

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 17, 2023

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** A. Boussouf and D. Gutowski, Resident Inspectors  
**SUBJECT:** Los Alamos Activity Report for the Week Ending March 17, 2023

**Plutonium Facility–Infrastructure:** On Monday night, the cool down spray for a HEPA filter housing actuated. The operations center reported receiving a signal from a high temperature detector in the housing at the time of the cooldown spray system actuation. The Los Alamos Fire Department (LAFD) received notification via a water flow alarm. LAFD responded, cleared the basement, and found no evidence of a fire. LAFD reported four feet of water in the first stage of the housing, with no evidence of water leaking from under the access doors. Water eventually spread across the entire housing, settling to approximately 1.5 feet deep (estimated 4,700 gallons of water). Additionally, a substantial area of the basement was flooded with a few hundred gallons of water from overflow of the retard chamber on the fire riser supplying the housing. Initial attempts to isolate the release were delayed due to issues identifying local isolation valves and poor seating of a valve at the riser. The release was eventually stopped by closing the outdoor post indicator valve supplying the plenum cool down spray system. The cause of this system activation is still under investigation.

Basement floor water sampling revealed no contamination and cleanup is underway. Recovery efforts will include water sampling, draining, and processing through the Radioactive Liquid Waste Treatment Facility, and finally replacement and testing of new HEPA filters. The recovery timeline for this incident is expected to be on the order of weeks.

There was a similar inadvertent actuation of the deluge system protecting the PF-400 ventilation system in 2019 (see 6/14/2019 report). In 2021, the NNSA Field Office approved an equivalency to disconnect this system based on the results of a computational fluid dynamics simulation which is intended to demonstrate that the dilution of air during a fire is sufficient to keep filter temperatures below requirements in lieu of water for cooling (see 11/5/2021 report). Triad is considering requesting a similar equivalency to disconnect these systems for the Plutonium Facility (see Board letter 12/6/2022).

**N3B–Area G Stop Work:** Last Friday evening, following questions from the Environmental Management Field Office, N3B personnel paused work on the recently resumed excavation of Corrugated Metal Pipes (see 3/10/2023 report). On Saturday morning, N3B senior management elevated the pause to a stop work. The reason they stopped work was to verify compliance of the excavation with all applicable engineering standards and Occupational Safety and Health Administration requirements invoked by 10 CFR 851, *Worker Safety and Health Program*. There is currently no entry allowed into the excavation area.

**Plutonium Facility–Readiness:** Last week, a contractor team commenced the readiness assessment for restart of the Aqueous Nitrate Process at the Plutonium Facility. This is the last major process that has not resumed operations following the 2013 Director’s Pause. A limited operation of the cement fixation process, which is one of the aqueous nitrate operations, did take place in 2018 (see 9/14/2018 report). The above flooding event has impacted the ability for personnel to perform cold demonstrations for the assessment team and the readiness review is being extended to allow for review of the full suite of activities. Demonstrations are tentatively rescheduled for April 2023.