

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 7, 2024

TO: R.T. Davis, Acting Technical Director
FROM: D.B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Sandia National Laboratories (SNL) Report for January 2025

Request to Exceed Annular Core Research Reactor (ACRR) Imposed Pulse Size

Restrictions for Annual Calibration: On January 16, 2025, the Sandia Field Office (SFO) did not agree with a request by National Technology and Engineering Solutions of Sandia, LLC (NTESS) to allow short-duration exceedance of the imposed pulse operation restrictions at the ACRR as outlined in the approval of the fuel cladding temperature Potential Inadequacy of the Safety Analysis (PISA) Evaluation of the Safety of the Situation (ESS) and Justification for Continued Operations (JCO). Following discussions with National Nuclear Security Administration (NNSA) stakeholder management and staff, SFO concluded that currently there is not a pressing requirement or need to test above the JCO/ESS limit. SFO instead recommended that the calibration be conducted within the current pulse limit, since tests anticipated in 2025 will occur within the current ESS/JCO power limitation. SFO also noted that once material studies and improved thermal modeling in support of the ESS/JCO are completed, or if an unforeseen mission need arises, this request can be revisited.

ACRR Safety Basis - 2024 Annual Update, Change Notice (CN) 18: On January 16, 2025, SFO approved the ACRR Facility Safety Basis 2024 Annual Update (CN 18) via a Safety Evaluation Report (SER) Addendum completed by SFO staff. The SER addendum addressed the page changes to the ACRR Documented Safety Analysis (DSA) and Technical Safety Requirements (TSRs) submitted by NTESS on May 15, 2024. SFO noted that these page changes constitute the Annular Core Research Reactor Facility (ACRRF) 2024 Annual Update (CN 18). To complete the SER, SFO staff evaluated the results of Unreviewed Safety Question Determinations approved between November 15, 2022, and November 14, 2023. In addition, the SFO staff reviewed Technical Area V (TA-V) condition reporting system (CRS) open action items entered during that same period, as well as any TA-V self-assessments that were performed. SFO staff also reviewed Potentially Inadequate Safety Analysis (PISA) Entry forms (PEFs) that were approved between November 15, 2022, and November 14, 2023. Based on this independent review, SFO concluded that the ACRR Safety Basis continues to provide reasonable assurance of adequate protection to the workers, the public, and the environment from the identified hazards associated with its operation, and meets the requirements specified in Title 10 of the Code of Federal Regulations, Part 830, Subpart B, *Safety Basis Requirements*. SFO approved the ACRR Safety Basis with no Conditions of Approval. SFO also required NTESS to perform an implementation verification review within 120 calendar days to confirm implementation of the approved ACRR Safety Basis (CN 18).

Approval of the Second Quarter Fiscal Year (FY) 2025 Startup Notification Report (SNR):

On January 16, 2025, SFO approved the second quarter FY 2025 SNR. In the SNR submittal, NTESS noted that during this quarter, there were no activities evaluated by the readiness level determination team for entry conditions into the readiness review process. Additionally, NTESS noted that there are no potential activities identified for readiness review within the next twelve months.