DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 6, 2006

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: Michael J. Merritt, DNFSB Site Representative
SUBJECT: Lawrence Livermore National Laboratory (LLNL)
Report for Week Ending January 6, 2006

DNFSB Staff Site Activity: T. Hunt and R. Rauch were at Sandia National Laboratories, California January 4-6 attending training sessions provided to the National Nuclear Security Administration's Nuclear Explosive Safety Study (NESS) Group. The NESS Group is receiving training to prepare for a NESS of W87 SS-21 nuclear explosive operations at the Pantex Plant.

Plutonium Facility Projects: In December 2005, LLNL provided a briefing to the Livermore Site Office (LSO) on planned projects to be performed in the Plutonium Facility during the remainder of fiscal-year 2006. Some of the projects were intended to commence in fiscal-year 2005, but were deferred due to the facility stand-down. The LLNL program sponsors are now pursuing LSO authorization of 13 projects to be performed in conjunction with the on-going resumption activities (see weekly report dated December 9, 2005). The proposed projects include:

- activation of a radiography cell (previously installed);
- performance of a radiation measurement campaign that requires an increase in room material-at-risk limits above the existing 5 kilograms fuel-grade plutonium equivalent;
- reconfiguration of a vault;
- replacement of glovebox exhaust ducting in a laboratory room;
- activation of a dilatometer in a new glovebox;
- activation of a new processing line for JASPER targets;
- disposition of a legacy item; and
- processing of highly enriched uranium (see weekly report dated December 16, 2005).

LLNL has assigned relative risk levels for the various activities as low, medium or high to provide LSO with perspective on how the project will affect the safety posture of the facility. At this point, it appears that the LLNL requests to initiate the projects are being submitted to LSO in a piecemeal fashion rather than providing a comprehensive approach that defines the schedule requirements, safety prerequisites, and interrelationships. A more comprehensive approach would be useful in assessing how the project schedules relate to the implementation of corrective action plans, removal of compensatory measures, and implementation of the 10CFR830-compliant documented safety analysis (see weekly report dated December 23, 2005).

Plutonium Facility Safety Basis Change: On December 21, 2005, LSO approved a change to the Plutonium Facility Safety Analysis Report (SAR) and Technical Safety Requirements (TSRs) relating to the minimum pressure requirements for the secondary water tanks. The tanks supply water to the fire suppression system in the event of loss of water supply from the fire mains. The SAR and TSR requirements were revised to increase the minimum pressure provided by the nitrogen tanks from 400 psig to 1000 psig, and increase the pressure blanket for the secondary water supply tanks from 72 psig to 75 psig. These changes were necessary to comply with National Fire Protection Association (NFPA) standard 13 requirements.