

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 26, 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 May 26, 2006

Plutonium Facility Resumption Status: On May 23, 2006, the Livermore Site Office (LSO) authorized LLNL to resume normal operations in the Plutonium Facility. Normal operations includes those activities that were approved and authorized prior to the stand down of the facility on January 15, 2005. The return to normal operations also removed a compensatory measure that restricted the amount of fissile material in a room to five kilogram fuel-grade plutonium equivalent. The limit will return to the pre-stand down allowable mass of 20 kilograms. The LSO approval is based on the results of an LLNL readiness assessment (see weekly report dated April 26, 2006) and an LSO oversight report dated May 10, 2006. The LLNL readiness assessment report did not identify any pre-start findings and the LSO report identified three minor issues that have been addressed by LLNL.

Approximately 70 percent 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 Operational Safety Plan (OSPs) that are unique to the work station(s). The current OSP status is; 35 OSPs in operation or trial operation, and approximately 15 OSPs in various stages of the resumption process. Full utilization of the facility's capabilities is expected in the near future. The existing capabilities will be augmented by some new capabilities controlled by OSPs and commenced using the normal start up protocols.

Plutonium Facility Personnel Radiation Exposure Controls: The Manager of the Plutonium Facility has taken actions to address inconsistencies between OSP requirements and the use of Electronic Personnel Dosimeters (EPDs) in the facility (see weekly report dated April 14, 2006). Approximately 40 percent of the OSPs used in the Plutonium Facility require the use of 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. Specific actions being taken include:

- revision of OSPs to standardize the requirements for EPD alarm set points;
- establishment of mandatory EPD training for all FMHs, as part of the qualification program; and
- improved issuance of EPDs to ensure set points match OSP requirements.

The Facility Manager direction will likely improve implementation of the OSPs by ensuring that EPDs are configured to appropriate alarm set points and that FMHs understand and properly respond to alarms for cumulative external radiation dose and for elevated dose rates.

Hardened Engineering Test Building Activity: A radiation measurement activity was conducted in the Hardened Engineering Test Building, Building 334 this week. The FMHs and Hazard Controls Technician performed the handling activity in a manner consistent with actions required of Plutonium Facility personnel. Adherence to work permits and procedures continues to improve.