



# **Independent Assessment of the 2023 Full-Scale Emergency Management Exercise at the Waste Isolation Pilot Plant**

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## Acronyms

CAT	Consequence Assessment Team
CBFO	Carlsbad Field Office
CM	Crisis Manager
CMR	Central Monitoring Room
COA	Continuous Ongoing Assessment
DOE	U.S. Department of Energy
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
EPZ	Emergency Planning Zone
ERO	Emergency Response Organization
FSM	Facility Shift Manager
GE	General Emergency
IC	Incident Commander
ICP	Incident Command Post
JIC	Joint Information Center
LWA	Land Withdrawal Act
MAR	Material at Risk
M&O	Management and Operating
NARAC	National Atmospheric Release Advisory Center
OE	Operational Emergency
OFI	Opportunity for Improvement
PA	Protective Action
PAC	Protective Action Criteria
PAR	Protective Action Recommendation
PE Ci	Plutonium Equivalent Curies
PPA	Property Protection Area
RAP	Radiological Assistance Program
SAE	Site Area Emergency
SIMCO	Salado Isolation Mining Contractors, LLC
SOC	Security Operations Center
SWB	Standard Waste Box
TIA	Timely Initial Assessment
WebEOC®	Web-based Emergency Operations Center Software
WHB	Waste Handling Building
WIPP	Waste Isolation Pilot Plant

# INDEPENDENT ASSESSMENT OF THE 2023 FULL-SCALE 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 the emergency management program during the 2023 full-scale exercise at the Waste Isolation Pilot Plant (WIPP) from September to November 2023. This assessment evaluated the effectiveness of the management and operating contractor, Salado Isolation Mining Contractors, LLC (SIMCO) and the Carlsbad Field Office (CBFO) programs in managing and maintaining emergency response organization performance via the October 18, 2023, emergency management annual exercise. This assessment considered requirements documented in DOE Order 151.1D, *Comprehensive Emergency Management System*. EA appraised the performance of the emergency response organization at key decision-making venues to determine whether SIMCO responded effectively to an Operational Emergency and took appropriate response measures to protect workers, responders, and the public.

SIMCO designed an adequate exercise to test the emergency response organization's capabilities in a realistic, real-time environment. However, emergency response organization performance did not demonstrate proficiency during the exercise. EA identified the following weaknesses that were classified as findings and warrant a high level of attention from SIMCO and CBFO management:

- SIMCO had not developed facility-specific emergency action levels for the spectrum of potential Operational Emergencies identified in the emergency planning hazards assessment. (Finding)
- SIMCO did not declare a Site Area Emergency for the incident when the radiation dose from the release of radioactive material was predicted to exceed the protective action criterion at 100 meters from the point of release. (Finding)
- The SIMCO consequence assessment was not integrated with emergency classification and protective action decision-making. (Finding)
- SIMCO did not provide accurate and complete initial and follow-up notifications to all appropriate offsite stakeholders. (Finding)
- During the exercise, SIMCO did not consistently demonstrate an effective emergency operating system that obtained and maintained situational awareness and disseminated a common operating picture among response components and external partners. (Finding)

Also, during the exercise, SIMCO responders used the Property Protection Area boundary as the basis for response decision-making instead of the site boundary, which coincides with the Land Withdrawal Act area boundary, resulting in three additional findings:

- SIMCO did not issue immediate notification and protective actions to the affected personnel no later than 10 minutes after the protective actions were identified. (Finding)
- SIMCO did not implement predetermined onsite protective actions consistent with the hazards and duration of the release based upon the results of emergency planning hazards assessment. (Finding)
- SIMCO did not demonstrate adequate planning and effective coordination with offsite agencies, to include determining a notification process to use during emergencies when protective actions may be implemented offsite. (Finding)

In summary, CBFO and SIMCO designed an adequate exercise to test the emergency response organization's capabilities in a realistic, real-time environment. However, there were significant performance weaknesses in the conduct of the exercise that warrant additional management attention.

These included not adequately implementing protective actions within the Land Withdrawal Act area. Also, weaknesses were identified in the execution of notifications, integration of the consequence assessment into the decision-making process, and maintaining situational awareness at all venues. Finally, although the emergency planning hazards assessment provides the technical basis for the WIPP hazardous material emergency management program, emergency action levels were not established for the spectrum of potential Operational Emergencies identified by the emergency planning hazards assessment. Until the concerns identified in this report are addressed or effective mitigations are put in place, CBFO and SIMCO cannot ensure an effective and efficient response to all-hazard incidents and events.

# **INDEPENDENT ASSESSMENT OF THE 2023 FULL-SCALE 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 2023 full-scale emergency management exercise at the Waste Isolation Pilot Plant (WIPP). This assessment was conducted as part of a series of assessments of emergency management exercises and programs at DOE sites. Assessment activities were conducted from September to November 2023.

This assessment evaluated the effectiveness of the management and operating (M&O) contractor, Salado Isolation Mining Contractors, LLC (SIMCO), and the Carlsbad Field Office (CBFO) programs in managing and maintaining emergency response organization (ERO) performance via the October 18, 2023, emergency management annual exercise. This assessment evaluated the performance of the ERO at key venues, including the incident command post (ICP), the central monitoring room (CMR), the emergency operations center (EOC), and the joint information center (JIC), with a focus on decision-making ERO positions, such as the incident commander (IC), facility shift manager (FSM), and EOC crisis manager (CM). Issues identified during the exercise evaluations were further examined to determine possible causes, such as a lack of training or insufficient procedural guidance.

Additionally, this assessment reviewed the status of two emergency planning issues that were identified by EA in the *Independent Assessment of Emergency Preparedness Capabilities at the Waste Isolation Pilot Plant, October 2023*. These issues included the designation of the site boundary and determination of the emergency planning zone (EPZ) boundary.

This assessment was conducted in accordance with the *Plan for the Independent Assessment of the Emergency Management Exercise at the Waste Isolation Pilot Plant, October 2023 – January 2024*.

## **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 criteria and review approach document 33-09, Revision 0, *DOE O 151.1D Emergency Management Program*: 4.3 *Emergency Response Organization*, 4.4 *Emergency Operations System (EOS)*, 4.6 *Offsite Response Interface*, 4.7 *Emergency Classification*, 4.8 *Protective Actions (PAs)*, 4.9 *Consequence Assessment*, 4.11 *Notifications and Communications*, 4.12 *Emergency Public Information (EPI)*, and 4.15 *Exercises*.

EA examined key documents, such as the exercise package, exercise evaluation guides, emergency plans, checklists, procedures, and policies. EA also interviewed key personnel responsible for developing and executing the associated programs. EA observed the controller/evaluator pre-exercise brief, the exercise, and the post-exercise hotwashes and debrief activities; and walked down significant portions of the CMR

and Waste Handling Building (WHB) contact handling bay facilities, focusing on exercise execution. The members of the assessment team, the Quality Review Board, and the management responsible for this assessment are listed in appendix A.

While previous findings were not addressed during this assessment, the status of two emergency planning issues that were identified by EA in *Independent Assessment of Emergency Preparedness Capabilities at the Waste Isolation Pilot Plant, October 2023* were reviewed.

### **3.0 RESULTS**

SIMCO designed and conducted a full-scale exercise to evaluate emergency response capabilities and multiple processes of key onsite ERO groups. Accordingly, 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. SIMCO conducted the exercise in a realistic, real-time environment in response facilities that necessitated actions by facility workers and the site-level ERO but simulated most offsite participation. SIMCO initiated the exercise with an announcement of severe weather moving over the site and continued to control weather by controller injects. A simulated microburst caused significant damage to the WHB by peeling back part of the roof, causing structural members to fall and damage transuranic standard waste boxes (SWBs) in the contact handling bay. The roof damage and falling debris resulted in a loss of differential pressure in the WHB and multiple continuous air monitor alarms indicating an unfiltered radiological release. The falling roof debris also trapped and injured a waste handling technician. The injured technician was treated on site as potentially being radiologically contaminated and then taken to Covenant Health Hobbs Hospital. The breached WHB roof, damaged SWBs, loss of differential pressure, and the low atmospheric pressure and winds resulted in a postulated spread of radiological material to the outside environment. SIMCO simulated additional damage throughout the site with four additional workers injured in two other buildings.

#### **3.1 Site and Emergency Planning Zone Boundaries**

This portion of the assessment followed up on two related concerns pertaining to emergency planning products derived from or used in the WIPP technical planning basis.

The EA report *Independent Assessment of Emergency Preparedness Capabilities at the Waste Isolation Pilot Plant, October 2023* identified potential concerns with the designation of the site boundary and determination of the EPZ. This report also identified a finding that CBFO and the previous M&O contractor had not provided emergency planning hazards assessment (EPHA) information to appropriate county and state agencies for use in offsite PA planning. The designation of the site boundary is a critical step that establishes requirements for incident classification, notification, consequence assessment, PA decision-making, and methods for PA implementation.

In 2019, CBFO and the previous M&O contractor moved the site boundary to coincide with the Land Withdrawal Act <sup>1</sup>(LWA) area boundary, increasing the site boundary distance from 0.19 miles to 1.8 miles, which established the entire LWA area as “onsite” for emergency management classification, notification, and PA decision-making purposes. The LWA defines an area of 16 sections, totaling 10,240 acres, and contains the Off-Limits Area and the Exclusive Use Area. The Exclusive Use Area includes a

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<sup>1</sup> The WIPP Land Withdrawal Act (public law 102-579), approved on October 30, 1992, and amended by public law 104-201 on September 23, 1996, transferred control of 16 sections of land in southeast New Mexico from the U.S. Department of the Interior to DOE to establish the WIPP site.

35-acre Property Protection Area (PPA), which is enclosed by a perimeter security fence. Typically, the perimeter boundary enclosing a DOE site defines where DOE has access control authority and the responsibility for implementing onsite PAs. If the public can gain unescorted access to areas of the DOE site, such as public highways or the LWA area, those areas are considered as offsite for the purposes of emergency class definition, unless the site M&O contractor has the capability to evacuate the area and establish access control within about one hour of any emergency declaration. However, this capability has not been validated at WIPP since the boundary was changed in 2019. In addition, the previous M&O contractor did not validate the capability to notify all populations in the LWA area of PAs within the required ten-minute period.

During the October 2023 exercise, EA identified significant performance weaknesses pertaining to classification, notification, consequence assessment, offsite interface, and PA decision-making that were directly related to the 2019 decision to change the site boundary to coincide with the LWA area boundary. Specifically, decision-makers in the CMR and EOC used the PPA as the site boundary. Consequently, decision-makers in the CMR and EOC did not implement onsite protective measures for the LWA area during the exercise. In addition, the public had unescorted access to the LWA area, including a heavily trafficked public highway. The following sections of this report provide details on the significance of the site boundary determination and its effect on specific response elements performance.

SIMCO and CBFO have defined a compliant EPZ in accordance with DOE Order 151.1D requirements, which only requires a determination of the size of the EPZ that is approved by DOE. Furthermore, per DOE Order 151.1D, there are no standards for establishing an EPZ, although DOE guidance provides a suggested methodology. Nevertheless, as previously identified in the October 2023 EA report, the size of the WIPP EPZ raised concerns as to whether the new site boundary determination adequately supported local authorities in planning and preparedness activities to protect offsite populations. The concern stems from the inclusion of a public use area within the site boundary that obviates the need for planning with offsite authorities because the EPZ no longer extends beyond the site boundary. Importantly, a 2020 change to the EPZ eliminated the need for CBFO and its M&O contractors to plan for release conditions and protective action recommendations (PARs) to offsite authorities that result in protective action criteria (PAC) being exceeded off site. The WIPP EPZ was increased in 2015 from 0.62 miles to 5.28 miles and in 2016 it was reduced from 5.28 miles to 4.04 miles, though there were no significant changes to site operations.

Currently, CBFO and SIMCO have not planned for emergency response beyond the WIPP site boundary, which conflicts with the EPHA consequence projections for an unmitigated bounding incident that projects a potential PAC distance of 12.4 miles and possible contamination beyond 25 miles. (See **OFI-SIMCO-1**.) Furthermore, the site EPZ is only useful if significant planning and preparedness measures are in place to support the local and state authorities in executing PARs that protect the public. CBFO and SIMCO have not established a strategy for PAs beyond the site boundary; during the exercise, SIMCO implemented only ad hoc PARs to close offsite highways and initiate actions to assess the extent of possible contamination.

### **Site and Emergency Planning Zone Boundaries Conclusions**

Some performance weaknesses observed during the exercise are the result of SIMCO responders deciding to use the PPA boundary as their basis for response decision-making instead of the site boundary, which coincides with the LWA area boundary. In addition, a 2020 change to the EPZ determination eliminated the need for CBFO and its M&O contractors to plan for release conditions and PAs that extend beyond the site boundary.



### 3.2 Technical Planning Basis

This portion of the assessment determined whether SIMCO uses an EPHA that identifies the potential consequences from unplanned releases of (or loss of control over) hazardous materials to develop facility-specific emergency action levels (EALs) for the full spectrum of potential Operational Emergencies (OEs) identified in the EPHA, including corresponding PAs.

SIMCO has adequately analyzed a range of scenarios and outlines release and atmospheric transport assumptions used in calculating consequences in DOE/WIPP-08-3378, *Waste Isolation Pilot Plant Emergency Planning Hazards Assessment*, which serves as the foundation of the emergency management program. The EPHA presents radiological consequences calculated for a suitable set of receptors using the appropriate radiological PAC (1 rem) and the threshold for early lethality exposure limit (100 rem) values for analyzed releases and two sets of meteorological conditions, adverse (F stability and 1.5 meters per second winds) and average (D stability and 3 meters per second winds) for the defined receptor locations. EPHA calculations are based on the movement of the site boundary from the PPA to the LWA boundary in 2019. SIMCO used the EPHA results as the basis for EALs that were developed and for sizing the EPZ.

However, SIMCO has not effectively used the results of the EPHA to develop a complete set of EALs with appropriate predetermined PAs. Contrary to DOE Order 151.1D, attachment 4, paragraph 2.t, facility-specific EALs do not adequately identify worst-case source terms or cover the spectrum of potential OEs identified by the EPHA. (See **Finding F-SIMCO-1** and **OFI-SIMCO-2**.) As a result, during the exercise, decision-makers in the EOC and CMR did not have appropriate tools for classifying the emergency and issuing predetermined PAs for the presented scenario. Specifically:

- The source term in the EAL used in response to the exercise scenario was not bounding for the loss of containment release scenarios in the WHB. The EAL source term is based on a scenario involving  $\leq 10$  SWBs with a material at risk (MAR) of 3,557 Plutonium Equivalent Curies (PE Ci) and a source term of  $9.73E-3$  PE Ci. The exercise scenario was based on 8 SWBs with a MAR of 1,800 PE Ci. During the exercise, the consequence assessment team (CAT) modelers used worst-case modeling parameters and scenario assumptions from the EPHA to calculate source terms of 0.216 and 1.08 PE Ci based on the MAR of 1,800 PE Ci as part of their ongoing assessment activities. Each of these source terms was significantly higher than the EAL source term even though the MAR was smaller, primarily because the damage ratio factor used in the EPHA for SWB damage was less than the one used by the CAT modelers. Consequently, the EAL source term was not the worst-case or bounding for the number of damaged drums in the postulated release scenario.
- The technical planning basis does not include EALs for the spectrum of potential OEs identified by the EPHA. The release of radioactivity from the WHB EAL presents information for an Alert classification but no information for potential Site Area Emergency (SAE) or General Emergency (GE) scenarios. Table 6.2 of the EPHA identifies the following threshold source terms for unfiltered ground level releases under adverse meteorology from the WHB:
  - Alert  $4.46E-5$  PE Ci
  - SAE  $4.99E-4$  PE Ci
  - GE  $2.28E-1$  PE Ci.

As indicated above, the CAT modelers calculated two source terms during the exercise that exceeded the threshold source terms for SAE and GE classifications; however, the facility-specific EAL did not include the possibility of an SAE or GE incident. Additionally, the Alert EAL source term of  $9.73E-3$  PE Ci exceeded the SAE threshold in the EPHA.

- As stated above, the EAL is based on an unfiltered release from the WHB involving  $\leq 10$  SWBs resulting in an Alert classification. The EPHA also postulates a scenario involving a collapse of the WHB involving  $\geq 84$  SWBs resulting in a GE classification. The EPHA does not, however, identify any unfiltered release scenarios involving between 10 and 84 waste assemblies or scenarios resulting in an SAE classification.

### **Technical Planning Basis Conclusions**

SIMCO has developed an EPHA that incorporates the relevant requirements of DOE Order 151.1D. The WIPP EPHA provides the basis for defining the provisions of the hazardous material emergency management program. However, the facility-specific EALs are not bounding and do not cover the spectrum of potential OEs identified by the EPHA. Consequently, during the exercise, decision-makers in the EOC and CMR did not have appropriate tools for correctly classifying the emergency and implementing the corresponding PAs.

### **3.3 Emergency Classification**

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 has provisions to classify incidents involving the actual or potential airborne release of hazardous materials from an onsite facility as an Alert, SAE, or GE based on PAC distance.

SIMCO promptly classified and confirmed classification of the incident during the initial stages of the emergency response. The FSM promptly classified the incident 5 minutes after identification, within 16 minutes of discovery, using what the FSM considered the most applicable facility-specific EAL available for an unfiltered release from the WHB. The FSM implemented the associated predetermined PAs, which directed surface personnel to shelter-in-place. Subsequently, the CM promptly reviewed the EAL selection and affirmed the entry conditions for the selected EAL upon declaring the EOC operational. Additionally, the CM agreed with the corresponding predetermined PAs.

However, SIMCO did not effectively apply discretionary EALs to upgrade the incident classification later in the response when it became known that the Alert EAL did not bound the incident conditions. Three hours after the initial release, the CAT provided the CM with deposition projections showing radiological contamination beyond the LWA area boundary, dose model projections of 3 rem at 100 meters, which indicated that the initial EAL did not bound the consequences. The CM reviewed but decided not to use discretionary EALs to upgrade the incident classification to an SAE (based on a PAC beyond 100 meters). The facility-specific EAL set used for initial classification was incomplete and lacked the technical planning that would have resulted in EALs to support upgrading the incident classification. Contrary to DOE Order 151.1D, attachment 4, paragraph 8.b, SIMCO did not declare an SAE for the incident when the predicted radiation dose from the release of radioactive material exceeded the PAC at 100 meters from the point of release. (See **Finding F-SIMCO-2** and **OFI-SIMCO-2**.) Importantly, although the CM did not upgrade the incident classification, the CM implemented offsite PAs associated with a GE, as discussed in section 3.6.

### **Emergency Classification Conclusions**

SIMCO promptly classified and confirmed incident classification during the initial stages of the emergency response but did not effectively upgrade the incident classification later in the response. The FSM used the most applicable facility-specific EAL for an unfiltered release from the WHB and the CM subsequently agreed with the Alert classification. However, SIMCO did not effectively use discretionary

EALs to upgrade the classification upon learning that the selected EAL was not bounding the incident conditions. The CM decided not to upgrade the incident classification because the facility specific EAL used for initial classification lacked the technical planning to support an upgrade. Although the CM did not upgrade the incident classification, the CM implemented offsite PAs associated with a GE.

### 3.4 Consequence Assessment

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

The CAT adequately conducted a TIA by acquiring situational awareness regarding the incident and using the National Atmospheric Release Advisory Center (NARAC) Web dispersion modeling program, current meteorological conditions, and the source term from the facility EAL in use. The CAT acquired situational awareness at 0853 hours and concurred with the selected EAL used to classify the incident and initiate initial predetermined PAs. The CAT reviewed the EAL, appropriately identified the EAL source term, and initiated TIA plume modeling. The TIA plume projection bounded the potential consequences and verified that the projected dose did not exceed the PAC of 1 rem beyond 100 meters from the point of release. The distance to PAC was less than the EAL basis because of differing weather conditions in the design of the exercise. The CAT also prepared a NARAC Web projection showing the possibility of contamination beyond the LWA area boundary. The CAT posted the TIA dose and deposition plots to the Web-based Emergency Operations Center software (WebEOC®).

Following the TIA, the CAT Lead performed an initial continuous ongoing assessment (COA) by coordinating with facility operations in the EOC to determine an incident-specific MAR based on a shipping manifest provided through a controller inject. The COA plume projections indicated the potential for radiation doses to exceed the PAC of 1 rem beyond 100 meters and that the source term exceeded the SAE threshold source term identified in the EPHA; however, the CAT did not recommend upgrading emergency classification from an Alert to an SAE. Consequently, the CAT did not integrate consequence assessment with emergency classification and PA decision-making, contrary to DOE Order 151.1D, attachment 4, paragraph 10.a. (See **Finding F-SIMCO-3.**) As a result, SIMCO did not accurately identify the potential emergency classification to ensure appropriate notifications were made and PAs were implemented to protect employees, the public, and the environment.

Importantly, the CAT did not effectively perform COAs using a set of on-scene field monitoring data. Instead, the CAT prepared multiple COA plume projections to make the projection match a single field data reading. The CAT initiated COA plume modeling at 1000 hours and did not reach a conclusion until 1142 hours regarding the potential to exceed the PAC at 100 meters. In addition, the CAT did not explain essential information to the EOC cadre upon posting plume projections as required by EOC checklist EA12ER3002-4-0, *Consequence Assessment Team Checklist*. (See **OFI-SIMCO-3.**) Specifically, the CAT did not brief the following checklist items:

- Whether the model was a continuous or puff release (impact of duration)
- All affected areas and potential doses
- All areas that exceeded PAC-2
- Potential dose projections at emergency response facilities
- Recommended PAs/PARs.

Consequently, the CAT did not effectively support development of a common operating picture among response components, and consequence assessment was not integrated with emergency classification and PA decision-making.

## Consequence Assessment Conclusions

The CAT produced an adequate TIA, validated the correct selection of the EAL, and effectively used the NARAC Web dispersion modeling program. However, the CAT did not effectively perform COAs, and did not provide adequate information to support EOC cadre decision-making based on its analysis and checklist requirements.

### 3.5 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.

SIMCO completed prompt notifications to the ERO, most onsite workers, and offsite agencies. The CMR staff effectively notified the field emergency response personnel within minutes of reports of the medical and building damage incidents. In addition, the CMR staff effectively notified the EOC cadre to respond approximately three minutes after classifying the incident. Further, the CMR staff effectively notified personnel in the PPA within six minutes of the FSM classifying the incident. Also, the CMR staff promptly published an initial emergency notification form (ENF) to provide email notification to DOE Headquarters, local agencies, and the State of New Mexico of the declared Alert 10 minutes after incident classification. The CMR staff completed calls to all notified offsite agencies to verify receipt of the electronic ENF 16 minutes after issuing the ENF and later provided routine periodic updates to site personnel. Similarly, the EOC staff completed three timely ENF updates that included an update within one hour of the initial ENF, an ENF for significant changes related to the incident, and an ENF for terminating the emergency. Communication systems (Everbridge, public address, and radio) adequately performed as intended, except for radio coverage within the WHB.

However, SIMCO did not adequately ensure that initial and follow-on ENFs were accurate and complete. The FSM did not ensure that the incident information was accurately captured on the initial ENF, including the emergency classification time, that the CMR staff directly notified local ranchers and oil field workers (via the simulation cell) of the incident, that not all site personnel sheltered-in-place, and importantly, the occurrence of a known radiological release. In addition, SIMCO continued issuing follow-on ENFs that included inaccurate and incomplete information. Additionally, SIMCO did not correct the incident summary information from the initial ENF when field monitoring deposition readings received prior to the issuance of the second ENF confirmed a radiological release. Significantly, when the CM became aware of the SAE conditions and extended deposition conditions, the CM directed the SIMCO offsite liaison to notify local law enforcement and the ranchers and oil field workers to implement offsite PAs rather than issuing PARs to the offsite authorities. Contrary to DOE Order 151.1D, attachment 3, paragraph 11, SIMCO did not provide accurate and complete initial and follow-on notifications to all appropriate offsite stakeholders. (See **Finding F-SIMCO-4** and **OFI-SIMCO-4**.) Consequently, offsite agencies did not have situational awareness or a common operating picture about the significance or extent of the incident or associated offsite impacts for four hours after the initial incident occurred.

Also, SIMCO did not immediately notify all personnel within the LWA area to take PAs. Although the CMR staff issued prompt notifications to personnel within the PPA, they did not include personnel outside of the PPA and within the LWA area (workers and “land users”, including vehicles traversing the LWA area), primarily because the FSM and CM did not consider the area as onsite, a perception that was confirmed in exercise follow-up interviews. SIMCO defines “land users” as the public within the LWA area. As a result, contrary to DOE Order 151.1D, attachment 3, paragraph 11.a, SIMCO did not issue immediate notification and PAs to all affected personnel no later than 10 minutes after the PAs were

identified. (See **Finding F-SIMCO-5** and **OFI-SIMCO-5**.) Consequently, personnel within the LWA area and outside of the PPA were unaware of the ongoing incident and the potential for exposure to hazardous materials in a large uncontrolled and potentially contaminated area.

### **Notifications and Communications Conclusions**

SIMCO completed prompt notifications to the ERO, most onsite personnel, and offsite agencies using adequate communication systems. However, SIMCO did not adequately ensure that initial and follow-on ENFs were accurate and complete. Importantly, the EOC staff did not correct the incident summary information from the initial ENF after receiving radiological field readings confirming a release prior to the issuance of the second and third ENFs. Significantly, when the CM became aware of the SAE conditions and extended deposition conditions, SIMCO directly notified local law enforcement to close roads and the ranchers and oil field workers to evacuate rather than issuing PARs to offsite authorities. Additionally, SIMCO did not provide prompt notifications to all personnel within the LWA area of the site, limiting notifications to the PPA.

### **3.6 Protective Actions**

This portion of the assessment evaluated whether 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.

During the exercise, SIMCO adequately determined and maintained the status of injured personnel and manually tracked this information on a status board located in the CMR. In addition, the FSM verified that accountability for underground personnel was achieved within 15 minutes of the Alert declaration and verified that 100% accountability was accomplished for the PPA within 1 hour of the Alert declaration.

However, SIMCO did not effectively implement the initial predetermined PAs for the entire area defined as onsite. SIMCO used the PPA boundary as the basis for response decision-making instead of the defined site boundary, which coincides with the LWA area boundary. The EAL did not differentiate between the PPA and LWA area for onsite PAs and, during the exercise, SIMCO did not treat the LWA area as onsite. (See **OFI-SIMCO-5**.) This perception led to the FSM issuing the EAL's predetermined site PAs of shelter-in-place to only the PPA. As a result, the LWA area public land users were not notified of the onsite PAs, LWA area accountability sweeps were not initiated, and the LWA area was not controlled to prevent access to the site; instead, the public was allowed to traverse the onsite area outside the PPA but inside the LWA area for most of the exercise using Louis Whitlock Road. Additionally, SIMCO did not implement the following onsite PAs for responders during the exercise:

- SIMCO did not advise the IC of the 1 rem dose concentration potential out to 253 feet from the incident as required by the EAL or request radiological control to perform habitability surveys at the ICP as required by procedure. These actions would have provided the IC the information needed to determine whether the ICP was in a safe location.
- SIMCO did not determine safe route information for the ERO responders in accordance with WP 12-ER.30, *WIPP Protective Action Plan*, which requires radiological control to provide safe route information to the FSM. In addition, the FSM did not announce safe route information for the ERO over the public address system when the site shelter-in-place PAs were initiated, as required by EA12ER4926-1-0, *CMR Expanded Staffing Checklist*.

Consequently, contrary to DOE Order 151.1D, attachment 4, paragraph 9.a, SIMCO did not implement predetermined onsite PAs consistent with the hazards and duration of the release based upon the results of

the EPHA. (See **Finding F-SIMCO-6** and **OFI-SIMCO-5**.) Prompt implementation of PAs in all affected areas is necessary to minimize the impacts of hazardous material releases and maximize the protection of health and safety for workers and the public.

Additionally, SIMCO has not developed adequate plans and procedures to promptly implement PAs in the LWA area portion of the site. WP 12-ER3908, *Remote Worker and Land User Tracking and Monitoring*, assigns direct responsibility to the Security Operations Center (SOC) for providing PAs to the land users by phone, relying on individual land user contact information to accomplish the notification. The public can gain unescorted access to the LWA area at any time and the procedure states that there is signage at the LWA area boundary instructing the public to notify the SOC by phone and provide their contact information when entering the area. However, the procedure also acknowledges that land users are not legally bound to contact the SOC, and states that the SOC is not responsible for tracking land users who do not make their presence known or who do not check out upon departing the LWA area. Exercise follow-up interviews with CMR personnel indicated that land users seldom, if ever, check in or out with the SOC as the boundary signs direct, which hampers the ability of SIMCO to confidently determine the actual number of land users located in the LWA area and ensure the ability to communicate any required PAs by phone during an emergency as planned. (See **Finding F-SIMCO-6** and **OFI-SIMCO-6**.)

In addition to adversely affecting the decision to upgrade the classification, as previously discussed in section 3.3, the EAL in use did not provide adequate PAs or any PARs for protecting personnel in the LWA area. (See **Finding F-SIMCO-1** and **OFI-SIMCO-2**.) Importantly, although the CM did not upgrade the incident classification, the CM applied appropriate offsite PAs but did so without going through offsite authorities. The CM was required to develop and implement ad hoc offsite PAs to protect the surrounding population and public traversing the site. The CM directed the SIMCO offsite liaison to directly contact local law enforcement to close the north and south access roads and Red Road (public roads) and directly notify local ranchers and oil workers to evacuate, both of which are offsite PAs associated with a GE that fall under the jurisdiction of local offsite authorities.

### **Protective Action Conclusions**

During the exercise, SIMCO adequately determined and maintained the status of injured personnel and achieved site accountability for both the underground workers and the PPA within one hour. However, SIMCO did not effectively implement the appropriate initial predetermined PAs/PARs for the entire area defined as onsite, leaving out the LWA area. Furthermore, the EAL did not provide adequate means for implementing predetermined PAs at a remote area that requires public actions.

### **3.7 Emergency Public Information**

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

During the exercise, SIMCO and CBFO adequately implemented EPI processes to disseminate timely public information and warnings. In addition, the CBFO Senior Federal Official activated the JIC as outlined in DOE/WIPP 17-3573, *WIPP Emergency Management Plan*, and adequately responded to inquiries from the media and public concerning the incident, and supported the identification, control, and correction of rumors and misinformation on social media.

The EOC public affairs officer initiated external communications with the issuance of a news release message sent out via e-mail and social media posts that delivered the requisite information to inform employees, affected communities, the public, news media, and elected officials about emergency conditions, the location of the emergency, damage observed, and response actions. Several mediums were used to disseminate EPI, including social media posts and an emergency notification system to ensure that clear, concise, plain-language updates were provided to the media and public.

To achieve operational status, SIMCO activated the JIC at the Skeen-Whitlock Building and met minimum staffing requirements well within the 30-minute operational objective established within WP 11-EA.01, *Joint Information Center Operations Plan*. Per the *Joint Information Center Operations Management Control Procedure*, emergency information for news media, public consumption, and general employee notifications was disseminated through and managed appropriately from the JIC in coordination with CBFO and the EOC. JIC staff appropriately interfaced with mock media members to convey routine response-related updates, conduct a formal press-briefing with mock media, and appropriately coordinated news releases, employee updates, and other internal communications. Similarly, the public affairs staff maintained awareness of ancillary, unapproved information posted to social media and actively worked to dispel rumors and ensure that only approved response-related messaging was released.

However, the JIC's public inquiry phone team was challenged in responding to a high number of mock media calls early on due to the initial void of information and lack of a common operating picture. Per EA11EA3000-9-0, *Public Inquiry Phone Team Checklist*, the JIC staff is directed towards WebEOC to obtain access to twitter/phone log/press release (published) boards, but this information was not posted when the JIC was activated. As a result, the JIC phone team improvised and responded to the many phone calls from mock media by deferring them to future updates on social media for the first 30 minutes following JIC activation. (See **Finding F-SIMCO-8** and **OFI-SIMCO-7**.)

### **Emergency Public Information Conclusions**

EPI activities resulted in the issuance of routine communications with appropriate media counterparts and other stakeholders. SIMCO and CBFO followed the EPI-related plans, procedures, and checklist to ensure that the JIC disseminated relevant information to internal personnel, external stakeholders, and the media. However, the public inquiry phone team was challenged to respond effectively to a high number of calls early in the exercise due to lack of information.

### **3.8 Offsite Response Interfaces**

This portion of the assessment determined whether SIMCO and CBFO coordinated effectively with local, state, and Federal organizations during the emergency.

In support of the exercise, SIMCO's initial offsite interactions were timely, including the CMR's emergency notifications and requests for mutual aid. EOC liaison officers later transmitted two additional ENFs and contacted local, state, and Federal agencies to confirm receipt of the forms and answer questions as needed. In addition, the EOC developed two situation reports, which were appropriately transmitted and briefed by liaison officers to the DOE Headquarters Watch Office and other offsite stakeholders, including Eddy County, Lea County, the State of New Mexico Duty Officer, and the New Mexico Department of Public Safety District 3 Dispatch Center. The CBFO manager effectively briefed DOE's Principal Deputy Assistant Secretary for the Office of Environmental Management (EM-2) and scheduled a follow-up briefing. In addition, the CBFO Senior Federal Official appropriately contacted DOE Headquarters to request the activation of the radiological assistance program (RAP) team.

Although not observed, follow-up interviews determined that SIMCO radiological control technicians interfaced with health care workers at Covenant Health Hobbs Hospital, providing advice and support on decontamination operations for the contaminated-injured worker transported to the hospital. Site radiological control technicians also advised hospital staff on the benefits of chelation agents and informed doctors that Radiation Emergency Assistance Center/Training Site experts could help provide advice for the treatment of a seriously injured individual exposed to airborne contamination.

However, CBFO and SIMCO did not demonstrate effective coordination with offsite agencies when the EPZ was enlarged into the LWA area, as discussed in section 3.1, or when PAs were implemented in uncontrolled public areas without coordinating with appropriate offsite stakeholders, as discussed in section 3.6. Furthermore, when the CAT projected widespread offsite contamination that had the potential for ingestion pathway concerns, no PARs were issued to offsite authorities, such as recommending that the public avoid certain areas and provide livestock with stored feed. Consequently, contrary to DOE Order 151.1D, attachment 4, paragraph 7, SIMCO did not demonstrate adequate planning and effective coordination with offsite agencies, to include determining a notification process to use during emergencies when PAs may be implemented offsite. (See **Finding F-SIMCO-7** and **OFI-SIMCO-1**.) Coordination with offsite agencies is necessary so that elected officials can make decisions regarding the appropriate level of preparedness and response.

### **Offsite Response Interfaces Conclusions**

SIMCO and CBFO appropriately notified and briefed offsite agencies on notification forms; transmitted and briefed situation reports to offsite agencies; contacted DOE Headquarters to request a RAP team; and interfaced effectively with EM-2. In addition, responders gave helpful advice and support to Covenant Health Hobbs Hospital medical staff. However, inadequate planning and coordination with offsite agencies for EPHA scenarios with offsite impacts, as required, resulted in the implementation of ad hoc offsite PAs without the appropriate involvement of elected officials.

### **3.9 Emergency Operations System**

This portion of the assessment determined whether the 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.

During the exercise, SIMCO had adequate EOS capabilities to collect incident information, to provide needed expertise for incident analysis from centralized, well-equipped facilities, and to ensure that the EOS was consistent with the operational concepts of the National Incident Management System. Nevertheless, SIMCO did not effectively implement its EOS during the exercise and did not prevent or adequately correct the ineffective and inaccurate flow of information among response components. Consequently, contrary to DOE Order 151.1D, attachment 3, paragraph 4.b, SIMCO did not demonstrate an effective EOS that obtained and maintained situational awareness and disseminated a common operating picture among response components and external partners. (See **Finding F-SIMCO-8** and **OFI-SIMCO-7**.) Consequently, the ERO did not consistently have the necessary understanding of the incident to provide an effective response. Importantly, the initial incident scene size-up did not accurately capture necessary information to assess the potential radiological consequences or to support mitigation of the incident. Specifically, EOS performance issues include:

- The FSM performed the initial incident scene size-up, which did not include a damage assessment from the IC or input from the SOC to identify that 84 SWBs were in the bay and could be potentially



involved based on security camera video coverage. The FSM classified the incident without understanding how many waste containers were potentially involved and selected the nearest EAL and indicators for the incident, which as previously stated was not bounding and adversely affected the classification determination.

- Unified incident command was not established with support from the radiological control supervisor and protective force lieutenant. Consequently, radiological monitoring and access control support to the IC was not performed, including ensuring habitability of the command post.
- Although a WebEOC daily log is used on a continuous basis in the CMR, during the exercise, SIMCO did not use WebEOC in the CMR for centralized collection, validation, analysis, and coordination of incident information. Consequently, SIMCO did not capture and share important data with the ERO, such as the damage assessment to the WHB.
- SIMCO did not effectively use WebEOC in the EOC for data collection, validation, analysis, and coordination of incident information, resulting in the use of individual informal logs (handwritten) by most ERO positions, which did not ensure that important information was captured and shared among the ERO and, most importantly, in consequence assessment analyses.
- No bridge line calls occurred between the IC, FSM, and CM to ensure a common operating picture and shared situational awareness, which impeded a clear understanding of incident scene responsibility.
- A web-based geographical information system does not exist in the EOC or CMR for analysis and display of incident information. Overlays of dispersion modeling projections were presented on a Google Earth map, which did not include a descriptive legend or provide adequate situational awareness for the ERO relative to access control points, command post locations, and field monitoring data points.

### **Emergency Operations System Conclusion**

The SIMCO EOS was consistent with the operational concepts of the National Incident Management System and had adequate capabilities to collect incident information and provide needed expertise for incident analysis from centralized and well-equipped facilities. However, SIMCO did not effectively implement the EOS or provide decision-makers with essential information to achieve acceptable situational awareness and a common operating picture, which contributed to many of the performance issues discussed in previous sections. The ineffective use of WebEOC and lack of integration of a geographical information system also contributed to these issues. Collectively, the ERO did not consistently have the necessary understanding of the incident to provide an effective response.

### **3.10 Exercise Design and Conduct**

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

SIMCO adequately designed and conducted the exercise to evaluate the multiple functions of key onsite capabilities. Accordingly, 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. SIMCO conducted the exercise in a real-time environment within response facilities requiring actions by facility workers and the ERO, but most offsite participation, subsequent to initial notification, was simulated by a SIMCO simulation cell. SIMCO effectively maintains several documents that control the design, conduct, and evaluation of emergency management exercises, including WP 12-ER.13, *WIPP*

*Drills and Exercises*, EA12ER13-1-0, *EM Exercise Planning Checklist*, and exercise evaluation guides. In accordance with these procedures, SIMCO held required player hotwashes at all venues immediately following the exercise, conducted a controller/evaluator debrief the next day, and evaluated all 57 objectives in the exercise in order to complete the exercise after-action report.

Ten offsite agencies participated in the exercise. The DOE Region 4 RAP team and Covenant Health Hobbs Hospital agreed to participate fully in the exercise, and EM-2 agreed to interact with the WIPP EOC during briefings. The remaining seven offsite partners agreed to receive initial notifications, including the DOE Headquarters Watch Office and EOC, Eddy County Office of Emergency Management, Lea County Office of Emergency Management, Lea County Communications Authority, the New Mexico Department of Homeland Security and Emergency Management, the Regional Emergency Dispatch Authority, and NARAC. To help promote realism, simulation cell controllers appropriately role-played various offsite agency representatives and interfaced with liaison officers in the EOC. No offsite EOCs were simulated to have been activated, and no SIMCO or CBFO representatives were requested to respond to or act as virtual liaisons for any offsite organizations.

The exercise plan appropriately contained seven previous findings from the 2022 annual exercise requiring resolution validation during this exercise. Notably, SIMCO assigned specific, independent evaluators solely for the purpose of evaluating the resolution of these findings. SIMCO determined that four of the seven finding resolutions were not validated as resolved during the 2023 exercise. Finally, SIMCO effectively used text messaging to controller/evaluator mobile phones during the exercise to communicate exercise injects and timelines and to manage exercise execution.

However, some issues detracted from the effectiveness of the exercise. (See **OFI-SIMCO-8**.) For example:

- Although included in the inject message for the entry team, the information that at least four SWBs were damaged was never reported to the IC or CMR. Consequently, the exercise did not evaluate the process for disseminating incident scene size-up information from the IC to the CMR and CAT. When the CAT asked the operations manager in the EOC for inventory information, they were given an inventory inject message reflecting eight damaged SWBs.
- The exercise did not test the capabilities to mitigate the incident. Although WP 12-ER4922, *Incident Command System*, requires the IC to direct mitigation efforts, when the IC attempted to get information on the damage at the scene from the simulation cell, the simulation cell incorrectly informed the IC that damage mitigation was a recovery activity and not the IC's responsibility.
- Field contamination data in the exercise package was much higher than would be expected for the postulated incident. Because exercise designers did not ensure that data were validated by EPA developers, the CAT performed follow-up COAs ineffectively, as discussed in section 3.4.
- Participation by local RAP team members did not qualify as a RAP team deployment, resulting in the inability of SIMCO to demonstrate the RAP capability. Although the request for a RAP team by the CBFO Senior Official was made appropriately, the deployment process was not followed, and local members of the RAP mobilized without a Federal leader. Allowing local RAP team members to self-mobilize at their own site was unrealistic because in an actual emergency those resources would have supported the facility.

### **Exercise Design and Conduct Conclusions**

SIMCO effectively designed and conducted the exercise to evaluate most capabilities and multiple functions of key onsite ERO groups. SIMCO conducted the exercise in accordance with its approved emergency management procedures and used its exercise implementation checklist. Notably, SIMCO

evaluated the resolution of seven findings from the previous annual exercise using independent evaluators and appropriately determined that four of the seven findings were not resolved. However, some issues occurred that detracted from the effectiveness of the exercise, such as the flow for specific scene size-up information, incorporation of unrealistic contamination survey data, and the use of a local RAP team for field monitoring support.

#### **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.

##### **Salado Isolation Mining Contractors, LLC**

**Finding F-SIMCO-1:** SIMCO has not developed facility-specific EALs for the spectrum of potential OEs identified by the EPHA. (DOE Order 151.1D, att. 4, par. 2.t)

**Finding F-SIMCO-2:** SIMCO did not declare an SAE for the incident when the predicted radiation dose from the release of radioactive material was expected to exceed the PAC at 100 meters from the point of release. (DOE Order 151.1D, att. 4, par. 8.b)

**Finding F-SIMCO-3:** SIMCO consequence assessment was not integrated with emergency classification and PA decision-making. (DOE Order 151.1D, att. 4, par. 10.a)

**Finding F-SIMCO-4:** SIMCO did not provide accurate and complete initial and follow-on notifications to all appropriate offsite stakeholders. (DOE Order 151.1D, att. 3, par. 11)

**Finding F-SIMCO-5:** SIMCO did not issue immediate notification and PAs to all affected personnel no later than 10 minutes after the PAs were identified. (DOE Order 151.1D, att. 3, par. 11.a)

**Finding F-SIMCO-6:** SIMCO did not implement predetermined onsite PAs consistent with the hazards and duration of the release based upon the results of the EPHA. (DOE Order 151.1D, att. 4, par. 9.a). In particular:

- SIMCO issued predetermined PAs only for the PPA but not for the LWA area, contrary to the site boundary and the EAL, which does not differentiate between the PPA and LWA area.
- SIMCO did not advise the IC of the 1 rem dose concentration potential out to 253 feet from the incident as required by the EAL or request radiological control to perform habitability surveys at the ICP as required by procedure, which would have provided the IC with the information needed to determine whether the ICP was in a safe location.

- SIMCO did not determine safe route information for the ERO responders in accordance with WP 12-ER.30, which requires radiological control provide safe route information to the FSM. In addition, the FSM did not announce safe route information over the public address system to provide further directions to the ERO when site shelter in place was initiated as required by EA12ER4926-1-0.
- SIMCO has not developed adequate plans and procedures to promptly implement PAs in the LWA area portion of the site.

**Finding F-SIMCO-7:** SIMCO did not demonstrate adequate planning and effective coordination with offsite agencies, to include determining a notification process to use during emergencies when PAs may be implemented offsite. (DOE Order 151.1D, att. 4, par. 7)

**Finding F-SIMCO-8:** During the exercise, SIMCO did not demonstrate an effective EOS that obtained and maintained situational awareness and disseminated a common operating picture among response components and external partners. (DOE Order 151.1D, att. 3, par. 4.b)

## 6.0 DEFICIENCIES

No deficiencies were identified during this assessment.

## 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.

### Salado Isolation Mining Contractors, LLC

**OFI-SIMCO-1:** Consider reevaluating the EPZ determination to verify that the current EPZ adequately supports local authorities in planning and preparedness activities to protect offsite populations, including:

- Establishing an immediate notification zone that includes the property beyond the PPA to the LWA area boundary.
- Identifying emergency planning sectors extending beyond the LWA area boundary to assist in public notification, warning, and PA instruction, if needed, which will enable the use of common sector descriptions and offsite monitoring points.
- Documenting an agreement with state and local authorities that upon a declaration of GE and the potential for offsite exposure, people in the immediate notification zone and impacted emergency planning sectors would be notified by the jurisdiction having authority using the Emergency Alerting System as to the incident location, the potential hazard, and recommended PAs.

**OFI-SIMCO-2:** To improve the tools available to decision-makers in the CMR and EOC for categorizing and classifying emergency incidents, consider:

- Revising EALs to cover the full spectrum of potential OEs identified in the EPHA.
- Developing EALs based on threshold source terms calculated in the EPHA and correlated to information readily available to FSMs such as available inventory or number of containers.

**OFI-SIMCO-3:** To achieve more consistent and complete consequence assessment that supports dissemination of a common operating picture among response components, consider developing a standard consequence assessment briefing checklist covering topics identified in EOC checklist EA12ER3002-4-0 and ensuring the checklist topics are discussed during EOC briefings.

**OFI-SIMCO-4:** To improve the accuracy of ENFs, consider:

- Establishing processes to verify that notification forms sent to offsite agencies are correct.
- Increasing ERO proficiency and rigor in notification form review and approval to ensure that the information in the forms is accurate before sending them to offsite agencies, in particular:
  - Releases to the environment based on the selected EAL should be clearly identified.
  - PARs should be clearly identified to offsite agencies prior to SIMCO implementing them directly.
- Emphasizing during training, drills, and exercises for ERO staff that prepare or approve ENFs, the rigor required during completion of the ENF.

**OFI-SIMCO-5:** Consider differentiating and defining the PAs required for the LWA area and PPA separately in EALs, since both have unique processes required to perform the appropriate notifications.

**OFI-SIMCO-6:** Consider improving the ability to notify LWA area land users of PAs by formalizing access controls for the LWA area to make land user sign-in and sign-out mandatory to ensure individual contact information is available, or use a wide-area notification system (i.e., public warning sirens) to provide an alert to implement PAs for land users.

**OFI-SIMCO-7:** To improve interoperability among the WIPP field responders and ERO, consider:

- Analyzing the field operations and ERO information flow dynamics to define the critical paths of key information and to identify expected actions for achieving and maintaining situational awareness among all teams.
- Adapting an information flow structure that assigns specific responsibility for each key information set, including responsibility for verifying and validating essential incident information collected in WebEOC.
- Establishing feedback loops back to the issuing decision-maker for key task completion, including offsite notifications, worker PA notification, accountability, and access control establishment.
- Incorporating guidance on the use of information management tools and resources to flow down requirements into the emergency plan, implementing procedures, and response checklists.
- Integrating incident management tools with other web-based geographical information systems to provide ERO personnel with views, data, and analysis tools for the site, the surrounding area, and interiors of many onsite buildings.
- Automating the EPI approval processes.

**OFI-SIMCO-8:** To improve exercise design and conduct, consider:

- Ensuring that critical scene-size up information is provided and disseminated to the IC by the entry team.
- Ensuring that exercises implement and evaluate all phases of an incident, including mitigation.
- Coordinating message injects information between radiological contamination information and source terms.
- Exercising the RAP team in accordance with RAP team processes and protocols.

## **Appendix A Supplemental Information**

### **Dates of Assessment**

September 18 to November 29, 2023

### **Office of Enterprise Assessments (EA) Management**

John E. Dupuy, 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  
Thomas E. Sowinski, Director, Office of Nuclear Safety and Environmental Assessments  
Kimberly G. Nelson, Director, Office of Worker Safety and Health Assessments  
Jack E. Winston, 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  
Joseph W. DeMers  
Christopher E. McFearin  
William A. Eckroade

### **EA Assessment Team**

Dr. Terrance J. Jackson, Lead  
Dr. Wade W. Gough  
John D. Bolling  
Dirk L. Foster  
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Jonathan L. Pack  
John L. Riley  
William J. Scheib