

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 16, 2021

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 16, 2021

Transuranic Waste Management: On Thursday, Triad's causal investigation team out-briefed senior laboratory leadership and multiple leaders from NNSA Headquarters on the results of their assessment of the sparking event involving reactive titanium metal fines. The team identified two root causes: (1) the programmatic operations group responsible for the welding activity did not recognize that welding titanium in an inert glovebox could result in the generation of potentially pyrophoric fume condensates and (2) neither Triad waste management nor Central Characterization Project processes rejected the prohibited reactive titanium metal fines from the transuranic waste stream. The team expects to release its full report next week with additional details, including a comprehensive barrier analysis and an event and causal factors tree. In our opinion, the second root cause and the associated contributing causes presented by the team demonstrate flaws in the corrective actions taken to enhance the acceptable knowledge program following the 2014 radiological release event at the Waste Isolation Pilot Plant.

Area G: This week, N3B and Triad personnel completed two shipments of legacy transuranic waste from the RANT Shipping Facility to the Waste Isolation Pilot Plant. Given the ongoing investigation on the titanium sparking event and the need for corrective actions, the Carlsbad Field Office has allocated Area G with all near-term planned shipments from LANL.

Flanged Tritium Waste Containers (FTWC): Triad and N3B personnel continue to work on corrective actions from last fall's federal readiness assessment associated with activities to vent and disposition the FTWCs with potentially flammable headspace conditions that are stored in a shed at Area G (see 1/29/2021 report). They are currently working to submit required safety basis changes, develop a case to conduct the activity under the limited operational envelope at Area G, and receive necessary regulatory approvals from the State of New Mexico. Given recent EM Field Office review and approval cycle times and the fact that Triad personnel will need to conduct additional practice and demonstrate those activities for DOE personnel, it will be challenging for Triad to conduct this important risk reduction activity prior to the start of the monsoon season. The radioactive decay of tritium increases FTWC pressures meaning that the continued delays increase the likelihood of an unplanned release to the environment.

Transuranic Waste–Safety Basis: On Tuesday, the NNSA Field Office rejected the three evaluations of the safety of the situation (ESS) related to spent ion exchange resins in waste containers associated with the Plutonium Facility, Chemistry and Metallurgy Research building, and the Transuranic Waste Facility (see 2/5/2021 report). The field office's rejection noted that Triad's supporting calculation does not provide an adequate basis to justify the conclusion that a small volume of unrinsed resin should be allowable in waste containers because it would not create a potential over-pressurization hazard. The rejection also noted that the evaluations do not identify procedures that render resins non-reactive through rinsing or cementation as safety controls. For the ESS specific to the Transuranic Waste Facility, the field office also noted that there are no controls associated with safely moving a container out of the facility that is noncompliant with the resin requirements—which is currently a required safety basis action.