

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 1, 2023

TO: Timothy J. Dwyer, Acting Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Sandia National Laboratories (SNL) Report for November 2023

Technical Area V (TA-V) Operations-Based Drill Summary Report: On November 7, 2023, National Technology and Engineering Solutions of Sandia, LLC (NTESS) issued a summary report for the operational drill conducted at TA-V on March 14, 2023. NTESS noted that the drill was designed to give participants the opportunity to demonstrate response strategies, actions, and processes, and to improve proficiency responding to a simulated emergency at TA-V. The drill scenario included an employee moving a contaminated filter with the crane in the Auxiliary Hot Cell Facility (AHCF). The filter dropped from the crane, fell out of its containment, and injured the employee. The area around the fallen filter had loose contamination. NTESS noted that the drill was successful in its primary objective: contaminated patient decontamination and transport. The emergency responders met 66 of 71 drill objectives with one objective not observed and four objectives not met. The NTESS drill report noted one noteworthy practice, two opportunities for improvement, four deficiencies, and no findings. NTESS is developing corrective actions in response to the results of this operations-based drill.

First Quarter Fiscal Year (FY) 2024 Startup Notification Report (SNR): On November 7, 2023, the National Nuclear Security Administration (NNSA) Sandia Field Office (SFO) approved the first quarter FY 2024 SNR submitted by NTESS on October 4, 2023. SFO agreed that one activity in the next twelve months, x-ray examination of irradiated Annular Core Research Reactor (ACRR) fuel at the AHCF, requires a work planning and control checklist review, which will also be observed by SFO staff. SFO requested to be informed when the checklist readiness review and x-ray activity are being performed at the AHCF and when the Transient Rod Withdrawal (TRW) operation is being performed at the ACRR so that federal oversight can be considered. NTESS previously completed TRW readiness activities.

ACRR Pool Water Resistivity and Pool Stratification: On November 8, 2023, SFO approved a request by NTESS to close the evaluation of the safety of the situation and an update on the justification for continued operation for the ACRR related to pool water resistivity and potential pool stratification (see SNL Monthly Reports for June 2023). SFO cited documents submitted by NTESS that sufficiently demonstrate that no significant stratification is occurring in the ACRR pool. Consequently, the compensatory measures to ensure sufficient pool water mixing to keep water in the bottom of the pool well-mixed are no longer required. In addition, SFO noted the receipt of the project charter for *ACRR Reactor Pool Corrosion Study*, which will be separately addressed by SFO at a later date.

ACRR Facility Annual Safety Basis Update Change Notice (CN) 17: On November 21, 2023, SFO responded to the NTESS submittal of the *Annular Core Research Reactor Facility (ACRRF) 2023 Documented Safety Analysis (DSA) and Technical Safety Requirements (TSRs) CN 17 Annual Update*, which NTESS submitted on May 10, 2023. Since the submission included an unusually large number of changes, SFO divided its review into two separate Safety Basis Review Teams (SBRT). The first SBRT will review the changes associated with pool release fractions for the ACRRF and related updated calculations and changes to the DSA and TSRs. The second SBRT will review the remainder of the annual update changes, as well as reviewing a sampling of the Unreviewed Safety Question Determinations (USQD). Due to the delay of the review of this submission, SFO stated that the next NTESS ACRRF Annual Update submission, CN 18, will not be expected to meet the annual submission date of May 2024. SFO requested that NTESS only submit an annual USQD summary with no changes to the DSA and TSRs in May 2024.