

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 8, 2021

**MEMORANDUM FOR:** Christopher J. Roscetti, Technical Director  
**FROM:** J.W. Plaue and D. Gutowski, Resident Inspectors  
**SUBJECT:** Los Alamos Activity Report for Week Ending January 8, 2021

**Area G–Safety Basis:** On Thursday, N3B management declared three additional potential inadequacies of the safety analysis (PISA) after further investigating concerns identified by its robust extent of condition review on fire related accidents (see 12/4/2020 report). They plan to finalize compensatory measures by next Monday. N3B management also declared two additional PISAs late last month after the EM Field Office rejected a September 2020 request to extend two safety basis documents for other longstanding PISAs. N3B suspended the affected operations when these two documents expired in November 2020. This week, N3B safety basis personnel commenced the second phase of the extent of condition review on the existing Area G safety basis.

These five declarations bring the total number of PISAs that originated in calendar year 2020 against the Area G safety basis to 17. While the PISAs indicate a healthy scrutiny of the safety basis, N3B and EM have struggled to efficiently develop, approve, and implement the required safety basis documents to ensure safety and support the important risk reduction mission at Area G. For example, N3B declared a PISA in January 2020 regarding the use of a spatula-like tool that occluded drum vents during headspace gas sampling (see 1/31/2020 report). This PISA remains without an approved safety basis due to issues with the initial submittal (see 9/11/2020 report) and protracted approval cycles within EM (Field Office and Headquarters). Flammable gas sampling operations remain paused eliminating this specific concern, but the pause also hinders N3B's ability to ensure that waste containers can be certified for permanent disposal. N3B and EM management are starting various initiatives to improve the situation.

**Plutonium Facility–Criticality Safety:** Last month, Triad nuclear criticality safety personnel issued a memo regarding the credibility of fissionable solutions leaking from the aqueous chloride processing room on the first floor into the basement during normal operations and following a seismic event. This evaluation was a corrective action from an event in November 2018 where an overflowing restroom sink led to water ingress into the facility's basement. This leak was similar to an earlier incident (see 3/16/2018 report). The concern is that there are no criticality safety controls in the basement for large volume geometries, including structural aspects (sumps) or transient items (voluminous equipment). The memo concludes that fissionable solutions cannot credibly enter the basement, since the solutions are contained in gloveboxes during normal operations and the building remains "intact" following a seismic event. Criticality safety personnel plan a future evaluation of leaks from the aqueous nitrate processing areas. Those areas are not currently in operation, but pose challenges of larger fissionable liquid volumes and tanks external to gloveboxes. Facility management is currently evaluating the bases for supporting the conclusion that there could be no leakage through the floor and examining the process to develop the memo.

**Weapons Engineering Tritium Facility:** On December 22, 2020, Triad management transmitted to the NNSA Field Office for approval the ESS concerning the oxygen monitoring system setpoint (see 11/20/2020 report). The ESS notes that facility personnel have adjusted the oxygen setpoint to 2.6 percent to ensure consistency with the current applicable National Fire Protection Association standard.