

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 2, 2010

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending July 2, 2010

Radioactive and Hazardous Waste Management: The transuranic waste shipping campaign was completed on June 28, 2010 (see weekly report dated June 17, 2010). The campaign involved six shipments removing a total of 214 55-gallon drums of transuranic waste from the Laboratory. Approximately 300 drums could not be shipped in this campaign and will require repackaging in order to meet acceptance criteria for the Waste Isolation Pilot Plant.

Institutional Processes: On June 24, 2010, the Laboratory submitted a revision to the Unreviewed Safety Question (USQ) procedure to the Livermore Site Office (LSO) for approval. The revision includes a number of changes, with two of the more substantive changes to include additional Categorical Exclusions to expedite the USQ process and incorporation of the expert USQ determination process. The expert USQ process streamlines the amount of documentation associated with each determination. The procedure requires experts to have three years of experience in a nuclear facility and one year of experience in the facility for which they are deemed experts, in addition to further training and management approval. The National Nuclear Security Administration established three prerequisites for adopting an expert USQ process: (1) four years of operation under a USQ process consistent with Guide 424.1-1A, (2) an assessment of two years of acceptable performance under the program, and (3) successful completion of a pilot prior to full implementation. LSO is likely to leverage criteria developed by the Office of Science to evaluate the second prerequisite and will set the scope of the pilot as part of the approval process. For perspective, the Laboratory performed approximately 760 and 600 USQ determinations in 2009 and 2007, respectively. The Laboratory has typically not utilized the USQ screening process. LSO is expected to complete review of the procedure revision in August 2010.

Tritium Facility: On June 30, 2010, the Laboratory submitted a revised safety basis to LSO for approval. The submittal responds to weaknesses in the safety basis identified by LSO (see weekly report dated January 22, 2010) and amplified in the Board's letter dated January 27, 2010. In particular, the submittal was intended to provide a rigorously developed hazards analysis and associated revised control set. The submittal proposed the following controls as safety-significant: tritium room monitors, carbon dioxide glovebox, carbon dioxide testable HEPA filter, pressure interlock system, walk-in enclosure, transuranic waste containers, and increment fire barrier. Specific Administrative Controls were also proposed on the facility radioactive material inventory and combustible loading limits. From a control set standpoint, the primary difference between the submittal and the existing safety basis is the elimination of the safety significant tritium gloveboxes and the addition of the safety significant tritium room monitors. Review of the hazards analysis will be necessary to determine the adequacy of this control set. LSO's review schedule targets transmittal of comments to the Laboratory for response on August 11, 2010, with overall issuance of a Safety Evaluation Report planned for January 5, 2011. LSO has supplemented their review team with an outside fire protection engineer and a tritium expert from the Savannah River Site Office.