

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 3, 2020

TO: Christopher J. Roscetti, Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Sandia National Laboratories (SNL) Report for December 2019

Annular Core Research Reactor (ACRR) – Safety Rod #1: On November 26, 2019, ACRR staff members noted parts (nut and washer) from one of eleven fasteners on ACRR Safety Rod #1 were missing. A similar incident occurred on the same fastener on this safety rod in November 2016. The ACRR staff developed a recovery plan that included replacement of all eleven fasteners on Safety Rod #1, as well as ACRR fuel rod movement to search for the missing hardware. On December 12, 2019, ACRR staff lifted Safety Rod #1 from its in-core location to begin the repair process. At that time, the ACRR staff noted a small stream of bubbles emanating from a corroded spot on a lower weld on the safety rod. The ACRR staff members returned the safety rod to its in-core position and declared an abnormal event. The ACRR staff completed appropriate measurements and noted no radioactive material release. The ACRR staff plan to retrieve a spare safety rod (Safety Rod #3) from corporate storage. Following appropriate surveillance and inspection of the spare safety rod, the ACRR staff will replace Safety Rod #1 with Safety Rod #3 and remove Safety Rod #1 from the reactor pool in a timely manner.

Sandia Pulsed Reactor/Critical Experiment (SPR/CX) Facility Fire Suppression System: With the recent completion of installation of a new fire suppression system in the SPR/CX Facility, Technical Area V staff and contractors are currently completing operational and acceptance tests for the system (See SNL Monthly Report for July 2019). The installation of the fire suppression system is complete with the exception of the final installation in one of the storage vault locations in the facility. The contractor will complete the installation of this final section of the fire suppression system once the material stored in this vault has been moved to corporate storage. The SPR/CX and contractor staffs plan to complete the fire suppression system acceptance testing by the end of December.

Auxiliary Hot Cell Facility (AHCF) Campaign 16 Waste Shipment: In late Fiscal Year 2019, the AHCF staff completed the disassembly and packaging of fuel assemblies used in the Degraded Core Coolability (DCC) experiments as part of Campaign 16 (see SNL Monthly Reports for February 2019, June 2019, and July 2019). In December 2019, the AHCF staff packaged and transported the ancillary radioactive wastes generated during Campaign 16 to the Radioactive and Mixed Waste Management Facility (RMWMF) for disposal. In addition, the AHCF staff also transported the packages containing the crucibles used in the DCC experiments to a vault storage location at RMWMF pending the completion of a criticality safety analysis prior to shipment for disposal.

Remedial Action Plan (RAP) for Department of Energy Laboratory Accreditation Program (DOELAP) 2019 External Dosimetry Assessment: On December 13, 2019, the Board's staff received the RAP completed by SNL in response to the deficiency and concerns cited in SNL's DOELAP external dosimetry onsite assessment report dated October 16, 2019. The RAP addressed an uncorrected finding related to area background monitoring at offsite locations not being performed on a routine basis. This uncorrected finding was from a previous DOELAP assessment conducted in June 2016. SNL will submit the RAP to the Sandia Field Office for final approval.