

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 1, 2023

**TO:** Timothy J. Dwyer, Acting Technical Director  
**FROM:** Sonia G. Thangavelu, Cognizant Engineer  
**SUBJECT:** Nevada National Security Site (NNSS) Report for August 2023

**DNFSB Staff Activity:** The Board staff conducted no onsite activities in August.

**Technical Safety Requirement Violation on Control of Operator Selector Switch (OSS) Keys at National Criticality Experiments Research Center (NCERC).** Only one critical assembly machine at NCERC is permitted to be operated at a time. A specific administrative control enforces this limitation by controlling access to the key required to operate the OSSs on the electronic consoles for the critical assembly machines. The same key can be used to operate each machine. The key is controlled by designating authorized personnel to access the key for use during machine operations and to store the key in a defined location once operations are completed. The control of keys ensure potential inadvertent operation of a critical assembly machine is minimized, the likelihood of accidents is reduced, and release of radiological material is prevented. In July, NCERC personnel procured new OSSs for potential use as replacements for the existing switches. The new switches came with new keys, and NCERC personnel discovered the new keys are identical to the currently controlled key and can be used to operate the existing OSSs at NCERC. On July 24, Mission Support and Test Services, LLC (MSTS) entered the potential inadequacy in the safety analysis (PISA) process, resulting in a positive unreviewed safety question determination. MSTS concluded that, because of the duplicate keys, the facility did not comply with the specific administrative control for control of key access and therefore paused all critical assembly machine operations. MSTS submitted an Evaluation Safety of the Situation (ESS) to the Nevada Field Office (NFO) for approval. The ESS identified operational restrictions, including removal of OSS keys from the facility and administrative lockout of the machine power supplies. The ESS identified additional corrective actions, including rekey of the OSSs and Godiva Burst switches and implementation of procedural changes related to unique key control. NFO approved the ESS and corrective actions. Los Alamos National Laboratory successfully implemented the corrective actions and resumed critical assembly machine operations on August 2.

**Annual Update to U1a Complex Safety Basis.** As discussed in the NNSS monthly report for November 2022, MSTS issued two ESSs to address two PISAs: muck accumulation in the U1h hoist sump and vessel confinement system (VCS) qualification issues. In June, NFO approved the two ESSs and the resolutions to the two PISAs as part of the annual update of the safety basis. MSTS revised the performance criteria for the U1h hoist control system and updated the surveillance requirement to limit the speed of the U1h hoist to 200 feet per minute for transport of subcritical experiment packages, to verify the available stopping distance at the bottom of the U1h hoist, and to test the U1h hoist 24 hours prior to operations. MSTS revised the VCS performance criteria and in-service inspection, stating the vessel must be constructed and tested to the design basis impulse according to the technical baseline information document approved by the national laboratory design authority that uses the boiler and pressure vessel code requirements as the basis; and to verify by letter from the national laboratory design authority that the VCS is qualified in accordance with the document.