DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 15, 2006

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: M. J. Merritt, DNFSB Site Representative
SUBJECT: Lawrence Livermore National Laboratory (LLNL) Report for Week Ending September 15, 2006

DNFSB Staff Site Activity: Staff member T. Hunt was at LLNL this week observing preparations for the disposition of Object-77 and providing site representative coverage. The site representative participated in DOE criticality safety "hands on" training for engineers in accordance with DOE-STD-1135-99, *Guidance for Nuclear Criticality Safety Engineer Training and Qualification*.

Legacy Item Disposition: Efforts to resume the readiness assessment to disposition Object-77 (see weekly report dated August 18, 2006) have been delayed due to equipment problems and staffing changes. LLNL is continuing to conduct dry runs and validate procedures in support of a management self-assessment to be followed by the contractor readiness assessment now expected to resume in October.

Tritium Facility Modernization (TFM): LLNL is preparing to upgrade the Tritium Facility to support new tritium handling and operational capabilities. The Livermore Site Office (LSO) recently issued a Safety Evaluation Report, with numerous conditions of approval, as part of approving the Preliminary Documented Safety Analysis (PDSA) for the TFM project. Since the accident analysis shows a dose consequence at the site boundary to be well below the evaluation guideline, there are no safety-class systems identified . Most of the new tritium equipment will be housed in safety-significant gloveboxes. LSO also approved the LLNL proposal to segment the Tritium Facility into two Hazard Category 3 nuclear facilities separated by a 2-hour fire wall, with independent ventilation and fire protection systems. The final design is complete and the site is awaiting approval from DOE-HQ to begin system and structural modifications. Current plans are to have the facility operational by September 2009.

Highly Enriched Uranium (HEU) Disposition: LLNL has nearly completed processing and measuring its excess plutonium-contaminated HEU metal and oxide in anticipation of shipping the material to H-Canyon at the Savannah River Site (SRS). The pathway to SRS is currently unavailable as SRS pursues approval of environmental documentation and generation of the shipper/receiver agreement. Potential issues with shipping containers and transportation could further delay the removal of excess HEU from LLNL and consolidation at SRS.

Tritium Facility Maintenance: LLNL recently began replacement of three ventilation exhaust fans on the roof of the Tritium Facility. In its safety basis amendment document – submitted to LSO as partial justification for approving and performing the proposed work – LLNL stated that the fans and ducting had been surveyed and determined not to be radiologically contaminated, even though the hoods and gloveboxes serviced by the exhaust ducting had a known history of tritium releases. Radiation surveys conducted the day before dismantlement was to begin indicated tritium levels on ventilation ducting, dampers and fans greater than the removable surface contamination values specified in Appendix D of 10CFR835, *Occupational Radiation Protection*. The personnel initially assigned to perform the fan disconnections were not radiation worker trained. Tritium Facility radiation workers ultimately disconnected and removed the components and sealed exposed surfaces pending decontamination of accessible ducting.