

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 3, 2016

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

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

**Annular Core Research Reactor (ACRR)—Plant Protection System (PPS).** On May 13 operators at the ACRR noticed a divergence between the values on two PPS channels (PPS1 & PPS2) that monitor instantaneous power as a result of pulsed power operations. The ACRR Technical Safety Requirements (TSR) specify each PPS pulse power channel is a safety significant control, and both are required to be operable to safely control the reactor. The TSR requires immediate facility shutdown if less than two pulse power channels are available. The ACRR staff determined that the PPS2 channel failed and entered a Limiting Condition of Operation (LCO). The LCO status affords extending continued operations for up to 14-days while engaging in troubleshooting and repair (TS&R). Within the 14-day window, the PPS2 detector was replaced. On May 24, 2016, during acceptance testing of the replaced PPS2 detector the ACRR staff noticed that there was no output from the PPS1 channel. The reactor operations team placed the reactor into shutdown mode immediately as required by the TSRs. Initial troubleshooting efforts indicate that PPS1 detector cabling had separated during the TS&R of the PPS2 channel. SNL Management decided to pause operations pending a causal analysis and identification of corrective actions prior to resuming operations.

**Sandia Pulse Reactor Facility (SPRF)—Fire Safety.** SNL is continuing their preparation of a cost analysis for engineered fire suppression options at the SPRF. The National Nuclear Security Administration's Sandia Field Office is working 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.