

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 9, 2011

**MEMORANDUM FOR:** Timothy Dwyer, Technical Director  
**FROM:** Jonathan Plaue, DNFSB Site Representative  
**SUBJECT:** LLNL Activity Report for Week Ending September 9, 2011

**Livermore Site Office (LSO):** In a letter to the contractor dated August 30, 2011, LSO provided the results of an oversight assessment examining follow-up to corrective actions from critiques performed during the past 18 months. The assessment examined 24 critiques and found: (1) critiques could be enhanced by the use of director aids to ensure consistent and comprehensive lines of inquiry, (2) corrective actions could be strengthened by ensuring the use of the Specific, Measurable, Achievable, Realistic/Reasonable, and Timely model as suggested in the procedure, and (3) follow-up on corrective actions was greatly enhanced when entered in the institutional Issues Tracking System (ITS). In addition, LSO observed that institutional issues management expectations were not clear resulting in missed opportunities for Contractor Assurance System analysis and that the critique procedure used by the Nuclear Materials Technology Program did not require entry of corrective action into ITS. LSO noted their intent to continue to follow critique performance and follow-up on the contractor's corrective actions from this assessment.

**Tritium Facility:** Last Tuesday, the contractor briefed LSO on concerns implementing the condition of approval (COA) for the revised safety basis that requires a Specific Administrative Control (SAC) to limit the content of hydrogen isotopes to be less than 2 % of the glovebox volume (see weekly report dated July 15, 2011). This COA responded to an issue raised in the Board's letter dated May 16, 2011, regarding appropriate safety margin to prevent deflagrations involving tritium. The contractor stated that a misunderstanding had occurred during development of the COA and that programmatic activities could not be accommodated under the 2 % limit. As a result, the contractor proposed revising the SAC limit to 4 % with a non-credited facility limit of 2 % in continuous, un-isolated process equipment volumes. This position is consistent with the contractor's prior submitted position and current facility practice.

The contractor provided tables supporting the need for a 4 % limit. The tables contain the estimated volumes of hydrogen isotopes required to support programmatic needs without significantly altering current operational methods (i.e., procuring smaller gas bottles or partially filling vessels). The Site Representative notes that the contractor has not suggested alternative controls (i.e., inerting, automated purging system, etc.) or testing demonstrating that a safety margin is unnecessary. LSO is currently evaluating whether to entertain a formal proposal. Page changes associated with the safety basis approval are due to LSO by September 25, 2011.

**Emergency Management:** On September 1, 2011, the contractor issued the after action report from the June annual emergency exercise in Superblock (see weekly report dated June 24, 2011). The evaluators concluded that each of the 18 exercise objectives were met; however, three comments were captured: (1) some individuals filling new response roles requested additional training for their assembly point functions, (2) a concern was raised that personnel did not completely listen to emergency announcements and simply evacuated the facility due to prior awareness of the exercise, and (3) personnel recognized the need to procure additional emergency radios to reduce reliance on mobile phones. These comments are being addressed by the facility and were not entered into ITS. The after action report for the Waste Storage Facilities was also recently issued. All four exercise objectives were met; however, an improvement action was captured to obtain a liquid scintillation counter to support response to tritium events.