

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 6, 2020

MEMORANDUM FOR: Christopher J. Roscetti, Technical Director
FROM: J.W. Plaue and D. Gutowski, Resident Inspectors
SUBJECT: Los Alamos Activity Report for Week Ending March 6, 2020

DNFSB Staff Activity: On Tuesday, R.C. Eul, P.J. Migliorini, and A.J. Miller conducted a teleconference with NNSA Field Office personnel to understand the basis for their rating of Triad in DOE's Annual Metrics Report to the DNFSB on Nuclear Criticality Safety Programs.

Area G: On Monday, N3B responded to EM Field Office contracting direction issued on February 21, 2020, to implement compensatory measures and take actions concerning the safe storage of high fissile gram equivalent (FGE) containers in Dome 49. In their letter, the field office expressed concerns that documentation may not accurately reflect the number, as-found configuration, and safety controls associated with high FGE containers. N3B's response provided a listing of all high FGE containers and indicated the containers had been stored in accordance with approved criticality safety controls and operating procedures. N3B noted that the number of high FGE containers had changed since mid-2019 as a result of their initiative to implement criticality safety controls based on the measured FGE content plus two times the uncertainty, as a best management practice. In our opinion, it appears that better communications could have avoided this exchange.

Transuranic Waste Management: On Wednesday, Plutonium Facility personnel conducted a fact-finding to learn from two issues encountered during a shipment last month of containers to the Transuranic Waste Facility. The first issue concerned the fact that a container that was prohibited from being shipped made it to a payload; fortunately, an attentive worker observed a physical hold tag and prevented the shipment. The second issue involved a container that was not physically moved as part of the shipment, but had been transferred to TWF in the electronic inventory. Both issues occurred despite numerous procedural and software checks involving multiple groups of workers. As a result, management decided to conduct a human performance review of waste container handling processes.

Plutonium Facility—Operations: Last month, workers encountered two anomalies while oxidizing legacy plutonium items from the vault along with cans of sweepings. Historical data on these items suggested they were already oxidized; however, the furnace run was planned for additional assurance that the material was stabilized. During the furnace run, an unexpected thermal excursion occurred resulting in a cracked crucible and damaged thermocouples. The contact dose rate of the product also unexpectedly increased from approximately 1.5 rem/hour to approximately 2 rem/hour. The high radiation levels required the workers to split the product into smaller batches to meet storage requirements; however, they were unable to complete this task due to frequent alarms on their electronic dosimeters. An expedited reading of the worker's dosimeter showed an unexpectedly high dose for February. At a fact-finding to learn from the radiation exposure, facility management identified the need to evaluate: blending plans for processing run; compliance with the radiological work permit for removing materials from the vault, and a path forward to complete packaging of this material. Given the similarity to a previous excursion that spread fine black powder inside a glovebox in the same room (see 7/19/2019 report), Triad management requested a causal analysis of the events.

Federal Oversight: On Monday, Mr. Thomas Johnson Jr. became acting manager of the EM Field Office. On Wednesday, the EM Field Office issued their first formal transmittal of oversight surveillance reports to N3B for resolution in the issues management process. The field office continues to work through challenges and achieve compliance with their oversight command media.