

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 7, 2024

**TO:** Timothy J. Dwyer, Technical Director  
**FROM:** Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer  
**SUBJECT:** Sandia National Laboratories (SNL) Report for May 2024

### **Annular Core Research Reactor Facility (ACRRF) Fuel Element Post-Irradiation Examination:**

On May 1, 2024, the Sandia Field Office (SFO) requested additional information after National Technology and Engineering Solutions of Sandia, LLC (NTESS) provided a briefing on April 23, 2024, on the ACRRF Post-Irradiation Examination and the External Advisory Board (EAB) recommendations. SFO requested more information regarding NTESS responses to the recommendations of the EAB, specifically:

- The EAB Technical Memorandum on March 4, 2024, requested to meet with NTESS management to discuss their recommendations within 30 days. SFO requested a summary of the discussions if they have occurred.
- One discussion point in the EAB Technical Memorandum on November 13, 2023, addressed adjudication and resolution of fuel element grading by different organizations. SFO requested further information to understand any differences in fuel element grading, if this has changed since 2023, and if there has been a Differing Profession Opinion on this concern.
- SFO requested a summary of how the EAB recommendations are or will be informing the Unreviewed Safety Question (USQ) process and the status of the USQ process determination related to ACRR fuel health, including how NTESS is classifying the thermal safety analysis question regarding maximum cladding temperature.

SFO requested a response from NTESS within 30 calendar days.

### **ACRRF Documented Safety Analysis (DSA) and Technical Safety Requirements (TSRs) 2024**

**Annual Update:** On May 15, 2024, NTESS submitted the ACRRF DSA and TSRs - Change Notice 18 (CN18) 2024 Annual Update to SFO for review and approval. NTESS noted that this submittal meets the requirement in 10 Title Code of Federal Regulations (CFR) § 830.202 to annually submit to the Department of Energy the updated ACRRF DSA and TSRs for approval. The submittal also included a summary of Unreviewed Safety Question Determinations and Potentially Inadequate Safety Analysis (PISA) Entry Forms (PEFs) associated with this Annual Update, as directed in 10 CFR § 830.203. The scope of the CN18 2024 Annual Update consists of the following:

- Changes to the DSA based on USQs approved between November 15, 2022, and November 14, 2023, as well as changes to the DSA based on any USQs deferred from CN17 2023, if applicable.
- Changes to the DSA based on PEFs approved between November 15, 2022, and November 14, 2023.
- Changes to the DSA based on Technical Area V (TA-V) Condition Reporting System open Action Items entered between November 15, 2022, and November 14, 2023, as well as Action Items addressing any TA-V or ACRRF-specific self-assessments that have been performed, if applicable.
- Disposition of ACRRF CN17 2023 Safety Basis Review Team Category 2 Comments, if applicable.

NTESS requested a formal response to this submission from SFO within 120 days to allow for effective management of the annual DSA review cycle.