

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 5, 2024

TO: Katherine R. Herrera, Acting Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Sandia National Laboratories (SNL) Report for December 2023

Fiscal Year 2023 (FY) 2023 Emergency Readiness Assurance Plan (ERAP): The Board's staff recently reviewed the FY 2023 ERAP for SNL. Department of Energy (DOE) Order 151.1D, *Comprehensive Emergency Management System*, identifies the requirement to create an ERAP. The ERAP is a documented annual report on the development, implementation, and maintenance of an Emergency Management Program. The ERAP is also a planning tool to identify and develop needed resources and improvements. The ERAP highlights significant changes in Emergency Management programs (e.g., planning basis, organizations, and exemptions) and compares actual achievements to goals, milestones, and objectives. The ERAP also includes SNL's Emergency Management Program activities in FY 2023 and the projected activities for FY 2024. In the submitted ERAP, National Technology and Engineering Solutions of Sandia, LLC (NTESS) noted upcoming challenges associated with moving to a new Emergency Operations Center in FY 2024, which could cause strain on the program as it adapts to new procedures needed to use the new space successfully. NTESS also noted concerns with Kirtland Air Force Base emergency response capabilities (e.g., incident command, rapid rescue, and low staffing).

Annular Core Research Reactor Facility (ACRRF) Fuel-Ringed External Cavity, Version II (FREC-II) - Fuel Element Extent of Condition Evaluation: ACRRF staff continue to evaluate the condition ACRRF and FREC-II fuel elements. During a recent fuel element inspection campaign, ACRRF staff checked 41 FREC-II fuel elements adjacent to the FREC cavity and 54 elements located on the periphery of FREC-II for free movement. In prior inspections, ACRRF staff noted two FREC-II fuel elements that appeared to be constrained. During the most recent evaluation, ACRRF staff noted one additional FREC-II fuel element was also constrained. ACRRF staff noted that the constrained elements are located at or near the corners where the aluminum spacers are fastened to the exterior of the FREC-II cavity. In mid-December, ACRRF staff successfully freed one of the constrained fuel elements. While the constrained fuel elements do not represent a safety concern, ACRRF staff are actively evaluating potential methods to free the remaining constrained elements.

Sandia Pulsed Reactor Facility Annual Safety Basis Update – Change Notice 6: On December 20, 2023, the Sandia Field Office (SFO) approved the *Sandia Pulsed Reactor Facility (SPRF) Documented Safety Analysis (DSA) and Technical Safety Requirements (TSRs) Change Notice (CN) 6 – 2023 Annual Update*, which NTESS submitted on November 2, 2023. The NTESS submittal included page changes to the SPRF DSA and TSRs and addressed associated Unreviewed Safety Question Determinations. SFO convened a safety basis review team (SBRT) to independently review the proposed changes to determine the adequacy of the SPRF Safety Basis. SFO provided SBRT comments to NTESS on November 9, 2023, and NTESS responded to these comments on November 30, 2023. Based on the results of SBRT review and resolution of the comments, SFO approved Change Notice 6 with no conditions of approval and no directed changes. SFO concluded that the SPRF 2023 Annual Safety Basis Update provides reasonable assurance of adequate protection to the workers, public, and the environment from the identified hazards associated with its operation and meets the requirements specified in Title 10, Code of Federal Regulations, Part 830, Subpart B, *Safety Basis Requirements*. SFO required NTESS to perform an Implementation Verification Review within 120 calendar days to confirm implementation of the approved 2023 Annual Update.