

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 19, 2019

**MEMORANDUM FOR:** Christopher J. Roscetti, Technical Director  
**FROM:** J.W. Plaue and D. Gutowski, Resident Inspectors  
**SUBJECT:** Los Alamos Activity Report for Week Ending July 19, 2019

**DNFSB Staff Activity:** D. Gutowski was at DNFSB Headquarters in support of agency planning initiatives for fiscal year 2020.

**Plutonium Facility–Nuclear Materials Management:** Last Friday, operators found that the box furnace they were using to oxidize legacy nuclear material had experienced an unexpected thermal excursion from about 380 to 640 °C. This rapid temperature increase caused the furnace to automatically shut off. The exothermic reaction also spread fine black powdered residue within the glovebox and an adjacent glovebox. There was no release of material outside of the glovebox system and the glovebox does not appear to have been damaged. The legacy items originated from research activities in the 1980's and were being processed as part of the Materials Recovery & Recycle program. The oxidation process is intended to produce a stable material form for disposition, typically as transuranic waste. Facility personnel intend to develop a recovery plan to clean and inspect the gloveboxes and furnace, replace the filter, obtain and analyze samples of the materials to ascertain the chemistry, and review the inventory to identify any similar materials. Safety basis personnel also entered the New Information process to examine implications for the safety basis.

**Plutonium Facility–Safety Basis:** On Wednesday, Triad management transmitted to the NNSA Field Office their evaluation of the safety of the situation (ESS) regarding vehicle impacts with transuranic waste containers stored on the outdoor pads (see 6/28/2019 report). The ESS examined two cases of impact with subsequent fuel pool fire: (1) a security vehicle with a high energy impact and small fuel pool volume and (2) a refueling truck with a low energy impact and large fuel pool volume. The ESS determined that the consequences do not warrant safety class or safety significant controls, but noted the vehicle barriers provide an important preventive, engineered safety function and recommended them to remain as Other Hazard Controls. The NNSA Field Office is reviewing the ESS.

Last week, Triad management transmitted to the NNSA Field Office a safety basis strategy and an updated project execution plan in support of the effort to upgrade the safety basis to comply with DOE-STD-3009-2014 (see 12/31/2018 report). The update includes clarifications to expectations for quality assurance and team interactions. The expected final submittal date remains March 31, 2022.

**Transuranic Waste Management:** This week, Triad personnel resumed loading operations at the RANT Shipping Facility after completing an outage to repair the roof. They completed one shipment and are working toward establishing a desired steady-state rate of about five shipments a month. However, their ability to ship is currently paced by waste container certification activities controlled by the Carlsbad Field Office. In another positive development, last week Triad personnel moved the first batch of pipe overpack containers (POC) with the new fusible filters to the Transuranic Waste Facility. These new filters support a damage ratio of zero for postulated fire scenarios (see 1/25/2019 report). Triad is also planning the first shipment of POCs to the Waste Isolation Pilot Plant in the coming weeks. This is important because POCs represent a substantial fraction of the current waste container population.