

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 3, 2023

**TO:** Katherine R. Herrera, Acting Technical Director  
**FROM:** Sonia G. Thangavelu, Cognizant Engineer  
**SUBJECT:** Nevada National Security Site (NNSS) Report for January 2023

**DNFSB Staff Activity:** The staff conducted no onsite activities at NNSS during January.

**Condition Assessment Report for the Fire Suppression System (FSS) Water Tank at the Device Assembly Facility (DAF).** As discussed in the NNSS Monthly Report for December 2022, a Mission Support and Test Services, LLC (MSTS) subcontractor performed an inspection of the credited FSS water tank in accordance with National Fire Protection Association standards. In January 2023, the subcontractor issued a condition assessment report that documented its findings from the inspection. In the report, the subcontractor described the methodology used to evaluate and survey tank conditions. The subcontractor measured the extent of corrosion and rusting, tank coating quality, and steel thickness loss using standard test methods and underwater ultrasonic equipment. Based on the data collected, the report concluded the tank interior is in poor condition with severe corrosion in all locations, notably at the tank bottom. The subcontractor identified that the pitting present at the tank bottom could result in active leaks and water loss soon if left uncorrected. The report further identified a combination of osmotic blistering, weathering, and metal oxidation as contributing factors for advanced corrosion in the tank. As a result of the findings, the report presented twelve recommendations to consider for tank repair. Some of the recommendations include tank replacement, recoating the tank interior and exterior surfaces, providing alternate water supply from a temporary water storage tank, and installation of a mechanical water level indicator. MSTS and Nevada Field Office (NFO) personnel will use the condition assessment report to determine if the current tank conditions impact the existing safety analyses and controls for the FSS water tank.

**Positive Unreviewed Safety Question Determination (USQD) for the FSS Water Tank at the DAF.** As discussed in the NNSS Monthly Report for December 2022, DAF facility personnel issued and implemented a timely order to check firewater pressure at a facility fire riser and perform additional checks on the FSS water tank for water leaks. The safety analyses identify corrosion and pitting as a vulnerability for the FSS water tank to supply water to the DAF fire suppression system but conclude the tank is not likely to leak significantly during facility operations. Based on the condition assessment report findings, MSTS personnel entered the Potential Inadequacy in the Safety Analysis (PISA) process and determined the corrosion of the FSS water tank is worse than described in the safety basis. This resulted in a positive USQD. MSTS personnel are currently developing an Evaluation of the Safety of the Situation document for submittal to NFO for approval.

**Waste Shipments at Radioactive Waste Management Complex (RWMC).** In January, RWMC received and processed multiple shipments of low-level radioactive waste (LLW) packages. MSTS and Navarro Research and Engineering, Inc., personnel performed real time radiography on select LLW packages to meet fiscal year 2023 programmatic goals.