HSS Independent Activity Report - Rev. 0	Report Number: HIAR LLNL-2013-02-27

Site: Lawrence Livermore National Laboratory (LLNL)	**Subject:** Office of Enforcement and Oversight's Office of Safety and Emergency Management Evaluations Activity Report for the Lawrence Livermore National Laboratory Operational Drill at the B332 Plutonium Facility

Date of Activity:	02/27/2013	**Report Preparer:**	Thomas Rogers

Activity Description/Purpose:

The Livermore Site Office (LSO) and Lawrence Livermore National Security, LLC (LLNS) requested personnel from the U.S. Department of Energy (DOE) Office of Safety and Emergency Management Evaluations (HS-45) to observe an operational drill at the Plutonium Facility in Building 332 (B332). LSO and LLNS desired HS-45's participation to help determine the maturity of the operational drill program by providing independent expertise in the matter at a time when HS-45 personnel were already on site conducting an emergency management review. LLNS administered this operational drill using the DOE guidance for emergency response drills; applying this guidance is a recent LLNS initiative to improve the operational drill program. HS-45 provided two observers for the drill: one near the event scene, which was inside the building in a radiological material area (RMA); and the other roving to witness important activities at the B332 operations center and control room and outside of B332 at the nearby incident command post.

The drill scenario was a response by B332 operations personnel, health and safety technicians, and the Alameda County Fire Department to a fire in a fume hood containing a depleted uranium part.

Result:

HS-45 personnel considered the drill to be appropriately administered and a beneficial training activity. Overall, the drill provided hands-on training for a multi-organizational response that provided lessons learned, practice in a response to facility-specific event using procedures developed for the event conditions, and an opportunity for individuals to demonstrate proficiency in their response tasks.

Drill Administration

HS-45 considered the drill to be adequately administered because:

- A drill package was developed that contained the essential elements for describing and executing the drill.
- The drill scenario was a plausible event that operators and fire fighters may contend with.
- All participants were provided a pre-drill briefing.
- The drill was adequately controlled by a controller network.
- The drill coordinator held a debrief meeting after the drill objectives were met.

Observations at the Event Scene Inside the RMA

Operators responded to the fire scenario by evacuating the immediate area, activating the fire alarm, announcing the condition over the area-wide public address system, and advising the facility manager of the event. The facility manager instructed the operators to stay in a nearby safe area to meet with responding radiological control technicians and fire department personnel.

A fire captain and two fire fighters entered the RMA with appropriate personal protective equipment and radiation detectors and were able to gain entry into the locked room where the fire was located. The fire fighters used the appropriate extinguishers to put out a fire involving uranium.

Fire fighters observed that their air supplies depleted faster than expected when performing high activity tasks, so they should practice bottle change-outs.

Operators noted a time lapse between the time the fire alarm was pulled and the building warning announcement.

Observations at the Operations Center, Control Room, and Incident Command Post

Operators responded to the fire alarm by making announcements and notifications from the operations center. The facility manager entered the operations center and gathered event information to achieve an appropriate response. The facility manager also dispatched operators to the B332 control room to make ventilation system realignments to support a fire response, as required by B332 abnormal operating procedures.

The facility manager deployed to the incident command post where he briefed the incident commander from the Alameda County fire department. A fire truck, a command vehicle, personnel from security and B332, and Alameda County fire fighters were also at the command post. B332 personnel consisted of the facility manager, health and safety personnel, and fissile material handlers. The additional fire fighters were preparing to make an entry to change out the air supply bottles used by the fire fighters inside the RMA.

Observations at the Debrief

The debrief meeting was well attended and was conducive to the development of lessons learned. Nevertheless, the training provided via this drill did not clarify that the scenario was not an operational emergency under DOE Order 151.1C, *Comprehensive Emergency Management System.* The scenario required a response from outside the plutonium facility from the on site Alameda County fire station and the incident command post was placed so that B332 personnel had to exit the building to meet with the incident commander. HS-45's follow-up discussions with participating personnel determined that none of the drill participants were responsible for performing event categorization and a controller injected the conclusion that the scenario was not an operational emergency.

HS-45 observed the need for operations personnel to be properly trained to recognize an operational emergency, as required by DOE Order 151.1C, *Comprehensive Emergency Management System*. LLNS acknowledged this observation and intends to provide instructions to trainees on the criteria of an operational emergency.

HSS Participants	**References**
1. Deborah Johnson	Drill Package for the February 27, 2013, B322 Fire Response Drill
2. Thomas Rogers	
3.	
4.	
5.	

Were there any items for HSS follow up? ☐ Yes ☒ No

HSS Follow Up Items:

- None.