DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 27, 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 December 27, 2019

The Year on a Page: A summary of the key developments of 2019.

- Triad completed 15 shipments of transuranic waste to the Waste Isolation Pilot Plant after restarting operations at the RANT Shipping Facility. They are working to increase the weekly pace of shipments and eventually integrating N3B shipments from Area G.

- Confinement Vessel Disposition project personnel completed cleanout of the last sphere. This represents completion of the last action resulting from the Board's Recommendation 94-1 *Improved Schedule for Remediation in the Defense Nuclear Facilities Complex*. As a result, the Chemistry and Metallurgy Research building is postured for a near-term significant reduction in material-at-risk as the exit strategy advances.

- Plutonium Facility personnel completed upgrades to eliminate seismic interaction hazards from the fire suppression system piping. This represents an important step toward ultimately qualifying the system for service in a performance category 3 seismic event; however, additional out-year efforts remain associated with reanalyzing the piping, installing additional bracing as needed, and separating the non-seismically qualified buildings from the fire water loop.

- NNSA completed testing of two column capital specimens and advanced the nonlinear dynamic analysis to improve the understanding of the seismic performance of the Plutonium Facility. NNSA began these efforts in 2012 and they are notionally scheduled to inform the safety basis in 2023.

- In its third year of operations, the utilization of the Transuranic Waste Facility reached about 40 percent of capacity. Facility personnel completed replacement of the seismic switches and continue longstanding efforts to upgrade the fire suppression system to safety significant, convert the dry pipe system from nitrogen to air, and establish the waste characterization capabilities that were deferred from the original project.

- Triad took steps in support of the production mission including: implementing a new safety basis for the Plutonium Facility that addresses long-standing conditions of approval and helps consolidate safety basis documents; strengthening plan of the day processes; reducing the backlog of criticality evaluations; and advancing the upgrade of the Radiological Laboratory Utility Office Building to a hazard category 3 nuclear facility.

- Triad personnel vented one of the three Flanged Tritium Waste Containers that have the potential for explosive headspace mixtures of oxygen and hydrogen isotopes that are stored at the Weapons Engineering Tritium Facility. They also received approval for three safety basis documents needed to support the venting and disposition of the four similar containers currently stored in a shed at Area G. They plan to execute these activities in spring 2020.

- At Area G, N3B executed 12 mobile loading shipments and restarted limited open container remediation capabilities. They also began a multi-year effort to upgrade the legacy safety basis after the EM Field Office mostly abandoned the new safety basis developed during the past 4 years using DOE-STD-3009-2014.