



Department of Energy
Washington, DC 20585

December 8, 2025

The Honorable Patricia L. Lee
Board Member
Defense Nuclear Facilities Safety Board
625 Indiana Avenue NW, Suite 700
Washington, DC 20004

Dear Dr. Lee:

On behalf of Secretary Wright, enclosed is the Department of Energy's (DOE) response to your letter dated June 18, 2025, regarding the Defense Nuclear Facilities Safety Board's (Board) review of critical infrastructure at the Waste Isolation Pilot Plant (WIPP). Your letter requested a written response and briefing to address the following two primary concerns identified by the Board:

1. The timeline and plan to reduce the risk from degraded escapeway hoists to facility workers, including any interim compensatory measures necessary to ensure the safety of ongoing operations; and
2. An evaluation of the adequacy of existing site aging infrastructure management processes based on recent experiences with degraded shafts and escapeway hoists.

The enclosed report provides details of DOE's infrastructure management approach, completed and planned hoisting reliability improvements, and system health monitoring protocols at WIPP. The health and safety of all employees supporting DOE's operations at WIPP is at the forefront of all decisions. WIPP facility operations are conducted in a manner that ensures continued safety. DOE agrees with the Board that WIPP's aging infrastructure is a critical issue that must continue to be addressed to support long-term mission needs of the DOE complex.

In accordance with your request, DOE briefed the Board on September 30, 2025. We appreciate the Board's perspectives and look forward to continued interactions with you and your staff. If you have any questions, please contact me or Mr. Mark Bollinger, Manager, Carlsbad Field Office, at (575) 234-7303.

Sincerely,

A handwritten signature in blue ink, reading "Timothy J. Walsh", is positioned above the typed name.

Timothy J. Walsh
Assistant Secretary
for Environmental Management

Enclosure

Response to March 28, 2025, Defense Nuclear Facilities Safety Board Staff Report Regarding the Evaluation of Waste Isolation Pilot Plant Shafts and Escapeway Hoists

Introduction

On June 18, 2025, the Secretary of Energy received a letter from the Defense Nuclear Facilities Safety Board (DNFSB or Board) sharing observations from a DNFSB staff evaluation of shafts and escapeway hoists at the Waste Isolation Pilot Plant (WIPP). The Board requested a briefing and report from the Department of Energy (DOE) within 120 days of receipt of the letter describing: “(1) the timeline and plan to reduce the risk from degraded escapeway hoists to facility workers, including any interim compensatory measures necessary to ensure the safety of ongoing operations; and (2) an evaluation of the adequacy of existing site aging infrastructure management processes based on recent experiences with degraded shafts and escapeway hoists.” On August 22, 2025, DOE transmitted a letter to the Board requesting an additional 45-days to provide the report due to internal coordination and processing time needed.

Board Request

(1) The timeline and plan to reduce the risk from degraded escapeway hoists to facility workers, including any interim compensatory measures necessary to ensure the safety of ongoing operations;

DOE Response

The health and safety of all employees supporting DOE’s operations at WIPP is at the forefront of all decisions made by DOE’s Carlsbad Field Office (CBFO) and WIPP’s management and operating contractor, Salado Isolation Mining Contractors (SIMCO). While CBFO and SIMCO agree with the Board’s observation regarding the need to modernize WIPP’s hoisting systems, SIMCO operates the WIPP facility in a manner that adequately ensures the continued safety of ongoing operations. CBFO and SIMCO would **never** knowingly operate a hoist – or any piece of equipment or infrastructure – in an unsafe condition. While all the WIPP hoists are experiencing reliability issues due to age and obsolescence, these reliability issues **do not** present safety risks to employees.

No interim compensatory measures have been necessary due to any issues WIPP has been experiencing with its hoisting systems. WIPP’s hoisting systems undergo rigorous preoperational testing and regular maintenance. A failure to meet any of these checks requires the hoist to be taken out of service. WIPP cannot operate its hoists with compensatory measures. WIPP has always had procedures in place to reduce the occupancy in the mine in the event that a hoist is removed from service. That policy has been implemented as required.

In accordance with DOE Order 433.1B Chg 1 (Admin Chg), *Maintenance Management Program for DOE Nuclear Facilities*, the Nuclear Maintenance Management Plan includes processes for conducting inspections to evaluate aging-related degradation and technical obsolescence of our systems and equipment. In both the nuclear and mining

industries, it is acceptable to operate older equipment that may not have the modern features of newer versions or where vendor support is limited, if that equipment is maintained such that it can fulfill its intended function while maintaining safety at or above regulatory standards. The term technically obsolescent describes this condition. Depending on budgets and other competing priorities, a balance must be struck that evaluates the mission need, the availability of funding, and the sustainability of equipment. Like many facilities in the complex, WIPP finds itself in the circumstance where it must maintain aging equipment in operation as it continues the mission and plans and funds replacements or repairs. However, in recognition of the increased reliability issues due to age, CBFO and SIMCO have taken steps to address these infrastructure needs. The following includes a summary of recently completed improvements and a list of planned projects.

Recently completed hoisting reliability improvements (completed within the last two years):

- **Air Intake Shaft (AIS) Improvements.** In 2024, SIMCO contracted with two third-party subject matter experts, Hatch Ltd. and Siemag Tecberg, to provide a comprehensive evaluation of the AIS Hoist's annual inspection reports, bearing conditions and risk of failure of bearings, prior to commencing the Salt Pocket Refurbishment Project. This evaluation was performed to ensure the AIS Hoist was capable of safely operating as an emergency egress while the Salt Hoist was out of service during the Salt Pocket Refurbishment Project. Both contractors confirmed the AIS Hoist was capable of safely operating as an emergency hoist and recommended additional temperature monitoring and installation of additional lubrication on the main bearings. Both recommendations were implemented by SIMCO, and the existing bearings on the AIS Hoist are scheduled to be replaced with new bearings by the end of 2025.
- **Salt Pocket Refurbishment Project.** This project entails reconstructing the lower portion of the Salt Hoist, including the installation of new guide systems, and installation of updated control systems for the salt bin at the station level. CBFO and SIMCO collaborated to identify a funding mechanism that enabled this project to begin a year in advance. On July 17, 2025, the Salt Hoist became available for emergency egress of personnel. As of October 2025, the Salt Hoist is back in full operation.
- **Utility Shaft Infrastructure.** SIMCO acquired the headframe, double drum hoist, Galloway, emergency hoist, and supporting surface and underground infrastructure used to construct the Utility Shaft. Securing this infrastructure ensures WIPP retains a fully functional emergency egress hoisting system connected to the underground and allows the ability to continue performing shaft inspections and maintenance on the new workings until the permanent hoist associated with the Hoisting Capability Project is installed. This acquisition was completed in July 2025.

- **Waste Hoist Improvements.** Refurbishment and realignment of the Waste Shaft station structural steel, motor inspection and cleaning, hoist rope replacement, and replacement of the chiller units that cool the motor of the Waste Hoist have all been completed. These improvements will improve the reliability of the Waste Hoist in the near term.

Planned Projects (2025 through 2031)

- **Waste Hoist Upgrades.** The first phase of a significant upgrade project for the Waste Hoist motor will be undertaken in Fiscal Year (FY) 2026. In addition, the Waste Hoist controls and drives and Waste Shaft structure will begin design and long lead orders in FY26. Construction work is scheduled to occur during planned shipping outages in 2027 and 2028, and the project is scheduled to be completed in 2028. This will be a significant effort and will necessitate a pause in waste shipments planned during Fiscal Year 2027.
- **Hoisting Capability Project (HCP).** This project entails construction of a hoist that will become the Primary Personnel Hoist and take much of the daily load for moving personnel and materials off the Waste Hoist. HCP also includes construction of a new Salt Production Hoist at the AIS and installation of ventilation fans in the underground. SIMCO submitted the package for DOE's review of Critical Decision-1 in September 2025.
- **Salt Production Hoist.** To enable the Hoisting Capability Project, the existing AIS Hoist will be removed as part of the HCP. The shaft will become the construction exhaust air shaft. The AIS Hoist will be replaced with a new hoist, which will become the Salt Production Hoist. The Salt Production Hoist will also serve as an emergency escape hoist. Upon completion, the Salt Production Hoist will provide WIPP with a new, state-of-the-art hoist. When combined with the upgraded Waste Hoist, WIPP will be equipped with a reliable Primary Personnel Hoist and a new Salt Production Hoist. This project is scheduled to be completed in 2029.
- **Primary Personnel Hoist.** Pursuant to the Hoisting Capability Project, a new permanent Primary Personnel Hoist will be constructed in the Utility Shaft following completion of the Production Hoist. This project will include construction of a hoist to be used for conveying materials and personnel to the underground. This project is scheduled to be completed in 2031.
- **Salt Hoist Upgrades.** Upon completion of the Primary Personnel Hoist, the Salt Hoist and shaft steel will be replaced and will serve as a back-up production hoist and another secondary, emergency escape hoist. This project is scheduled to be completed in 2031.

Discussion on Safety versus Reliability

Based on the Board's Staff Report, which accompanied the Letter to the Secretary, CBFO and SIMCO believe it important to directly address the issue of safety versus reliability. The Board is concerned that increased reliability issues "raise safety concerns about the ability to safely evacuate workers during a major fire or radiological release in the underground."

In accordance with Title 30 of the Code of Federal Regulations (CFR) Part 57.11050, Safety and Health Standards – *Escapeways and Refuges in Underground Metal and Nonmetal Mines*, WIPP has adequately established safe escapeway and evacuation plans. The regulation requires that in **non-emergency** circumstances, that the combination of all conveyances can get all miners out of the mine, from all levels, within an hour. WIPP has both primary (Waste) and secondary (Salt or AIS) escapeways with hoists capable of egressing personnel. Every 6 months, WIPP personnel perform underground evacuation drills within these time limits to demonstrate WIPP's capability to meet this regulation. Of note, there is no requirement in Title 30 to egress the mine in under an hour during an **emergency**. Emergencies inherently come with complications that must be dealt with on an individual basis, which would not benefit from obligating the response to rigid timeframes. The focus is to get the miners out of the underground to the surface, not the time in which this is accomplished.

The requirement for the two separate escapeways comes directly from 30 CFR 57.11050, is strictly adhered to by WIPP, and is adequate in the estimation of the Mine Safety and Health Administration and CBFO to ensure all miners will be safely conveyed to the surface in the event of an emergency. This is the regulation for all underground mines in the United States. This regulation has been formed from decades of experience from the mining industry.

To address reliability issues, 30 CFR 57.19120, *Procedures for Inspection, Testing, and Maintenance*, has specific and rigorous pre-operational and normal maintenance inspections and activities that must be met to declare a hoist operational. Should a failure of any of these checks or maintenance activities be encountered, the hoist is declared out of service immediately. If there are any personnel in the underground when this occurs, they are required to perform an orderly egress to the surface using another operational conveyance.

In the unlikely event that there is no means of egress (all hoists are inoperable) with personnel still in the underground, there should be no issues initially with the workforce. Ventilation, which is entirely separate from the hoisting systems, would still be available to provide a safe environment for the underground workforce. All work would come to a stop, eliminating nearly all the initiators to accidents. Personnel would stage at assembly areas designed to ensure the workforce was in locations where fresh air is being mechanically ventilated into the area and emergency medical personnel are always present in the WIPP underground when it is occupied. Employees who had or developed injuries or illnesses at the same time as such an unlikely circumstance would be cared for

by professionals and staged in optimum locations to egress them from the underground when hoisting systems became available. If an emergency (a fire or radiological event) were to develop at the same time as this unlikely circumstance, the balance of Title 30 and WIPP requirements provide enough defense in depth to ensure protection of life and health to the miners until an escape can be affected. These include:

- The ability to compartmentalize fires and resultant smoke in different air circuits with Control Doors. (30 CFR 57.4760)
- Respiratory protection for all miners including respirators that will convert carbon monoxide to carbon dioxide (W-65s) for up to an hour and the capability to switch to air supplied respiratory protection that can last up to 8 hours (Self Contained Self Rescuers). (30 CFR 57.15030)
- Assembly areas in 4 locations in the mine to stage miners in fresh air while awaiting conveyance to the surface. (30 CFR 57.11053)
- Fire protection on all mobile equipment to prevent vehicle fires. (30 CFR 57 Subpart C)
- Control of combustibles to minimums around all escape shafts. (WIPP policy)

It should also be noted that the ventilation is designed to move contaminants from radiological accidents away from the assembly areas and the workforce. As such, the WIPP Documented Safety Analysis does not even consider the need to escape the underground in such events, only to move to areas of the underground in fresh air away from the event.

Additionally, CBFO and SIMCO wanted to emphasize some points about its hoisting systems and the mine that were mentioned in the DNFSB Staff Report.

- There are no long-term safety issues related to any of WIPP's hoists as stated in the report. The hoists go through rigorous testing and inspection prior to use and are taken out of service immediately if **any** of those inspections are unsatisfactory. Although there are reliability issues as acknowledged by SIMCO and CBFO, the timely resolution of those can be complex, but are being planned and are in progress. However, safety issues are addressed immediately.
- There is no location in the WIPP underground required to maintain a refuge chamber under Mine Safety and Health Administration (MSHA) regulations (30 CFR 57.11050 (b)/11052). The chambers mentioned in the report were purchased during the recovery efforts following the accidents of 2014 but were found to be unnecessary according to the regulations. Refuge chambers are only required if miners cannot egress the mine in a non-emergency situation within an hour.

Conclusion

Although the age of WIPP's hoists has led to increasing instances where the hoists have been taken out of service, there has never been a circumstance where miners have been allowed on the hoists if they did not meet all regulatory requirements for safe operation. Lastly, it should be noted that WIPP is subject to random inspections by the MSHA as required by the Land Withdrawal Act and its accompanying Memorandum of Understanding between the MSHA and the DOE. Since 2019, WIPP has not received an MSHA citation related to hoist operability of any of its active repository hoists.

Board Request

(2) An evaluation of the adequacy of existing site aging infrastructure management processes based on recent experiences with degraded shafts and escapeway hoists.

DOE Response

DOE has addressed aging infrastructure needs through the execution of minor construction projects and capital asset projects. Addressing infrastructure needs requires strategic investments in critical infrastructure and a management approach that ensures these investments are planned and executed in a manner that addresses long-term mission needs with minimal impact to ongoing waste disposal operations.

Aging infrastructure challenges at WIPP have offered critical lessons that have informed improvements in management processes. Management processes continue prioritizing risk-based projects, lifecycle costing, and data-driven informed improvements. Overall, the challenges with aging infrastructure have driven improvements toward a more resilient performance-based management approach. The following management processes have been implemented at WIPP using lessons learned on aging infrastructure:

- **CBFO and Contractor Oversight.** CBFO and its contractor utilize project controls, operations, engineering, mining operations, safety, and project management oversight personnel.
- **Performance Measurement Baseline.** WIPP established a Performance Measurement Baseline in 2024 to track and measure operations and infrastructure cost, scope, and schedule performance.
- **Plan of the Day Meetings.** WIPP utilizes an established critical equipment program and ensures this is a focus of the daily planning meetings to maximize WIPP's equipment operational availability. SIMCO's maintenance program, which includes preventative maintenance, corrective maintenance and predictive maintenance, is designed to ensure safe operation of equipment at WIPP in accordance with the manufacturers' guidelines.
- **System Health Reporting Program.** The System Health Reporting Program utilizes maintenance data along with engineering evaluations to produce periodic

system level health assessments. System Health Report stop light charts summarize the conditions and required actions. The System Health Reports are integrated into the Integrated Priority List (IPL), discussed below, and other planning tools to manage upgrades to the WIPP facility.

- **Integrated Priority List.** The IPL is a key tool to evaluate long-term infrastructure. The IPL contains a comprehensive list of the infrastructure projects identified at WIPP and includes information regarding the priority level assigned to each project (i.e., High, Medium, Low), cost and a target schedule. The IPL is updated routinely, discussed in monthly meetings with CBFO, and used as a tool to inform annual budget planning cycles. Both the Hoisting Capability Project and the Mine Sustainment Plan are integrated with the IPL and provide a long-term, systematic approach to infrastructure management at WIPP.
- **Performance-based Contract Incentives.**
 - In FY 2025, CBFO incentivized SIMCO for the development of a Hoisting Capability Project, which provides a detailed plan for upgrading the hoisting systems and includes plans to optimize ventilation and muck haulage. As a result, the Hoisting Capability Report is premised upon an integrated view of the operation in which all shafts, hoists, waste handling, mining, mine haulage, mine ventilation, and surface haulage are viewed as an interrelated system.
 - In FY 2025, CBFO incentivized SIMCO with the development of a Mine Sustainment Plan, which discusses the equipment, technology, methods, plans, and processes that SIMCO plans to employ to ensure underground mining operations will continue to safely support and meet the mission requirements over the next 10 years and beyond.
 - In FY 2026, CBFO will incentivize, through performance-based incentives, a continued focus on infrastructure improvement
- **Master Site Plan.** The Master Site Plan provides a structured approach to mission sustainability throughout the lifecycle of the WIPP. The Master Site Plan provides a road map to infrastructure recapitalization to increase mission capacity and resiliency, strengthen infrastructure sustainability, transform the site security and emergency preparedness posture, enhance and upgrade information management systems, and provide state of the art mining methods and ground control technology. The Master Site Plan is integrated with the IPL and will be updated in 2025 and beyond to ensure WIPP continues to realize its strategic potential to address the nation's nuclear waste challenges.
- **WIPP Infrastructure Deep Dive.** WIPP hosted the EM Infrastructure Deep Dive in November 2024, which included representatives from across the DOE Complex. The WIPP Infrastructure Deep Dive was a multi-day event focused on

discussing key elements of the Master Site Plan and receiving input from waste generator sites to ensure long term planning efforts are closely coordinated across the DOE Complex. The review validated that WIPP had an accurate accounting of what needs to be completed to best position the site for success in current and future operations.

Conclusion

CBFO and SIMCO's infrastructure management approach and system health monitoring protocols have allowed WIPP to increase operational capabilities over the last two years, notwithstanding aging and outdated infrastructure. WIPP has not experienced a situation where personnel safety has been compromised by aging infrastructure. WIPP has not missed a waste shipment due to critical equipment being out of service, and, as the Board acknowledges, WIPP's management systems comply with DOE Order 430.1C Chg 2 (Admin Chg), *Real Property Asset Management*, and DOE Order 433.1B Chg 1 (Admin Chg), *Maintenance Management Program for DOE Nuclear Facilities*.

DOE agrees with the Board that WIPP's aging infrastructure is a critical issue that must be addressed to support long-term mission needs for the DOE Complex. CBFO and SIMCO's successful completion of the UVS project, while simultaneously increasing WIPP's waste disposal capabilities and completing strategic infrastructure plans, proves DOE has a management team in place at WIPP capable of safely executing the waste disposal mission while executing critical infrastructure projects. Consistent funding to address the aging infrastructure and equipment is the key to ensuring WIPP remains capable of meeting the long-term needs for the DOE Complex.