

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 11, 2021

MEMORANDUM FOR: Christopher J. Roscetti, Technical Director
FROM: D. Gutowski, Resident Inspector
SUBJECT: Los Alamos Activity Report for Week Ending June 11, 2021

Plutonium Facility–Glovebox Safety: On Monday, a worker in a plutonium machining area discovered contamination on their personal protective equipment while performing a survey upon exiting the glovebox gloves. There was no skin contamination or evidence of an uptake. Further evaluation determined that the over-gloves used to protect from substantial sharps hazards had a breach in the internal Kevlar layer. The outer goatskin layer was visibly worn, but the breach was not obvious from an external inspection. This type of over-glove was introduced in the facility in 2018 and has so far been performing well for allowing dexterity while providing additional protection. Facility personnel plan to evaluate additional inspections and lifetime tracking of these gloves.

Following the glovebox glove breach and uptakes last June (see 8/7/2020, 6/12/2020 reports), Triad performed an investigation and implemented several corrective actions including new practices for exiting glovebox gloves to detect breaches earlier and reduce their impact to others in the room. These practices were initially implemented via a standing order and were later rolled into the training requirements for glovebox workers. The training does not currently address inspection expectations when working in over-gloves as in the above event. During recent observations of glovebox work in the Plutonium Facility, the Resident Inspector has not observed rigorous compliance with the current requirement for a visual inspection of glovebox gloves prior to removing one's hands on every glovebox glove exit. Compliance with the long-standing requirement to survey one's hands following removal from glovebox gloves remains strong, however compliance with the new timing expectation of said survey, prior to securing the gloves, is mixed.

Transuranic Waste Management: Last Wednesday, Triad issued the Corrective Action Plan for the energetic event during a waste drumout activity (see 3/5/2021, 5/14/2021 reports). All corrective actions are expected to be completed this year. Of note, the corrective actions include one to develop process reviews that will include the process operators, waste packaging personnel, and representatives from the WIPP Central Characterization Program. The reviews will identify process inputs and outputs to support development of operations-specific Chemical Compatibility Evaluations and accurate Acceptable Knowledge Reports. The reviews are also intended to ensure that Chemical Compatibility Evaluations account for comingled streams and will support Safety Basis personnel in developing a systematic approach to analyze and control potential incompatible material hazards.

Plutonium Facility–Criticality Safety: On Thursday, Triad nuclear criticality safety personnel issued a revised memo that provides a new basis for the conclusion that a criticality accident resulting from leakage of fissile solutions from aqueous chloride process areas to a non-safe geometry in the basement was not credible (see 1/15, 1/8/2021 reports). The new memo notes that due to non-seismically qualified gloveboxes and the potential for cracks to form in the floor, fissile solution could potentially leak into the basement. However, given the location of the boxes where a leak could occur and the pathways to an unfavorable geometry in the basement (e.g., a sump), the memo concludes that it would be incredible for the maximum possible volume of leaked solution to accumulate into a critical geometry.