

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 3, 2023

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer  
**SUBJECT:** Sandia National Laboratories (SNL) Report for February 2023

**Defense Nuclear Facilities Safety Board (Board) Interactions:** On February 13–16, 2023, the Vice Chair and members of the Board’s staff attended the WR 708 course (*Survey of Weapons Development and Technology*) at SNL. The Board’s cognizant engineer for SNL conducted routine nuclear safety oversight and met with National Technology and Engineering Solutions of Sandia, LLC (NTESS) and Sandia Field Office (SFO) managers and staff. The Vice Chair and cognizant engineer also met with senior NTESS and SFO leadership and walked down the Annular Core Research Reactor Facility (ACRRF), Auxiliary Hot Cell Facility (AHCF), Sandia Pulsed Reactor/Critical Experiment (SPR/CX) Facility, and the Manzano Storage Facilities.

**Transient Rod Withdrawal (TRW) Contractor Readiness Assessment (CRA) Corrective Action Plan (CAP):** On January 30, 2023, NTESS issued a CAP to address items identified in the TRW CRA report. The CRA identified one post-start finding related to software quality assurance (SQA). Specifically, “The Software Quality Program Owner (SQE) for TA-V was minimally involved in TRW Submode acceptance testing and software document development, which resulted in numerous quality issues in the ATP 8-1 documentation and compliance with the requirements of the TA-V Safety Software Quality Management Procedure.” NTESS determined this finding be a low significance issue since it was the result of process inefficiencies and editorial documentation issues that resulted in confusion and administrative rework of the procedure. NTESS created a condition report to address this post-start finding and identified no immediate compensatory actions. NTESS noted that closure of this corrective action is not required prior to the restart of TRW operations at ACRRF. SFO began the onsite portion of its review of TRW operations at the ACRRF on February 27, 2023.

**SPR/CX – Documented Safety Analysis (DSA) and Technical Safety Requirements (TSR) - Change Notice (CN) 5 Safety Evaluation Report (SER):** On February 21, 2023, SFO approved the proposed changes to the SPR/CX DSA and TSR safety basis documents in the 2022 Annual Update (CN-5), via an addendum to the SER. SFO performed an independent review of the proposed page changes for the DSA along with the supporting unreviewed safety question determinations for SPR/CX. SFO concluded the SPR/CX safety basis continues to provide reasonable assurance of adequate protection to the workers, the public, and the environment for the identified hazards and meets the requirements specified in 10 CFR 830, Subpart B, *Safety Basis Requirements*. SFO directed NTESS to implement the updated safety basis documents within 120 days.

**ACRRF Crane Fault:** On February 6, 2023, ACRRF staff members were removing a test apparatus from the Fuel Ringed External Cavity – Version II, in support of programmatic operations. During the lifting operation, which required a blocked transition to change the load from one rigging set to another, the five-ton crane would no longer lower the load. ACRRF staff stopped work, stabilized the load, notified SNL and SFO management, contacted SNL hoisting and rigging subject matter experts, and contacted SNL Facilities crane and electrical staff. After developing a recovery plan, ACRRF and SNL Facilities electrical staff inspected the crane and identified a failed relay in the five-ton crane control system. Facilities electrical staff replaced the relay and successfully completed crane operations.