DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 11, 2005

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: Michael J. Merritt, DNFSB Site Representative
SUBJECT: Lawrence Livermore National Laboratory (LLNL)
Report for Week Ending November 11, 2005

Radiography Facility Operations: This week, radiography of a pit was performed in the Radiography Facility. The work was similar to pit radiography conducted in October during which the Site Representative observed a lack of explicit definition of radiological controls and personal protective equipment (PPE) in the work permit. Based on the observations, facility management established a new work permit that explicitly defined the controls for the work including the use of respirators, anti-contamination clothing and gloves, and other PPE. The Radiography Facility does not generally use the Operational Safety Plans that are commonly used in the Plutonium Facility. Instead, the work is performed using a combination of controls defined by the Facility Safety Plan (FSP) and work permits. During this particular activity, the work was completed in accordance with the FSP and the specific controls identified in the recently improved work permits.

Building 235 Plutonium Intake Management Review: A report was recently completed by LLNL that reviewed a personnel plutonium intake in a Building 235 laboratory in August 2005. The intake was detected from a routine bioassay and confirmed by a second bioassay. According to the report, the worker did not recall any specific event that may have resulted in the intake and there was no evidence of any abnormal conditions based on review of the continuous air monitor (CAM) records. Despite the fact that the review team was unable to reconstruct the events, the team did conclude that the most likely cause was an inadvertent, very small puncture of the glove from a tiny needle used during the fume hood operation. The team made a number of recommendations to improve the process including:

- using thicker gloves during certain evolutions;
- relocating the room CAM to improve effectiveness;
- installing passive air samplers near the fume hood; and
- double bagging transuranic waste prior to disposal operations.

Last month in the same laboratory room, a spread of contamination was detected outside of the fume hood. According to the occurrence report (ORPS report OAK–LLNL-LLNL-2005-0090), the contamination levels were $1x10^6$ dpm/100cm^2. Based on the two recent incidents, LLNL management is considering the need to improve the controls for this operation, including conducting more of the work in a glovebox rather than a fume hood.

Plutonium Facility Resumption: Additional nuclear activities began operational trial periods this week. The preparations to begin the activities followed the protocol documented in the *Process for Standing-Up Workstations to Limited Operations* (see weekly report dated November 4, 2005). The trial period will last for 30 days, at which point the Facility Manager is required to determine if additional workstation checks are necessary. The activities approved included some that were approved during the facility stand-down, but had not undergone the process for standing up. Included in this category were the enhanced surveillance activities that are performed in a number of workstations.