

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 11, 2010

**MEMORANDUM FOR:** Timothy Dwyer, Technical Director  
**FROM:** Jonathan Plaue, DNFSB Site Representative  
**SUBJECT:** LLNL Activity Report for Week Ending June 11, 2010

**Radioactive and Hazardous Waste Management:** This week, the Livermore Site Office (LSO) and the Laboratory issued a series of correspondence that completed the recategorization of the B695 Segment, previously a hazard category 3 nuclear facility, into two separate radiological facilities (see weekly report dated May 21, 2010). LSO's approval acknowledges that proper implementation of inventory control procedures will ensure that the radiological inventories are reliably maintained below the hazard category 3 threshold.

On June 9, 2010, Laboratory personnel completed a dry-run for the loading of transuranic waste drums into TRUPACT 2 shipping containers. The dry-run was considered part of the Facility Readiness Review (FRR). The expectations for the FRR were not uniformly communicated to LSO and Laboratory personnel. This observation re-enforces a weakness noted by LSO in October 2009 that the FRR process lacked clear guidance on expectations and a defined minimum set of elements. Transuranic waste loading and shipping operations should commence next week.

**Plutonium Facility:** On June 7, 2010, the Facility Manager issued the critique report from the continuous air monitor alarm experienced while attempting to open a package containing nuclear material (see weekly report date May 28, 2010). The critique identified the apparent cause of the contamination to be degraded primary packaging materials (i.e., aluminum foil and two plastic bags). The critique further noted that indicators suggested that the extra precaution of bagging the item into a glovebox should have been taken. Specifically, the indicators were that the item was "warm to touch" and had not been opened in 11 years. The critique identified the following suggested corrective actions: (1) issue interim guidance on opening packages, (2) evaluate criteria for use of room ventilation intakes for opening secondary containers, and (3) strengthen the control set in the Facility Safety Plan. In accordance with these actions, on June 7, 2010, the facility manager issued a memo limiting the opening of secondary containers obtained from the vault to: (1) the room (ventilation intake method) only with management approval, (2) a fume hood, or (3) a glovebox. The memo also established a committee to review processes and procedures for opening secondary containers.

On June 9, 2010, the item involved in this event was unpackaged in a glovebox. Corrosion was evident on the outside of the egg can—this should have been another indicator of the need for extra precaution. Opening of the item revealed that corrosion was also present on the rim area and inside lid of the egg can. The poultry bag and bag out bag, which are both made of polyvinylchloride, were discolored and degraded to the point that oxide had spilled into the bottom of the egg can. A significant portion of the nuclear material had oxidized resulting in several kilograms of dispersible material. Although the Laboratory has not experienced issues with plastic as the primary packaging, overall this result is consistent with years of experience around the complex suggesting that plastic is not suitable packaging for nuclear material.

**Tritium Facility:** During the past two weeks, operations to remove a legacy equipment manifold from a fume hood resulted in two contamination events and an activation of a tritium room monitor. The Health Physicist is evaluating whether Special Tritium Compounds (STCs) are involved. The work control document does not currently require passive air sampling or respiratory protection from STCs.