

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 6, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: Sonia G. Thangavelu, Cognizant Engineer
SUBJECT: Nevada National Security Site (NNSS) Report for November 2022

DNFSB Staff Activity: During the week of December 5, B. Sharpless and S. Thangavelu went on-site to perform a walk down of the U1a Complex and Device Assembly Facility (DAF), including the DAF firewater suppression tank. The staff team observed critical assembly operations at the National Criticality Experiments Research Center (NCERC) within the DAF and observed an emergency exercise at NCERC and the NNSS Emergency Operations Center. The staff team participated in discussions with the Nevada Field Office (NFO) and Mission Support and Test Services, LLC (MSTS) for status updates on various safety basis deliverables.

Enhanced Staging Project (ESP) at the DAF. As discussed in the NNSS Monthly Report for November 2022, NFO approved the change notice to the DAF Documented Safety Analysis (DSA) for the ESP and issued a Safety Evaluation Report (SER) addendum to the DSA. In December, MSTS personnel began phased construction and installation of bolts and support frames in a reconfigured staging building. These frames are support structures as part of the multi-tiered staging rack system, which will be used to stage various materials. The SER states staging of subcritical experiment packages and high explosive materials is prohibited in the reconfigured building according to the DAF DSA change notice.

Firewater Suppression Tank at the DAF. As discussed in the NNSS Monthly Report for October 2022, MSTS planned to apply epoxy to contain internal corrosion present at the baseplate area in the DAF firewater suppression tank as an alternative to tank replacement. In December, a MSTS subcontractor, Coating Specialists and Inspection Services, LLC performed a three-year inspection of the firewater tank as required by *NFPA 22: Standard for Water Tanks for Private Fire Protection*, and *NFPA 25: Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*. The inspection requires divers to enter the tank while it still contained water and identify areas where corrosion and pitting are present within the tank. As part of the inspection, the divers planned to clean the surfaces using wire brushes and apply the epoxy coating. However, during the inspection, the subcontractor identified use of wire brushes to clean tank surfaces could cause pinholes and result in leakage. Based on this assessment, the vendor stopped work and did not apply epoxy to the tank at the designated location. MSTS and NFO personnel are currently evaluating alternatives to repair the tank and develop contingency plans if the tank becomes inoperable. Due to the extent of corrosion, MSTS plans to accelerate the tank replacement project and determine the impact the current condition has on the existing safety analyses and controls for the firewater tank. A formal inspection report that includes recommendations for tank repairs is under development. This week, MSTS issued a timely order for DAF personnel to visually inspect the firewater tank for water leaks once a week and to verify the static water pressure at a riser located in the DAF is checked daily prior to start of nuclear and explosive operations.