

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 9, 2011

**MEMORANDUM FOR:** T. J. Dwyer, Technical Director  
**FROM:** B.P. Broderick and R.T. Davis  
**SUBJECT:** Los Alamos Report for Week Ending December 9, 2011

**Weapons Engineering Tritium Facility (WETF):** The WETF safety basis credits combustible loading limits as a TSR-level control and requires monthly and annual surveillances for transient and permanent combustibles, respectively. WETF uses a detailed software spreadsheet to track the quantities of combustibles present in the facility and to compute the combustible loading (in units of lbs/ft<sup>2</sup>) for WETF rooms that have defined limits. A summary spreadsheet then imports the computed combustible loading values from the detailed spreadsheet and operators use the data from the summary spreadsheet to perform the monthly TSR surveillance.

On Thursday, a WETF operator performed the monthly combustible loading surveillance, documented that the combustible loading for all rooms complied with TSR limits, and turned in completed surveillance paperwork to the Operations Center. A post-surveillance review by Operations Center personnel discovered that for one WETF room, the documented combustible loading value from the summary spreadsheet exceeded the TSR limit by roughly a factor of four, but had been recorded as satisfactory during the surveillance.

Follow-up investigation showed that the combustible loading in the affected WETF room actually complied with TSR limits. However, a recent change to the summary combustible loading spreadsheet had introduced an error that caused it to import data from the wrong fields in the detailed spreadsheet. WETF combustible loading spreadsheets are graded as the second highest level of safety-related software, but required change control and verification and validation (V&V) protocols failed to identify this error. Several recent events have highlighted failures of existing change control and V&V protocols to identify errors introduced to safety-related software spreadsheets by changes. WETF declared a TSR violation in August based on a container pressurization spreadsheet error and last week Area G declared a TSR violation based on a tritium inventory tracking spreadsheet error.

**Plutonium Facility:** On Thursday, the site office issued the Safety Evaluation Report (SER) that approves revision 2 of the Justification for Continued Operation (JCO) for seismic issues associated with the Plutonium Facility. This JCO reflects completion of facility upgrades and implementation of compensatory controls. The Kardex unit has also been added as a component that will be upgraded. The site office SER directs implementation of additional controls for mezzanine loading within 30 days. The JCO expires on May 11, 2012. LANL continues to work on additional analyses of building seismic performance to address concerns identified by the Board's staff and independent peer reviews.

**Transuranic Waste Operations:** This week, the federal readiness assessment team completed their review of the box repackaging line in Area G's Building 412 and briefed their results to site office and LANL management. The team recommended that LASO authorize startup following resolution of the one pre-start finding (a carryover finding from the contractor readiness assessment) and approval of corrective actions for the two post-start findings identified by the federal review team. As a noteworthy practice, the team noted that the project team and personnel demonstrated a visible nuclear safety awareness and focus on eliminating or mitigating challenges to safe and reliable operations. Results from recent laboratory readiness reviews and this review indicate significant improvements in line management readiness and startup performance for waste disposition programmatic activities.