

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 6, 2012

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending January 6, 2012

Plutonium Facility: This week, the Livermore Site Office (LSO) completed their acceptance review of the annual update to the safety basis. Of note, the approved Scope and Key Issues Statement for this update included an action to address issues identified during recent staff reviews, such as those discussed in the appendix to the Board letter dated December 13, 2011. Key changes in the safety basis include the following:

- Revised events 1–31 in the hazards analysis table to be categorized as Standard Industrial Hazards no longer requiring safety basis coverage
- Addressed scenarios for compressed gas sources over-pressurizing a glovebox through the addition of defense-in-depth flow-limiting orifices
- Removed credit assigned in the hazards analysis table for:
 - The glovebox exhaust system to protect workers from confinement breaches due to explosions
 - Gloveboxes as a mitigative control to protect workers from shrapnel-generating events inside the glovebox
 - Gloveboxes as a preventive control for pyrophoric reactions, noting instead that gloveboxes are a non-credited feature for their inherent gas confinement
- Addressed the plutonium solubility issue for dose conversion factors
- Credited as safety significant the vacuum pump serving the hydrogen and oxygen detectors and downgraded the room hydrogen detectors to defense-in-depth
- Improved the description and associated diagrams covering the interfaces and component-level functional classification for the Fire Detection and Alarm System, Audio Warning and Paging system, and the Fire Suppression System
- Revised the projected schedules for several planned safety enhancements and added replacement of one of the emergency motor control centers to remove a single-point failure in the Emergency Power System
- Clarified that several existing controls remained credited based solely on the facility manager's discretion rather than derived from the hazards analysis

LSO has targeted consolidation of review comments by the end of the month. On a related note, LSO determined that their extent-of-condition review on safety systems will not be performed as part of the annual update review and instead will be conducted as a separate effort under a schedule to be determined. As a result, any needed improvements identified during the extent-of-condition review will likely be deferred until next year's update.

Hardened Engineering Test Building: On January 4, 2012, LSO approved the start of Shaker operations. The corrective action for the pre-start issue regarding the explosive bolts was closed through a letter clarifying that the use of the bolts is not authorized until an Independent Verification Review and Readiness Review determination have been completed. The contractor revised language in the facility safety plan to clarify this prohibition. Full operation of the Shaker with nuclear material is expected in the next several weeks.