

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 4, 2015

**TO:** Steven A. Stokes, Technical Director  
**FROM:** John R. Mercier, Cognizant Engineer  
**SUBJECT:** Sandia National Laboratories (SNL) Report for August 2015

**DNFSB Staff Activity:** There were no onsite Board staff reviews or oversight visits in August.

**Annular Core Research Reactor (ACRR) Facility Fuel Storage Racks:** On September 1, 2015, the National Nuclear Security Administration (NNSA) Sandia Field Office (SFO) approved the Sandia National Laboratories (SNL, hereinafter Sandia) path forward to address the need for criticality safety analyses (CSA) for fuel storage racks (see July report) in the reactor and storage pools. Nuclear material movements below the threshold limit do not require a CSA. The ACRR Documented Safety Analysis (DSA), and not the Sandia nuclear criticality safety program, applies to fissile material activities inside the reactor pool for reactor operations, maintenance, and shutdown. The 2016 ACRR DSA update will explicitly evaluate the handling and storage of fissile material within the reactor pool. For the storage pool, Sandia committed to complete a comprehensive CSA for all storage racks by June 30, 2017.

**Positive Unreviewed Safety Question Determination (USQD) for the ACRR:** On July 12, 2015, Sandia submitted the Evaluation of the Safety of the Situation (ESS) for the ACRR that addressed a positive USQD for regulating rod withdrawal speeds (see July report). Upon receiving initial feedback from SFO, Sandia decided to revise the ESS and will resubmit it in the near-term.

**Radiation Levels in the ACRR High Bay Areas:** Sandia determined that radiation areas exist in the ACRR High Bay during steady state operations (1%-10% power) due to a change in shielding configuration to support researcher experiments (see July report). Sandia is expected to continue comprehensive radiation level characterizations in ACRR High Bay areas for the varying reactor operating configurations as operating conditions permit. Results from the initial characterization surveys confirm that current postings are accurate.

**Campaign 17 Transuranic Waste (TRU) Waste:** Campaign 17 addresses previously packaged containers that failed to pass the Waste Isolation Pilot Plant waste acceptance criteria (WIPP-WAC) for the fissile gram equivalent (FGE) container limit. One of the drums repackaged under the direction of National TRU Program personnel failed to pass the WIPP-WAC a second time. It will be repackaged again in late October in a hot cell at the Auxiliary Hot Cell Facility (AHCF).

**Campaign 16 Spent Fuel Waste:** Decades old uranium waste from the Degraded Core Coolability (DCC) experiments will be packaged at the AHCF. On July 6, 2015, Sandia submitted a Basis for Interim Operations (BIO) safety basis supplement document to justify this activity whilst maintaining the capability of the AHCF to operate as a Hazard Category 3 nuclear facility. SFO is currently reviewing the BIO Supplement and will produce a Safety Evaluation Report.