

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 14, 2017

MEMORANDUM FOR: S.A. Stokes, Technical Director
FROM: R.K. Verhaagen and J.W. Plaue
SUBJECT: Los Alamos Report for Week Ending April 14, 2017

Waste Characterization, Reduction, and Repackaging Facility (WCRRF)–Safety Basis:

Last Thursday, the NNSA Field Office Manager, with concurrence from NNSA and DOE-EM Headquarters personnel, unconditionally approved the safety basis change related to the use of an electric forklift for handling of the inappropriately remediated nitrate salt (RNS) waste drums (see 3/31/17 weekly).

WCRRF–Engineering: Last Wednesday, the facility experienced its second momentary loss of electrical power in a month. The previous loss of power occurred as personnel were preparing to commence a performance demonstration as part of the federal readiness assessment (see 3/10/17 weekly). In both cases, the response of facility personnel was appropriate; however, the electrical distribution systems did not respond as intended. In the first instance, the uninterruptible power supply (UPS) did not function properly. In the second instance, the UPS functioned but the automatic transfer switch indicated several potential anomalies. Given the high priority associated with commencing the RNS treatment campaign, LANL senior management has engaged in this situation and placed several additional institutional resources on the problem. They are also pursuing vendor support and installation of additional monitoring devices to augment their typical troubleshooting activities.

Area G–Safety Basis: On Wednesday, the NNSA Field Office returned comments to LANL management pertaining to the technical inadequacy of the Evaluation of the Safety of the Situation (ESS) concerning the Flanged Tritium Waste Containers (FTWCs) with potentially explosive headspace mixtures of oxygen and hydrogen isotopes (see 10/28/16 weekly). The NNSA Field Office identified deficiencies that included: an incorrect energy threshold for ignition that potentially challenges the need to further consider hazards from wind-driven vibrations; inadequate technical bases supporting the exclusion zone distance of 50 feet for protection from projectiles; and insufficient bases to exclude the potential for deflagration to detonation transition.

On Thursday, LANL submitted to the NNSA Field Office for review a set of proposed milestones for high-level actions to be taken to mitigate the hazard posed by the Area G FTWCs. In the proposal, LANL notes that a process hazard analysis will be completed by May 5, 2017, that will determine whether the FTWCs will be safely stored in place or remediated for offsite disposition. LANL indicates that if the offsite disposition path is followed an adequate control set will have to be developed and an updated ESS will have to be approved, and estimates remediation could be completed by September 2018.

Plutonium Facility–Safety Basis: As directed by the NNSA Field Office Manager, LANL submitted a plan and schedule for resolving by August 3, 2017, all outstanding conditions of approval, directed changes, directed actions, Field Office comments and open ESSs that affect the Plutonium Facility safety basis (see 2/24/17 weekly).