

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 2, 2021

MEMORANDUM FOR: Christopher J. Roscetti, Technical Director
FROM: J.W. Plae and D. Gutowski, Resident Inspectors
SUBJECT: Los Alamos Activity Report for Week Ending April 2, 2021

Plutonium Facility–Conduct of Operations: On Wednesday, a worker adding water to the vault water baths jammed open the spring-closed fill valve and departed for another task resulting in the baths overflowing. The local high-level alarm did activate; however, the alarm communication to the operations center did not function as intended. A radiological control technician discovered flooding in the vault corridor several hours later and reported the incident. The valve was promptly closed. Facility and criticality safety personnel concluded there was no immediate hazard from the estimated 1800 gallons of spilled water and started cleanup activities. There was no spread of radioactive contamination discovered during water sampling. Facility management has proposed many corrective actions to prevent recurrence including reviewing their alarms, evaluating an overflow line to a sump, and reviewing their fill procedure.

Plutonium Facility–Glovebox Safety: On Monday, workers performing hand lapping of a piece of plutonium metal breached a glovebox glove. The workers received contamination on their personal protective equipment, but there was no indication of an uptake. This was a repeat of an event that occurred last month (see 3/5/2021 report). Based on worker comments, it appears that corrective actions to improve tooling created a different sharps hazard. Management is reviewing the tooling.

Transuranic Waste Management: Last month, Triad safety basis personnel completed their New Information process related to the reactive titanium and tantalum metal fines that ignited and sparked during waste drum-out activities on February 26, 2021. For the Plutonium Facility, they entered the New Information process 5 days following the event. Fourteen days later, they completed the process. For the Transuranic Waste Facility (TWF), they entered the New Information process 10 days following the event and reached their conclusion 11 days later. Triad's procedure for its New Information process requires declaration of a potential inadequacy of the safety analysis (PISA) if a decision cannot be reached within 13 calendar days of entry into the process; however, Triad analysts received an internal variance to this requirement because of the one day safety stand-down.

Triad's analysis for both facilities concluded that a PISA did not exist, largely based on calculations demonstrating that reaction of the metal fines could not overpressurize or initiate a fire inside a waste container. The analysis for TWF also addressed whether the two containers that potentially contained reactive metal fines violated the safety basis prohibition on receipt of D001 (ignitable characteristic) waste. Safety basis personnel demonstrated compliance with the restriction using an email with an analysis from the division leader responsible for waste. The analysis indicated that any reactive fines placed in the waste container would have oxidized to a nonreactive state given the time elapsed since container closure.

Overall, Triad's analysis for the Plutonium Facility recommends improving discussion in the safety basis to explicitly describe the non-radioactive pyrophoric hazards (e.g., stainless steel, tantalum, titanium) in the welding and solid waste sections.

Area G–Safety Basis: On Monday, the EM Field Office rejected N3B's evaluation of the safety of the situation concerning DNFSB/TECH-46 (see 1/22/2021 report). The rejection noted the need to integrate with the other PISAs and provide a discussion on the safety of moving containers thought to have incompatible chemicals.