

West Valley Demonstration Project

Overview

The West Valley Demonstration Project (WVDP) is an approximate 150-acre area located within the Western New York Nuclear Service Center (WNYNSC), which is a 3,338-acre site located 35 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 (SNF) reprocessing facility to operate in the United States. In 1962, Nuclear Fuel Services, Inc., entered into agreements with the Atomic Energy Commission and the state of New York to construct, license, and operate the commercial reprocessing plant, along with two associated waste burial grounds and an underground set of four tanks for reprocessing waste. The fuel reprocessing plant operated from 1966 to 1972, processing 640 metric tons of SNF and generating over 600,000 gallons of liquid High-Level Waste (HLW).

In 1980, Congress passed the West Valley Demonstration Project Act, which required DOE to conduct a HLW management demonstration project at the WNYNSC and transport the HLW to a federal repository for disposal. The WVDP Act directed DOE to:

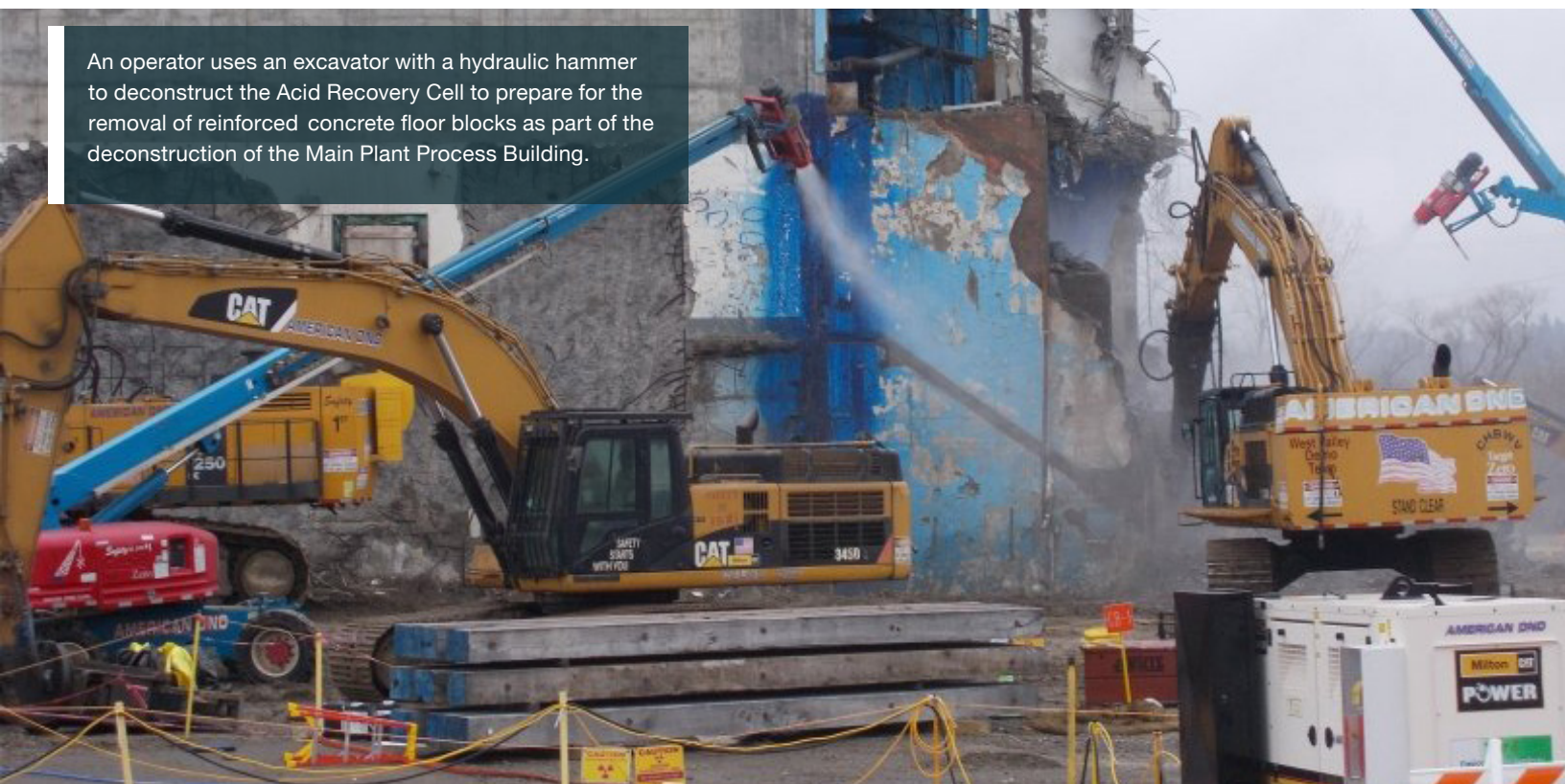
- Solidify the HLW in a suitable form for transportation and disposal
- Develop containers suitable for the HLW's disposal
- Transport the solidified waste to a federal repository for disposal as soon as feasible
- Dispose of low-level waste (LLW) and transuranic (TRU) waste produced by the HLW solidification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

* WVDP TRU waste was derived from commercial nuclear fuel reprocessing. DOE refers to this waste stream as Greater than Class C TRU waste in Environmental Impact Statement (EIS)-0375: Final EIS (Volume I, Chapters 1-8); 2016.

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

DOE chose vitrification as the technology for solidifying the HLW, and DOE completed vitrifying the HLW in 2002. The resulting 278 canisters of vitrified HLW

An operator uses an excavator with a hydraulic hammer to deconstruct the Acid Recovery Cell to prepare for the removal of reinforced concrete floor blocks as part of the deconstruction of the Main Plant Process Building.



are currently stored on-site. Since 1997, DOE has been disposing of LLW at off-site disposal facilities; processing and packaging both contact-handled and remote-handled WVDP-TRU waste; and deactivating, decontaminating, and removing unneeded facilities.

In 2010, DOE and NYSERDA published, in compliance with the National Environmental Policy Act, a joint final EIS that addressed both DOE's completion of the WVDP and NYSERDA's decommissioning and/or long-term stewardship of the WNYNSC. The same year, DOE issued a Record of Decision and NYSERDA issued a Statement of Finding to proceed with a phased decision-making approach for remaining cleanup activities. Phase 1 covers soil remediation and disposition of the remaining facilities. Phase 2 will address the four underground waste tanks, the two on-site disposal areas, the non-source area of a groundwater plume, and several other minor facilities. DOE and NYSERDA intend to complete the remaining decision-making with its Phase 2 decision in a supplemental EIS.

DOE has a strong public outreach program at WVDP including conducting Quarterly Public Meetings and participating in eight monthly meetings with the West Valley Citizen Task Force. DOE provides updates of the status of ongoing Phase 1 decommissioning activities at both these meetings. DOE also provides a status of site progress at the monthly Ashford Town Board meetings.

Calendar Year 2023 Accomplishments

- **Demolished and disposed of 9,000 tons of Main Plant Process Building (MPPB) waste – an EM 2023 priority**
- **Completed the construction of the new guard house facility**
- **Shipped two of seven Chemical Process Cell degraded containers**

Post-2034 Cleanup Scope

Remaining work at West Valley post 2034 will focus on disposal of “orphan” waste (waste which currently does not have a pathway for disposal) and completion of Phase 2 decommissioning activities. DOE currently anticipates completing cleanup activities at West Valley by 2043.

Planned Cleanup Scope 2024–2034

Work underway at West Valley is now focused on completing demolition of the MPPB. By 2025, DOE expects to complete the removal of the above grade portion of the MPPB.

By 2025, DOE and NYSERDA intend to make an integrated decision on the path forward for the Phase 2 decommissioning activities and/or long-term stewardship of the WNYNSC. Phase 2 decommissioning decisions will address the four underground tanks, the two waste disposal areas, the non-source area of the groundwater plume, and several other facilities.

By the end of 2032, DOE expects to complete the decommissioning of the below-grade portions of the MPPB and the Vitrification Facility, where above ground demolition was completed in 2019. DOE will also complete the decommissioning of the site's radioactive water treatment system, including four active lagoons and one closed lagoon. By the end of 2036, DOE will complete soil remediation efforts in Waste Management Area-1 and Waste Management Area-2.

If a disposal option for WVDP-TRU waste is available, DOE could, by the end of 2037, complete the processing, packaging, shipment, and disposal of WVDP-TRU waste and removal of remaining waste processing facilities, such as the Remote-Handled Waste Facility, once TRU waste shipping and disposal is complete.

Key Regulatory Milestones 2024–2034

- **None**