West Valley Demonstration Project

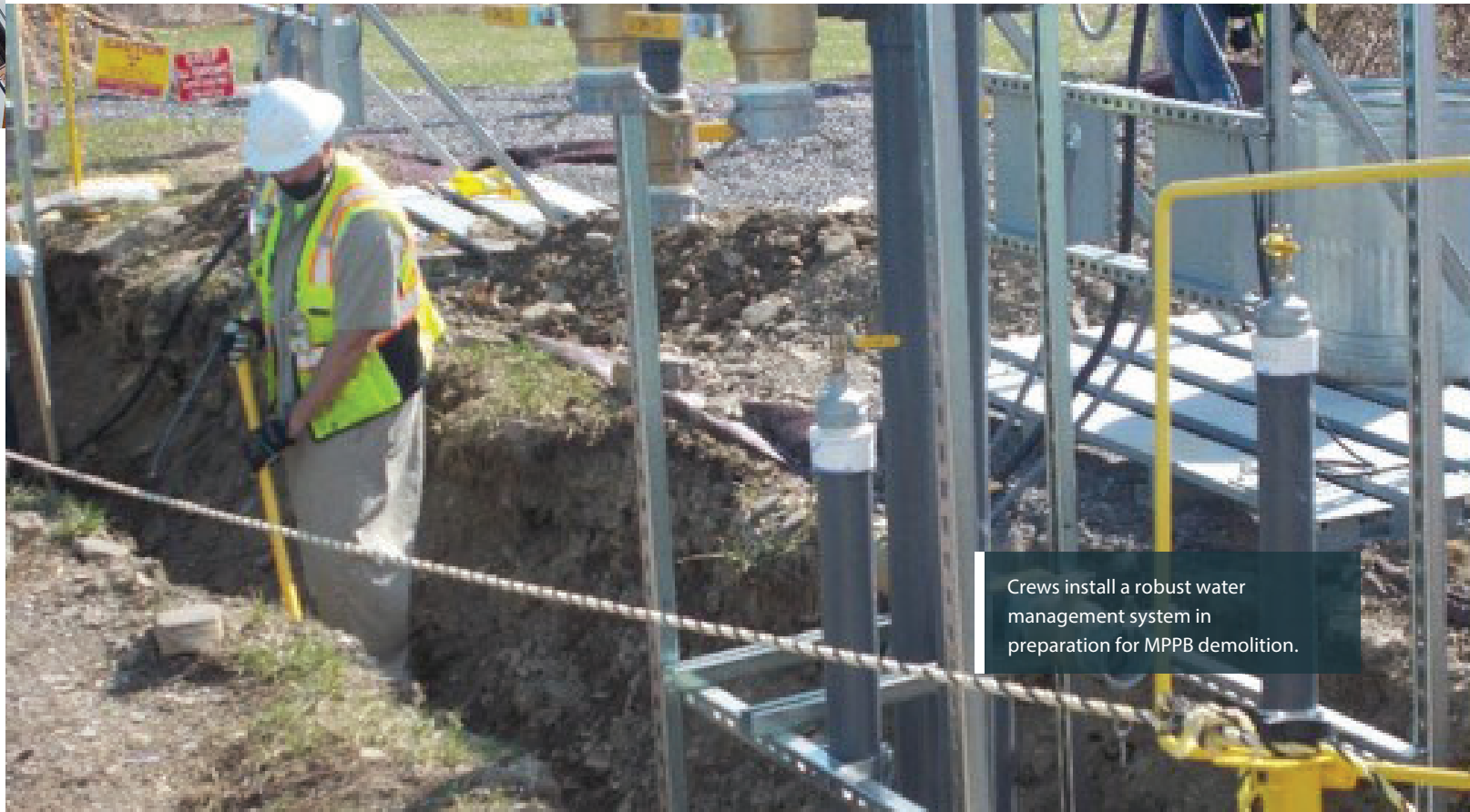
Overview

The 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 (AEC) and New York State to construct, license, and operate the commercial reprocessing plant. The fuel reprocessing plant, along with two associated waste burial grounds and an underground set of four tanks for reprocessing waste, operated from 1963 to 1972, processing 640 metric tons of SNF and generating over 600,000 gallons of liquid high-level waste (HLW).

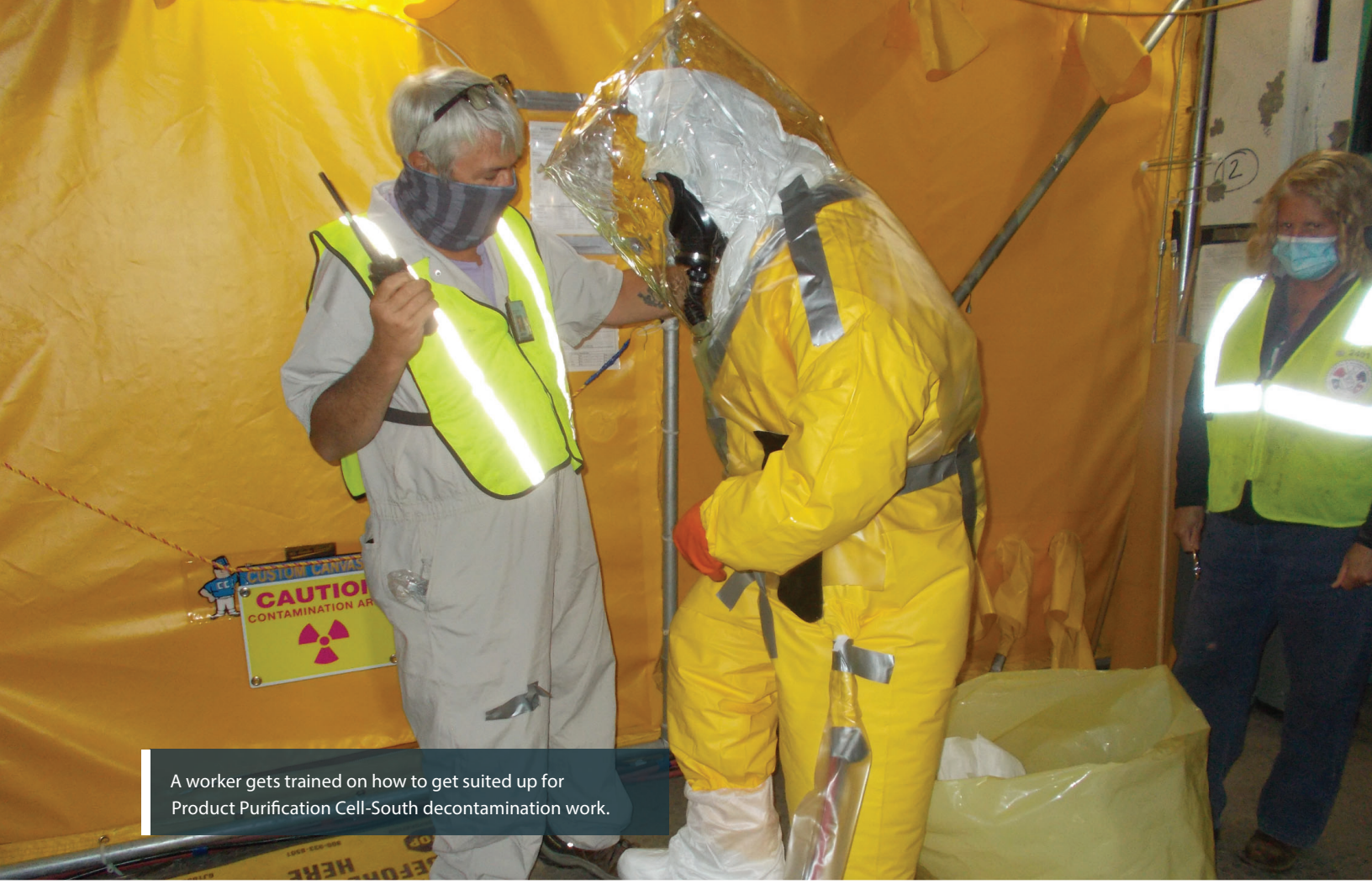
In 1980, Congress passed the West Valley Demonstration Project (WVDP) Act, which required DOE to conduct a HLW management demonstration project at the WNYNSC and transport it to a federal repository for disposal. The WVDP Act directed DOE to:

- **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***

* Because WVDP TRU waste was derived from commercial nuclear fuel reprocessing, it is considered commercial TRU waste. DOE refers to this waste stream as Greater than Class C (GTCC)-like waste.



Crews install a robust water management system in preparation for MPPB demolition.



A worker gets trained on how to get suited up for Product Purification Cell-South decontamination work.

- **Decontaminate and decommission the tanks and other facilities used at the WNYNSC in which the HLW 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 are currently stored on-site. Since 1998, DOE has been disposing of LLW at off site disposal facilities; processing and packaging both contact-handled and remote-handled GTCC-like 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 environmental impact statement 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 (ROD) 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 environmental impact statement.

DOE has a strong public outreach program at WVDP including conducting Quarterly Public Meetings (QPMs) and participating in monthly meetings with the West Valley Citizen Task Force (CTF). During the planning of the Phase 1 decommissioning decision, DOE discussed the approach at both the QPMs and CTF meetings. DOE provides updates of the status of ongoing Phase 1 decommissioning activities at both the QPM and CTF meetings. DOE also provides a status of site progress at the monthly Ashford Town Board meetings. This year, the site held two in-person Town Hall Meetings to discuss the upcoming demolition of the Main Plant Process Building

Calendar Year 2021 Accomplishments

- Restored rail shipment capabilities for the site
- Continued preparation for the Main Plant Process Building (MPPB) demolition by installing a new water collection and treatment system and repurposing an administrative trailer complex into a multipurpose building designed to support MPPB demolition activities
- Completed final General Purpose Cell related stabilization activities and completed the deactivation of the Equipment Decontamination Room (EDR) and Chemical Process Cell (CPC)
- Completed the removal and restoration of the last of the 46 balance of site facilities that are no longer needed for current or future cleanup efforts

Planned Cleanup Scope 2022–2032

Over the next decade, DOE will complete Phase 1 soil remediation and facility decommissioning activities, though completion could be impacted by a lack of disposal options for GTCC-like waste. In 2022, DOE will start the demolition of the last major remaining facility, the Main Plant Process Building (MPPB). By February 2025, DOE expects to complete demolition of the MPPB.

By the end of 2028, 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 2030, DOE will complete soil remediation efforts in Waste Management Area-1 and Waste Management Area-2.

By 2023, 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.

Key Regulatory Milestones 2022–2032

- None

Post-2032 Cleanup Scope

Remaining work at West Valley post-2032 will focus on disposal of "orphan" waste (waste which currently does not have a pathway for disposal) and completion of Phase 2 decommissioning activities. If a disposal option for GTCC-like waste is available, DOE could, by the end of 2033, complete the processing, packaging, shipment, and disposal of GTCC-like waste and removal of remaining waste processing facilities, such as the Remote-Handled Waste Facility, once GTCC-like waste shipping and disposal is complete.