DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 3, 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 November 3, 2006

Plutonium Facility Criticality Safety Implementation: On October 31, 2006, fissile material handlers (FMHs) inadvertently transferred a mis-identified item between workstations in the Plutonium Facility. The item in question was combined with other plutonium parts as part of a transfer in a single container. Facility procedures and the Controlled Materials Accountability Tracking System (COMATS) requires the positive identification of each item and independent verification when "grouping" items. In this case, the items in the group were not segregated from other items (not included in the transfer) in the glovebox, resulting in the physical removal of the wrong item during the bag-out. A contributing cause for this event was the lack of independent verification of each item by the second FMH. The transfer did not result in a non-compliance with the Standard Criticality Control Condition for the receiving workstation.

Critique Process: Earlier this year, LLNL added critique guidance to the *LLNL Environment Safety and Health (ES&H) Manual, Document 4.7, ES&H Analysis Methods*. The addition of this guidance increases the available techniques for LLNL facility personnel to investigate events as required by DOE Order 5480.19, *Conduct of Operations Requirements for DOE Facilities*. The *ES&H Manual* critique guidance has been successfully implemented following some recent events such as the tritium contamination occurrence involving Building 255 and 298. However, the critique process has yet to be implemented in the Plutonium Facility. In some cases, the lack of a formal critique process has hampered the collection, documentation, and communication of accurate information regarding the event. NMTP would benefit from the use of the LLNL critique process in evaluating events in all of its facilities.

Tritium Contamination Report: This week, an incident analysis (IA) report was released by LLNL to the Livermore Site Office. The report evaluated and documented an investigation of a tritium contamination event that occurred earlier this year (see weekly report dated July 21, 2006) involving Buildings 255 and 298. The occurrence was reported on July 13, 2006 (ORPS report NA–LSO-LLNL-LLNL-2006-0032) and resulted in the spread of tritium contamination in excess of the limit specified in Appendix D of 10 Code of Federal Regulations 835, *Occupational Radiation Protection.* The IA report committee recommended 13 judgments-of-need (JON). Included in the report are recommendations to:

- improve the inventory process for legacy items;
- review programs for control and storage of radioactive materials;
- develop an institutional process for prompt characterization of materials; and
- strengthen the effectiveness of the lessons learned process.

Legacy Item Disposition: This week, the NMTP Program Leader observed mockup demonstrations in the Plutonium Facility for the disposition of Object-77 (see weekly report dated August 18, 2006). The observations identified the need to improve the implementation of procedure prerequisites and other operational improvements. LLNL is expected to resume the previously suspended contractor readiness assessment within a few weeks.