

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 17, 2021

**MEMORANDUM FOR:** Christopher J. Roscetti, Technical Director  
**FROM:** D. Gutowski, Resident Inspector  
**SUBJECT:** Los Alamos Activity Report for Week Ending September 17, 2021

**Plutonium Facility–Criticality Safety:** On Monday, a Plutonium Facility worker was reviewing a database to determine options for a future nuclear material movement. They noted that the recorded mass of material in a glovebox appeared higher than the posted criticality safety limit and reported the concern. Facility and criticality safety personnel responded and found that the amount of nuclear material in the glovebox exceeded the limit on the criticality safety posting. Criticality safety personnel determined the overmass was bounded by the analysis in the criticality safety evaluation and the condition was currently safe and stable. The glovebox has been posted out of service until the condition is resolved. Further review of the event determined that the workers who moved the material into the glovebox did not fully understand the language on the criticality safety posting. The posting was updated last year and the limits on material type masses included the new logical connector “with” instead of the more routinely encountered “and” or “or.” The term “with” is not yet formally defined in the criticality safety command media for Technical Area 55. The posting does include a table of example masses for material type combinations to help explain the intent of the new language. Triad personnel are evaluating the best language to define this type of mass limit which adds value to several operations that inherently create a change in material form, but is not yet trained on or widely understood. This event also showed the potential for error due to the tremendous number of material moves being performed. Congestion in many process rooms has reached the point where it often takes several moves to get other items out of the way to support movement of a part while complying with mass limits in each location.

**Safety Basis:** On Thursday, the NNSA Field Office transmitted a letter to Triad directing they provide schedules and implementation plans for implementing the newly revised DOE-STD-5506-2021, *Preparation of Safety Basis Documents for Transuranic Waste Facilities*. For the Plutonium Facility, they requested implementation be coordinated with the current upgrade of the safety basis to DOE-STD-3009-2014. For the other nuclear facilities, they requested recommendations as to whether to implement DOE-STD-5506-2021 promptly or to defer to when the safety bases for those facilities are upgraded to DOE-STD-3009-2014.

**Emergency Management:** On Wednesday, Triad personnel performed the annual criticality evacuation drill for the Plutonium Facility. This was the first field performance of the drill since October 2019. There was a tabletop drill earlier this month and an e-mail response based ‘virtual drill’ in December 2019 (see 9/3/2021 report). The scenario for the field drill was a criticality event in a laboratory room with three casualties in the immediate area and four others receiving an elevated dose in an adjacent hallway.

**Weapons Engineering Tritium Facility (WETF):** On Wednesday, the NNSA Field Office unconditionally approved the safety basis addendum to support plutonium coupon studies at WETF (see 8/6/2021 report).