

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 8, 2022

**MEMORANDUM FOR:** Christopher J. Roscetti, Technical Director  
**FROM:** D. Gutowski and J. Plaue, Resident Inspectors  
**SUBJECT:** Los Alamos Activity Report for Week Ending April 8, 2022

**Radiation Protection:** On Tuesday, Triad personnel briefed the NNSA Field Office leadership on efforts to manage worker radiation doses. The most recent DOE annual radiation exposure report shows Los Alamos leads all sites with the highest collective worker dose and an upward trend, consistent with an expanding mission. Triad explained that most of this dose comes from workers in the Plutonium Facility, particularly the groups that work with heat-source plutonium, support legacy material repackaging, manufacture new pits, conduct surveillance work on old pits, and support construction and maintenance. They further explained their dose management processes and various action levels. Triad sets their administrative control level at 2,000 mrem and their action level to perform a management review at 1,000 mrem. These values are considerably higher than other sites. For example, the Savannah River Site and the Lawrence Livermore National Laboratory both perform plutonium work and use 500 mrem as their administrative control level. Triad justified these higher levels based on historical information for the type of work performed in the Plutonium Facility. They further asserted that their As Low As Reasonably Achievable program was effective and compliant. Notably, Triad discussed additional reviews of established operations, since most dose review processes focus on operations that are new or modified.

**Plutonium Facility– Infrastructure:** Last Friday, the NNSA Field Office approved the third revision of the safety design strategy for the Los Alamos Plutonium Pit Production Project. This revision separates out activities into those needed to achieve a base capability to produce 30 pits per year and those needed to achieve that rate reliably. It also increases the material-at-risk for the solvent extraction process. The approved safety design strategy continues to indicate planned upgrades to achieve a safety class active confinement ventilation system contrary to NNSA’s recent response to the Board (see 4/1/2022 report).

On Monday, Triad personnel conducted a fact-finding on last week’s ventilation system failure. Due to obsolescence, there are no working spare actuators on hand. Of the two damper actuators that failed, facility personnel restored one through manual stroking and replaced the other through cannibalization of damaged spares and inactive actuators installed in the facility. System engineering personnel believe they can maintain functionality of the damper actuators through continued scavenging of unused or damaged components until replacements are installed. A new model of actuator will be installed as soon as possible and was already undergoing testing and commercial grade dedication at the time of the failures.

**Area G:** Last Wednesday, N3B management declared a nuclear criticality safety infraction after personnel conducting an annual review determined a waste container was non-compliant with spacing requirements. Their criticality analysts determined the configuration was safe and would be allowed under an approved evaluation that is not yet implemented. Because containers involved have uncertain potential for an energetic chemical reaction, N3B management conservatively decided to leave the configuration in-place and accelerate implementation of the new evaluation. N3B management also requested additional review to determine why the existing limit did not get incorporated into the applicable procedure and posting.