

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 1, 2016

**TO:** Steven A. Stokes, Technical Director  
**FROM:** John R. Mercier, Cognizant Engineer  
**SUBJECT:** Sandia National Laboratories Report for June 2016

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

**Annular Core Research Reactor (ACRR)—Plant Protection System (PPS).** On May 13, the ACRR staff determined that the PPS2 channel failed and on May 24, during acceptance testing of the replaced PPS2 detector the ACRR staff noticed that there was no output from the PPS1 channel. SNL Management decided to pause operations pending a causal analysis and identification of corrective actions prior to resuming programmatic operations. The causal analysis determined that the PPS2 channel failed due to normal life expectancy of the detector and that the PPS1 channel failed as a result of a connector coming loose during the work to replace the PPS2 detector. The causal analysis identified the root cause of connector coming loose may have been due to a lack of attention to detail in the work plan and/or in the work execution. Following implementation of corrective actions, the ACRR resumed programmatic operations on May 27.

**ACRR Transient Rod Failure.** On June 28, Transient Rod "C" broke during pulse operations. The lower aluminum section of the transient rod assembly separated at a joint where it connects to the follower section of the assembly. SNL promptly stopped programmatic operations. SNL initiated removal of the rod on June 29. A backup transient rod is on hand and will be evaluated to confirm equivalent performance before resuming programmatic operations.

**Fission Products in Reactor Pool Water.** The ACRR staff completed their investigation to identify the source of fission products at trace levels in the reactor pool water. They were able to rule out any fuel cladding failures but were not able to rule out fission of uranium contamination in the pool water. Based on a detailed review of ACRR experiment histories and on movement of nuclear materials between different water storage locations at Technical Area V during the past three decades, the ACRR staff were able to identify activities that could have introduced uranium contaminants into the ACRR pool.

**Sandia Pulse Reactor Facility (SPRF)—Fire Safety.** The National Nuclear Security Administration's Sandia Field Office is continuing to work with the Kirtland Air Force Base Fire and Security personnel to update the Memorandum of Understanding regarding fire and security response for the Sandia National Laboratories, New Mexico facilities. On June 29, the Kirtland Air Force Base Fire Chief and members of his staff, with members of the SNL Emergency Management Program staff, executed a familiarization walkdown of all defense nuclear facilities at Technical Area V.