

Waste Isolation Pilot Plant

Overview

WIPP is the nation's only repository for the disposal of TRU waste generated by atomic energy defense activities. WIPP is located 33 miles southeast of Carlsbad, New Mexico, in the Chihuahuan Desert, far from major population centers. Waste is disposed of in a set of panels located nearly one-half mile below the surface (2,150 feet) in a deep geologic salt bed formed 250 million years ago. Construction of WIPP started in the early 1980s. The facility began operation in 1999 and celebrated 20 years of operations in 2019. To date, WIPP has received approximately 13,000 shipments that were safely transported more than 15 million cumulative miles.

The WIPP Land Withdrawal Act (LWA), Public Law 102-579 as amended by Public Law 104-201, limits the amount of TRU waste that can be disposed of in the repository to 6.2 million cubic feet (about 176,000 cubic meters). Approximately 2.44 million cubic feet (69,000

cubic meters) of TRU waste, or about 39 percent of the LWA TRU volume limit, has been placed in the underground repository to date. WIPP is currently anticipated to operate beyond 2050.

A number of diverse stakeholder groups closely monitor all aspects of WIPP and the National TRU Program. WIPP has pursued significant engagement with local area stakeholders in the city of Carlsbad and Eddy and Lea counties with an interest in WIPP events, progress, and the role WIPP has in the overall cleanup of the DOE complex. WIPP engages routinely with state and federal regulators, and advocacy groups that tend to serve a watchdog role in their interest in WIPP. DOE provides technical, training, logistical, and funding support to six tribal nations and state regional groups and their 25 member states that focus on the safe transport of TRU waste through their jurisdictions. The Carlsbad Field Office will continue to work with its stakeholders and foster the ongoing collaborative relationships developed since the inception of WIPP.



A radiological worker surveys the inside of a Transuranic Package Transporter Model 2 (TRUPACT-II) containment lid during waste handling operations at the WIPP Site.



The ground immediately surrounding the 700C fan is covered in tarps as WIPP prepares to perform a bump test of the fan.

Calendar Year 2020 Accomplishments

- Met an EM priority to begin work on the new utility shaft; when finished, this 26-foot-diameter shaft will be the fifth shaft that leads to the WIPP underground and will help improve ventilation throughout the mine
- Maintained a shipping rate from EM sites of five shipments per week; this included resuming waste shipments from LLNL for the first time in a decade
- Completed the WIPP North Access Road Bypass allowing the diversion of traffic away from the WIPP Site, improving traffic safety for site employees and workers at the Utility Shaft Project

Planned Cleanup Scope 2021–2031

It is anticipated that over the next 10 years, approximately 883,000 cubic feet (25,000 cubic meters) of TRU waste from EM, NNSA and SC sites will be emplaced at WIPP. To support planned waste

emplacement activities, EM expects to complete mining activities in Panel 8 in 2022.

Much of the work to be performed at WIPP over the next decade will focus on necessary infrastructure improvements to ensure the facility can continue to play its important role in the EM complex for the long term. By the end of 2024, a set of key infrastructure projects will be completed, improving WIPP capabilities in mining and waste emplacement. These include the new SSCVS, which will provide 540,000 cubic feet per minute of ventilation to the underground, allowing concurrent mining, waste emplacement, and ground control operations throughout the life of the facility. In addition, the new utility shaft will serve as an air intake entry point to support the SSCVS, and house a new, larger capacity hoisting capability to transport materials from the repository to the surface.

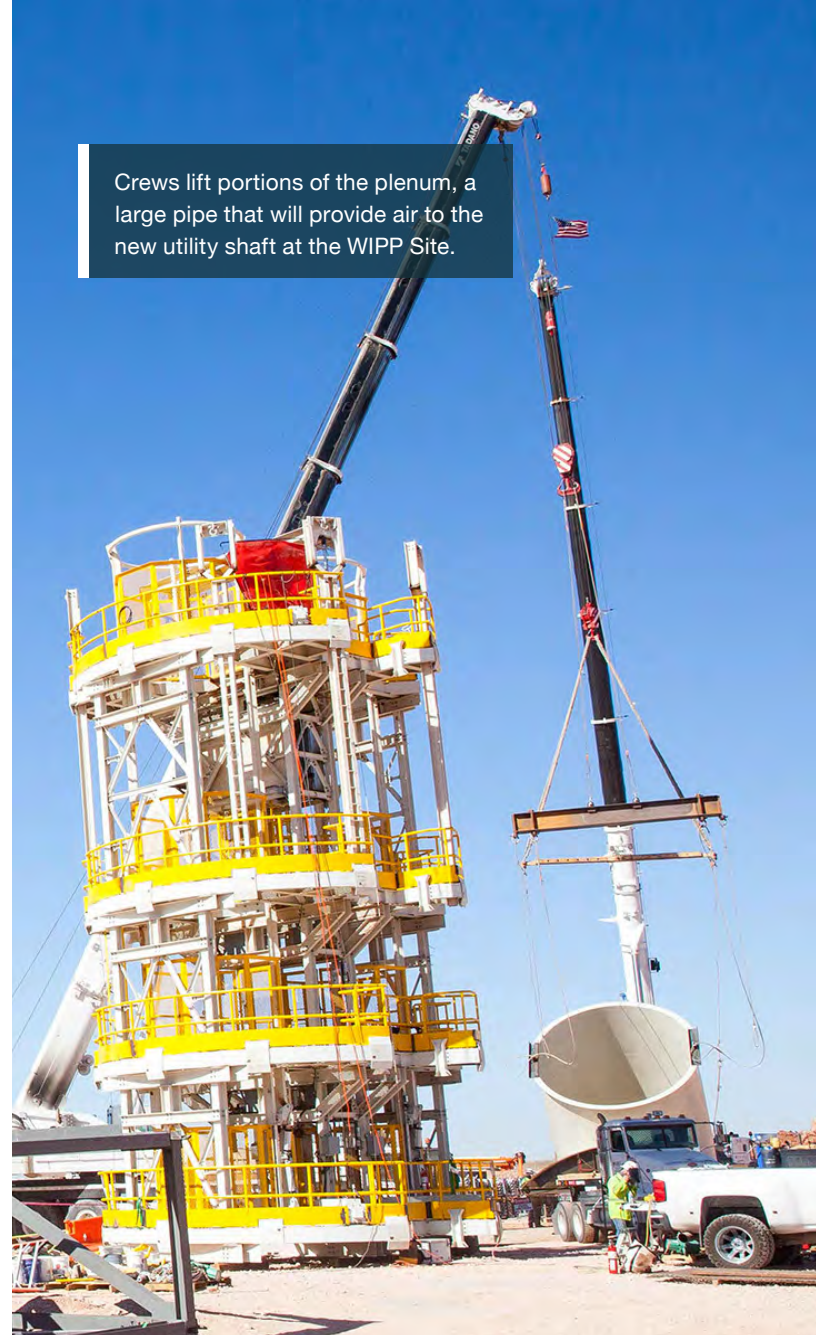
Additional site infrastructure improvements to be completed over the next decade include:

- Recapitalization of key safety systems
- Replacement/refurbishment of shaft and hoist systems

- Upgrades to monitoring and site network systems
- Replacement of electrical substations
- Installation of additional backup generators
- Modernizing underground equipment to zero-emission, battery-electric vehicles, or very low emission Tier IV Final diesel-powered equipment
- Replacement of underground Electrical System Switch Stations
- Modernization of WIPP's Central Monitoring Control Room
- Installation of a new digitally based geotechnical monitoring system in the WIPP underground

Key Regulatory Milestones 2021–2031

- None



Crews lift portions of the plenum, a large pipe that will provide air to the new utility shaft at the WIPP Site.

Post-2031 Cleanup Scope

WIPP will continue mining and waste emplacement operations to dispose of a total of 6.2 million cubic feet of TRU waste, supporting key NNSA and SC missions, along with the remaining EM cleanup mission. Initially, it was assumed that WIPP would complete its mission and cease operation in 2030. However, based on revised TRU waste estimates, it has been determined that additional time will be required for WIPP to fully complete its mission. The expected life of the project is limited by the volume of waste allowed under the LWA, which does not specify an operating period for WIPP. Before taking any actions outside the scope of DOE's existing NEPA analysis and decisions, DOE will determine the need for and conduct, as appropriate, further NEPA analysis.