

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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TO: Christopher J. Roscetti, Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Sandia National Laboratories (SNL) Report for September 2022

Causal Analysis Report – Criticality Safety Index (CSI) Containers Moved without Updating Tracking Sheet: On August 30, 2022, National Technology and Engineering Solutions of Sandia, LLC (NTESS) completed a causal analysis report for an event in which Radiological Field Technicians (RFT) moved several drums out of a CSI array in a storage bunker without updating the CSI tracking form. Subsequently, RFTs moved these drums back into the bunker and updated the CSI tracking form. Since the RFTs had not updated the CSI tracking form at the time of container removal, the form incorrectly listed the total quantity of containers as higher than the number actually present. NTESS Nuclear Criticality Safety (NCS) Engineers conducting an annual assessment of the bunker noted the discrepancy between material physically present in the bunker and what was accounted for on the CSI tracking form. Upon discovery of the error, NCS Engineers accurately tracked and accounted for the material through other logging systems. NTESS is developing a plan to address the corrective actions identified in the causal analysis report.

New Core Design at the Sandia Pulsed Reactor/Critical Experiment (SPR/CX) Facility: On September 1, 2022, NTESS completed the first approach to critical on a new triangular pitch core at the SPR/CX facility. NTESS noted that this marked the first triangular pitch critical experiment performed with 7uPCX fuel at the facility. The National Nuclear Security Administration's Nuclear Criticality Safety Program funded this integral experiment, which is part of a larger series, Integral Experiment Request 305 (IER-305), being executed in collaboration with the French Institute for Radiation Protection. NTESS also noted that this new core design was the first designed, built, and executed under the recently implemented Nuclear Quality Assurance-1 (NQA-1) quality standard, which required a large, coordinated effort between NTESS Operations, Engineering, and Experiment organizations.

Causal Analysis Report – Radiological Contamination at the Radioactive Mixed Waste Management Facility (RMWMF): On September 12, 2022, NTESS issued a causal analysis report for the radiological contamination of a worker that occurred on June 16, 2022, during the separation activity for an Isentropic Compression Experiment (ICE) assembly at the RMWMF (see SNL Monthly Report for June 2022). The report noted that the contamination occurred when a flange port cover that provided access to the radioactive contents of the ICE assembly had been inadvertently removed. After the radiological field technicians (RFT) identified the incorrectly opened port on the ICE assembly, a radiological control technologist (RCT) took a contamination swipe and the RFTs placed the ICE assembly into a safe configuration by reinstalling the ICE assembly flange and closing the open port. The causal analysis report identified corrective actions addressing revised operating procedures, improved training, and staging of decontamination tools and equipment in the work area prior to beginning work. NTESS management paused operations at the RMWMF pending implementation of corrective actions.

Auxiliary Hot Cell Facility (AHCF) – Basis for Interim Operations (BIO) and Technical Safety Requirements (TSR) Annual Update: On September 15, 2022, the Sandia Field Office (SFO) approved the 2022 Annual Update to the AHCF BIO and TSR. SFO noted that the AHCF BIO and TSRs continue to provide reasonable assurance of adequate protection to the workers, the public, and the environment from the identified hazards. SFO identified no Conditions of Approval during this review.