

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 3, 2021

MEMORANDUM FOR: Christopher J. Roscetti, Technical Director
FROM: D. Gutowski, Resident Inspector
SUBJECT: Los Alamos Activity Report for Week Ending December 3, 2021

DNFSB Staff Activity: On Tuesday, a staff team held a remote interaction with Triad and NNSA Field Office personnel to discuss the staff's observations from its review of the ongoing upgrade to the Plutonium Facility leak path factor methodology (see 10/1/2021 report).

Plutonium Facility–Safety Basis: On Tuesday, Triad submitted to the NNSA Field Office for approval the safety basis addendum supporting receipt of large shipments of heat source plutonium (see 11/26/2021 report). The addendum would allow an increase to material-at-risk limits as this activity will exceed the current first floor and glovebox limits until repackaged in credited containers. The mitigated public dose due to the bounding post-seismic fire accident is estimated to be a range from 83 to 378 rem because there is substantial uncertainty regarding the leak path factor that can be appropriately applied to the scenario. The increased doses are applicable during the time when the new material is not in credited containers. As this exceeds the DOE evaluation guideline of 25 rem to the public, Triad is requesting that NNSA accept the risk involved with performing this mission. The addendum includes an attachment outlining how Triad addressed the evaluation criteria from DOE-STD-3009-2014, *Preparation of Nonreactor Nuclear Facility Documented Safety Analysis*, for existing facilities with greater than 25 rem mitigated doses. This includes a discussion of potential controls and why they were unable to be used and credited to further reduce mitigated dose. NNSA has established a headquarters and field office safety basis review team to evaluate the submittal.

Last week, the NNSA Field Office unconditionally approved the revision to the Plutonium Facility safety basis that includes reanalysis of the post-seismic fire accident and downgrade of the seismic power shutoff system, which has known vulnerabilities in meeting the requirements for a credited safety class system (see 10/8/2021 report). The approval letter noted that Triad should evaluate known upcoming changes to the safety basis prior to implementation and if a future change would require re-implementing the seismic power shutoff system as a credited control, they should consider retaining it as a credited system. It is not currently proposed as a control for the heat source plutonium addendum described above.

Area G–Safety Basis: Last week, the Environmental Management Field Office transmitted to N3B a letter directing they revise the safety basis strategy for developing a modern Area G safety basis to incorporate DOE comments on the previous revision (see 3/19, 5/14/2021 reports).

Transuranic Waste Management: Triad personnel have completed their re-evaluations of the safety basis implications of transuranic waste containers with nitric acid and polysaccharides at the Plutonium Facility, the Transuranic Waste Facility, the Chemistry and Metallurgy Research Building (CMR), and the RANT Shipping Facility (see 11/12/2021 report). They concluded that the only facility with a potential inadequacy in the safety analysis is the RANT shipping facility as it can receive waste from locations without existing Specific Administrative Controls prohibiting such waste as TA-55 and CMR do. Triad is establishing operational restrictions on nitric/polysaccharide waste at RANT and concluded that the potential inadequacy in the safety analysis constitutes a positive unreviewed safety question.