected at WFBCBKG, however, the detected level was only 0.06% of the DCS 2022 standard and was below the minimum detectable concentration (MDC) level.

What Does This Mean?

The concentration percentage at WFBCBKG, 0.06%, against the DCS value means that a hypothetical person ingesting the creek water at the sampling location for one quarter would be exposed to only 0.06% of the annual guideline for water ingestion.

Off-Site Surface Water Monitoring

Waters from the WVDP site eventually drain into Buttermilk Creek, which flows northward, east of the site. Buttermilk Creek converges with Cattaraugus Creek north of the site, and Cattaraugus Creek then flows westward away from the WVDP and drains into Lake Erie. Off-site surface water is sampled at three stream locations, one background location upstream of the site from Buttermilk Creek (not affected by WVDP activities), one downstream of the WVDP from Buttermilk Creek, and one further downstream of the WVDP from Cattaraugus Creek.

What is Off-Site Surface Water Monitoring?

The water samples are collected once every two weeks and combined into semiannual samples at the Buttermilk Creek sampling locations and into monthly samples at the Cattaraugus Creek sampling location. Creek water samples are collected with a continuous water sampling system and then shipped to a certified laboratory for radiological and chemical analyses.

The samples collected at these three stream locations are used to ensure that the off-site surface water is safe and complies with DOE's guidelines for ingested water.

The WVDP models the annual dose to off-site individuals through all water pathways, using comprehensive waterborne radiological data, including site discharges into these creeks. Members of the public do not have access to the WVDP site or the on-site water. No potable drinking water is drawn from Cattaraugus Creek, downstream of the WVDP site. The modeling results are included in the WVDP Annual Site Environmental Report (ASER).

The Department has safely and successfully conducted numerous open-air deconstructions throughout the DOE complex and will utilize lessons learned, modeling and other data to ensure the safe removal of the MPPB. The WVDP ASER can be found at: https://www.energy.gov/wvdp/annual-site-environmental-reports-aser.

For questions about the WVDP quarterly reports, contact information can be found at https://www.energy.gov/wvdp/west-valley-demonstration-project-homepage.

The Low Down on Millirems

WHAT IS A MILLIREM?

A millirem is a unit of absorbed radiation dose by a human being.

The Amount of Radiation Absorbed by a Person is Measured in Dose

To ensure the safety and protection of workers and the public, a worldwide body of experts has established basic principles to safely regulate radiation exposure, including dose limits. These global principles date back to 1928 and are part of the International Atomic Energy Agency (IAEA)'s Basic Safety Standards for Radiation Protection. The IAEA's standards are published jointly with the World Health Organization (WHO), the International Labor Organization, and the Nuclear Energy Agency (NEA).

MILLIREMS AND YOU

The WVDP permissible limit (measured in dose) from air emissions is 10 millirem per year (mrem/yr) to the Maximally Exposed Off-Site Individual (MEOSI). This means that the WVDP site cannot release an amount of radiation that would cause an individual at the site boundary line to receive a radiological dose above 10 mrem/yr.

The estimated potential dose for the approximately 33-month deconstruction of the MPPB was 0.08 mrem. This dose estimate for the entire project period represents less than 1% of the 10 mrem/yr standard and less than 5% of the radiological dose one would receive by taking a one-way flight from Washington, D.C. to Seattle, WA. The annual dose associated with WVDP operations in 2024, including both airborne and waterborne pathways, was 0.184 mrem/yr.

Radiation in Your Everyday Life

WHAT IS BACKGROUND RADIATION?

Background radiation exists all around us, no matter where we live. Most background radiation occurs naturally. It mainly comes from natural minerals, some of which are even found in the human body, and cosmic radiation.

In fact, according to the National Council on Radiation Protection and Measurements, the average American is exposed to 620 mrem/yr, about half of which comes from natural background radiation.

DOE and Environmental Monitoring

The DOE works hard to ensure communities near our facilities maintain safe and healthy environments while meeting national and state environmental standards. The DOE is committed to working with the community and the state to ensure the safety, health and protection of our workforce, the general public, and the environment.

Relative Doses from Radiation Sources