

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 4, 2019

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 4, 2019

Inclement Weather: The laboratory remained closed for two additional days following the holiday closure due to heavy snowfall.

Weapons Engineering Tritium Facility–Readiness: Last month, Triad transmitted their second quarter fiscal year (FY) 2019 Startup Notification Report to the NNSA Field Office. The new report changes the recommendation for the level of readiness review for the movement and venting of the Flanged Tritium Waste Containers (FTWC) with potentially explosive headspaces. The predecessor contractor had previously proposed a contractor readiness review for this activity. Triad’s new report withdraws the recommendation for a formal readiness assessment and states that a safety basis Implementation Verification Review and management self-assessment are sufficient. The stated basis for this change is an assertion that ignition of the potentially flammable oxygen and hydrogen isotope mixtures within the FTWCs is not credible during the venting operation. However, we note that the recently approved safety basis addendum (see 11/30/2018 report) includes credited controls to prevent a FTWC from tipping as it states a complete tip cannot be excluded as an energy source for ignition. The startup report also included the recommendation for a federal readiness assessment for the startup of the Pinch Welder (see 12/14/2018 report).

Plutonium Facility–Infrastructure: On December 20, 2018, Triad management transmitted the annual revision of the TA-55 Project Execution Strategy (PES) to the NNSA Field Office for information. The predecessor laboratory contractor originally developed the PES in August 2011 as deliverable 5.4.5 in support of the Board’s Recommendation 2009-2. The PES describes the strategy, cost, scope, schedule, and identified funding sources for the upgrades the contractor has identified as necessary to ensure that the mitigated consequences from a seismically-induced accident at the facility will no longer challenge the DOE Evaluation Guideline of 25 rem. The PES revision notes the tangible progress that has been achieved since 2011, highlights recommended scope for this fiscal year, and sets out-year goals.

Some of the proposed scope for this FY continues efforts started last year (see 1/5/2018 report), including completion of the following: installation of the generators and transfer equipment for the electric firewater pumps; designs to remedy seismic interaction issues with the fire suppression system; and continued development of fire hazard evaluations and seismic analyses for gloveboxes. While the PES has resulted in many infrastructure improvements, some upgrades to key safety systems have experienced delays due to unexpected engineering challenges, funding perturbations, and reprioritizations for emergent scope as the facility seismic analyses progressed. For example, the current schedule estimates show slippages compared to the baseline projections as follows:

- 11 years for the upgrade of the fire suppression system to seismic performance category (PC)-3, now estimated for completion in FY-24
- 6 years to complete modifications to ensure laboratory walls provide a 2-hour fire barrier, now estimated for completion in FY-21
- 5 years to achieve a PC-3 active confinement ventilation capability and replace the fire alarm system, now both estimated for completion in FY-25
- 4 years to separate the non-seismically qualified buildings from the firewater loop, now estimated for completion in FY-26