DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 31, 2007

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: T.L. Hunt, Acting DNFSB Site Representative
SUBJECT: Lawrence Livermore National Laboratory
Report for Week Ending August 31, 2007

Activity Summary: Michael Merritt was on leave this week. Tim Hunt was on site performing site representative duties.

Operational Emergency: On Wednesday morning, an electrical fire on a transformer disrupted power to a significant portion of the site (ORPS report NA-LSO-LLNL-LLNL-2007-0040). The Superblock, Radiography Facility (B239), and more than 100 other buildings were affected (no operations were underway in the nuclear facilities at the time). The Emergency Power System in the Plutonium Facility (B332) activated upon loss of electrical power and started the diesel generator that supports the safety systems. Electrical power to the site was fully restored in about six hours. A B332 facility operator, per procedure, was required to walk down the facility safety systems and verify they were functional and stable prior to restart of nuclear operations.

B332 Safety Basis Implementation: B332 engineering, facility, operations, authorization basis, and safety personnel met this week to discuss issues identified in, and possible lessons learned from, a recent DNFSB staff report regarding a Pantex safety basis review. This productive forum identified several possible opportunities to improve the B332 safety basis (e.g., description and implementation of controls). The B332 documented safety analysis (DSA) is projected to be fully implemented by November.

Tritium Facility Modernization: A critique was convened this week to discuss the unauthorized core drilling in an external, concrete wall during the modernization project. The unreviewed safety question determination limited the size of wall penetrations to 2.5 inches in diameter. This limit was not captured in the penetration permit which allowed a hole of 8 inches to be drilled for installation of fire sprinkler piping. The process currently in place allows work permits to be approved prior to all authorization basis documentation being completed. Facility personnel are evaluating other work permits to determine if similar issues exist with flowdown of requirements. A potential inadequacy of the safety analysis was declared (ORPS report NA-LSO-LLNL-LLNL-2007-0041).

Transuranic (TRU) Waste Storage: A Memorandum of Agreement (MOA) has been generated between Radioactive and Hazardous Waste Management (RHWM) and Nuclear Materials Technology Program detailing roles and responsibilities for receipt and temporary (one year) storage of up to 100 TRU waste drums. The subject drums—generated and currently stored in B332—do not fully meet the RHWM waste acceptance criteria (WAC). The Livermore Site Office (LSO) recently approved an exemption to the WAC to allow the drums to be transferred to RHWM facilities; freeing up space in B332 for urgently needed programmatic activities. The storage is bounded by the RHWM DSA but it does not comply with aspects of established RHWM procedures, which are addressed by the MOA. At the end of the one-year storage, all drums that do not fully comply with RHWM requirements will be returned to B332.

B332 Radiography Cave: LLNL recently began radiography operations in B332 following a facility operational readiness review. The cave consists of a lead lined vault and 450 kV x-ray unit and has been authorized to radiograph oxide, metal and weapon components. The new equipment in B332 will reduce the amount of material handling previously required to transfer and radiograph the items in B239.