

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 2, 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 August 2, 2019

Plutonium Facility–Nuclear Materials Stabilization: Plutonium Facility personnel recently completed their historical analysis and received approval for their recovery plan for the furnace involved in the recent thermal excursion (see 7/19/2019 report). The recovery plan specifies that personnel will take samples of the black residue for analysis, inspect the furnace crucible and glovebox filter, replace all of the gloves, and test the operability of the furnace. The historical analysis notes that an exothermic reaction is likely responsible for the unexpected 220 °C excursion that initiated at about 378 °C. The analysis notes that some of the legacy items present in the batch contained bismuth and zinc, and that it is likely that exothermic reactions between these metals and oxygen caused the excursion. Additional research is ongoing to identify similar items to be flagged for special processing. Safety basis personnel entered the new information process to evaluate this event and concluded that there was no potential inadequacy of the safety analysis as the event was bounded by existing analyses.

Plutonium Facility–Transuranic Waste Management: Waste Operations personnel are continuing to develop work control documents to allow flammable gas sampling and intrusive investigation of the drum with a corroded filter vent discovered in May (see 5/24/2019 report). The contents of this drum included gloves made of a chlorinated polymer. Historically, the Rocky Flats Plant experienced significant internal corrosion of drums where radiolysis of carbon tetrachloride resulted in internal container corrosion and filter plugging in some cases. At Rocky Flats, operators developed an apparatus to confirm flow through potentially corroded filters rather than relying on visual and auditory observation to determine operability.

Area G–Work Control: On Wednesday, a subcontractor performed work to remove the Lightning Protection System for Dome 229 that had not been released on the Plan of the Day. This work was intended to start on Dome 230 once the work package was approved and released. N3B personnel paused the work when they discovered it was occurring and held a Fact Finding Meeting to evaluate the breakdowns in the work control process including lack of a formal pre-job briefing, incomplete training for the subcontractor person in charge, work scheduling and release, and responsibility for subcontracted work. N3B Management is planning to perform an apparent cause analysis of this event. The Lightning Protection System does not have a credited safety function in the Area G safety basis and N3B engineering personnel and the subcontractor believe the Dome 229 system still provides adequate cones of coverage. As a precaution, facility personnel are implementing a fire watch while the system is evaluated and repaired. The system is being removed to support reskinning of the domes which were damaged by heavy snowfall (see 1/11/2019 report).

Chemistry and Metallurgy Research Building: Facility management approved a second extension for completion of a root cause analysis for the March level 1 non-compliance criticality safety infraction (see 3/15/2019 report). The analysis is now expected to be complete at the end of August.

Weapons Engineering Tritium Facility–Readiness: An eleven member contractor team completed their readiness assessment for resumption of pinch welder operations at the Weapons Engineering Tritium Facility. The team had one prestart finding related to the level of detail in the startup plan and one post-start finding related to analysis of hot work conditions. A Federal Readiness Assessment will follow.