DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 2, 2025

TO:	Acting Technical Director
FROM:	Sandia National Laboratories (SNL) Cognizant Engineer
SUBJECT:	SNL Report for April 2025

Defense Nuclear Facilities Safety Board (Board) Staff Interactions: On April 11, 2025, the Board's staff transmitted an agenda for a review of the Annular Core Research Reactor (ACRR) fuel health program. On April 22, 2025, the Board's staff completed a video teleconference with National Technology and Engineering Solutions of Sandia, LLC (NTESS) and Sandia Field Office (SFO) staff members to discuss the agenda and provide clarification of the lines of inquiry. The Board's staff will conduct the review at Sandia in June 2025.

Third Quarter Fiscal Year (FY) 2025 Startup Notification Report (SNR): On April 8, 2025, NTESS submitted the third-quarter FY 2025 SNR in accordance with SNL procedure GN470109, Implementing the Startup and Restart Process for Nuclear Facilities, Activities, and Operations. During this quarter, the NTESS Readiness Level Determination (RLD) team evaluated two activities for applicability of the GN470109 requirements: (1) Disassembly and Assembly of ACRR Fuel Elements (FEs) Phase 2 at the Auxiliary Hot Cell Facility (AHCF) and (2) Demonstrate Proficiency for Experiments with Hazard Category 3 (HC-3) Quantities of Fissionable Material. The RLD team determined that the first activity involves less than HC-3 quantities of material, which is the primary basis for exclusion from the readiness review process. Additionally, the process of moving, handling, and processing unirradiated fuel elements has been evaluated and determined to be a routine activity at the AHCF. The RLD team noted that the AHCF will not require a change or modification to accommodate the process of disassembly and assembly. In addition, existing procedures and processes will not require revisions to support the activity, and current staff have been trained to support the activity. For the second activity, the RLD reviewed a proficiency demonstration for the continued readiness of support for HC-3 experiment activities, which included a full tabletop review of the routine work activity for fissionable material experiments and the performance of a walk-through that covered containment, thermal shielding, commercial-grade dedication, and additional discussions. The ACRR operations team, experimenters, radiation protection, quality assurance, and SFO were present at the walk-through. The RLD team also noted that actual HC-3 experiment activities occurred as recently as August 2024. The RLD team determined that neither activity meets the entry conditions of the readiness level determination process. The SNR also noted that no other potential activities were identified for readiness review within the next twelve months. SFO approved the SNR on April 23, 2025.

Response to the Chief of Defense Nuclear Safety (CDNS) Correspondence Regarding the Annular Core Research Reactor (ACRR): On April 16, 2025, SFO management responded to correspondence from the CDNS dated January 17, 2025, that addressed safety concerns, compliance, and mission resilience for the ACRR (See <u>SNL Monthly Report for February 2025</u>). In the correspondence, SFO stated, "As this report is being shared with other organizations, we wanted to address factual inaccuracies and the resultant interpretations and conclusions within the report. With additional testing, some of the assumptions made may prove correct, but at this time, it is important to separate proven details from unsubstantiated inference until further testing and modeling can be completed." SFO attached a summary that included a list of statements SFO considered to be inaccurate interpretations and conclusions, along the SFO response provided for each statement. As noted above, the Board's staff is currently conducting a review of the ACRR Fuel Health Program and will evaluate the safety issues identified by CDNS, SFO, and NTESS.