

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 13, 2017

MEMORANDUM FOR: S.A. Stokes, Technical Director

FROM: J.W. Plaue

SUBJECT: Los Alamos Report for Week Ending October 13, 2017

Plutonium Facility–Operations: This week, programmatic operators successfully produced their first batch of americium-241 oxide. The activity used the recently authorized aqueous chloride-based solvent extraction system and the separations process known as the Chloride Extraction and Actinide Recovery (CLEAR) line. This was the first time the CLEAR line operated and the first time that the solvent extraction process has operated since 2013. During the process, operators experienced intermittent problems with a vacuum pump and briefly paused to re-evaluate controls after they encountered higher than expected radiation levels during the precipitation process.

Transuranic Waste Facility (TWF): On Wednesday, TWF operators successfully received their first shipment of four transuranic waste drums. Workers appropriately paused and consulted management after they observed two discrepancies associated with labeling: (1) the word “EMPTY” along with an individual’s contact information hand written on the bottom of one drum and (2) an unexpected label indicating the presence of beryllium in a second container. Of note, waste handlers at the Plutonium Facility observed, but did not address, these discrepancies during their pre-shipment inspection.

Area G–Safety Basis: Last Friday, LANL management submitted to the EM Field Office for approval a revision the Evaluation of the Safety of the Situation (ESS) for the continued safe storage of the Flanged Tritium Waste Containers (FTWC) that have potentially explosive headspace mixtures of oxygen and hydrogen isotopes (see 2/24/2017 weekly). The ESS revision reflects additional analysis regarding accident initiators associated with container movement, lightning, external fire, and electrostatic discharge. In particular, the latter work establishes a technical basis to support resumption of regulatory inspections of the shed containing the FTWCs, as well as other nearby activities. Additionally, the ESS presents a new mechanical failure analysis of an exploding FTWC that indicates the lid bolts will elongate resulting in a venting event without the generation of a shrapnel hazard. Consequently, LANL has proposed changing the 50 foot exclusion area to a 15 foot isolation area with a new process to evaluate proposed work activities in the vicinity of the FTWCs.

Earlier this month, LANL management submitted to the EM Field Office for approval the annual safety basis update. Consistent with the previously submitted waste strategy (see 7/7/2017 weekly), the update proposes increasing the material-at-risk limits from 39k to 64k plutonium-239 equivalent curies (PE-Ci) total with 14.5k combustible PE-Ci. The increase is intended to provide contingency space for NNSA.

Area G–Restart Activities: Last week, the EM Field Office approved the checklist plan of action associated with the contractor readiness assessment planned to support the upcoming treatment campaign for the unremediated nitrate salt (UNS) wastes. The UNS campaign will require limited Sort, Segregate, Size Reduction, and Repackaging operations in the Dome 231 PermaCon to remove the UNS materials in their drum liners from their existing degraded containers and place them into new containers suitable for shipment to the Waste Characterization, Reduction, and Repackaging Facility. The plan of action specifies review of radiation protection program, the hoisting and rigging program, and worker level of knowledge, as the remainder of the core requirements were determined to be justifiably excluded. The planned three day assessment is targeted for the end of this month.