

Waste Isolation Pilot Plant

Overview

The Waste Isolation Pilot Plant (WIPP) is the nation's only deep geologic repository for the disposal of transuranic (TRU) waste generated by atomic defense activities. WIPP is located 33 miles southeast of Carlsbad, New Mexico, in the Chihuahuan Desert. 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 emplacing TRU waste in 1999 and celebrates 25 years of operations in 2024. To date, WIPP has received more than 13,400 shipments. Those shipments were safely transported more than 16 million cumulative miles.

The Waste Isolation Pilot Plant Land Withdrawal Act (LWA), Public Law 102-579 as amended by Public Law 104-201, limits the amount of TRU waste which can be disposed of in the repository to 6.2 million cubic feet (about 176,000 cubic meters). WIPP is currently anticipated to operate beyond 2050.

A number of diverse Tribes and stakeholder groups closely monitor all aspects of WIPP and the National TRU Program. WIPP has pursued significant engagement with stakeholders across New Mexico 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 that focus on the safe transport



Ribbon cutting for the start of mining Panel 11.

of TRU waste through their jurisdictions. The Carlsbad Field Office continues to work with its stakeholders and foster the ongoing collaborative relationships developed since the inception of WIPP.

Calendar Year 2023 Accomplishments

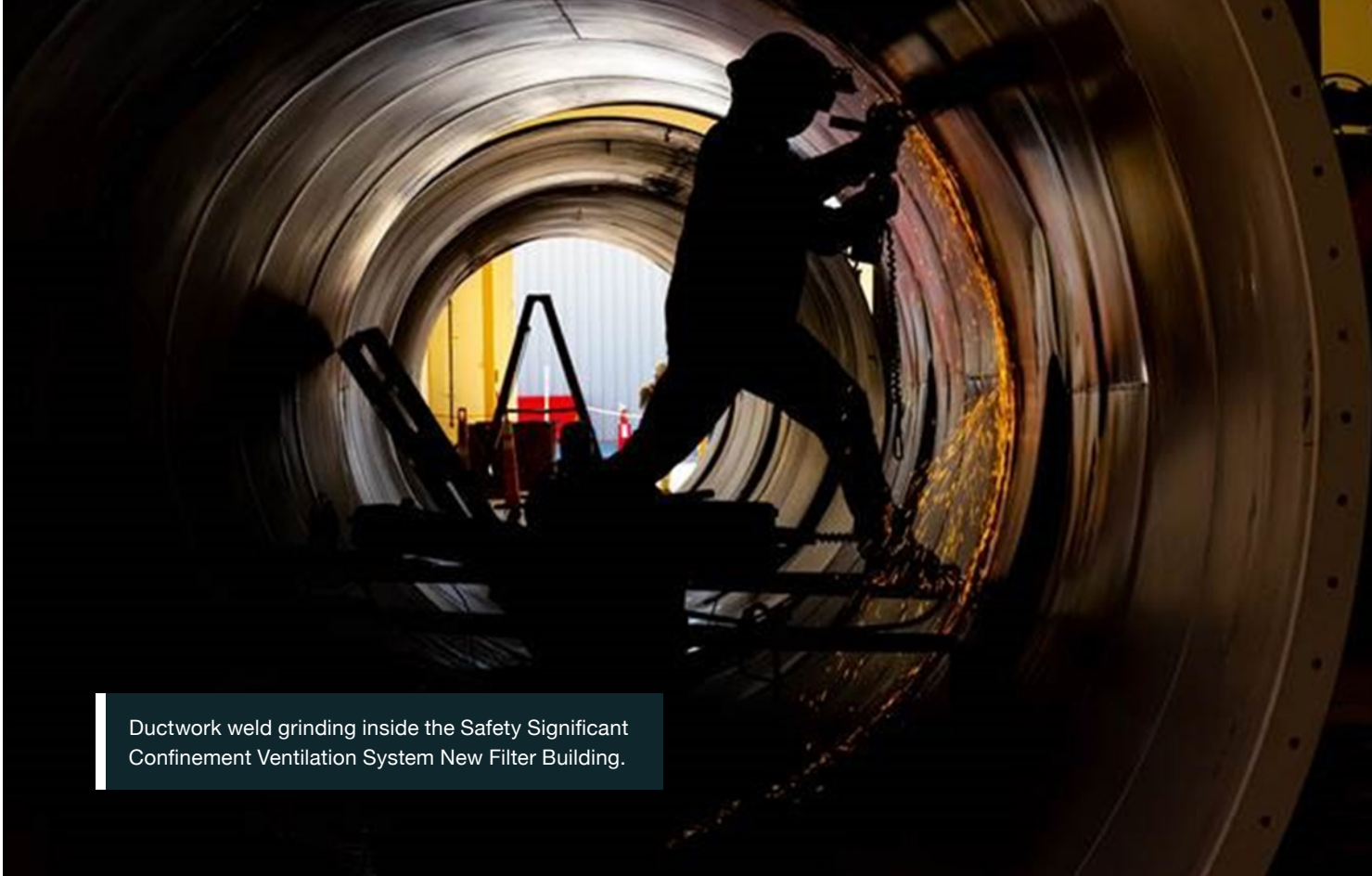
- Began TRU waste emplacement in Panel 8 of the WIPP Underground
- Received 473 waste shipments from generator sites
- Completed sinking the Utility Shaft to reach the final depth of 2,275 feet
- Began commissioning the new Safety Significant Confinement Ventilation System (SSCVS) – an EM 2023 priority
- Received New Mexico Environment Department approval for a new 10-year operating permit
- Successfully completed the transition to a new management-and-operations contract

Planned Cleanup Scope 2024–2034

It is anticipated during the next 10 years, approximately 883,000 cubic feet (25,000 cubic meters) of TRU waste from EM, the National Nuclear Security Site, and small quantity sites will be emplaced at WIPP. WIPP will continue to work closely with the EM Los Alamos Field Office (EM-LA) to expedite the shipping of its legacy waste. EM-LA will remain the only EM site with an “at-ready” arrangement with WIPP, meaning when EM-LA has waste ready to ship, WIPP will accept it.

To support planned waste emplacement activities, much of the work to be performed at WIPP over the next decade focuses on necessary infrastructure improvements to ensure the facility can continue to play its important role in the EM complex.

By the end of 2026, a set of key infrastructure projects will be completed, improving WIPP's 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



Ductwork weld grinding inside the Safety Significant Confinement Ventilation System New Filter Building.

concurrent mining, waste emplacement, and ground control operations throughout the life of the facility. The new Utility Shaft will serve as an air intake entry point to support the mine and meet SSCVS volumes. The Utility Shaft is proposed to house a new, larger capacity hoisting capability to transport materials in and out of the repository.

WIPP will also work to replace disposal capability that was lost following a radiological incident that occurred in 2014. WIPP has applied to the state of New Mexico for approval to mine two new panels (Panels 11 and 12). Panels 11 and 12 will be replacement panels for space lost in Panels 1-7 and from the abandonment of Panel 9.

Additional site infrastructure improvements scheduled for completion during the next decade include:

- **Recapitalization of key safety systems**

- **Replacement/refurbishment of shaft and hoist systems**
- **Upgrades to monitoring systems**
- **Replacement of electrical substations**
- **Installation of additional backup generators**
- **Modernization of underground equipment to zero-emission, battery-electric vehicles, or very low-emission Tier IV diesel-powered equipment**
- **Replacement of underground electrical system switch stations**
- **Installation of a new digitally based geotechnical monitoring system in the WIPP underground**

Regulatory Milestones 2024–2034

- **None**

Post-2034 Cleanup Scope

DOE expects to operate WIPP until its full capacity limit is met, as defined by the LWA. 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 National Environmental Policy Act (NEPA) analysis and decisions, DOE will determine the need for and conduct, as appropriate, further NEPA analyses.