DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 4, 2025

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

DNFSB Staff Activity: The DNFSB staff did not conduct any onsite activities in May.

Partial Implementation of Device Assembly Facility (DAF) Safety Basis Revision of Enhanced Staging Program (ESP). The ESP is a new capability within a DAF building to consolidate and stage containers containing radiological materials in a safe and stable configuration on a multi-tiered rack system. The ESP also includes a remote monitoring system to collect data of the staged materials; a dedicated materials-handling building for handling, packaging, and unpackaging operations; and a new battery-operated, special-purpose, narrow-aisle forklift that will be used to stage containers on the racks. Between 2022 and 2024, the Nevada Field Office (NFO) approved three revisions to the DAF safety basis for the ESP project. The first two revisions included crediting the rack system to maintain structural integrity during and after a design-basis seismic event; prohibiting high-explosive materials staging; and removing applicable in-service inspections and limiting conditions for operations pertaining to high explosive staging (e.g., standoff distance and Faraday-like shielding). The third revision would allow interim staging of special nuclear material on the floor prior to start-up of staging operations on the rack system. On April 30, 2025, NFO approved partial implementation of the third revision. NFO stated partial implementation is necessary to support the National Nuclear Security Administration accelerated campaign for special nuclear material staging on the floor in the multi-tiered staging rack system building before full implementation of all prior revisions are complete. NFO further stated to support the accelerated campaign, implementation of the third revision is needed to bring the building to an operable status. On June 12, 2025, NFO issued an operational awareness activity report documenting NFO's shadow assessment of Mission Support and Test Services, LLC (MSTS) Implementation Verification Review (IVR). NFO noted that although the safety basis has not been revised to formally credit the rack design feature, the rack system appeared to have been constructed and tested adequately to the appropriate level of quality to support floor-staging activities. The IVR identified no findings or opportunities for improvement, and the DAF facility manager stated the revision was fully implemented to allow interim floor-staging. MSTS will perform a second IVR in July 2025 to implement the remaining revisions (e.g., fully implementing the racks design feature and associated controls, such as rack anchors and supports) prior to start of readiness activities planned later in the year.

Update for Potential Inadequacy in the Safety Analysis (PISA) for Seismic Evaluation at DAF. As discussed in the NNSS monthly report for June 2024, MSTS submitted the Evaluation of the Safety Situation for NFO approval to address the PISA based on results from the soil-structure interaction (SSI) analysis of the DAF building structures. From the analysis, MSTS concluded six DAF building structures do not meet Seismic Design Category 3 performance requirements. On June 26, 2025, MSTS submitted the recovery plan to NFO to address the seismic demand-to-capacity challenges and restore the seismic qualification of the impacted buildings. The recovery plan primarily includes analytical refinements in the SSI analysis. If the analytical refinements do not yield the desired results, the plan outlines additional contingency actions to reduce the seismic demand to established acceptance criteria for load capacity as defined in DOE Standard 1020-2016, *Natural Phenomena Hazards Analysis and Design Criteria for DOE Facilities*. MSTS will resubmit an updated recovery plan following completion of the analytical refinements to provide a more detailed scope and schedule for the actions described in the plan.