

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 31, 2013

MEMORANDUM FOR: Steven Stokes, Acting Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending May 31, 2013

Plutonium Facility: On March 24, 2013, the laboratory contractor submitted to the Livermore Field Office (LFO) a safety basis amendment request in support of the refurbishment of the safety significant argon and nitrogen supply systems. These systems provide inert gases to the gloveboxes for the prevention of fires and pyrophoric events. The refurbishment activity will require the use of temporary supply tanks for a period of up to 45 days during which time the contractor asserts programmatic work needs to continue in the facility. As a result, the contractor requested temporary relief from the Technical Safety Requirements. In particular, the contractor notes that the trailer-mounted tanks used for the temporary supply will not be seismically qualified to Performance Category 2, as required by the safety basis for the permanent system. Consequently, the contractor proposed compensatory measures including: (1) staging the tanks at least 10 feet from other safety systems, (2) blocking of the trailer wheels, (3) using a flexible connection line, and (4) visually inspecting the temporary system daily and after a seismic event. LFO is reviewing the request.

Facility personnel continue to resolve the Potential Inadequacies to the Safety Analysis (PISAs) concerning the credited boundaries and engineering capabilities of certain components in the loft (see weekly report dated May 10, 2013). The contractor concluded that the associated Unreviewed Safety Question Determinations (USQDs) for both PISAs were positive. In addition, the contractor has hired an outside firm to develop refined modeling of temperatures in fire compartments within the facility. The current design basis fire postulates hot gas temperatures of 815 °C; however, the refined modeling is believed potentially to lower this temperature. The outside firm is also assessing the as-found configuration for survivability. For example, the USQD assumed a service temperature of 120 °C for various rubber sealing materials. The results of the outside firm's study will support development of the Evaluation of Safety of the Situation, which is now expected to be submitted to LFO by mid-June.

Waste Storage Facilities: This week, LFO personnel approved the shipment of a transuranic waste drum also containing mixed waste into the facility. As part of the compensatory measures for the positive USQD concerning incorrect consequence analysis, facility management restricted shipments of additional material-at-risk without LFO approval (see weekly report dated February 8, 2013). The drum was generated in the Plutonium Facility and is approaching its time limit for temporary storage in the satellite accumulation area. LFO believes the risk of the additional drum is appropriately bounded in the existing analyses and minimized by the compensatory measures. As a further measure, LFO requested that the contractor maximize the distance between the new drum and the existing drum with the highest existing material-at-risk.