DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 8, 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 November 8, 2019

DNFSB Staff Activity: R.L. Jackson and Y. Li observed the Plutonium Facility Seismic Performance Reassessment workshop. This workshop covers the non-linear dynamic analysis.

Plutonium Facility–Operations: Last Wednesday, during chlorination activities, the lower-threshold room alarm for chlorine gas activated. The approximately 12 workers in the room promptly evacuated, reported the alarm to the operations center, noted the smell of chlorine, and awaited radiological control technician support. At the fact-finding, workers noted that the chlorine system recently passed a leak test and completed a run successfully. However, a portion of the system had been locked out for maintenance during that test and had not been retested after being returned to service. Facility personnel are doing a full inspection and test of the chlorine piping and it remains locked out at the source bottle until those results are satisfactory.

Transuranic Waste Management: On Thursday, the NNSA Field Office unconditionally approved Triad's evaluation of the safety of the situation regarding autocatalytic exothermic chemical reactions involving polysaccharides and nitric acid (see 10/18/2019 report). This is the first approved safety basis document at LANL that quantitatively analyzes the potential consequences associated with an energetic chemical reaction involving transuranic waste using an overall respirable release fraction of 0.07. The resident inspectors note that this approach might apply to other facilities that have the potential to generate or receive transuranic waste containing polysaccharides that have contacted nitric acid, such as the Chemistry and Metallurgy Research (CMR) Building, Radiological Laboratory Utility Office Building, Transuranic Waste Facility, and Area G.

Nuclear Criticality Safety: On Thursday, NNSA personnel out-briefed their assessment of Triad's implementation of their program improvement plan. They noted a number of positive developments including improved quality and output of evaluations, strengthened relationships with operations, good timeliness of annual reviews, and evaluation backlog reduction is progressing as scheduled. The four member team also identified three preliminary findings associated with: (1) scheduling program assessments to ensure all elements are covered at least once every three years; (2) incomplete functioning of the institutional Nuclear Criticality Safety Committee; and (3) lack of a plan/procedure to identify and evaluate inadvertent holdup of fissionable materials. Of note, Triad's recent management assessment identified the issues associated with the last two findings as opportunities for improvement (see 10/25/2019 report).

Flanged Tritium Waste Containers (FTWC): On Wednesday, Triad safety basis personnel submitted to the NNSA Field Office the third safety basis document supporting the project to vent and move FTWC containers stored at Area G. This addendum covers receipt and remediation of the FTWCs to the Weapons Engineering Tritium Facility. The current schedule estimates FTWC venting will occur in mid-March 2020.

CMR–Risk Reduction: Earlier this year, Triad hired a subcontractor to begin materials removal, primarily as low-level or non-radiological waste, from CMR to support future decontamination and demolition. The current scope of work is primarily focused in the unused Wings 2, 3, and 4, and attic areas of other wings. A second subcontractor is beginning work to perform bulk disconnects of electrical utilities in unused wings. The second phase of work, which should begin in the middle of next year will involve more invasive work including development of decontamination procedures, glovebox removal, hood removal, and limited scope removals of ventilation and piping.