

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 25, 2010

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending June 25, 2010

Deinventory of Security Category I/II Nuclear Materials: The deinventory effort remains on track with material leaving the Laboratory as planned to support the 2012 schedule. This week, NNSA representatives from Los Alamos National Laboratory, Readiness in Technical Base and Facilities, Plutonium Sustainment, Science Campaign, and Nuclear Counterterrorism programs were at the Laboratory to discuss the programmatic mission portfolio and funding associated with nuclear facility operations beyond 2012.

Nuclear Criticality Safety: On June 14, 2010, a criticality infraction was declared associated with the degraded item involved in the continuous air monitor alarm (see weekly reports dated May 28 and June 11, 2010). The item's poor packaging resulted in significantly greater oxidation than was anticipated to be present during the examination effort. As a result, the condition of the item violated the criticality limits for the glovebox because the 220 g limit for chips, fines and small pieces was exceeded and the approved shape had been deformed. Laboratory personnel removed the material from the glovebox under an approved recovery plan. This event was determined to be a Level 4 infraction, only requiring internal reporting.

On June 21, 2010, two fissile material handlers were machining a uranium part and appropriately stopped work when they observed that the amount of turnings may have exceeded the 500 g limit for dispersible material in the glovebox. A recovery plan was developed and executed to remove the turnings from the glovebox. Personnel determined that when work was stopped, the glovebox contained 743 g of dispersible material, which included 122 g of plutonium samples in other containers. This event was also determined to be a Level 4 infraction. The handlers involved had not previously machined uranium and were used to the properties of plutonium. The Operational Safety Plan governing the machining operations does not differentiate between plutonium or uranium work. No additional training or supervisory review was required before switching between metals.

Plutonium Facility: On June 17, 2010, an occurrence report (LLNL-2010-0024) was filed associated with the degradation of the safety significant Emergency Battery Lighting System. Execution of a Technical Safety Requirement (TSR) surveillance procedure revealed that 11 of the 68 lights did not illuminate for the required 90 minutes. Facility management held a critique on June 21, 2010. The following points were discussed during the critique: (1) the individual performing the surveillance did not notify facility operations staff when a given light was found to be unsatisfactory as required by the continuous use procedure, (2) the individual attempted to repair the lights by replacing the batteries and, as a result, facility personnel did not formally log and enter the limiting condition on operations (three days are allowed to restore operability before a mode change is required), (3) the inoperable conditions were discovered during the system engineer's review of the surveillance data sheets, which occurred at the completion of the 10 day testing campaign, and (4) no preventative maintenance existed for these lights—the rechargeable batteries were run to failure and an adequate replacement supply did not exist. On June 23, 2010, the Laboratory revised the occurrence to reflect a TSR violation based on the critique information and discussions with the Livermore Site Office.