

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 9, 2009

**MEMORANDUM FOR:** T. J. Dwyer, Technical Director  
**FROM:** B. Broderick and R.T. Davis  
**SUBJECT:** Los Alamos Report for Week Ending October 9, 2009

**Plutonium Facility – Fire Suppression System:** As discussed last week, the Plutonium Facility remains in standby mode pending resolution of operability issues associated with the fire suppression system. This week, LANL submitted a Justification for Continued Operations (JCO) to the NNSA site office that would allow a return to normal operations for most of the facility with specific compensatory measures for the affected areas (i.e. the areas that do not meet the safety basis requirement for flow density). Most of the affected facility areas (11 of 13) meet the NFPA 13 flow density requirement for Ordinary Hazard Group 1 (OH1) of 0.15 gal/ft<sup>2</sup> but not the safety basis requirement of 0.19 gal/ft<sup>2</sup>. One area is only slightly below the OH1 flow density requirement and another area is significantly below this density requirement. LANL notes that NFPA 45, *Standard on Fire Protection for Laboratories Using Chemicals*, requires an OH1 fire suppression system for Class C laboratory units and that the recently updated Fire Hazards Analysis identified the facility as containing Class C chemistry laboratory units.

To allow normal operations to resume, the JCO recommends the following compensatory measures: 1) for the 11 areas that meet the OH1 flow density and the one area slightly below this density, these areas will be inspected prior to resuming operations and daily to ensure combustibles and flammable chemicals meet the requirements for OH1 Class C laboratory units and 2) for the one area with significant deficiencies, operations will remain suspended. As part of the Documented Safety Analysis (DSA) implementation, an improved combustible control program was in the process of being rolled out. This program and associated procedures will now be used to implement the first compensatory measure including an Implementation Validation Review prior to mode change. LANL is also pursuing design changes to improve system performance such that the safety basis flow density requirement will be met. The site office is currently reviewing the JCO.

**Plutonium Facility – Legacy Material Disposition:** LANL recently completed a study of nuclear materials stored at the Plutonium Facility to identify a path forward for eliminating nuclear material congestion and legacy container issues. The study concluded that a significant portion of the nuclear materials (approximately 1/3 of the containers) should be dispositioned off-site and that significant improvements in floor and vault storage could be achieved through disposition, processing and consolidation of materials. The study also notes that approximately 40% of the roughly 10,000 existing material containers need to be either dispositioned or replaced with more robust containers that meet the nuclear material packaging manual. For this fiscal year, the NNSA site office identified performance based incentives that are focused on removal of legacy nuclear materials and repackaging of nuclear materials into robust containers.

**Radioactive Liquid Waste Treatment Facility (RLWTF):** LANL recently submitted a revised DSA and associated TSR document for NNSA site office review and approval. Unlike the existing 1990s-vintage authorization basis that relies solely on administrative controls, the new submittal credits a number of transuranic liquid waste tanks to provide confinement. Also, a Specific Administrative Control limiting material inventory is identified to protect the facility's Hazard Category 3 status.