

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 20, 2012

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending January 20, 2012

Livermore Site Office (LSO): This week Ms. Kimberly Davis assumed the role of Site Office Manager.

Plutonium Facility: On January 10, 2012, LSO approved the laboratory contractor's request to perform a new classified activity and the resulting changes to the safety basis (see weekly report dated August 19, 2011). The scope of work for this activity was derived from viewgraphs incorporated by reference into the safety basis. A new event was added to the hazards analysis table to capture the inadvertent detonation of high explosives (HE). LSO determined the detonation event itself to be a standard industrial hazard. A separate event, initiated by the detonation, evaluated the resulting radioactive material release and was determined to result in a low unmitigated consequence to worker. This consequence assignment was based on two new Specific Administrative Controls used to establish initial conditions, which: (1) limit operations involving HE and metal-encapsulated special nuclear material to 10 g of HE in a room and (2) prohibit the handling of HE and dispersible plutonium in the same room.

An experimental chamber discussed in the viewgraphs was determined to be a defense-in-depth control with functions associated with providing containment and limiting the oxygen content of the chamber atmosphere for the purpose of preventing a sustained fire. As a condition of approval, LSO directed that a control be added to the work permit for the activity requiring the suspension of operations upon detection of a lightning threat. LSO also requested the results of any tests performed using surrogate materials.

Feedback and Improvement: On Friday, the Nuclear Materials Technology Program conducted a periodic safety and security briefing for personnel who work in the nuclear facilities. Attendance is required for Superblock personnel and suggested for Waste Storage Facilities personnel. Topics briefed included:

- Conduct of Operations: reviewed use operator aids, equipment labeling, and technical procedures
- Electrical Safety: discussed changes in personal protective equipment and the need to directly specify controls in the work control documents rather referencing additional documents
- Future mission: emphasized that program work will continue in the Plutonium Facility following completion of the Deinventory project and discussed plans to install three new gloveboxes and additional programmatic equipment in the coming year
- Health Physics: reviewed lessons-learned and dose estimates from the puncture wound at Savannah River Site and the recent uptakes associated with fuel handling at Idaho National Laboratory
- Event reports: discussed occurrence and facility event reports since the previous briefing