

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 9, 2026

TO: Technical Director
FROM: Nevada National Security Sites (NNSS) Cognizant Engineer
SUBJECT: NNSS Report for December 2025

DNFSB Staff Activity: On December 3, 2025, a DNFSB staff team discussed documents related to fire protection at the Device Assembly Facility (DAF) in a teleconference with Mission Support and Test Services, LLC (MSTS) and Nevada Field Office (NFO) personnel. The staff team discussed the Department of Energy (DOE) Operating Experience OE-3-2025, *Use of Cast Iron Fittings in Credited Fire Protection Systems*, and the site's approach to address cast iron fittings that might be present in the credited DAF fire suppression system, either installed during original construction or introduced during lead-in replacement activities. The operating experience cites a DNFSB letter dated April 9, 2024, that notes cast iron fittings generally have poor seismic performance and their failure can result in an impaired fire suppression system after an earthquake.

Safety Design Strategy (SDS) for Principal Underground Laboratory for Subcritical Experimentation (PULSE) New Access Project (PNAP): The PNAP is a major modification project for the design and construction of a new safety significant (SS) cage hoist to support the National Nuclear Security Administration (NNSA) increased operational tempo for subcritical experiments (SCE) at PULSE (see NNSS Monthly Report for January 2025). The new hoist and the existing U1H hoist would serve as two redundant credited safety systems needed to support NNSA's programmatic needs. On October 14, 2025, NFO issued a safety review letter that approved the SDS. The new hoist would be designed to meet seismic design criteria-2 requirements following DOE Standard 1020-2016, *Natural Phenomena Hazards Analysis and Design Criteria for DOE Facilities*. The SDS identified a new specific administrative control that limits the total time an SCE package is in the shaft. This control would reduce the risk of a high explosive violent reaction during SCE movement in the shaft. The SDS also identified a new SS lightning protection system to reduce the probability of an SCE being struck by lightning above ground. NFO is currently reviewing the conceptual safety design report submitted by MSTS to support the upcoming critical decision-1 milestone planned in March 2026.

Technical Safety Requirements (TSR) Revision for Experiment Plans at National Criticality Experiment Research Center (NCERC): The design and operations of the three critical assembly machines at NCERC, including the requirements for its safe shutdown, are based on the requirements and guidance in American National Standards Institute (ANSI)/American Nuclear Society (ANS) – 1, *Conduct of Critical Experiments*, and for Godiva only, ANSI/ANS-14.1, *Operation of Fast Pulse Reactors*. During a review of an experiment plan, NFO raised a concern that the experiment may deviate from the safety shutdown margin described in the ANSI/ANS standards. Such a deviation from ANSI/ANS-1 and ANSI/ANS-14.1 was not allowed at the time by the TSRs. NFO also noted the need to establish a formal process to document, evaluate, and approve any experiment plan that deviates from the ANSI/ANS standards. On November 5, 2025, NFO approved a safety basis revision to update the TSR language to require NFO approval for experiment plans that deviate from ANSI/ANS standards. In December 2025, Los Alamos National Laboratory and an industry stakeholder performed experiments to achieve zero power criticality on a critical assembly machine after receiving NFO approval on the experimental plan, per the updated TSRs.