Office of Enterprise Assessments Operational Awareness Record		**Report Number:** EA-WIPP-2014-12-08	
Site: Waste Isolation Pilot Plant		**Subject:** Observation of the WIPP Horizon-14 Exercise	
Dates of Activity :	December 8-11, 2014	**Report Preparer:**	Tom Rogers

Activity Description/Purpose:

The Office of Enterprise Assessments (EA) observed the Waste Isolation Pilot Plant (WIPP) Horizon-14 Exercise to ascertain WIPP's progress in strengthening its emergency management program since the shutdown of operations in February 2014. EA performed this review using the *Plan for the Office of Enterprise Assessments Review of the Waste Isolation Pilot Plant Exercise Horizon-14 – December 2014*.

The WIPP operating contractor, Nuclear Waste Partnership LLC (NWP), conducted the Horizon-14 Exercise to demonstrate and evaluate a site-level emergency response using new programs, plans, and procedures. The exercise was preceded by a series of training and drill activities. The most significant change in the emergency management program since the February 2014 shutdown involved the command and control structure. NWP has recently implemented a National Incident Management System (NIMS) based incident command system. The WIPP emergency response now consists of an incident commander (IC) controlling the event scene and a facility shift manager (FSM) serving as the emergency director in the 24/7 central monitoring room (CMR), until relieved by the crisis manager once the emergency operation center (EOC) is operational.

For this exercise, the WIPP response elements consisted of the emergency response organization (ERO) in the CMR, the EOC, the incident command post (ICP), the lamp room, and the mine. The site response consisted of the FSM, mine rescue team (MRT), emergency response team, operations assist team, Fire and Emergency services, radiological control personnel, protective force, and public affairs organization in the joint information center (JIC).

Offsite participation involved the DOE Headquarters Watch Office, City of Carlsbad Fire Department, Carlsbad Medical Center, Native Air (for a life safety helicopter), Mine Safety and Health Administration, Lea County, Eddy County, and the State of New Mexico.

The exercise scenario was a fire on a bolting machine in the mine with five personnel requiring medical attention. One victim was contaminated. The event resulted in an Operational Emergency (OE) not requiring further classification per DOE Order 151.C, *Comprehensive Emergency Management System*, because no hazardous material release was postulated.

EA observers were located at the ICP near the salt hoist collar and in the CMR. Before the exercise, EA observers attended exercise participation and site access training. After the exercise, EA observers attended selected hotwashes and the controller/evaluator critique, and met with the NWP emergency management program manager to discuss EA observations.

Result:

WIPP has made significant progress in strengthening its emergency management program, but much remains to be done. Most significantly, during this exercise, WIPP adequately executed new procedures, appropriately responded to the event, and minimally implemented their new NIMS-based incident command system. Improvements are still needed in some system and programmatic areas, as well as in attaining proficient responders. The new WIPP emergency management program manager was aware of most areas EA identified as weak and voiced his plans for continual improvement.

Positive attributes observed by EA during the site visit include:

- Controller, evaluator, and observer training was adequate and provided an appropriate level of detail on the exercise package and the WIPP underground operations involved in the scenario.
- Appropriate procedures for activating the ERO, evacuating the mine, categorizing the event, and performing offsite notifications were used and worked well.
- The FSM correctly categorized the event and, except for the notification to the Mine Safety and Health Administration, all offsite notifications were completed within 30 minutes, as required by DOE Order 151.1C.
- CMR operators were instrumental in attaining offsite assets and took effective actions when the life safety helicopter

could not fly due to actual weather conditions.
- Although the EOC and JIC are not required to be activated for an OE, WIPP effectively used the opportunity to exercise and evaluate their response.
- ICP and CMR personnel provided self-critical feedback during the hotwash to help improve their responses in the future.
- The CMR has recently been evaluated for evacuations, which resulted in posted CMR occupancy limits that CMR operators are familiar with and that are strictly enforced.
- Overall, the radiological control response and performance at the salt hoist collar was commendable.

The most significant areas EA noted for response improvements include:
- Command and control. The unified command at the ICP was not very effective in maintaining situational awareness and ensuring a common operating picture among responders. For example, there was no clear establishment of an ICP from which to manage and coordinate the event scene response, capture and process event information, and serve as the focal point for all on-scene activities. Additionally, the facility shift engineer did not respond to the ICP, as anticipated by the IC, which adversely influenced his situational awareness related to the facility status. Furthermore, the IC was frequently absent from the ICP (due to communications issues discussed later) in order to maintain situational awareness, communications and update incident information with the CMR and EOC.
- Communications and information management. Several communication systems issues adversely affected command and control at the ICP, including NWP not having a command vehicle equipped with adequate communications and information management tools.
- ICP staffing. The ICP was under staffed, which affected the ability of the IC to conduct command post briefings, task and track the incident action plan, and maintain situational awareness with the CMR and EOC.
- Interoperable communication systems. The ICP did not have adequate communication interoperability with the MRT once the MRT left the command post location. Fire and Emergency Services radios do not have the capability to communicate with the MRT radios and vice versa. Further complicating the situation, the IC was unable to maintain adequate radio communication with the CMR, which forced him to leave the ICP for extended periods to use the lamp room phone.
- The public address systems used to announce onsite protective actions cannot be heard in all areas. A map in the CMR identifies areas where the public address system cannot be heard.
- A more comprehensive offsite notification form. The current form is not designed to collect all information required by DOE Order 151.1C.
- Proficiency in completing offsite notification forms. Personnel recording information on the offsite notification form did not provide all known information. Items omitted during the exercise include the official time of event categorization and the number of injured personnel.
- Frequency of briefings in the CMR to maintain situational awareness. The FSM did not provide CMR personnel with periodic briefings or briefings following conference calls during the exercise.
- Periodic verifications that phone numbers used by CMR operators to make notifications and obtain assets are correct. The CMR operators could not contact the MRT with the phone numbers they had, and phone numbers are not provided in a controlled document or operator aide.

Other areas EA noted for response improvements include:
- Limitation of the CMR facsimile machine caused delays in sending notification forms to offsite authorities because the machine sequences each address rather than sending to all addresses at once.
- CMR operators are not proficient in using the communicator system to activate the ERO and cellular service for the ERO communicator recall was not effective in getting ERO members to the EOC quickly.
- The absence of position checklists and the need for CMR personnel to carefully read response procedures delayed offsite notifications. Although notifications were provided in just under 30 minutes for this OE, a similar process is followed for classified events that require notifications to be completed within 15 minutes.
- Narrative logs were not maintained in the CMR. Logs would have been helpful during the exercise when operators were trying to remember who was informed about the potential for a contaminated victim. Logs are also helpful later when trying to reconstruct a legally defensible description of the event and response as required by DOE Order 151.1C.
- CMR operators have reassumed tracking WIPP shipments. At one time, shipment tracking was performed elsewhere

because of the impact it has on CMR operators. Shipment tracking did not impact the response to this exercise, because no shipments are in progress while WIPP is shutdown. However, CMR staff members were very involved with monitoring site conditions and supporting the exercise response, and adding shipment tracking could negatively impact CMR performance since shipments do not cease during an event at WIPP.
- There were few announcements throughout the exercise to maintain site-wide event status and keep everyone informed of the current priorities and activities.
- Although it was evident that a radiological control engineer was directing the radiological control technicians at the salt hoist collar, it was not clear that ICP personnel were aware of all activities.
- Radio communications did not routinely include repeat backs, which could potentially lead to confusion and improper operations during an emergency.

Areas EA noted for improving exercise administration include:
- Attendance of all players at hotwashes to provide improvement items. Not all players attended the ICP hotwash.
- Keeping radios used by the players out of scan mode, so players cannot hear controller and evaluator discussions on the controller network. Players received unintended feedback from the controllers over their radios during the exercise.
- Controllers should not coach players during exercises. EA observed one example of a controller coaching a player at the salt hoist collar.

EA Participants:	**References**
1. Bill Miller (lead)	DOE Order 151.C, *Comprehensive Emergency Management System*
2. Jeff Snook	*Plan for the Office of Enterprise Assessments Review of the Waste Isolation Pilot Plant Exercise Horizon-14 – December 2014.*
3. John Bolling	
4. Tom Rogers	

Were there any items for EA follow up? ☑Yes ☐No

EA Follow-Up Items:

EA will continue to monitor NWP’s progress in strengthening the WIPP emergency management program.