

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 26, 2014

MEMORANDUM FOR: S.A. Stokes, Technical Director
FROM: R.K. Verhaagen and J.W. Plaue
SUBJECT: Los Alamos Report for Week Ending December 26, 2014

LANL's annual winter closure began Wednesday evening with operations resuming on January 5, 2015.

Conduct of Engineering: Last month, LANL issued the report from a recent Parent Organization Functional Management Review. The review concluded that there has been significant improvement in the Conduct of Engineering since 2006 and noted seven noteworthy practices. Opportunities for improvement included the need for: (1) processes to support continuous improvement, (2) assignment of system engineers earlier in projects, (3) increased focus on configuration management, (4) safety basis awareness training for design engineers, and (5) a more focused effort to keep standards up to date. One of three additional performance feedback items noted that some engineering efforts performed in program groups have not fully embraced Conduct of Engineering and suggested bolstering this interface to ensure that activities that may impact safety bases are appropriately elevated.

Area G–Nitrate Salts: Area G personnel initiated a series of thermal tests to determine the rate of heat removal from a 55-gallon drum containing remediated nitrate salt wastes. The tests will utilize instrumented drums containing a surrogate mixture of wheat-based cat litter and a commercial ice-melt compound consisting of calcium and magnesium chlorides. A robust understanding of the cooling and warming rates is necessary to support the safety of the planned final treatment process, which will rely on temperature control to minimize heat generation from microbial species and slow chemical kinetics.

Plutonium Facility–Work Planning: Last Thursday, a group of eight workers, with five simultaneously working in gloveboxes, experienced a contamination event while performing corrective maintenance on the trolley in the plutonium-238 area. Radiological surveys identified greater than two million disintegrations per minute (dpm) in several locations in the room and on multiple areas of the coveralls of two individuals. One of these workers also had about 500 dpm on the skin. Overall, three workers started special bioassay. The continuous air monitor alarmed about 1.5 hours into the event; however, its filters and those of other fixed air samplers revealed only low levels of airborne contamination. Management conducted a fact-finding for this event on Monday where follow-up actions revealed a V-shaped tear about the size of a quarter in one of the gloves; however, potential causes of the tear remain undetermined. Other points discussed include the need for extra monitoring equipment, reinforcement of surveying following glove exit, and a request for continuous presence of a radiological control technician (RCT) during complicated trolley jobs. The participants noted excellent responses by the RCTs. The Site Representatives note that many of the RCTs in the facility, including the involved RCTs, recently conducted drills for similar scenarios as part of readiness preparation activities, which may have contributed to the strong response.

Plutonium Facility–Worker Safety: On Monday, the programmatic operations lead released restrictions on the plutonium-238 oxide thermal treatment line (see 8/8/14 weekly). The release comes after a significant improvement in the safety posture of these old gloveboxes, including the replacement of several compromised windows, engineered closure of previously taped openings, repairs to shielding, and correction of electrical safety issues.