DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 5, 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 April 5, 2019

Flanged Tritium Waste Containers (FTWC): On Friday, Weapons Engineering Tritium Facility (WETF) personnel successfully vented the first of three FTWCs that have the potential for headspaces with a flammable mixture of oxygen and hydrogen isotopes. This is an important milestone in resolving a safety issue that was discovered in 2016 (see 9/9/2016 report). WETF personnel found that the inner contents had not leaked and plan to disposition them prior to venting the remaining two FTWCs of concern located in that facility.

The NNSA and EM Field Offices continue to deliberate on the fate of the FTWCs currently located at Area G. The primary question is whether the FTWCs should be vented *in situ* prior to transportation back to WETF for final disposition. Once a decision is reached, additional work will be needed to solidify the technical approach, schedule, safety basis, and roles and responsibilities.

Plutonium Facility–Conduct of Operations: In response to an observed uptick in the number and severity of potential process deviations, Triad management initiated a safety pause to brief all fissile material handlers. The briefing emphasized that 16 of 18 potential process deviations that have occurred in calendar year 2019 resulted from errors associated with executing the material movement process. Managers solicited feedback and workers provided a number of opportunities to improve the material movement process. The one-hour briefing also emphasized recent standing orders intended to enhance procedural execution and control of sharps (see 3/22/2018 and 12/21/2018 reports).

Transuranic Waste Management–Inconsistencies: The incidents at the Waste Isolation Pilot Plant in February 2014 and the Idaho National Laboratory in April 2018 demonstrated that improperly prepared transuranic waste can result in energetic events that release radioactive materials from drums in a manner that was not previously envisioned by DOE Standard 5506-2007, *Preparation of Safety Basis Documents for Transuranic Waste Facilities*. In the absence of DOE direction, safety basis personnel have inconsistently incorporated this information into the safety bases for the LANL nuclear facilities. For example, the safety basis for the Transuranic Waste Facility acknowledges the potential for an energetic release of radioactive material from a container with non-compliant waste could be 2–3 orders of magnitude greater than is analyzed per the DOE Standard 5506. As such, the NNSA Field Office directed development of a Specific Administrative Control to ensure only compliant waste is received at the facility (see 4/13/2018 report). A similar control does not exist at the Plutonium Facility, Chemistry and Metallurgy Research (CMR) building, and Area G—all facilities that handle transuranic waste in outdoor locations in the absence of engineered confinement.

Developments: N3B personnel successfully completed a mobile loading shipment of waste from Area G. CMR personnel executed their recovery plan and transferred the containers of fissionable materials to appropriate locations (see 3/15/2019 report). Plutonium Facility personnel restored operability to the uninterruptible power supply (see 3/29/2019 report).