

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 6, 2023

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

**DNFSB Staff Activity:** During the week of September 18, S. Thangavelu observed a safety stand down initiated by Mission Support and Test Services, LLC (MSTS) at the U1a Complex. MSTS held the safety stand down in response to a series of adverse events, including ground fall and rock bolting operations that resulted in personnel injuries several weeks prior. The Board's staff observed work control process training and pre-job briefs, and performed a walkdown of the Z-Pinch Experimental Underground System (ZEUS) testbed infrastructure project. As part of routine oversight, the Board's staff received updates from MSTS and the Nevada Field Office (NFO) leadership team on emerging topics and safety basis deliverables at NNSS defense facilities.

**Lockout/Tagout (LOTO) Violation at the U1a Complex.** The U1a Complex safety basis relies on appropriate implementation of LOTO as an administrative control for equipment to protect workers during operations per DOE Order 422.1, *Conduct of Operations*. In September, an electrician opened and locked out the wrong breaker prior to performing work. Personnel proceeded to perform absence of voltage checks and confirmed zero voltage, but other components within the electrical panel were potentially still energized. MSTS directed personnel to stop work pending an investigation and initiated the safety stand down at the U1a Complex. Personnel were not injured as a result of the event.

**Update to U1a Complex Fire Protection Strategy.** As discussed in the monthly report for July 2023, MSTS and the National Nuclear Security Administration (NNSA) chartered a committee of fire protection subject experts to conduct an analysis of alternatives for fire extinguishing systems at the U1a Complex. In August, the committee analyzed fourteen systems and presented the results to NNSA management, recommending a hybrid (water and inert gas) fire extinguishing system. Based on the recommendation, the NNSA federal project manager directed MSTS to immediately restart all work associated with design of the hybrid system for the U1a Complex Enhancements Project and the ZEUS testbed infrastructure project. The committee is drafting a report to document their results. MSTS plans to restart work in mid-October.

**Failed Surveillance of Fire Suppression System (FSS) at Device Assembly Facility (DAF).** A limiting condition of operation (LCO) for each building at DAF requires an operable fire suppression system. This is met by maintaining the static water pressure at 107 psig at a building riser and ensuring an open flow path exists from the credited firewater tank to the building sprinklers. In September, personnel entered the LCO to perform an annual FSS main drain surveillance test for a DAF building as required by National Fire Protection Association 25, *Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems*. During the test, personnel notified the facility manager of a potential blockage in the water line, resulting in pressure below acceptance criteria. The affected DAF building will remain in the LCO until FSS operability is restored.