

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 3, 2021

TO: Christopher J. Roscetti, Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Sandia National Laboratories (SNL) Report for November 2021

Defense Nuclear Facilities Safety Board (Board) Staff Interactions: On October 27, 2021, the Board's SNL conduct of operations review team conducted a teleconference with Sandia Field Office (SFO) managers and National Technology and Engineering Solutions of Sandia, LLC (NTESS) managers and staff members to discuss several issues related to critical lifts at the Annular Core Research Reactor (ACRR). Technical Area V (TA-V) managers discussed the results of causal analyses completed in response to recent hoisting and rigging issues at the ACRR. TA-V managers also provided insight into the corrective actions underway to address critical lift issues. NTESS staff evaluated the results of the causal analyses, input from an external consultant, Industrial Training International (ITI), and actions proposed by ACRR staff to develop a list of corrective actions. The causal analyses identified additional improvements to the Sandia corporate Hoisting and Rigging (H&R) procedures. In addition, the causal analyses suggested additional training for ACRR operators. The Board's conduct of operations review team scheduled a follow-up teleconference with SNL on December 9, 2021.

Lift Director & Critical Lift Planning Training: On November 1–2, 2021, and November 8–9, 2021, ACRR staff completed a training course entitled, *Lift Director and Critical Lift Planning*, presented by ITI. The course addressed the responsibilities of a Lift Director as identified by Federal Regulations (29 CFR 1926.1400 - Occupational Safety and Health Administration), *Cranes and Derricks in Construction*, and American Society of Mechanical Engineers (ASME) Standard P30.1 *Lift Planning*. The course provided participants with an outline of the recommended knowledge and skills that should be mastered in order to become a competent Lift Director. The Critical Lift portion of the course focused on the process of assessing risks, the compilation of crane and rigging data, crane operating areas, rigging methods, a safety checklist, personnel competencies and assignments, a proposed sequence of events, contingency plans and other category items, as recommended in ASME Standard P30.1.

SNL Improvement Initiative: SNL Environment Safety & Health (ES&H), Advanced Science and Technology (Division 1000), and Infrastructure Operations (Division 4000) jointly issued an Improvement Initiative on Material Handling. In the last 6 months of fiscal year 2021, Sandia identified six events involving the improper use of material handling equipment. While no injuries were sustained, NTESS management noted that increased awareness of ES&H requirements promulgated in November 2020 could have prevented some these incidents. NTESS completed a systemic causal analysis and a self-assessment to evaluate material handling policy and processes. The assessment identified ineffective requirements flow down and line implementation. To improve the effectiveness of communications and operational performance, leadership from ES&H, Division 1000, and Division 4000 have initiated a comprehensive improvement initiative. The initiative focused on immediate and long-term actions leading to a sustained improved safety performance, including: 1) Extent of Condition Assessment, 2) Communications, Workforce Outreach, and Training, and 3) Strengthening Operations. NTESS's efforts to strengthen operations include the formation of a Material Handling Committee, establishing a Material Handling Officer Program, and benchmarking the Material Handling Program by applying industry best practices (e.g., nuclear power operations within the DOE complex and Institute of Nuclear Power Operations best practices).