

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 7, 2025

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

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

Coordinate Measuring Machine (CMM) Contractor Readiness Assessment (CRA) at Device Assembly Facility (DAF): The CMM is a new safety significant instrument that will be used to take measurements on various configurations to support multiple projects occurring at DAF. The instrument consists of a granite slab with a movable bridge and probe assembly that is controlled using safety system software. The safety function of the CMM is to reduce the likelihood of impacts to high explosive configurations and resulting high explosive violent reactions by using the software to control and automate the measurement path. On January 29, 2025, Misson Support and Test Service, LLC (MSTS) and Lawrence Livermore National Laboratory (LLNL) completed the management self-assessment (MSA) for this project and issued its report. The MSA report stated that the CMM project and facility personnel adequately demonstrated an in-depth knowledge of CMM operations and safety bases requirement, and concluded the project can commence with readiness activities. From February 10 to 14, 2025, MSTS and LLNL performed the checklist CRA. The CRA team assessed demonstrations, which highlighted the operator's ability to perform CMM calibration, set-up, and operations, and evaluated software quality assurance of the safety control system. The CRA team issued its report and identified one pre-start finding, one deficiency, and two opportunities for improvement. The finding relates to the effectiveness of safety bases changes made for this project. The report concluded that CMM operations can proceed after resolution of the finding.

Principal Underground Laboratory for Subcritical Experimentation (PULSE) New Access Project (PNAP): On April 26, 2023, the NNSA Administrator approved Critical Decision – 0 for PNAP. In response to the approval, the NNSA Office of Infrastructure commissioned the NNSA Office of Analysis and Evaluation to develop an analysis of alternatives (AoA) study in accordance with requirements in DOE Order 413.3B, *Program and Project Management for the Acquisition of Capital Assets*. The AoA study evaluated eight alternatives and recommended NNSA initiate conceptual design for a new single shaft/hoist with the addition of a dual-level cage. The AoA study concluded that this alternative is a viable solution to support an increase in operational tempo for execution of subcritical experiments (SCEs) in new and expanding SCE testbeds, as well as to transport personnel, large experimental vessels, SCE packages, and equipment at PULSE. In response to the AoA recommendation, the NNSA Office of Infrastructure submitted a memorandum to the Administrator requesting approval to initiate conceptual design. On February 18, 2025, MSTS submitted the safety design strategy for this project to the Nevada Field Office (NFO) for approval.

Material-At-Risk (MAR) Increase at National Criticality Experiments Research Center (NCERC): On January 18, 2025, MSTS submitted change notices to the NCERC safety bases for NFO approval, which would permit an increase to the MAR limit for the Comet and Planet critical assembly machines. On February 24, 2025, NFO issued a safety evaluation report (SER) approving the changes notices with no conditions of approval. In the SER, NFO stated that the change in MAR slightly increased the maximally-exposed offsite individual doses for two bounding accident scenarios, but did not challenge the DOE Evaluation Guideline for consideration of safety class controls. NFO concluded that the existing controls are sufficient to confine and suppress the conservatively postulated releases and fires scenarios.