DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 17, 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 March 17, 2006

Plutonium Facility Annual Evacuation Drill: LLNL is required to conduct a criticality accident response drill or exercise every year. This requirement is captured in American National Standards Institute / American Nuclear Society (ANSI/ANS) 8.23, *Nuclear Criticality Accident Emergency Planning and Response*, and is promulgated in LLNL's Work Smart Standards (ANSI/ANS-8.23-1997). The implementation of the standard at LLNL alternates between an exercise and a drill each year. Plutonium Facility management recently identified a need to the Livermore Site Office (LSO) to participate more fully with the site earthquake response drill. The Plutonium Facility has not routinely participated in earthquake drills in the past.

This week, LSO informed Plutonium Facility management that it could satisfy the ANSI/ANS 8.23 drill requirement for 2006 by participating in the LLNL site-wide earthquake response exercise instead of conducting the annual criticality response drill. The LSO approval letter states that Section 8.3 of the ANSI/ANS standard allows sites to take credit for an evacuation drill that involves a scenario other than a criticality accident. Plutonium Facility management is currently developing the detailed drill packages to accomplish the annual requirement. As part of the drill preparations, facility management should ensure that the scenario response tests the same evacuation practices that are used for a criticality accident, since this is a condition contained in ANSI/ANS 8.23 when a scenario other than a criticality accident is simulated to initiate the evacuation.

Plutonium Facility Evaluation of Safety: This week, LSO completed its review of an Evaluation of Safety (EOS) for the Plutonium Facility related to flexible couplings for room ventilation system exhaust fans. The ability of the flexible couplings to withstand a two-hour evaluation basis fire in the basement prompted LLNL to report a Potential Inadequacy in the Safety Analysis (PISA) on November 29, 2005 (ORPS report OAK–LLNL-LLNL-2005-0096). The underlying concern was that the material specification of the couplings was unknown, therefore, the ability of the couplings to withstand a fire could not be determined. An Unreviewed Safety Question Determination (USQD) was completed on January 5, 2006 and LSO was notified that the USQD was positive on January 23, 2006.

As a result of the PISA, operational restrictions (i.e., compensatory measures) were established that "unnecessary combustible materials be removed within 10 feet of the flexible connections." The EOS and USQD confirmed that a basement fire could burn a hole through the flexible connections and cause an unfiltered release of radioactive material that was not considered in the current safety basis. LSO has concluded that with the compensatory measures in place, the facility can continue to operate safely while safety basis modifications are approved.

LLNL Interim Director Announcement: On March 15, 2006, the University of California announced an interim director for LLNL. George H. Miller will assume his duties immediately and is expected to serve through the remainder of the University's contract that runs through September 30, 2007.