DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 15, 2004

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: Michael J. Merritt, DNFSB Site Representative
SUBJECT: Lawrence Livermore National Laboratory (LLNL)
Report for Week Ending October 15, 2004

WIPP Mobile Vendor Incident Analysis Report: On October 11, 2004, LLNL transmitted a report to the Livermore Site Office (LSO) providing LLNL's assessment of the August 19, 2004, contamination event (see weekly report dated August 27, 2004) in the Mobile Visual Examination and Repackaging Unit (MOVER). The report provides an assessment of the causes of the incident, as well as "Judgments of Need" that are intended to prevent reoccurrence by addressing the causal factors. The incident analysis team identified a wide range of issues.

According to the report, the direct cause of the event was the loss of confinement of radioactive contamination in the MOVER glovebox. This loss of confinement resulted in airborne contamination and uptake to the MOVER operators. The root causes were inadequate acceptance testing of the vendor's confinement system and inadequate evaluation of the bag-in and bag-out procedure by LLNL. A number of contributing causes were also cited including the following:

- ineffective design of confinement equipment;
- inadequate closure of an LSO operational readiness review finding regarding the vendor's configuration management program;
- less than adequate safety management by the vendor in the areas of operational experience and changes to operations;
- failure of the vendor's operational procedures to include methods to recognize and respond to changing conditions;
- less than adequate LLNL verification of the vendor's quality assurance plan; and
- less than adequate communication of technical issues and operational problems up the line management chain at LLNL.

For each of the aforementioned causes, the report identifies corresponding judgments of need. The report also discusses schedule pressures and contractual arrangements to use pre-designed equipment as factors that inhibited a thorough site-specific review.

Implementation Plan for DOE-STD-3009: LSO requested that LLNL prepare an implementation plan for DOE-STD-3009 Change Notice 02 (dated April 2002), *Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analysis,* in March 2004. The primary impact of this change is the designation of safety-significant systems, structures, and components for protection of the worker. LLNL's current plan provides a conditional schedule to implement the standard at the various LLNL nuclear facilities. The schedule to implement the standard in the Plutonium Facility is one year after the LSO approval of the LLNL Documented Safety Analysis(DSA). Since the current DSA is not expected to be approved until early 2005, the best case scenario would be to have the standard implemented at the Plutonium Facility in 2006. However, LLNL considers the safety-significant functional classification to be an issue of "subjective judgment" and is not proposing any changes in the DSA methodology. If LSO interprets the requirements differently, LLNL states that the implementation schedule will have to be revisited.