

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 3, 2015

**MEMORANDUM FOR:** S.A. Stokes, Technical Director  
**FROM:** R.K. Verhaagen and J.W. Plaué  
**SUBJECT:** Los Alamos Report for Week Ending April 3, 2015

**Area G–Nitrate Salts:** On Monday, Area G personnel successfully relocated into the Dome 375 Permacon the four newly identified drums thought to contain remediated nitrate salt wastes (see 3/27/15 weekly). Last Friday, LANL submitted to the NNSA Field Office a study on temperature control options for the Permacon. The study notes that there is no compelling technical justification for additional cooling; however, the LANL Director determined that additional cooling will be implemented as a defense-in-depth measure. The selected option involves installation of a supplemental chiller into the existing ventilation system to cool the Permacon to about 5 °C. LANL expects the system to be operational by the end of May 2015.

**Plutonium Facility–Restart Activities:** On Thursday, the federal readiness assessment team out-briefed the results of their review on the T-Base II machining operation. The team identified four pre-start findings: (1) the nuclear criticality safety evaluation inappropriately relied on an upper subcritical limit that was not supported by the validation report and the independent review was inadequate; (2) the procedure does not implement criticality safety controls consistent with DOE requirements; (3) an inconsistency between the safety basis and the fire hazards analysis concerning glovebox firefighting media was not entered into the New Information process; and (4) the Field Office lacks a documented basis for a safety basis condition of approval concerning the glovebox support stand. The team identified 10 post-start findings. Notable items involve the lack of an established drill program, inadequate procedural implementation of labeling, problems with the Unreviewed Safety Question process, and inadequate Field Office oversight. The team also noted that their detailed report contains additional concerns and non-compliances that did not rise to the agreed upon threshold for a finding, but that management ought to consider for improvement.

**Plutonium Facility–Nuclear Criticality Safety:** Last Friday, the Field Office directed LANL to: (1) review for sufficiency all legacy criticality safety evaluations applicable to restart activities, (2) evaluate the ability of the criticality staff to support operations given the ratio of operations under compliant evaluations versus those operating under compensatory measures, and (3) update their program improvement plan to reflect resolution of legacy issues and actions to develop evaluations for operations with current compensatory measures. These actions are due in 60 days. In addition, the Field Office directed LANL to develop compliant evaluations for all operations under legacy Augmented Limit Reviews prior to restart.

**Plutonium Facility–Configuration Management:** On Monday, facility personnel conducted a fact-finding after operators discovered 10–15 L of unexpected liquid in a vacuum trap in one of the aqueous processing rooms. The operators were conducting additional monitoring of vessels directed after previous unexpected liquid discoveries (see 1/30/15). This is the fourth discovery of unexpected liquid in the last year. While operators previously sampled the liquid in those cases, management has yet to receive results or otherwise determine the source(s) of liquid associated with the past two discoveries dating back to November. During the fact-finding, personnel indicated that the previous extent of condition review excluded process support vessels such as vacuum traps. However, field office personnel questioned the need to examine all vessels that are in communication with certain vessels that are geometrically unsafe from a criticality perspective. Subsequently, facility personnel took an action to verify the administrative lockout on the geometrically unsafe vessels in the near-term and seek a longer-term solution to isolate physically these vessels from the system. Facility personnel also indicated that they were developing as-built drawings on a schedule to support future readiness assessments, but they would not develop drawings for systems slated for eventual removal.