

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 2, 2018

TO: Steven A. Stokes, Technical Director
FROM: Douglas J. Brown, Cognizant Engineer
SUBJECT: Sandia National Laboratories Report for January 2018

Staff Activity at Sandia National Laboratories (SNL). On January 29, 2018, four Defense Nuclear Facilities Safety Board (Board) staff members started the week-long WR708 course, *Survey of Weapons Development and Technology*. On January 30–31, 2018, two members of the Board's staff attended the Warhead Measurement Campaign Nuclear Explosive Safety Study Kickoff and Training.

Sandia Pulse Reactor Facility (SPRF) – Safety Basis Documentation. On January 4, 2018, the Sandia Field Office (SFO) issued its Safety Evaluation Report Addendum for the *2017 Annual Update to the Sandia Pulse Reactor Facility Safety Analysis Report and Technical Safety Requirements*. The contractor's submittal provided documents to review for the closure of two previous Conditions of Approval (COA). SFO reviewed the resolution for the first COA, the calculation, *Downwind Dose Calculation to Support SPRFICX DSA Re-write*, SPRCX- CALC-2017-001, Rev 1, and identified no significant difference from the previous results. SFO closed this COA. SFO completed a review of the proposed resolution to the second COA, the National Technology and Engineering Solutions of Sandia Emergency Management Program Description, but remained concerned that this resolution did not fully address the COA. SFO left the second COA open with a requirement to provide documentation to close it with the next SPRF Safety Basis Annual Update submittal. SFO concluded that the 2017 Annual Update to the Sandia Pulse Reactor Facility Safety Analysis Report and Technical Safety Requirements meets the annual requirement for submittal of an updated documented safety analysis as specified in Title 10, Code of Federal Regulations, Part 830, Subpart B, *Safety Basis Requirements*.

Auxiliary Hot Cell Facility (AHCF) Campaign 18 Update. On January 18, 2018, SNL resumed programmatic operations after completing implementation of AHCF Basis for Interim Operations Change Notices 9.1 and 10 as discussed in the November 2017 monthly report.

Annular Core Research Reactor (ACRR) Annual Calibration. SNL personnel performed an annual plant protection system calibration in January to support programmatic operations. On January 22, 2018, operators identified a concern with the calibration procedure because a special calibration had previously been applied. The step directed operators to adjust the gain such that the special calibration would be removed. Operators stopped and discussed the situation with management. Operations proceeded in a conservative manner by completing the calibration procedure, performing a pulse operation, and re-completing the special calibration procedure.

ACRR – Reactor Fuel Modeling Update. As discussed in the September 2016 monthly report, SNL has completed its RAZORBACK software package to model the reactor fuel for thermodynamic and thermal-hydraulic parameters. SNL personnel completed a Functional Configuration Audit and a Physical Configuration Audit in late December 2017 to complete the baseline for the software. The audit identified no findings and concluded that the software is in conformance with NQA-1-2008/2009a, *Quality Assurance Requirements for Nuclear Facility Applications*, and the TA-V Safety Software Quality Management Procedure.