

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 26, 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 26, 2019

Transuranic Waste Management–Safety Basis: Last week, the Carlsbad Field Office issued LANL a non-conformance report concluding that 9 transuranic waste containers did not meet the waste acceptance criteria for the Waste Isolation Pilot Plant. All of the non-conforming containers are currently stored at Area G, though two are owned by Triad. These containers specifically failed to meet the Basis of Knowledge requirements for oxidizing chemicals that DOE established to preclude another energetic chemical reaction and radioactive material release at WIPP. These energetic reactions can result in greater airborne respirable releases of radioactive material than is typically analyzed. Triad recognized this fact with their recent declarations of potential inadequacies of the safety analysis (PISA) for their facilities (see 6/28/2019 report) due to interactions between polyols and nitric acid—just one consideration in the BoK. When N3B reviewed the polyol information, they did not declare a PISA because they believe these reactions are adequately covered by existing accidents that are modeled as flammable gas deflagrations. In contrast, the approved safety basis for the Transuranic Waste Facility acknowledges that releases from these energetic events could be 2–3 orders of magnitude greater than is analyzed for deflagrations (see 4/5/2019 report). Controls for an energetic event may also be different than for a flammable gas event. N3B is reviewing the situation.

Plutonium Facility–Nuclear Materials Management: On Wednesday, facility personnel held a fact-finding for an issue that occurred on July 9, 2019, when safeguards personnel discovered liquid on the floor of a glovebox used to stage several plastic carboys containing plutonium-238 aqueous processing residues. Further investigation identified that a carboy had cracked and released some of its contents, an exposed electrical wire was in the liquid, and a cable assembly on a spool piece door had failed. Since then, personnel isolated the conductor, properly cleaned the spill, and replaced the door cable. Notably, the replacement of this cable and the cable involved in last year's puncture wound were the first to be replaced since that August 2018 accident (see 2/8/2019 report). This incident had several similarities to last year's unexpected drop in solution level (see 6/8/2018 report). While previous corrective actions to improve spill response were successful, planned actions to minimize the backlog of these production residues, improve tracking of carboy volumes and age, and eliminate reliance on plastic carboys have not yet been achieved.

TA-48 Radiochemistry Facility–Radiological Control: Last Wednesday, the questioning attitude of several workers prevented the possibility of contaminated material being transported offsite. They were cleaning radiologically uncontrolled laboratory space in the Radiochemistry Facility, noted water staining, and decided to take precautionary radiological smears. They discovered contamination, paused, and called a radiological protection technician to confirm the presence of contamination. The following morning, the technician began controlling and surveying items already removed from the room, as well as performing extensive surveys of personnel, the facility, and equipment. No personnel contamination was detected; however, the surveys did discover contaminated items in a recycling bin. The source of contamination was a leak in a radioactive liquid waste line from the radiological laboratory on the floor above.