

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 4, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Sandia National Laboratories (SNL) Report for May 2021

Federal Readiness Assessment (FRA) for In-Service Fuel Cladding Inspections at the Annular Core Research Reactor Facility (ACRRF) Final Report: On May 6, 2021, the Sandia Field Office (SFO) transmitted the final report for the FRA for In-Service Fuel Cladding Inspection at the ACRR to National Technology and Engineering Solutions of Sandia, LLC (NTESS). The FRA assessed the equipment, personnel, safety features, operating procedures, safety and support systems, and the adequacy of the Management Self-Assessment (MSA), Contractor Readiness Assessment (CRA), and readiness preparations. The FRA team reviewed eight functional areas including: Conduct of Operations; Maintenance and Configuration Management; Criticality Safety; Feedback and Improvement; Quality Assurance; Radiation and Industrial Safety; Safety Basis; and SFO's oversight. The FRA report identified one pre-start finding and documented five observations regarding deficiencies, non-compliances, and opportunities for improvement that did not rise to the level of findings. The pre-start finding noted that the limit on the allowable number of fuel elements assembled in the reactor pool, but outside of the reactor core, has not been adequately flowed down into procedures. SFO requested NTESS provide a corrective action plan (CAP) within 30 days for approval by the SFO Startup Authorization Authority. SFO also requested that the CAP include the five observations for completeness, but not for approval.

Sandia Pulsed Reactor Facility (SPRF) Safety Basis Annual Update: On May 10, 2021, SFO approved the SPRF Safety Basis Annual Update Change Notice 3 (CN3). As part of its approval process, SFO performed an independent review of the proposed page changes for the Documented Safety Analysis (DSA) along with the supporting Unreviewed Safety Question Determinations for the 2020 Annual Update CN3. SFO identified no conditions of approval during the review. SFO also noted that no prior conditions of approval were required to be closed from the previous annual update. SFO included four comments to be addressed for the 2021 Annual Update CN4. SFO concluded that the SPRF Safety Basis continues to provide reasonable assurance of adequate protection to the workers, the public, and the environment from the identified hazards and meets the requirements specified in 10 CFR 830, Subpart B, *Safety Basis Requirements*. SFO directed NTESS to implement the SPRF Safety Basis 2020 Annual Update CN3 within 120 calendar days.

ACRRF DSA and Technical Safety Requirements (TSR) Comment Responses: On May 20, 2021, NTESS submitted responses to six SFO comments on the ACRRF DSA and TSR Annual Update CN14. The NTESS responses corrected typographical errors, clarified training manager responsibilities, revised/clarified conflicting text, updated the emergency management chapter, and addressed fuel cladding in-service inspection frequency requirements. NTESS noted that all six comments involve a problem or concern that affects the utility or validity of the safety basis documentation but do not require resolution prior to SFO approval of the safety basis submittal and can be resolved in the next annual update. SFO is evaluating the NTESS comment responses.

Emergency Response Tabletop Drill: On May 5, 2021, NTESS Emergency Management conducted a tabletop drill in preparation for the restart of experiments at ACRRF. The MSA, CRA, and FRA for this restart will require drills simulating event scenarios involving the experiments to be conducted by the facility and observed by the assessment teams as part of each readiness assessment.