Independent Assessment of the 2025 Annual Full-participation Emergency Management Exercise at the Waste Isolation Pilot Plant

May 2026

U.S. DEPARTMENT of ENERGY | Office of Enterprise Assessments

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Acronyms

CAT	Consequence Assessment Team
CBFO	Carlsbad Field Office
CFR	Code of Federal Regulations
CM	Crisis Manager
CMR	Central Monitoring Room
CRAD	Criteria and Review Approach Document
DOE	U.S. Department of Energy
DSA	Documented Safety Analysis
EA	Office of Enterprise Assessments
EAL	Emergency Action Level
ENF	Emergency Notification Form
EOC	Emergency Operations Center
EOS	Emergency Operations System
EPHA	Emergency Planning Hazards Assessment
EPI	Emergency Public Information
ERO	Emergency Response Organization
FSM	Facility Shift Manager
IC	Incident Commander
JIC	Joint Information Center
LWA	Land Withdrawal Act
OE	Operational Emergency
OFI	Opportunity for Improvement
PA	Protective Action
SFO	Senior Federal Official
SIMCO	Salado Isolation Mining Contractors, LLC
SOC	Security Operations Center
UG	Underground
WDS	Waste Data System
WebEOC®	Web-based Emergency Operations Center Software
WIPP	Waste Isolation Pilot Plant

INDEPENDENT ASSESSMENT OF THE 2025 ANNUAL FULL-PARTICIPATION EMERGENCY MANAGEMENT EXERCISE AT THE WASTE ISOLATION PILOT PLANT

Executive Summary

The U.S. Department of Energy (DOE) Office of Enterprise Assessments (EA) conducted an independent assessment of emergency management of the 2025 annual full-participation exercise at the Waste Isolation Pilot Plant from August to September 2025. The assessment evaluated the effectiveness of the management and operating contractor, Salado Isolation Mining Contractors, LLC (SIMCO), and the Carlsbad Field Office (CBFO) in managing and maintaining emergency response organization performance.

EA identified the following strengths:

- SIMCO appropriately categorized the incident, issued protective actions, and conducted prompt notifications to all relevant parties.
- SIMCO's consequence assessment team was well-staffed with knowledgeable personnel and effectively communicated with decision-makers.
- CBFO and SIMCO effectively conducted a strategic planning meeting with senior management personnel before the initial press conference to align leadership on timelines, roles, and messaging.
- SIMCO conducted a well-designed full-participation exercise according to plans and procedures, meeting DOE requirements, and involving offsite response organizations.

EA also identified several significant weaknesses, including one finding, as summarized below:

- SIMCO did not provide complete and accurate initial and follow-on notifications to all appropriate offsite stakeholders. (Finding)
- Emergency public information did not contain all required information (e.g., the reason for the joint information center activation and a news media team telephone number) or encourage the media to gather for updates.
- A misunderstanding led to additional highways being closed by the emergency response organization and the implementation of unnecessary notifications and protective measures.
- Limitations in the consequence assessment team's access to the Waste Data System's online data and inoperable meteorological display systems hindered timely and accurate consequence assessments.
- Corrective actions for five previous EA findings were ineffective, particularly concerning worker and public protective measures due to the inadequately defined responsibilities related to the relocation of the emergency management site boundary.

In summary, while CBFO and SIMCO demonstrated effective capabilities in several areas of emergency response, significant weaknesses related to communication consistency and misunderstanding of the need for highway closures diminished the overall effectiveness of the emergency response. In addition, until effective corrective actions for the previous EA findings described in this report are put in place, responses to real-world emergencies could be impaired, particularly regarding the protection of transient populations within the Land Withdrawal Act area.

INDEPENDENT ASSESSMENT OF THE 2025 ANNUAL FULL-PARTICIPATION EMERGENCY MANAGEMENT EXERCISE AT THE WASTE ISOLATION PILOT PLANT

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) Office of Emergency Management Assessments, within the independent Office of Enterprise Assessments (EA), assessed the 2025 annual full-participation emergency management exercise at the Waste Isolation Pilot Plant (WIPP). This assessment was conducted as part of an ongoing series of assessments of emergency management exercises and programs at DOE sites. Assessment activities were conducted from August to September 2025.

This assessment evaluated the effectiveness of the management and operating contractor Salado Isolation Mining Contractors, LLC (SIMCO), and the Carlsbad Field Office (CBFO) in managing and maintaining emergency response organization (ERO) performance via the September 10, 2025, full-participation emergency management exercise. This assessment evaluated the performance of the ERO at key decision-making venues, such as the central monitoring room (CMR) and the emergency operations center (EOC), and incident command post and ERO positions, such as the crisis manager (CM) and incident commander (IC). Issues identified during the exercise evaluation were further examined to determine possible causes, such as a lack of training or insufficient procedural guidance. This assessment was conducted in accordance with the *Plan for the Independent Assessment of the September 2025 Full-scale Emergency Management Exercise at the Waste Isolation Pilot Plant, August - November 2025.*

2.0 METHODOLOGY

The DOE independent oversight program is described in and governed by DOE Order 227.1A, *Independent Oversight Program*, which EA implements through a comprehensive set of internal protocols, operating practices, assessment guides, and process guides. This report uses the terms "best practices, deficiencies, findings, and opportunities for improvement (OFIs)" as defined in the order.

As identified in the assessment plan, this assessment considered requirements documented in DOE Order 151.1D, *Comprehensive Emergency Management System*. EA used the following sections of EA CRAD 33-09, Revision 0, *DOE O 151.1D Emergency Management Program*: section 4.3, *Emergency Response Organization*; section 4.4, *Emergency Operations System*; section 4.6, *Offsite Response Interface*; section 4.7, *Emergency Classification*; section 4.8, *Protective Actions*; section 4.9, *Consequence Assessment*; section 4.11, *Notifications and Communications*; section 4.12, *Emergency Public Information*; and section 4.15, *Exercises*. EA also used elements of EA CRAD EA-30-07, Revision 1, *Federal Line Management Oversight*, to collect and analyze data on CBFO oversight of SIMCO.

EA examined key documents, such as the exercise package, exercise evaluation guides, emergency plans, checklists, procedures, manuals, analyses, and policies. EA also interviewed key personnel responsible for developing and executing the emergency management program; observed exercise planning activities; and walked down significant portions of selected WIPP facilities, focusing on emergency response. The members of the assessment team, the Quality Review Board, and the management responsible for this assessment are listed in appendix A.

EA conducted previous assessments of the emergency management program at WIPP in 2023, as documented in EA reports *Independent Assessment of Emergency Preparedness Capabilities at the Waste*

Isolation Pilot Plant - October 2023 and *Independent Assessment of the 2023 Full-Scale Emergency Management Exercise at the Waste Isolation Pilot Plant - February 2024*. The current assessment examined the completion and effectiveness of corrective actions for the EA findings identified in the previous assessments. Results of the corrective action review are included in section 3.8 of this report.

3.0 RESULTS

SIMCO designed and conducted a full-participation exercise to evaluate emergency response capabilities and multiple processes of key ERO teams. The exercise focused on the use of appropriate plans, policies, and procedures, as well as the actions of ERO members involved in management, direction, and command and control functions. Facility workers, the site-level ERO, and offsite participants conducted the exercise in a realistic, real-time environment. The postulated incident involved an underground (UG) roof collapse in the active area of the mine resulting in radiological contamination being released within the mine, two contaminated-injured workers, and three contaminated-uninjured workers (simulated). SIMCO declared an Operational Emergency (OE) not requiring further classification as a result of the incident. The WIPP fire department responded to the incident and assumed IC duties on the surface while the UG fire department's emergency medical services technicians responded to the scene. SIMCO activated the EOC and joint information center (JIC) in support of the UG roof collapse. The WIPP fire department ambulance transported one of the injured patients to the Carlsbad Medical Center while the Carlsbad fire department ambulance transported the other injured patient.

3.1 Emergency Operations System

This portion of the assessment determined whether the SIMCO emergency operations system (EOS) provides centralized collection, validation, analysis, and coordination of information related to a WIPP incident response, and whether that information is used to obtain and maintain situational awareness and disseminate a common operating picture among response components to achieve a well-coordinated, well-understood, and effective response.

SIMCO had adequate EOS capabilities to collect incident information and provide needed expertise for incident analysis from a centralized EOC and adequately equipped facilities. The EOS was consistent with the operational concepts of the National Incident Management System. In addition, the WIPP emergency plan (DOE/WIPP 17-3573, *Waste Isolation Pilot Plant Emergency Plan*) and implementing documents adequately established the EOS to support an ERO structure that consists of a tiered approach for responding to OEs. For example:

- Clear authority was given to the SIMCO IC to manage the incident scene.
- The facility shift manager (FSM) appropriately managed facility responses, including incident categorization and protective action (PA) decision-making, before the EOC was operational.
- CBFO and SIMCO staffed the EOC ERO to include a management team, CM, CBFO senior Federal official (SFO), emergency management duty officer, liaison officer, public affairs officer, security lead, operations chief, and planning chief. Once the EOC was operational, SIMCO provided adequate management and coordination of site-level facilities, organizations, and capabilities, including the CMR, EOC, and JIC.
- SIMCO appropriately used the Web-based Emergency Operations Center software (WebEOC®), a commercially available information management software tool, to enable centralized collection, validation, analysis, and coordination of information among the EOC, CMR, security operations center (SOC), and JIC.

Overall, SIMCO demonstrated effective command and control within individual response venues and, with one exception, obtained and maintained situational awareness and disseminated a common operating picture among all response components and external partners. During the response, recently implemented capabilities and processes for situational awareness were validated, which included the addition of WebEOC in all response facilities (CMR, SOC, EOC, and JIC); the effective use of conference call briefings among the CM, FSM, and IC; and the frequent use of EOC ERO briefings to maintain alignment with strategic objectives. However, some communications did not provide a common operating picture relative to site access control decision-making. Consequently, a misunderstanding related to the closure of highways by the IC occurred, leading to additional highways being closed by the ERO and the implementation of unnecessary notifications and protective measures.

Emergency Operations System Conclusions

Overall, the SIMCO EOS is structured consistent with the operational concepts of the National Incident Management System, and SIMCO possessed sufficient capabilities to gather incident information from centralized and well-equipped facilities. With one exception, SIMCO demonstrated an effective EOS for an OE not requiring further classification. However, some communications did not provide a common operating picture relative to site access control decision-making that resulted in unnecessary notifications and protective measures.

3.2 Emergency Categorization and Protective Actions

This portion of the assessment determined whether (1) the predetermined decision-makers categorized the OE as promptly as possible, but no later than 15 minutes after identification and no more than 30 minutes from initial discovery, and (2) SIMCO correctly identified and implemented PAs to minimize the consequences of an emergency and to protect the health and safety of workers and the public.

SIMCO adequately categorized the incident as an OE per WP 12-ER3906, *Categorization and Classification*, for a filtered UG radiological release. The FSM adequately categorized the incident, using the most applicable facility-specific emergency action level (EAL). Subsequently, the CM promptly reviewed the EAL selection and concurred with the OE categorization upon declaring the EOC operational.

SIMCO also appropriately issued PAs to protect workers and first responders and addressed injured and/or contaminated personnel. SIMCO adequately identifies onsite PAs in the WIPP emergency plan, in WP 12-ER.30, *WIPP Protective Action Plan*, and in associated procedures. Upon notification of the UG roof collapse, the CMR operator referenced procedure WP 04-CM4042, *CMR Response to Underground Roof Fall*, and made the appropriate announcement for UG personnel to report to the waste hoist for orderly egress and aboveground personnel to suspend site activities. After receiving UG radiological alarms indicating a radioactive material release, the FSM directed the CMR operator to immediately issue the prescribed predetermined PAs for UG personnel to report to their assembly areas and aboveground personnel to remain indoors. The announcement was later followed by an Everbridge notification (an automated system that delivers voice, text, and email messages) directing the same actions. Additionally, injured and/or contaminated personnel received appropriate treatment during the exercise. Critical patients were triaged, treated, and transported to a local hospital, and a decontamination trailer was used to address the three contaminated-uninjured workers. Based on the incident's categorization, no offsite PA recommendations were required, although a protective measure was requested for local law enforcement to close a heavily trafficked public highway to limit access to the site as the incident progressed.

Although PAs were issued as required, the WIPP emergency plan and WP 12-ER.30 are not consistent concerning the identification of the site emergency boundary, as further discussed in section 3.8. WP 12-ER.30 defines the site boundary as the Land Withdrawal Act (LWA) area boundary; however, the WIPP emergency plan lists the site boundary as the off-limits area for the purpose of emergency management and considers the Federal land beyond the off-limits area as an area of public access, which places the responsibility for protection of the public in the LWA on local authorities. WP 12-ER.30 does not contain any language pertaining to the LWA area being offsite for emergency purposes or discuss the anticipated actions by local government authorities related to PAs that would be required for individuals located on the LWA Federal property during an emergency incident. (See **OFI-SIMCO-1**.)

Emergency Categorization and Protective Actions Conclusions

SIMCO adequately categorized the incident and appropriately issued PAs to protect workers and first responders during this exercise. SIMCO correctly implemented the initial EAL-identified predetermined onsite PAs by directing UG personnel to report to their assembly areas and for aboveground personnel to remain indoors as required by procedures. Additionally, injured and/or contaminated personnel were appropriately addressed by emergency responders. However, the site's PA plan and WIPP emergency plan are not consistent concerning the location of the site boundary.

3.3 Notifications and Communications

This portion of the assessment determined whether SIMCO performed initial and follow-on notifications promptly, accurately, and effectively to all appropriate stakeholders, and whether the ERO maintained effective communications throughout the response.

3.3.1 Notifications

SIMCO completed prompt notifications to the ERO, onsite workers, field responders, and offsite agencies. SIMCO has a defined process with appropriate supporting checklists for performing notifications as described in WP 12-ER3907, *Operational Emergency Notifications*. The CMR staff effectively notified field emergency response personnel within minutes of reports of the UG roof collapse incident causing personnel injuries and a radiological release. Quickly afterwards, the CMR staff provided PA notifications for both UG and aboveground workers. Additionally, the CMR effectively used Everbridge, which delivered voice, text, and email messages to notify and activate the ERO. The CMR staff also promptly published the initial emergency notification form (ENF) to provide notification to DOE Headquarters, local agencies, and the State of New Mexico of the declared OE shortly after incident categorization. After issuing the ENF, the CMR staff completed calls to all notified offsite agencies to verify receipt of the electronic ENF after issuing the ENF and provided the first ENF update within one hour, as procedurally required. Similarly, the EOC staff completed additional ENF hourly updates.

Nevertheless, SIMCO did not ensure that initial and follow-on ENFs were complete and accurate. Although SIMCO responders followed established procedures, required information pertaining to casualties and agencies involved was not included on the ENFs. Furthermore, WP 12-ER3907 does not direct ERO members to review all known information from the ENF with the DOE Headquarters Watch Office during the initial phone call, as required by DOE Order 151.1D. In addition, SIMCO was not consistent in describing the release of radiological material in the sequential ENFs, which was initially listed as "has not occurred," then later listed as "occurred but terminated," and finally listed as "in progress." Significantly, the second follow-on ENF, issued by the EOC, recommended that offsite agencies implement an unnecessary offsite protective measure, namely closing a heavily trafficked public highway. Contrary to DOE Order 151.1D, attachment 3, paragraph 11, SIMCO did not provide complete

and accurate initial and follow-on notifications to all appropriate offsite stakeholders. (See **Finding F-SIMCO-1**.) Consequently, offsite agencies did not have full situational awareness or a complete common operating picture about the significance, extent of the incident, associated offsite impacts, or involvement of other organizations.

3.3.2 Communications

ERO communications were mostly effective. WIPP communication systems (Everbridge, public address, and radio) adequately performed as intended, except for public address coverage for some areas of the UG. SIMCO appropriately used WebEOC access in the CMR, SOC, and JIC to support a common operating picture and situational awareness. Commendably, the conduct of operations by the expanded CMR staff was effective. For example, three-way communications (i.e., repeating back information) were used consistently throughout the emergency response.

Notifications and Communications Conclusions

SIMCO completed prompt notifications to the ERO, onsite workers, field responders, and offsite agencies using adequate communication systems. Additionally, SIMCO appropriately used WebEOC access in the CMR, SOC, and JIC to support a common operating picture and situational awareness. Commendably, the conduct of operations by the expanded CMR staff was effective. However, SIMCO did not ensure that initial and follow-on ENFs were accurate and complete. Importantly, the SIMCO notification procedure does not prompt responders to provide essential information required for the ENF or to review existing notification details by phone with the DOE Headquarters Watch Office.

3.4 Consequence Assessment

This portion of the assessment determined whether SIMCO's consequence assessment activities provided a conservative, timely initial assessment; accurate projections using incident conditions; and supportive assessments throughout the emergency.

SIMCO adequately staffed the consequence assessment team (CAT) with knowledgeable personnel from safety and engineering fields using a suitable set of checklists, reference materials, computers, and dispersion modeling software to support atmospheric dispersion modeling. The CAT used source term information prominently stored in the associated EAL to produce a conservative timely initial assessment. The CAT effectively communicated with ERO decision-makers through briefings and posted well-annotated model output to WebEOC.

The CAT generated accurate continuous assessments by using the current waste inventory for the area affected in the exercise scenario, which was available by accessing the Waste Data System (WDS) online. However, the CAT only had access to WDS data because only one specific team member had WDS access, and the current data would not be readily available if that specific team member had not responded. Additionally, a dedicated computer that displays meteorological tower information for the CAT was inoperable during the exercise, resulting in the CAT spending a significant amount of effort trying to make the computer operable before finally resorting to telephoning the FSM to receive current meteorological tower data. (See **OFI-SIMCO-2**.)

Consequence Assessment Conclusions

Overall, SIMCO demonstrated the ability to provide a conservative assessment of incident conditions. However, only one team member had access to the WDS database, and the CAT was unable to access meteorological tower information directly.

3.5 Offsite Response Interfaces

This portion of the assessment evaluated the effectiveness of SIMCO and CBFO in establishing and maintaining interfaces with local, state, and Federal organizations responsible for emergency response.

SIMCO and the CBFO SFO demonstrated effective interfaces with DOE, local, state, and Federal organizations responsible for emergency response. Although not required by procedure, an additional offsite liaison officer responded to the ERO activation, resulting in two offsite liaison officers staffing the position throughout the exercise. The two offsite liaison officers effectively executed their offsite liaison checklist and adequately interacted with Eddy County, Lea County, the DOE Headquarters Watch Office, the New Mexico Department of Public Safety Dispatch Center, and the New Mexico Department of Homeland Security and Emergency Management. Likewise, the CBFO SFO effectively used his checklist to communicate with the DOE program office and request that a radiological assistance program team report to the Carlsbad Medical Center. During the exercise, responders demonstrated effective coordination with external medical resources. The Carlsbad fire department transported one of the two contaminated-injured workers to the Carlsbad Medical Center, and the WIPP fire department transported the other contaminated-injured worker. SIMCO responders then contacted the Radiation Emergency Assistance Center/Training Site at Oak Ridge for assistance and advice.

Offsite Response Interfaces Conclusions

SIMCO and the CBFO SFO demonstrated effective interfaces with DOE, local, state, and Federal organizations responsible for emergency response.

3.6 Emergency Public Information

This portion of the assessment determined whether emergency public information (EPI) staff provided accurate, candid, and timely information to workers, the media, and the public, and whether that information facilitated situational awareness to support a well-coordinated, well-understood, and effective response.

During the exercise, public affairs personnel, social media writers, and support staff, in general, adequately developed, coordinated, and disseminated information throughout the response. EPI personnel demonstrated a thorough understanding of position-related responsibilities, WIPP's mission, and the UG infrastructure to support a common operating picture. Throughout the response, the public affairs officer routinely interfaced with the CBFO SFO and the CM. Social media writers used a combination of preapproved ChirpEX (social media platform) messages and press releases tailored to the incident to provide situational awareness. Specifically, the social media writers issued 20 updates about the ongoing incident to update the public, the media, and workers' families.

Prior to the press conference, senior executives and ERO responders from SIMCO, including the President, Vice President, consequence assessment modelers, and the CM, as well as senior CBFO officials, including the Chief of Staff, the SFO, and the Public Affairs Manager, prepared pre-scripted statements for the press and discussed near and mid-term (24 to 48 hours) response activities to ensure a unified response strategy, integrated operations, and coordinated activities. During the meeting, CBFO

and SIMCO executives defined objectives, acknowledged essential elements of information, established scalable incident command structures, and prioritized roles to identify mission critical functions and requirements. CBFO and SIMCO's use of a strategic planning session and formal documentation in EA11EA3000-2-0, *JIC Manager Checklist*, set clear timelines of events, confirmed roles and responsibilities, and ensured that narratives remained controlled and factual.

While information disseminated via ChirpEX was timely and efficient, it did not contain all required information (e.g., the reason for the JIC activation and a news media team telephone number), and it did not encourage the media to gather for updates per the WIPP emergency management plan. Specifically, of the 10 identified press releases sent via ChirpEX, only 1 included both the phone number and reason for the activation, and none contained all 3 elements. Contrary to DOE Order 151.1D, attachment 3, paragraph 12, and DOE/WIPP 17-3573, section 13.1, SIMCO did not provide accurate and timely information to workers, the media, or the public during the emergency. (See **Deficiency D-SIMCO-1**.) Consequently, workers' families and impacted community members were not provided with a phone number to obtain specific information related to the incident in a timely manner and the media were not encouraged to gather by EPI personnel to help share critical updates.

Emergency Public Information Conclusions

Overall, EPI activities resulted in the issuance of routine communications with appropriate media counterparts and other stakeholders but lacked consistent key information to connect the media and interested public with SIMCO. CBFO and SIMCO generally followed EPI-related plans, procedures, and checklists to ensure that the EPI section and JIC supported coordination, production, and dissemination of relevant information to internal personnel, external stakeholders, and the media. However, some EPI information was not consistently disseminated in press releases as required by DOE Order 151.1D and SIMCO procedures.

3.7 Exercise Design and Conduct

This portion of the assessment evaluated the ability of the SIMCO exercise program to validate emergency response capabilities and test and validate emergency plans and procedures for hazards identified in the emergency planning hazards assessment (EPHA).

Procedure 12-ER.13, *WIPP Emergency Management Exercise Program Plan*, adequately governs the design, conduct, and evaluation of emergency management exercises at WIPP. Per its five-year exercise plan, SIMCO developed a scenario package to meet its requirement to conduct a UG exercise based on a scenario analyzed in the EPHA. Scenario challenges included a UG roof collapse in the active waste storage panel, resulting in an orderly egress of mine personnel, multiple contamination cases, and two injured workers who were transported to Carlsbad Medical Center. The Carlsbad fire department and Mosaic Potash mine rescue team responded on site, and seven other Federal, state, and local agencies received emergency notifications and communications from the site. In addition, doctors at the Radiation Emergency Assistance Center/Training Site provided chelation advice to medical staff. The exercise was also designed to validate closure of previous findings and test key onsite capabilities, as well as important aspects of the emergency management program. Notably, SIMCO's five-year exercise plan was revised in 2024 to include conduct of two annual exercises, a high-consequence surface release exercise and an exercise involving a UG release, enabling SIMCO to better address previously identified weaknesses and improve responder proficiency.

The scenario package included appropriate information for exercise control, including exercise injects, radiological data, medical data, symptomology tags, public information messages, safety guidance, a communications plan, a waste hoist outage contingency plan, and exercise evaluation guides. To promote

realism, actual meteorological conditions were used; the Argonne National Laboratory's Exercise Training Network participated to provide realistic media simulations; and props were provided, including realistic moulage for simulated victims and an audio recording of the roof collapse.

In addition to being properly designed, the exercise was safely conducted and adequately controlled. In accordance with procedures, SIMCO held player hotwashes at all venues immediately after the exercise, a collective hotwash for all onsite venues, and a controller/evaluator debrief the next day. The objectives and evaluation criteria chosen for evaluation tested key programmatic elements and appropriately referenced applicable procedures. Evaluators completed exercise evaluation guides at all venues. Commendably, the controller/evaluator critique was critical and thorough, covering each objective and associated key evaluation criteria.

Although SIMCO's exercise program is well managed, the following improvement items were identified (see **OFI-SIMCO-3**):

- SIMCO planned and briefed the exercise to validate closure of the remaining EA 2023 EOS exercise finding. As discussed in section 3.1, SIMCO demonstrated adequate EOS capabilities during the exercise. However, the exercise scenario was not complex and did not replicate the conditions and scope of the 2023 exercise. Assessment of a more consequential scenario classified as an Alert, Site Area Emergency, or General Emergency would have been more appropriate for validation of EOS corrective actions because it would have required a robust demonstration of consequence assessment, PAs and PA recommendations, offsite interfaces, and EOS improvements.
- Multiple workers who were exempted from exercise participation evacuated the mine with exercise players, which caused delays in completing UG personnel accountability and led to a controller exercise inject stating that full UG accountability had been achieved. SIMCO self-identified the issue during hotwashes at multiple venues.
- Although SIMCO's five-year exercise plan adequately identifies capabilities and program elements to be tested, as well as offsite participation invitations and responses for future exercises, it does not identify: (1) full-scale versus full-participation exercises; (2) which initiators will apply to full-scale/full-participation exercises versus "dress-rehearsal" exercises; or (3) which exercises meet DOE severe event requirements (i.e., unavailability of mutual aid and/or loss of infrastructure).

Exercise Design and Conduct Conclusions

Overall, SIMCO designed and conducted a full-participation exercise in accordance with plans, procedures, and checklists that met DOE requirements, tested ERO capabilities and resources, and involved offsite response organizations. The exercise was safely conducted and adequately controlled. Commendably, the controller/evaluator critique was thorough and critical.

3.8 Follow-up on Previous EA Findings

This portion of the assessment determined whether corrective actions were effective for the three findings identified in EA report *Independent Assessment of Emergency Preparedness Capabilities at the Waste Isolation Pilot Plant, October 2023,* and the eight findings identified in EA report *Independent Assessment of the 2023 Full-Scale Emergency Management Exercise at the Waste Isolation Pilot Plant, February 2024*.

EA conducted an independent assessment of emergency management response capabilities at WIPP from June to July 2023 that evaluated whether the previous management and operating contractor, Nuclear Waste Partnership, LLC, and CBFO validated the WIPP emergency preparedness capabilities during the

previous five-year period. That assessment identified three findings associated with validating onsite response capabilities and offsite response capability interfaces. Subsequently, EA conducted an independent assessment of the emergency management program during the 2023 full-scale exercise at WIPP from September to November 2023 that evaluated the effectiveness of SIMCO and CBFO in managing and maintaining ERO performance via the October 18, 2023, emergency management full-scale exercise. That assessment identified eight findings associated with the performance of the ERO during the exercise. The most significant findings were associated with inadequate capabilities to notify workers and members of the public located in the LWA, but outside the off-limits area, of protective measures necessary to ensure their health and safety during an emergency. During the current assessment, EA evaluated the effectiveness of the corrective actions developed and implemented to address the 11 findings. EA determined that 6 of the 11 findings were effectively closed. All identified actions from the remaining five findings were closed; however, the actions taken inadequately addressed worker and public protective measure issues due to the relocation of the emergency management site boundary as discussed in the following paragraphs.

The most significant corrective action taken in response to the five findings that were not closed effectively involved the relocation of the identified WIPP emergency management site boundary. The corrective actions approved by CBFO and implemented by SIMCO involved reducing the emergency management site boundary from the LWA boundary (approximately 2,900 meters) to the off-limits area boundary (approximately 1,000 meters). During the 2023 EA assessments, the emergency management site boundary coincided with the WIPP documented safety analysis (DSA) site boundary (i.e., LWA area) and the findings did not state or infer that the designations were incorrect. Instead, EA identified the inability of SIMCO to notify and protect the transient populations (e.g., ranchers, hunters, campers) inside the LWA boundary. The relocation of the emergency management site boundary resulted in the transfer of DOE responsibility for notifications and PAs on Federal property beyond the off-limits area to offsite local authorities (i.e., Eddy Counties and the State of New Mexico). CBFO and SIMCO have not developed, coordinated, and implemented an adequate assistance agreement with state, tribal, and local authorities so that appropriate response measures are taken to protect workers, the public, the environment, and national security within the LWA. As a result, the absence of clear responsibilities for managing an integrated response during some hazardous material releases may result in inadequate protection of transient populations inside the LWA. (See **OFI-SIMCO-4**.)

SIMCO conducted a coordination meeting with Lea and Eddy County emergency management to provide information on the revised EPHA, including site boundary changes but the meeting did not include an agreement on a process for notification and protection of transient populations outside the off-limits area and inside the LWA or an agreement by the offsite organizations to accept responsibility for notifications and PAs on the Federal land in the LWA. In addition, the corrective actions did not include validation that the offsite local authorities could accomplish the actions necessary to protect personnel in the LWA.

Additionally, the relocation of the emergency management site boundary introduces a conflict between the WIPP safety basis and emergency planning. The WIPP DSA was prepared using the methodology outlined in DOE-STD-3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, to satisfy the requirements of and demonstrate compliance with 10 CFR 830, *Nuclear Safety Management*. DOE-STD-3009-2014 defines the site boundary as "a geographic boundary within which public access is controlled and activities are governed by DOE and its contractors, and not by local authorities." Furthermore, the WIPP DSA states that during operations, the area within the WIPP site boundary (i.e., LWA) will remain under Federal control. Relocation of the site boundary, used for emergency management purposes and the transfer of responsibility for notifications and PA implementation on Federal property inside the LWA to offsite local authorities, conflicts with the site boundary definition in DOE-STD-3009-2014.

Follow-up on Previous EA Findings Conclusions

SIMCO prepared and CBFO approved corrective action plans to address the EA findings identified during two assessments in 2023. SIMCO has closed all corrective actions for the identified findings; however, the corrective actions did not effectively resolve 5 of the 11 EA findings. Moving the emergency management site boundary from the LWA boundary to the off-limits area boundary resulted in the transfer of responsibility for notification and protection of the transient populations in the LWA to local authorities without an agreed upon method for accomplishing this task. Additionally, the relocation of the emergency management site boundary introduces a potential conflict between the WIPP safety basis and emergency planning.

4.0 BEST PRACTICES

No best practices were identified during this assessment.

5.0 FINDINGS

Findings are deficiencies that warrant a high level of attention from management. If left uncorrected, findings could adversely affect the DOE mission, the environment, the safety or health of workers and the public, or national security. DOE line management and/or contractor organizations must develop and implement corrective action plans for findings. Cognizant DOE managers must use site- and program-specific issues management processes and systems developed in accordance with DOE Order 226.1, *Implementation of Department of Energy Oversight Policy*, to manage the corrective actions and track them to completion.

SIMCO

Finding F-SIMCO-1: SIMCO did not provide complete and accurate initial and follow-on notifications to all appropriate offsite stakeholders. (DOE Order 151.1D, att. 3, par. 11)

6.0 DEFICIENCIES

Deficiencies are inadequacies in the implementation of an applicable requirement or standard. A deficiency that did not meet the criteria for a finding is listed below, with the expectation from DOE Order 227.1A for site managers to apply their local issues management processes for resolution.

Deficiency D-SIMCO-1: SIMCO social media messages did not consistently include the reason for the JIC activation, provide a telephone number for the media or public to call, or encourage the media to gather as required by WIPP policy. (DOE Order 151.1D, att. 3, par. 12; DOE/WIPP 17-3573, sec. 13.1)

7.0 OPPORTUNITIES FOR IMPROVEMENT

EA identified the OFIs shown below to assist cognizant managers in improving programs and operations. While OFIs may identify potential solutions to findings and deficiencies identified in assessment reports, they may also address other conditions observed during the assessment process. These OFIs are offered only as recommendations for line management consideration; they do not require formal resolution by management through a corrective action process and are not intended to be prescriptive or mandatory.

Rather, they are suggestions that may assist site management in implementing best practices or provide potential solutions to issues identified during the assessment.

OFI-SIMCO-1: Consider revising WP 12-ER.30 to align with the site boundary established for emergency purposes as defined in DOE/WIPP-17-3573, including listing the required actions to be taken by offsite agencies in relation to PAs for individuals located on the LWA Federal property.

OFI-SIMCO-2: To improve the consequence assessment response, consider modifying the method used to transmit data from the site's meteorological towers to ERO members including the CAT, who may need current weather condition information.

OFI-SIMCO-3: To improve the exercise program, consider:

- Ensuring that exercise scope/complexity is sufficient to fully validate the closure of previous findings or changing the validation process to require demonstration during two exercises, to help ensure that corrective actions for findings were effective.
- Reducing the number of workers exempted from participating in exercises, ensuring that all exempted employees are clearly identified (e.g., wearing vests that identify them as exempt), and ensuring that exempted players are briefed not to respond to exercise PA announcements.
- Revising the five-year exercise plan to identify: (1) full-scale versus full-participation exercises; (2) which initiators will apply to full-scale/full-participation exercises versus "dress-rehearsal" exercises; and (3) which exercises meet DOE severe event requirements (i.e., unavailability of mutual aid and/or loss of infrastructure).

OFI-SIMCO-4: To improve notifications and PAs within the LWA, consider:

- Revising MOUs to clearly define responsibilities for PAs in the LWA, and then develop associated training, drills, and exercises to verify effective implementation.
- Installing signs near public and recreational areas to remind land users of potential hazards and their responsibility to provide the CMR with a phone number and other necessary contact information for emergency notifications.
- Installing a siren system, upgrading public address systems, and/or implementing a reverse 911 system to help alert the public in the LWA of emergencies.
- Purchasing drones with cameras and speakers that can be operated by emergency management or security personnel to locate and warn the public in the LWA or to quickly verify the absence of people.
- Creating gravel turn-around areas at traffic control points for large trucks/vehicles that transit through the site.

8.0 ITEMS FOR FOLLOW-UP

As discussed in section 3.8, this assessment identified an issue related to shifting the WIPP emergency management site boundary, which transferred DOE responsibility for notifications and PAs on Federal property to offsite local authorities, and created a conflict with the site boundary definition used in the WIPP safety basis. As such, EA plans to conduct a follow-up assessment (programmatic and exercise performance evaluation) focused on the site's effectiveness in resolving the five remaining findings related to the site boundary issue during fiscal year 2026 or 2027.

Appendix A
Supplemental Information

Dates of Assessment

August 18 to September 25, 2025

Office of Enterprise Assessments (EA) Management

Mark D. Barth, Acting Director, Office of Enterprise Assessments
William F. West, Deputy Director, Office of Enterprise Assessments
Kevin G. Kilp, Director, Office of Environment, Safety and Health Assessments
David A. Young, Deputy Director, Office of Environment, Safety and Health Assessments
Tamara D. Powell, Director, Office of Nuclear Safety and Environmental Assessments
David Olah, Acting Director, Office of Worker Safety and Health Assessments
Terrance J. Jackson, Acting Director, Office of Emergency Management Assessments
Brent L. Jones, Director, Office of Nuclear Engineering and Safety Basis Assessments

Quality Review Board

William F. West, Advisor
Kevin G. Kilp, Chair
Shannon L. Holman
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