

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 4, 2022

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Sonia G. Thangavelu, Cognizant Engineer  
**SUBJECT:** Nevada National Security Site (NNSS) Report for October 2022

**DNFSB Staff Activity:** During the week of October 30, M. Dunlevy, D. Minnema, R. Oberreuter, A. Powers, E. Tetteh, and S. Thangavelu went on site to perform a walk down of the Device Assembly Facility (DAF) and observe material movement operations in a staging building. The staff team participated in discussions with the Nevada Field Office (NFO) and Mission Support and Test Services, LLC (MSTS) for a staff review of the DAF Documented Safety Analysis Rewrite Project. D. Grover, J. Heath, and P. Foster participated in the review virtually to discuss electrical and confinement safety systems and controls.

**Positive Unreviewed Safety Question Determination (USQD) of Muck Accumulation at U1a Complex.** In late August and early September, the state of Nevada experienced an active monsoon season that impacted operations at the U1a Complex. During a routine inspection, MSTS personnel discovered water and muck accumulation at the bottom of the U1h hoist sump. The U1h hoist is designed to carry and transport subcritical experiment (SCE) packages underground to perform diagnostic experiments. The safety bases allow a safety margin of a specific stop distance between the SCE and bottom of the sump to prevent contact if the hoist exceeds its specific administrative control speed limit. MSTS personnel performed an engineering evaluation of the muck accumulation and concluded the muck level exceeded the safety margin required to prevent contact with the SCE during operations. This resulted in a Potential Inadequacy of the Safety Analysis (PISA) and a positive USQD for the U1h hoist system. As a result, MSTS designated the U1h hoist system as inoperable while the U1a complex continues to remain in cold standby operations (as discussed in the NNSS Monthly Report for July 2022). MSTS personnel are currently preparing an Evaluation of the Safety of the Situation document and have already determined that the U1a Complex safety basis will need to be revised.

**Firewater Suppression Tank at the DAF.** As discussed in the NNSS Monthly Reports for May and June 2019, the DAF firewater suppression tank has extensive internal corrosion, which may potentially impact its credited safety function. In late September, MSTS awarded a contract to apply epoxy to contain the corrosion as an alternative to tank replacement. MSTS plans to reapply the epoxy to the tank every three years based on visual inspection and satisfy requirements stated in *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* to ensure the corrosion is contained. MSTS personnel are preparing to apply the epoxy to the tank in December 2022.

**Joint Actinide Shock Physics Experimental Research (JASPER) Facility Water Tank.** The defense in depth tank supplies water to JASPER's fire suppression system. MSTS personnel determined the tank requires maintenance due to delamination of the tank's internal coating. MSTS plans to drain the water and recoat the tank.