

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 14, 2012

**MEMORANDUM FOR:** T. J. Dwyer, Technical Director  
**FROM:** R.T. Davis and R.K. Verhaagen  
**SUBJECT:** Los Alamos Report for Week Ending December 14, 2012

**Weapons Engineering Tritium Facility (WETF):** Since the discovery of oxygen in-leakage into the WETF hot-inlet system (HIS) in October, 2010, WETF has operated under a Justification for Continued Operation (JCO). Because the source of in-leakage has been difficult to identify and repair, the JCO has been repeatedly extended, with the most recent extension expiring on December 1, 2012. In lieu of extending the JCO, LANL submitted to the site office an Evaluation of the Safety of the Situation (ESS) declaring the HIS inoperable and concluding that with this action WETF is in a safe configuration. The ESS requires that the operational restrictions on the HIS not be removed until the in-leakage is repaired and the HIS is adequately implemented as safety significant.

In response, the site office concurred that because the HIS contains only trace quantities of tritium, the system is safe provided it is completely locked and tagged out. As such, the site office directed LANL to immediately lockout and tagout the tritium sources to the HIS. The site office noted that allowing the JCO to expire without correcting the problems in a timely manner was another example of less than disciplined operations at WETF (see 11/9/12 weekly). Additionally, the site office directed LANL to address the HIS issues and perform a contractor readiness assessment prior to making appropriate recommendations on future operations to the site office manager for approval.

**Plutonium Facility – Criticality Safety:** LANL submitted an ESS to the site office for approval that addresses a criticality safety issue for storage of fissile materials in vault rooms B and I. Based on questions from site office personnel in October, LANL identified that the Criticality Safety Evaluations (CSEs) for these two rooms did not adequately address the potential for interaction effects between drawer and floor storage locations (see 10/19/12 weekly). Plutonium Facility management suspended operations in vault rooms B and I. These restrictions remain in place. The criticality safety issue was subsequently declared an Unreviewed Safety Question.

The ESS recommends establishing a Technical Safety Requirement (TSR) level control for the minimum spacing between drawer and floor locations. LANL is also pursuing a new CSE for these vault rooms that will appropriately analyze interaction effects. In the interim, LANL recommends approval of the ESS that will allow resumption of vault room B and I operations with the spacing control implemented as a TSR level control. The site office is reviewing the ESS.

**Transuranic Waste Facility (TWF) Project:** The site office recently provided direction to LANL on the Safety Design Strategy (SDS) and the Preliminary Documented Safety Analysis (PDSA). LANL is requested to re-submit the SDS and PDSA documents in early-2013 to address site office issues including the following: 1) clear description and justification of differences between the Area G and TWF safety basis; 2) re-evaluation of material at risk limits (the site office believes the waste storage building material limits could be reduced by a factor of 2 or 3); 3) include a safety class engineered control that prevents large vehicle impact; and 4) evaluation of safety implications and life-cycle impacts of elevating waste storage containers, fire suppression system and lightning protection system (including support systems) to safety class. The TWF project design is approximately 90% complete.