DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 2, 2023

TO: Christopher J. Roscetti, Technical Director
FROM: Sonia G. Thangavelu, Cognizant Engineer
SUBJECT: Nevada National Security Site (NNSS) Report for May 2023

DNFSB Staff Activity: During the week of May 2, C. Berg attended the 86th Department of Energy/National Nuclear Security Administration explosives safety committee meeting at the Nevada Support Facility. The Board's staff conducted no onsite activities in May.

Justification for Continued Operation (JCO) for Fire Suppression System (FSS) Water Tank at Device Assembly Facility (DAF). As discussed in the NNSS Monthly Report for February 2023, the Nevada Field Office (NFO) approved the evaluation of the safety of the situation (ESS) for the FSS water tank. The ESS identified three compensatory measures to maintain the safety function of the tank. Mission Support and Test Services, LLC (MSTS) and NFO personnel have not identified active water leaks since implementing the ESS.

In May, MSTS submitted the JCO to NFO for approval in accordance with Title 10 Code of Federal Regulations 830, *Nuclear Safety Management*, Subpart B, *Safety Basis Requirements*. The JCO provides a temporary safety basis for continuing operations at DAF and the National Criticality Experiments Research Center (NCERC) with the corroded tank. The JCO identified two general service tanks as an alternate water source to directly feed water to the DAF FSS. The JCO states the compensatory measures identified in the ESS will continue to be implemented for the DAF FSS water tank, as well as a new compensatory measure to verify the static water pressure of the general service tanks to be at least 138 inches water column (w.c.) on a weekly basis, and to restore the tank water level in 7 days if the water pressure falls below 138 inches w.c. The JCO further states the general service tanks will provide sufficient water flow to the DAF FSS according to an engineering calculation and enable the FSS to meet its safety function if the existing tank is declared inoperable or taken out of service. Additionally, MSTS modified the DAF and NCERC limiting condition of operations and surveillance requirements to include the new compensatory measure. MSTS plans to either repair the existing tank or procure a new safety class FSS water tank that meets seismic qualification requirements while the JCO is in effect. The JCO will terminate when the DAF FSS no longer relies on the general service tanks as an alternate water source. NFO is currently reviewing the JCO for approval.

Coordinate Measuring Machine (CMM) at DAF. As discussed in the NNSS Monthly Report for June 2022, NFO approved the change notice to the DAF safety basis. In the change notice, MSTS introduced the CMM, which is a computer-controlled device that allows precise inspection and measurement of a subcritical experiment package (i.e., radioactive material mated with high explosives) during assembly operations. The hazard analysis credits the CMM system to prevent a high explosive violent reaction during measurement operations by controlling the instrument's measurement path using software that has been through commercial-grade dedication. In September, MSTS will perform a contractor readiness assessment using the CMM for a subcritical experiment planned at the U1a Complex next fiscal year.