

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 28, 2010

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending May 28, 2010

Plutonium Facility: On May 24, 2010, two fissile material handlers experienced a continuous air monitor (CAM) alarm while attempting to open a package containing a nuclear material item. The item was packaged 11 years ago and was wrapped in foil, bagged into a bag-out bag, over-bagged in a poultry bag, and placed in a taped gold slip-lid container (i.e., egg can). According to the *Facility Safety Plan* (FSP), plastic bags may serve as a primary container for this type of nuclear material item (a secondary container is required for storage). As a result of the assumed confinement provided by the bag, the FSP required opening of the secondary container to be performed in front of a room ventilation system intake with a CAM and for the workers to wear a half-face air purifying respirator. The work was performed in accordance with these controls. The CAM alarmed upon removal of the lid, which required use of a hand tool to ease removal. The handlers responded to the alarm appropriately and exited the room where they were surveyed. Contamination was found on the coveralls and personal pants for one handler. Both handlers had detectable nasal swipes (0.3 and 1.0 dpm) and were placed on non-routine bioassay. The Laboratory filed an occurrence report (LLNL-2010-0021) and held a critique. Corrective actions from the critique are likely to focus on improving the FSP controls for this type of activity. Actions to recover the room, which had low levels of contamination on portions of the floor, were under way using a work permit.

The Livermore Site Office (LSO) completed its evaluation of the loss of the safety significant Evacuation Voice/Alarm Audio Warning and Building Paging system experienced during the unexpected impairment of the lab-wide Emergency Voice Alarm system (see weekly report dated April 16, 2010). LSO captured a number of questions regarding the potential for the loss of safety function (annunciation to all areas of the Radioactive Materials Area) in the review comment record for the safety basis annual update. In addition, a similar issue regarding conflicting statements in the safety basis was captured as a weakness in the most recent Periodic Issues Report (PIR).

Livermore Site Office: On May 24, 2010, LSO issued a PIR to the Laboratory. All of the attached issues were associated with the nuclear facilities. In addition to the issue associated with the AW/P system discussed above, the attached issues included weaknesses associated with (1) inadequate definition of chemical hazards associated with an Operational Safety Plan used in the Plutonium Facility, (2) clarification of roles and responsibilities for readiness activities, and (3) inadequate closure of a corrective action associated with clearly linking controls to hazards and associated tasks in work control documents.

Tritium Facility: On Tuesday, the Laboratory reported to LSO that the development of the safety basis amendment associated with remediation of weaknesses in the hazards analysis and associated control flowdown (see weekly report dated February 26, 2010) was on schedule for submission by the end of June 2010. LSO requested the status update. Of note, the Laboratory stated that the institutional review, which is to commence next week, will not include a tritium subject matter expert; however, development of the amendment includes tritium experts from the facility.