

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 13, 2015

**MEMORANDUM FOR:** S.A. Stokes, Technical Director  
**FROM:** R.K. Verhaagen and J.W. Plaue  
**SUBJECT:** Los Alamos Report for Week Ending February 13, 2015

**DNFSB Activity:** New Board Member Santos, accompanied by Board Member Sullivan and staff member D. J. Campbell, visited the lab for familiarization. The visit included walk-downs all of the primary defense nuclear facilities and introductions with key federal and laboratory management.

**Plutonium Facility–Criticality Safety:** Plutonium Facility management unveiled revision 13 to the local administrative procedure for nuclear criticality safety. Notably, this revision requires workers to post a hardcopy of the inventory at each fissionable material operation and to update this hardcopy as soon as practicable following any change to a parameter important to criticality safety. This change addresses a post-start finding from the recent contractor readiness assessment, several findings from internal and NNSA assessments, and the Board letter dated July 15, 2013. While this change moves LANL into compliance with the DOE Directives, the inventory tracking process remains fallible to human error. To address this vulnerability in the longer term, Plutonium Facility management initiated an effort to explore technological solutions (e.g., barcodes or radiofrequency identification tags) to enable workers to obtain direct measurement of the inventory at the time of material movement. These mainstream technologies are currently cost effective; however, challenges remain with security requirements.

**Weapons Engineering Tritium Facility (WETF)–Safety Systems and Conduct of Operations:** Last week, a series of safety system and conduct of operations failures created a situation where operations personnel could not comply with a limiting condition for operation (LCO), forcing them to enter the generic LCO. During a surveillance in June 2014, a ventilation damper was identified to be broken such that it could not perform its safety function to isolate the control room upon activation of the halon fire suppression system. In response, facility personnel installed a blank over the damper to seal the ventilation duct. This modification caused the differential pressure between the control room and an adjacent hallway to change such that a safety significant fire door would not operate as required (see 1/30/15 weekly). Failure of the door to function properly rendered the fixed wet-pipe fire sprinkler system inoperable necessitating a fire watch to comply with a LCO. While in this LCO, a low-level tritium alarm occurred in the facility, preventing operators from performing the fire watch and resulting in the TSR violation. Investigation into the cause of the tritium leak revealed that during performance of a routine surveillance two steps of the use every time procedure were skipped that resulted in a valve being left open and a fitting left uncapped.

**Safety Basis:** On Wednesday, management paused all Unreviewed Safety Question (USQ) activities at the lab after a management assessment identified multiple instances where analysts incorrectly applied the USQ process to maintenance activities performed on credited Design Features. In several occasions, these instances resulted in TSR violations. USQ operations resumed following special training to analysts that emphasized the need ensure that safety bases appropriately cover maintenance activities on Design Features. In the opinion of the Site Representatives, providing LCO coverage for Design Features—a best management practice utilized by Lawrence Livermore National Laboratory—would prevent this situation and similar situations that may temporarily impact credited systems (i.e., emergency exercises).