

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 2, 2022

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

Defense Nuclear Facilities Safety Board (Board) Staff Interactions: On August 8–11, 2022, the Board’s cognizant engineer for SNL and the Board’s Associate Technical Director (ATD) for Nuclear Weapon Programs were on site providing quarterly oversight at SNL. The cognizant engineer and ATD completed walkdowns at Technical Area V and the Radioactive Mixed Waste Management Facility, observed an operational drill at the Annular Core Research Reactor Facility (ACRRF), and met with National Technology and Engineering Solutions of Sandia, LLC (NTESS) and Sandia Field Office (SFO) managers and staff.

Contractor Readiness Assessment (CRA) – Class III Experiments with Hazard Category 3 (HC-3) Quantities of Fissionable Material at the ACRRF: On August 8, 2022, NTESS began a CRA for the restart and execution of Class III experiments at the ACRRF. The CRA team conducted a performance-based review of the operational readiness of the facility, staff, and documentation. The CRA team reviewed key elements of conduct of operations, training, procedures, maintenance, operational drills, safety limits, fire protection, pressure safety, vital safety systems, hoisting and rigging, emergency management, criticality safety, and implementation of the Startup/Restart Plan. On August 19, 2022, the CRA team completed their final report concluding that all CRA objectives had been met. The CRA team identified no pre-start or post-start findings and provided 44 observations.

SNL Full-Scale Emergency Management Exercise: On August 10, 2022, SNL conducted the 2022 full-scale annual emergency management exercise at the hazardous waste handling unit (HWHU) on the SNL site. NTESS noted that the purpose of the exercise was to test and validate the effectiveness of the SNL Emergency Response Organization (ERO) through implementation of the SNL site emergency plan and procedures, Department of Energy Order 151.1D, *Comprehensive Emergency Management System*, and the National Nuclear Security Administration *Criteria and Review Approach Document (CRAD) Handbook*. NTESS identified the focus areas for this exercise including effective communications; emergency medical support; response, integration, and coordination among ERO personnel; emergency hazardous material response; emergency categorization and classification decision-making; immediate facility access by emergency responders; and HWHU protective actions. The exercise scenario included two HWHU personnel—a forklift driver and spotter—moving containers of waste containing bromine in preparation for shipment. The accident scenario began with the forklift tines penetrating a 55-gallon drum containing bromine, which slowly leaked onto the pavement. The SNL Emergency Operations Center (EOC), Kirtland Fire and Emergency Services, Sandia Protective Force, and the Kirtland Air Force Base EOC participated in this exercise. NTESS conducted a post-exercise critique identifying potential issues. NTESS is developing the After-Action Report for this exercise.

CRA Plan of Action (POA) for Transient Rod Worth (TRW) Operations at the ACRRF: On August 18, 2022, SFO provided comments on the POA for the CRA for the restart of TRW operations at the ACRRF. SFO identified three comments that need to be resolved before it will approve this POA. The comments included updating an unreviewed safety question determination required to restore TRW functionality, clarifying the software and hardware changes associated with TRW operations, and clarifying the operational drill proposed as part of the CRA. SFO requested that NTESS provide a formal response and an updated POA.