

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 25, 2022

MEMORANDUM FOR: Christopher J. Roscetti, Technical Director
FROM: D. Gutowski and J. Plaue, Resident Inspectors
SUBJECT: Los Alamos Activity Report for Week Ending March 25, 2022

DNFSB Staff Activity: Staff members F. Bamdad, P. Migliorini, and R. Oberreuter were onsite for a review of the safety basis addendum supporting the upcoming receipt of large shipments of heat source plutonium. They also held a meeting to discuss the technical basis behind a fire protection equivalency at the Radiological Laboratory Utility Office Building. Another staff team held a virtual meeting with site personnel to discuss decontamination and decommissioning activities at the Plutonium Facility and the Chemistry and Metallurgy Research building to support an upcoming staff review.

Transuranic Waste Management: Last Friday, personnel at the Waste Isolation Pilot Plant (WIPP) identified that a transuranic waste drum from Los Alamos had been emplaced in the repository without having received a flammable gas analysis. WIPP certification personnel at Los Alamos are required to perform this analysis to comply with shipping requirements. WIPP management paused receipts of drums from Los Alamos while they evaluate the event. Locally, Triad personnel have entered their new information process to evaluate the safety basis implications of having a drum without flammable gas analysis in the RANT Shipping Facility, the Transuranic Waste Facility, and the Transportation Safety Document.

Plutonium Facility–Nuclear Criticality Safety: This week, personnel in the pyrochemistry room implemented a pilot for a new glovebox combustible loading program. The new program limits the amount of fixed and transient combustibles within a glovebox to an amount that would limit a fire to less than 100 kilowatts. Triad analysts determined that a fire within a glovebox of less than 100 kilowatts would be of insufficient energy to activate nearby over-head fire sprinkler heads. This allows criticality analysts to limit the amount of flooding they must analyze when this combustible limit is implemented in a seismically qualified glovebox without any other viable sources of liquid-ingress. In order to implement this new control, operations personnel have developed operator aids posted at the glovebox location. The aids include photographs of the inside of the glovebox with the baseline level of allowed combustibles. During their morning inspections to release work, area controllers compare the as-found condition against the baseline. If conditions exceed the baseline, they declare a potential process deviation and work cannot be performed.

The pilot includes two gloveboxes and facility personnel will evaluate this approach in about a month. If found to be workable and effective, the resident inspectors note that a similar approach could be applied to control housekeeping and combustible loading issues in other gloveboxes such as those with increased hazards like heat-source plutonium. While improvements have been made in the past year, maintaining good glovebox housekeeping continues to need management attention. Notably, the combined waste accumulation in all approved staging locations often challenges the limit of 55 gallons for a single room.

Onsite Transportation: The NNSA Field Office unconditionally approved the revision to the technical safety requirements for onsite transportation allowing an increase in the amount of heat source plutonium in packages (see 2/11/2022 report).