

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 5, 2018

**TO:** Steven A. Stokes, Technical Director  
**FROM:** Douglas J. Brown, Cognizant Engineer  
**SUBJECT:** Sandia National Laboratories Report for December 2017

**Staff Activity at Sandia National Laboratories (SNL).** There were no onsite Defense Nuclear Facilities Safety Board (Board) staff reviews or oversight visits in December.

**Annular Core Research Reactor (ACRR) Pulse Power Discrepancy Update.** On December 1, 2017, SNL personnel completed the revised calibration procedure on the pulse power channels and performed a test pulse. The divergence between channels was reduced; it is now calculated to be 3.7%. The channel divergence did not affect system operability since the readings are primarily utilized for experiment consistency and repeatability. An Operability Assessment established guidelines to determine when the channels are to be considered degraded or inoperable. SNL has lifted the programmatic pulse operations pause.

**Annular Core Research Reactor Facility (ACRRF) – Safety Basis Documentation.** On December 7, 2017, Sandia Field Office (SFO) issued their Safety Evaluation Report Addendum for the *Sandia Annular Core Research Reactor Facility Safety Basis 2017 Annual Update, (Change Notice 11)*. SFO concluded that the ACRRF Safety Basis 2017 Annual Update 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*. SFO also approved delaying implementation of the ACRRF 2016 Annual Update to coincide with the implementation of the 2017 Annual Update. No new conditions of approval were identified during the review. As discussed in the August 2017 monthly report, a Condition of Approval for the 2015 Annual Update (administrative controls for maximum  $^{239}\text{Pu}$  for experiments and total facility material-at-risk) was not addressed in the 2017 Annual Update but must be included and evaluated in the 2018 Annual Update.

**Sandia Pulse Reactor (SPR) Knowledge Preservation** – The Department of Energy's National Nuclear Security Administration (NNSA) requested knowledge preservation in a memo dated March 13, 2017, *Subject: Decision to Continue Storage of Sandia Pulse Reactor III Fuel Plates and Reactor*. The memo proposed four options related to the continued storage of the SPR III. A part of the option that was selected and approved by NNSA included SNL performing knowledge preservation by documenting and filming how to use and maintain the SPR III reactor for historical purposes. SNL recently received funding for this initiative and started the Knowledge Preservation Project.

**Technical Area V (TA-V) Groundwater Treatability Study** – A phased groundwater treatability study of in-situ bioremediation (ISB) was approved by the New Mexico Environment Department to evaluate the effectiveness of ISB as a potential technology to address trichloroethene in the groundwater. Since the groundwater in TA-V is not used for any purpose, an injection well was recently installed and the pilot test of the treatability study began in early November 2017. The first injection of microbes was completed at the end of November 2017. Periodic samples will be taken from the well to determine the effectiveness of this remediation process.