

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 8, 2021

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer  
**SUBJECT:** Sandia National Laboratories (SNL) Report for September 2021

**Annular Core Research Reactor Facility (ACRRF) Hoisting and Rigging (H&R):** On August 31, 2021, the ACRRF staff completed an experiment involving electronics mounted in an aluminum fixture within the LB44 lead-boron bucket in the ACRR central cavity. The ACRRF team used the high-bay three-ton crane to extract the experimental package from the LB44 bucket. As the package emerged from the top of the central cavity, the team observed that the fixture was caught on the LB44 lifting hardware bringing the bucket up with it. The ACRRF team paused operations and contacted all required management personnel. Working with the Sandia Corporate H&R subject matter expert and facility management, the team developed and implemented a solution to stabilize the bucket, removed the experimental package, and executed a field change to the critical lift plan for the LB44 bucket to document the change of rigging needed to extract the bucket from the central cavity. The ACRRF team then completed the LB44 bucket lift and placed the bucket in its storage location. National Technology and Engineering Solutions of Sandia, LLC, (NTESS) management paused crane operations in ACRRF, completed a fact-finding for this event on September 1, 2021, and developed a plan for improving H&R activities at the ACRRF. NTESS also contracted with Industrial Training International (ITI) to perform an independent review of H&R at ACRRF. ITI specializes in training associated with crane, rigging, and load handling activities. Working with ITI, ACRRF staff revised the Critical Lift Plan (CLP) used to install and remove the shield plug from the ACRR central cavity as a case study to improve all CLPs at the ACRRF. In addition, NTESS conducted a causal analysis using the Blue Dragon methodology to assess themes common to the August 31<sup>st</sup> event and three prior H&R events at ACRRF over the last two years. NTESS completed the causal analysis on September 30, 2021. NTESS is developing corrective actions to address H&R operations at ACRRF.

**ACRRF Safety Basis Annual Update:** On September 10, 2021, the Sandia Field Office (SFO) approved the proposed page changes for the 2020 ACRRF Safety Basis Annual Update. SFO reviewed the proposed page changes, the supporting unreviewed safety question determinations, evaluations of potential inadequacies in the safety analysis, and actions to address operational experiences in its Safety Evaluation Report and identified no Conditions of Approval. SFO noted that the ACRRF Safety Basis continues to provide reasonable assurance of adequate protection to the workers, the public, and the environment from the identified hazards associated with its operation, and meets the requirements specified in 10 CFR 830, Subpart B, *Safety Basis Requirements*. SFO's directed NTESS to perform an implementation verification review to confirm implementation of the approved ACRRF Safety Basis Annual Update within 120 calendar days.

**Returning Plutonium Isentropic Compression Experiment (Pu-ICE) Containers to Los Alamos National Laboratory (LANL):** On September 20, 2021, the Central Characterization Program (CCP) at the Waste Isolation Pilot Plant (WIPP) issued the Waste-Specific Data Package (TRAMPAC) for the shipment of several standard waste boxes (SWB) containing LANL Pu-ICE containers from SNL to LANL. CCP completed the TRAMPAC in accordance with the quality assurance requirements under the CCP WIPP certification program and documented that the SWBs meet the requirements for shipment in Transuranic Packaging Transporter, Model II containers. According to the WIPP Eight-Week Rolling Schedule Shipment Summary, these SWBs will be shipped to LANL in October 2021.