DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 21, 2012

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending September 21, 2012

Inventory Reduction: Today, the National Nuclear Security Administration (NNSA) formally announced completion of the project to deinventory Security Category 1 and 2 special nuclear material from the laboratory. This effort was primarily driven by the desire to consolidate nuclear material at other sites in order to reduce security costs at LLNL. NNSA intends to continue operations in the Plutonium Facility as a Hazard Category 2, Security Category 3 nuclear facility. In safety terms, the inventory reduction also represents a significant reduction in the real-world safety risk posed to the public. In particular, some of the material-at-risk (MAR) limits assumed in the safety analysis are now constrained by security limits; however, there are still materials that are not of a security concern, but can significantly contribute to the MAR (e.g., transuranic waste, plutonium-238, etc). The laboratory contractor and Livermore Site Office (LSO) intend to examine and adjust the MAR as part of the next annual update to the safety basis for the Plutonium Facility.

Quality Assurance: On September 19, 2012, LSO transmitted to the contractor a Periodic Issue Report (PIR) containing a deficiency related to the failure to adhere to the procedure for calibration of critical measuring and testing equipment. In the PIR, a deficiency is defined as a systemic failure to meet a Department of Energy, contractual, or regulatory requirement. LSO cited issues related to the calibration of pressure gauges on certain gloveboxes in the Tritium Facility (see weekly report dated August 3, 2012) and provided seven specific examples of failure to meet this particular procedure. The deficiency requires a causal analysis, extent of condition review, and corrective action plan within 30 days.

Tritium Facility: On Thursday, program personnel discussed upcoming changes in tritium activities at the monthly meeting of the Readiness Review Board (RRB). In particular, the program intends to install a Diffusion Fill System (DFS) in the Tritium Processing Station glovebox. The DFS includes new equipment to permit filling different style targets for the National Ignition Facility. These targets support the Inertial Confinement Fusion community. The RRB discussed the extent of structural changes to the glovebox shell, procedures, and related hazards and determined that additional information was necessary on software control failure modes and any hazards posed by larger quantities of liquid nitrogen before a determination could be made on the need for a readiness assessment. Operations using the DFS are expected to begin in May 2013.

At the request of the LSO Facility Representative, the RRB also discussed the status of the Tritium Grinder System (TGS). The TGS has not operated for nearly a year, equipment modifications are underway to the scrubber system, and operating personnel have changed. The RRB determined that additional information and a detailed readiness review determination worksheet were needed for the TGS.