

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 3, 2015

**TO:** Steven A. Stokes, Technical Director  
**FROM:** Zachery S. Beauvais, Cognizant Engineer  
**SUBJECT:** Sandia National Laboratories (SNL) Report for June 2015

**Annular Core Research Reactor (ACRRF) Fuel Storage Racks:** In July 2013, the NNSA Sandia Field Office (SFO) sent a letter to SNL stating that criticality safety evaluations (CSE) for two locations in Technical Area-V (TA-V), developed before the implementation of DOE Standard 3007, did not meet the current standard. The 2013 letter directed SNL to develop compliant CSEs “before any operations can occur in either location.” SNL developed a CSE for operations in only one of the affected locations. During a meeting with the TA-V criticality safety officer on June 1, 2015, the SFO criticality safety subject matter expert discovered that SNL had not taken any actions related to the second location—the ACRRF fuel storage racks. On June 2, the SNL manager for reactor facilities issued a directive to restrict fuel movement into or out of the ACRRF fuel storage racks. SNL reviewed ACRRF logbooks dating back to the original SFO letter and determined that they had performed fuel moves at this location on three separate occasions—each instance involving approximately 100 g  $^{235}\text{U}$ . In late June, SFO issued a letter that directs SNL to (1) provide proof that SNL has stopped movements into and out of the ACRRF fuel storage racks, (2) develop compensatory measures to allow resuming fuel movements, (3) provide an assurance that communication mechanisms are in place to prevent this type of miscommunication from recurring, and (4) communicate the schedule and scope for development of a compliant CSE for fuel storage rack operations. On June 26, SNL and SFO personnel stated that this event did not constitute a criticality safety infraction since fuel movement did not constitute failure of any criticality safety controls, though it did represent a violation of express direction from SFO.

**Unknown Container in Monorail Storage Area:** In late May 2015, SNL personnel entered the Hot Cell Facility (HCF), a less than Hazard Category-3 nuclear facility, to retrieve two legacy experiment assemblies to be repackaged in the Auxiliary Hot Cell Facility (AHCF). During that operation, SNL inspected other storage locations in HCF to determine if any other material was present and discovered an unexpected container in a storage silo within the HCF monorail storage area. The container is approximately 9 inches in diameter, weighs more than 500 pounds and is similar in appearance to other containers irradiated in the ACRRF central cavity. Radiological control technicians surveyed the upper lid of the container and found surface contamination of  $\sim 60,000$  dpm/100 cm<sup>2</sup> beta/gamma. The container does not have any other identifiable details or markings and its presence was not known from HCF records and logs. SNL is developing a work package to visually inspect the container and perform gamma spectroscopy to better determine the contents.

**Nonconforming Transuranic (TRU) Waste Drums Update:** This month, personnel from the Waste Isolation Pilot Plant (WIPP) performed dose-to-curie measurements on drums repackaged in Campaign 14 and non-conforming drums repackaged in Campaign 12 (see May 2015 report). The SNL manager for non-reactor nuclear facilities stated that preliminary indications confirm that the containers identified in Campaign 12, and one additional container from Campaign 14, will exceed the fissile gram equivalent limit for WIPP. Therefore, these items must be repackaged.

**SNL Management Change:** On June 22, the Sandia Corporation Board of Directors unanimously selected Ms. Jill Hruby to succeed Dr. Paul Hommert as SNL Director, effective July 17, 2015 (see May 2015 report). Ms. Hruby is a 30 year veteran of SNL.