

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 3, 2022

**MEMORANDUM FOR:** Christopher J. Roscetti, Technical Director  
**FROM:** A. Boussouf, D. Gutowski, and J. Plaue, Resident Inspectors  
**SUBJECT:** Los Alamos Activity Report for Week Ending June 3, 2022

**Plutonium Facility–Accident Investigation:** On Tuesday, the NNSA Cognizant Secretarial Officer for Safety signed out the report from the accident investigation associated with the January 7, 2022, radioactive material release and uptake event (see 4/22/2022 report). The report notes that subsequent bioassay monitoring of the exposed individuals revealed radiation doses that did not exceed the criteria for a formal Accident Investigation Board; however, NNSA personnel continued to review the event to obtain lessons learned and document them in an Incident Review Report. The report identified the overall direct cause as an incorrectly configured ventilation lineup that isolated the glovebox from ventilation and allowed radioactive material to leak from a degraded gasket on an unused sample port. The report provides 27 conclusions resulting in 9 judgements of need. Some of the weaknesses identified include: insufficient configuration management of gloveboxes; lack of protocols to ensure procedures reflect actual equipment configurations; overreliance on the skill of the worker; confusion on roles and responsibilities with respect to glovebox ownership; and inadequate control of hazards from glovebox appurtenances.

On the last point, the report notes that there is no systematic process in place to monitor appurtenances, many of which use gaskets that degrade and are often run to failure. These appurtenances constitute part of the physical confinement boundary provided by the glovebox safety system. Gloveboxes are required to maintain confinement even under loss of ventilation. In this event, the glovebox failed to perform its safety function. The resident inspectors note that since 2011, facility personnel have been monitoring and planning to address about 40 appurtenances with questionable seals, including 4 of the same design that failed in this event. Facility personnel are also monitoring flexible boots on another 8 gloveboxes, including one that recently developed a hole. In our opinion, the tendency to consider these safety significant confinement boundaries as operable despite components with questionable integrity creates a mindset that impedes timely permanent fixes.

**Transuranic Waste Management:** On Thursday, the NNSA Field Office noted its concurrence with Triad's impact assessment and proposed plan for updating the safety basis for the Plutonium Facility to include DOE Standard 5506-2021, *Preparation of Safety Basis Documents for Transuranic (TRU) Waste Facilities*. Triad plans to incorporate implementation of Standard 5506-2021 into the project execution plan for the larger effort to upgrade the Plutonium Facility safety basis to a DOE Standard 3009-2021 compliant product. The field office previously concurred on plans for the Transuranic Waste Facility and the RANT Shipping Facility (see 5/6/2022 report).

**Area G:** On Thursday, the EM Field Office unconditionally approved the evaluation of the safety of the situation (ESS) for the potential inadequacy of the safety analysis related to hydrogen accumulation in closed plastic transuranic waste containers with lids (see 3/18/2022 report). The ESS contains one compensatory measure, which prevents opening any of these types of containers with potential hydrogen accumulation. This will replace the immediate operational restriction that prohibited any transuranic waste container made of plastic or with a plastic lid from being included in a waste processing plan.