DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 14, 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 April 14, 2006

Plutonium Facility Safety Basis: On December 19, 2005, LLNL submitted a Documented Safety Analysis (DSA) and Technical Safety Requirements (TSRs) document for the Plutonium Facility to comply with 10 CFR Part 830, the *Nuclear Safety Management* rule (see weekly report dated December 23, 2005). This week, the Livermore Site Office (LSO) issued the Safety Evaluation Report (SER) for the DSA and TSRs. The SER contains eight conditions of approval (COAs). More than half of the COAs are to be accomplished as part of the next annual update to the DSA to improve the safety basis content. Other COAs are related to specific operations (i.e. hydrogen operations and hydride operations) that require LLNL to provide improved technical bases prior to commencing those activities. LLNL previously committed to submitting an implementation plan for the rule compliant DSA/TSRs within 30 days from receipt of the SER.

Plutonium Facility Personnel Radiation Exposure Controls: Approximately 40 percent of the Operational Safety Plans (OSPs) used in the Plutonium Facility require the use of Electronic Personnel Dosimeters (EPDs). The EPDs are used as a radiation safety control to inform and alert Fissile Material Handlers (FMHs) of increased radiation fields and cumulative external radiation dose received for specific work activities. Generally, FMHs are required by the OSPs to wear EPDs when handling material that produces a radiation dose rate greater than 100 mrem/hr at a distance of 30 centimeters from the surface of the item or container.

The site representative has observed inconsistencies between the OSP requirements and the actual use of the EPDs in the facility. In reviewing the OSPs, it was noted that the EPD alarm set points for cumulative external radiation dose differed between OSPs and that some, but not all, OSPs also required alarm set points for elevated dose rates. Despite the fact that OSPs require different set points, there is no indication that the issuance of EPDs is actually linked to a specific OSP. Given this manner of implementation, it would be possible for an FMH to wear an EPD that has set points higher than required by the OSP being performed. Facility management and the facility ALARA engineer are currently evaluating the inconsistencies to ensure proper implementation of the OSPs. The Facility Manager is also considering additional training for Hazard Control Technicians and FMHs to ensure worker proficiency with regard to EPD functions, operation, and alarm response.

Plutonium Facility Path Forward: This week, LSO approved LLNL's readiness assessment plan to return to normal operations. LLNL has defined normal operations as those activities that were approved and authorized prior to the stand-down of the facility on January 15, 2005. The RA is scheduled to begin next week.

Plutonium Facility Resumption Status: More than half of the work stations (see weekly report dated December 9, 2005) in the Plutonium Facility are either in operation or in trial operational periods. The work stations are controlled by OSPs that are unique to the work station(s). The current OSP status is; 10 OSPs in operation, 16 OSPs in trial operation, and approximately 25 OSPs in various stages of the resumption process.