

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 28, 2011

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending October 28, 2011

DNFSB Staff Activity: C. Roscetti, C. Shuffler, and J. Anderson held a teleconference with Livermore Site Office (LSO) personnel to discuss consolidated site positions on the staff's observations resulting from the review on safety system design, functionality, and maintenance. Following clarification, LSO committed to re-examine a number of the responses.

Emergency Management and Fire Protection: The laboratory currently does not meet contractual requirements for a drill program contained in Department of Energy Orders for emergency management and nuclear facility training (Orders 151.1C and 426.2, respectively). Efforts to improve this situation include: (1) revision of institutional procedures to require facility-specific drills (see weekly report April 1, 2011), (2) initial efforts by the Nuclear Materials Technology Program to develop a documented drill program, and (3) contractual incentives placed by LSO to encourage program development in fiscal year 2012.

Despite these efforts, a definitive schedule for executing drills in the nuclear facilities does not exist, integration with the institutional program is weak, and there remains disagreement within both the contractor and LSO on expectations for this program. For example, although personnel cannot recall when a fire-specific scenario was last drilled or exercised in the Plutonium Facility, some personnel continue to believe that annual exercises for nuclear criticality and earthquake scenarios adequately fulfill this requirement. In the Site Representative's opinion, management attention is needed to set expectations and assure timely improvement.

Post-Deinventory Planning: This week, personnel from the contractor's security organization briefed LSO on the concept for operations under a security category III environment. The concept involves establishment of a number of Strategic Rollup Areas (SRAs) across the laboratory, along with mechanisms to prevent unauthorized accumulation of nuclear material. The primary mechanism to prevent accumulation will be limiting physical access authorizations for each individual to a single SRA. Site personnel are now beginning the detailed implementation planning for this concept; however, this constraint appears to present significant challenges for federal oversight, contractor management, facility operations staff, and safety professionals.

Plutonium Facility: Program personnel are currently preparing for operations of the hydride-oxide (HYDOX) process. This process is used to convert plutonium metal to oxide through hydride and nitride intermediates. HYDOX chemistry was tested in the facility more than a decade ago, resulting in the installation of new equipment linked with the hydride-dehydride-casting (HYDEC) process. The current HYDOX equipment was proof tested with surrogates in a non-nuclear facility, but has never operated in the Plutonium Facility. HYDOX operations are authorized under the same Operational Safety Plan as HYDEC; however, the equipment, chemical process, and procedure are different. Program personnel are currently writing the operating procedure and equipment testing plan, but hope to begin trial period operations in the coming weeks. The institutional Readiness Review Board previously examined this activity and determined that it did not meet criteria for a formal readiness assessment. LSO and contractor personnel are revisiting the basis for this conclusion.