

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 3, 2023

TO: Katherine R. Herrera, Acting Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Sandia National Laboratories (SNL) Report for January 2023

Combined Radiation Environments for Survivability Testing (CREST) Facility Update: On January 5, 2023, National Technology and Engineering Solutions of Sandia, LLC (NTESS) provided the Sandia Field Office (SFO) a briefing on the proposed CREST facility at Technical Area V (TA-V). NTESS provided a CREST design update, a project management status report, the current funding scenarios, and discussed Annular Core Research Reactor fuel element recladding. NTESS expects a Critical Decision 1 (Approve Alternative Selection and Cost Range) determination for the CREST project in mid-2024.

Building 720 – Tritium Outgassing Event: On January 16, 2023, the SNL Emergency Management Communications Center (EMCC) received a call for a suspected tritium gas leak in Building 720. Radiological Control Technicians (RCT) were on-scene at the time of incident. The EMCC dispatched the Sandia Agency Representative (SAR) to further investigate and determine incident needs. The responders determined that an emergency response was warranted. Non-essential personnel evacuated the building. The EMCC dispatched Protective Force and Kirtland Fire Emergency Services (KFES). NTESS activated the Emergency Operations Center (EOC) to level three monitoring mode with the addition of Emergency Public Information, Industrial Hygiene, and Radiation Protection (RP) staff. The involved line organization (Org. 01866), RP, and emergency management staff developed, approved, and safely executed a recovery plan, minimizing tritium levels, and reported no injuries. RP staff conducted tritium measurements and established that there was no tritium outside of the containment vessel. NTESS developed a comprehensive recovery plan in which the tritium targets were securely packaged in an isolated vessel and transported to the Radioactive Mixed Waste Management Facility, Building 6925, for safe and secure storage. NTESS returned Building 720 to normal operations on January 18, 2023. NTESS is developing a plan to investigate the cause of the incident.

Fire Alarm and Sprinkler Flow Activation Alarm: On January 19, 2023, the SNL EMCC received a fire alarm and sprinkler flow activation in Buildings 6577, 6578, and 6586 via the Phoenix Alarm System. The EMCC dispatched the SAR, KFES, and Protective Force to TA-V. KFES determined there was no active sprinkler flow in building 6578. A fire alarm maintenance team was on scene and had been servicing the systems involved. KFESS found no fire or smoke in Building 6578 and deemed the building was fire safe, and also found no hazards in the other two buildings alarm. KFES determined the alarm was due to low air pressure to the dry sprinkler system and terminated the event.

Second Quarter Fiscal Year (FY) 2023 Startup Notification Report (SNR): On January 23, 2023, SFO approved the second quarter FY 2023 SNR. In its December 15, 2022, SNR submittal, NTESS determined that two activities planned in the next twelve months for the TA-V nuclear facilities require readiness reviews (*Class III Experiments with HC-3 Quantities of Fissionable Material (Bambino)*, and *Transient Rod Withdrawal (TRW) Operations*). NTESS is the Startup Authorization Authority (SAA) for the Bambino experiments and completed its Contractor Readiness Assessment (CRA) in August 2022. NTESS noted that the Bambino experiments are scheduled to be completed in May 2023. SFO is the SAA for the TRW operations for which the Management Self-Assessment and CRA were completed in October and December 2022, respectively. The Federal Readiness Assessment for TRW operations is scheduled for February 2023.