

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 6, 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 September 2023

Corrective Action Plan (CAP) for the Transient Rod Withdrawal (TRW) Federal Readiness

Assessment (FRA): On August 28, 2023, the National Nuclear Security Administration (NNSA) Sandia Field Office (SFO) approved the CAP for the TRW FRA with one addition, requiring a Commercial Grade Dedication procedure be provided to SFO. On April 13, 2023, the FRA Final Report was issued to Technical Area V (TA-V) for the TRW sub-mode pulse operations at the Annular Core Research Reactor Facility (ACRRF). (See SNL Monthly Report for April 2023). The FRA report identified two pre-start findings, six post-start findings, and eighteen observations. The two pre-start findings identified issues with the restart plan and quality assurance of software design documents. The post-start findings identified issues with configuration management, nuclear maintenance, communication with the line management authority, inadequate disposition of items identified in the management self-assessment and contractor readiness assessment, issues with software quality assurance procedures, plans, and oversight, and inadequate implementation of training requirements. The CAP addressed all pre-start and post-start findings identified during the FRA. The CAP also noted that TA-V staff will adjudicate the observations using TA-V's Condition Reporting and Corrective Action process. SFO required National Technology and Engineering Solutions of Sandia, LLC (NTESS) to close the pre-start findings prior to submitting a request to restart TRW sub-mode operations at the ACRRF.

Auxiliary Hot Cell Facility (AHCF) Safety Evaluation Report (SER) Addendum – 2023 Annual

Update: On September 19, 2023, SFO approved the AHCF Basis for Interim Operations (BIO) and technical safety requirements (TSRs) Change Notice 16 (CN 16) via an addendum to the AHCF SER. NTESS transmitted proposed page changes to the AHCF BIO and associated Unreviewed Safety Question Determinations/Screens on July 7, 2023, and September 5, 2023, respectively. NTESS made no changes to the TSRs. Based on the results of SFO's review along with the comment resolutions submitted by NTESS, SFO approved CN 16 with no Conditions of Approval and no directed changes. SFO also concluded that the AHCF Annual Update continues to provide reasonable assurance of adequate protection to the workers, the public, and the environment from the identified hazards associated with AHCF operation. SFO directed NTESS to perform an Implementation Verification Review to confirm implementation of the approved update within 120 days.

Independent Assessment of Safety Management at the ACRRF: On September 27, 2023, the Department of Energy (DOE) Office of Enterprise Assessments (EA) issued an *Independent Assessment of Safety Management at Sandia National Laboratories – New Mexico, Annular Core Research Reactor Facility*. The EA assessment focused on safety-significant structures, systems, and components (SSC) at the ACRRF and included a review of contractor safety management programs and Federal oversight provided by SFO. The EA assessment evaluated engineering design, configuration management, the cognizant system engineer program, safety system surveillance and testing, quality assurance, feedback and improvement, and Federal oversight. While noting four strengths and five weaknesses in the safety management program at the ACRRF, the EA assessment team identified one finding, six deficiencies, and three opportunities for improvement. The EA report noted that NTESS has established the essential safety system management programs necessary for managing and maintaining safety-significant SSCs at the ACRRF. In addition, the EA report noted that SFO is meeting the requirements of DOE Order 226.1B, *Implementation of Department of Energy Oversight Policy*, and has implemented an adequate safety system oversight program in accordance with NNSA Supplemental Directive 226.1C, *NNSA Site Governance*.