

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 17, 2005

**MEMORANDUM FOR:** J. K. Fortenberry, Technical Director  
**FROM:** J.A. Malen, Acting DNFSB Site Representative  
**SUBJECT:** Lawrence Livermore National Laboratory  
Report for Week Ending June 17, 2005

**Activity Summary:** Michael Merritt was on leave this week. Jonathan Malen was on site performing site representative duties.

**Plutonium Facility Configuration Management:** The Board expressed concern in a November 3, 2004, letter to the Secretary of Energy regarding the apparent lack of an adequate configuration management (CM) program for the highest-hazard nuclear facilities at the Lawrence Livermore National Laboratory (LLNL). Similar concerns were asserted by a 2004 inspection of LLNL by the Office of Independent Oversight and Performance Assurance (OA). A subsequent Department of Energy (DOE) Livermore Site Office (LSO) evaluation of the Plutonium Facility vital safety systems (VSSs) confirmed the concerns brought forth by the Board and OA.<sup>1</sup> In January 2005 DOE committed to perform an LSO and LLNL joint review of the CM program, consistent with the Phase II assessment criteria born from Board Recommendation 2000-2, *Configuration Management, Vital Safety Systems*.

Phase II reviews of the VSSs in the Plutonium Facility were completed on June 3, 2005 and a report documenting the results and the recommended corrective actions is anticipated by July 2005. LSO's original evaluation of the Plutonium Facility<sup>1</sup> identified significant deficiencies in the application of CM which suggested the need for a review of the operability of the VSSs. The Phase II review reconfirmed deficiencies in the application of CM to the VSSs, but concluded that all of the VSSs are operable and capable of performing their safety functions. LSO advocates similar Phase II reviews for other high hazard facilities at LLNL that are under the management of the Nuclear Materials Technology Program, i.e., the Tritium Facility, the Hardened Engineering Test Building, and the Radiography Facility.

**Configuration Management of the Plutonium Facility Room Ventilation System:** The staff reviewed the preliminary results of the room ventilation system (RVS) Phase II review. In the Draft Documented Safety Analysis the RVS is classified as safety-significant, but DOE has notified LLNL that the system is required to be safety-class. Several additional opportunities for improvement in CM of the RVS were identified by the Phase II review. These opportunities, which according to LSO are common to all VSSs in the Plutonium Facility, are summarized as follows:

- System drawings of the RVS do not accurately reflect the current system configuration and do not identify boundaries or interfaces with other facility systems. The existing drawings have been red-lined to include these changes, but permanently updating these drawings will require significant effort.
- Labeling of RVS components throughout the facility is insufficient.
- Work control is often invoked by procedures that do not identify acceptance criteria.
- System engineers are not well integrated into the work control process.

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<sup>1</sup>The LSO evaluation report was forwarded to the Board on January 4, 2005