DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 6, 2012

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending July 6, 2012

Tritium Facility: On June 28, 2012, the Livermore Site Office (LSO) approved without conditions the revised page changes for 2010 safety basis annual update. Since the page changes were submitted on November 17, 2011, LSO and laboratory contractor personnel were engaged in significant dialog and iterations, particularly regarding the application of industry standards to credited gloveboxes. LSO ultimately approved a safety basis closing the controversial elements, including those pertinent to the Board's letter dated May 16, 2011, with the following:

- A revised performance criterion stating, "the glovebox shall provide a passive barrier such that less than 10 % of the glovebox atmosphere is released in one hour."
- A revised surveillance test to ensure that the glovebox is capable of maintaining a differential pressure between -2.0 and -0.5 inches of water, as demonstrated by a differential pressure drop of no more than 1.0 inches of water in 15 minutes. The contractor calculated that the sensitivity of this test translates into a leak rate of 1.7 % of the glovebox volume per hour assuming a temperature change of ±1 °F.
- A redefined safety significant boundary of the gloveboxes that includes all components, including the gloves, tested by the differential pressure surveillance test.
- No changes in the controls credited to protect workers from a fire involving tritium. The safety basis relies on tritium room monitors to detect such a fire and a Specific Administrative Control to direct and train the responses of workers.

LSO directed implementation of the new safety basis within 180 days. In the approval letter, LSO also noted a lack of timeliness and poor quality of responses from the laboratory contractor, particularly on issues associated with the glovebox, and directed a briefing in one year on the performance of the glovebox tests.

Plutonium Facility: On June 15, 2012, facility personnel completed modifications to the priorities associated with the credited Fire Detection and Alarm System to ensure that a notification of a fire to workers could no longer be over-ridden by the site-wide announcement system. This modification resolved one of the concerns conveyed in the Board's letter dated December 13, 2012. On June 29, 2012, LSO approved the annual update to the safety basis, which included changes that addressed several other issues in the Board's letter.

On July 3, 2012, LSO authorized operations for the oxidation furnace associated with the hydride/nitride/oxide (HYDOX) process. Program personnel intend to begin operations using depleted uranium and develop a work permit with additional controls before processing the high radiation dose rate fuel plates from the Zero Power Physics Reactor.

Post Deinventory Planning: In the approval letter for the annual update, LSO noted that a significant amount of the material-at-risk had been removed from the Plutonium Facility and that as a result, contractor and LSO collaboration was necessary to reflect the scope of the post-deinventory mission in the next annual update. LSO requested a briefing no later than January 31, 2013, to describe post deinventory programmatic work and desired capabilities. In the Site Representative's opinion, this effort ought to be closely aligned with the development of the broader plutonium strategy for the nuclear weapons complex.