

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 18, 2022

MEMORANDUM FOR: Christopher J. Roscetti, Technical Director
FROM: D. Gutowski and J. Plaue, Resident Inspectors
SUBJECT: Los Alamos Activity Report for Week Ending February 18, 2022

Plutonium Facility–Infrastructure: Heat-source plutonium (HS-Pu) operations are among the highest risk in the facility due to the material’s high radioactivity and dispersible material forms. During the past few years, Triad personnel have made progress analyzing the seismic performance of HS-Pu gloveboxes following the updated seismic hazard from 2007. Their current analyses indicate that only about 10 HS-Pu gloveboxes meet the required seismic performance, meaning that more than 50 gloveboxes are now known to be deficient. The NNSA approved safety basis acknowledges the potential for gloveboxes to be seismically deficient and commits to analyze and upgrade gloveboxes on a risk-based priority. NNSA and Triad are upgrading and replacing about a hundred gloveboxes to support pit manufacturing, analytical capabilities, and surplus plutonium disposition. There are currently no funded plans associated with upgrading or replacing HS-Pu gloveboxes.

Plutonium Facility–Readiness: On Wednesday, Triad managers met to evaluate whether a formal readiness review is necessary for the proposed startup of a new HS-Pu bench-scale recovery line. The new line occupies the gloveboxes associated with the full-scale scrap recovery line that never became operational after challenges completing a readiness review (see 7/8/2005 report). The new line will house a second open vessel and furnace operation, like the existing bench-scale operation, to produce purified HS-Pu oxide through comminution, dissolution, precipitation, and calcination. The new line will also repurpose some of the fixed vessels from the defunct full-scale line to support new capabilities to store and process waste filtrate solutions. Filtrate processing is currently conducted in a different location and is dependent on the use of many plastic carboys to store solutions awaiting processing. Given that these carboys have leaked in the past (see 6/8/2018 report)—moving to the engineered vessels represents an improvement. Triad engineering personnel are currently evaluating whether these gloveboxes meet required seismic performance. Triad managers concluded that this startup will not require a formal readiness review because it meets local criteria for an expansion of an existing capability.

Plutonium Facility–Operations: Facility personnel held a fact-finding meeting to evaluate an event where drums of transuranic waste were staged too close to inactive areas containing holdup of special nuclear material contrary to the criticality safety posting for drums. Last fall, following the start of holdup measurements in this area to support future equipment removal, facility personnel identified that their current processes have weaknesses for tracking material at risk in inactive areas. Until a process is put in place, compliance with criticality safety limits and material at risk limits will continue to be a challenge for facility workers.

Radiological Laboratory Utility Office Building (RLUOB)/PF-400: A contractor team completed an operational readiness review for the upgrade of RLUOB to a hazard category 3 nuclear facility to be known as PF-400. They identified four prestart and three post-start findings during their review. A federal operational readiness review is planned for May following completion of corrective actions from this review.

Area G–Readiness: N3B and Environmental Management Field Office personnel held an event investigation meeting to evaluate the commencement of the contractor readiness assessment for resumption of drill and drain and glovebag operations in the Dome 231 Permacon with an inaccurate approved Plan of Action (see 1/14/2022 report).