

# West Valley Demonstration Project (WVDP) Strategic Vision



**The Main Plant Process Building operated as a commercial nuclear fuel reprocessing plant from 1966 to 1972. During its six years of operations, the plant generated approximately 600,000 gallons of liquid high-level radioactive waste, which was vitrified.**

## Overview

The **West Valley Demonstration Project (WVDP)** is located at the **Western New York Nuclear Service Center (WNYNSC)**, a 3,338-acre site 30 miles south of Buffalo, New York. The site is owned by the **New York State Energy Research and Development Authority (NYSERDA)** and is home to the only commercial spent nuclear fuel reprocessing facility to operate in the United States. In 1962, Nuclear Fuel Services, Inc. (NFS) entered into agreements with the Atomic Energy Commission (AEC) and New York State to construct, license, and operate the commercial spent nuclear fuel reprocessing plant. NFS built and operated the plant and two waste burial grounds from 1963 to 1972. NFS processed 640 metric tons of spent nuclear fuel and generated over 600,000 gallons of liquid high-level waste (HLW). In 1976, NFS exercised its contractual right to yield the **WNYNSC's** responsibility back to New York State and currently **NYSERDA** holds title and manages it.



**The **West Valley Demonstration Project** is a radioactive waste management and decommissioning project at the site of the only commercial nuclear fuel reprocessing plant to have operated in the United States.**

In 1980, Congress passed the **WVDP Act**. The **WVDP Act** requires the U.S. Department of Energy (DOE) to conduct a HLW management demonstration project at the **WNYNSC** for purposes of demonstrating solidification techniques which may be used for preparing HLW for disposal. The **WVDP Act** directed DOE to:

- Solidify the HLW in a suitable form for transportation and disposal.
- Develop containers suitable for the disposal of the HLW.
- Transport, as soon as feasible, the solidified waste to a federal repository for disposal.
- Dispose of low-level radioactive waste (LLW) and transuranic (TRU) waste produced by the HLW's solidification processes.

- Decontaminate and decommission the tanks and other facilities used at the **WNYNSC** in which the HLW was solidified, the facilities used in the waste solidification effort, and any material and hardware used in connection with the **WVDP**.

The **WVDP Act** prohibits DOE from taking title to the waste, real property, or facilities at the **WNYNSC**.



**Workers begin demolishing a former utility room extension building at EM's West Valley Demonstration Project. It was one of seven support buildings of the Main Plant Process Building. Three of those structures remain and are scheduled for demolition.**

DOE completed solidifying the HLW into canisters in 2002. The resulting 278 canisters of vitrified HLW are currently stored onsite, pending availability of a federal repository. Since 1998, DOE has been disposing of LLW; processing and packaging both CH and RH Greater-than-Class-C (GTCC)-like waste; and deactivating, decontaminating, and removing facilities used in the process of solidification of the HLW.

In 2010, DOE and **NYSERDA** issued a joint Final Environmental Impact Statement (FEIS) that analyzed the potential environmental impacts of reasonable alternatives to complete the **WVDP** cleanup pursuant to the **WVDP Act** and the decommissioning and/or long-term stewardship of the **WNYNSC**. In that same year, DOE issued a Record of Decision in which DOE decided to implement a phased decision-making approach for decommissioning the site. The first phase covers decommissioning and removal of certain facilities and areas, which includes soil remediation activities.

The second phase, for which DOE has not yet made a decision, would involve decommissioning remaining facilities and areas pursuant to the WVDP Act, including the four underground waste tanks and decommissioning of the NRC-licensed Disposal Area.



**A view of debris following completion of demolition of the former utility room extension building.**

### **Cleanup accomplishments include the following:**

- Relocated 278 vitrified waste canisters to a new on-site dry cask storage area.
- Dispositioned all legacy LLW.
- Demolished the Vitrification facility and 25 other support buildings.
- Deactivated 98% of the Main Plant Process Building in preparation for demolition in 2020.

### **Cleanup Highlights 2020-2030**

Work at West Valley over the coming decade will focus on completing remaining facility decommissioning activities, including demolition of the last remaining major building – the former Main Plant Process Building – as well as reaching agreement with state regulators on paths forward for remaining cleanup activities.

Over the next decade, DOE will complete soil remediation and facility decommissioning activities, though completion could be impacted by a lack of disposal options for GTCC-like waste. By September 2023, DOE expects to complete demolition of the Main Plant Process Building. In addition, demolition activities will be completed at the remaining two ancillary support buildings, and three remaining excess facilities.

Between 2024 and 2030, DOE will complete the decommissioning of the below-grade portions of the Main Plant Process Building and Vitrification Facility, as well as the radioactive water treatment system, including four active lagoons and one closed lagoon. EM will need an identified GTCC-like waste disposal option by 2025 to allow the demolition of all GTCC-like waste storage and processing facilities, such as the Remote Handled Waste Facility, and related support facilities, by 2030.

### **Remaining Cleanup Scope Post-2030**

Work at **West Valley** post-2030 will focus on DOE and **NYSERDA** intended integrated decisions for a path forward on the disposal of waste and completing the cleanup of the waste tank farm two waste burial grounds, and long-term site stewardship. DOE and **NYSERDA** intend to make an integrated decision on the path forward for these activities by 2023. In addition, some facility demolition activities may remain to be completed if a GTCC-like waste disposal option is not identified by 2025. DOE will also work to identify a disposal pathway for the stored canisters of vitrified HLW.

### **DOCUMENT AVAILABLE FOR DOWNLOAD**

 [West Valley Demonstration Project \(WVDP\) Strategic Vision](#)