

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 6, 2026

TO: Technical Director
FROM: Nevada National Security Site (NNSS) Cognizant Engineer
SUBJECT: NNSS Report for January 2026

DNFSB Staff Activity: The Board's staff did not conduct onsite activities in January.

Conceptual Safety Design Report (CSDR) for Principal Underground Laboratory for Subcritical Experimentation (PULSE) New Access Project (PNAP): On December 29, 2025, the Nevada Field Office (NFO) approved the PNAP CSDR with two conditions of approval and three issues for the next stage in design. One of the issues identified requires that all forms of radioactive material planned for use at PULSE be fully considered in the dose consequence analysis to establish the appropriate safety control strategy for each design basis accident. One of the conditions of approval notes that while explosion accident scenarios caused by mechanical and electrical insults during subcritical experiment (SCE) operations were evaluated in the hazard analysis, thermal insults were not. NFO concluded that the preliminary documented safety analysis (PDSA) must evaluate thermal insults as potential initiators for these scenarios. Of note, the Board expressed concerns in its December 19, 2018, and July 25, 2024, letters regarding the adequacy of controls to protect against thermal and electrical insults to an SCE that could result in a high-explosive violent reaction at PULSE, and the need to procure and utilize a new device shipping container to protect against those insults.

Safety Basis Update for Z-Pinch Experimental Underground System (ZEUS): On December 29, 2025, NFO approved the third and fourth revisions of the ZEUS PDSA and safety design strategy, respectively (see NNSS Monthly Report for November 2024). The updated PDSA addressed and closed the ten conditions of approval and fourteen issues identified in the previous revision. Mission Support and Test Services, LLC (MSTS), removed the hybrid fire extinguishing system from the project and revised the fire protection strategy following the National Nuclear Security Administration's (NNSA) approval of the exemption to fire protection requirements in DOE Order 420.1C Chg. 3, *Facility Safety* (see NNSS Monthly Report for October 2025). The Board expressed a concern in its October 17, 2025, letter that in the absence of a fire extinguishing system, workers may not be adequately protected from aerosolization and dispersion of radiological material caused by a fire-initiated explosion event. The Board's staff plans to review this PDSA to better understand the revised nuclear safety control strategy for fire hazards scenarios in the underground. MSTS also re-evaluated the collocated worker dose consequences at 100 meters following NNSA's approval of an exemption to certain seismic requirements from DOE Standard 1020-2016, *Natural Phenomena Hazards and Design Criteria for Facilities* in the revised PDSA. The Board agrees with this approach as it addresses a safety concern documented in the Board's December 1, 2021, letter regarding derivation of safety controls to protect the collocated worker during seismic accident scenarios (see NNSS Monthly Report for July 2024). NFO also noted that the PDSA incorporated resolutions to the potential inadequacies in the safety analyses for the vessel confinement system and use of high-energy initiators specific administrative control (see NNSS Monthly Reports for October 2024 and November 2024).

Second Quarter Start-Up Notification Report (SNR): On December 18, 2025, MSTS submitted the second-quarter SNR in accordance with DOE Order 425.1D, *Verification of Readiness to Start Up or Restart Nuclear Facilities* requirements. MSTS plans to conduct a contractor readiness assessment for the additional SCE assembly building pending installation of a modified ventilation system. NFO is currently reviewing the SNR for approval and will issue the Enhanced Staging Program federal readiness assessment report prior to the start-up of operations.