

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 3, 2022

TO: Christopher J. Roscetti, Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Lawrence Livermore National Laboratory (LLNL) Report for May 2022

Defense Nuclear Facilities Safety Board (Board) Staff Interaction: A member of the Board's technical staff was on site at LLNL to participate in the Department of Energy (DOE)/National Nuclear Security Administration 84th Explosives Safety Committee (ESC) Meeting on May 16–20, 2022. The ESC oversees modifications to DOE Standard 1212-2019, *Explosives Safety*; evaluates the latest developments in explosive safety information, techniques, and lessons learned from recent events; and provides any identified safety-related concerns to all ESC members. In addition, the Board's staff member completed a tour of the LLNL High Explosives Applications Facility, including discussions of facility capabilities, safety features, and current missions.

Request for Corrective Action Plan (CAP) for Potential Inadequacies of the Safety Analysis (PISA) Assessment Observations: On May 26, 2022, the Livermore Field Office (LFO) requested Lawrence Livermore National Security, LLC, (LLNS) to submit a CAP in response to the Fourth Quarter Fiscal Year 2021 Assessment of PISA Determinations based on observations from a DOE Office of Enterprise Assessments (EA-31) independent assessment and new information. The EA-31 assessment identified three observations. LFO required LLNS to submit a CAP within 21 days. As part of the corrective action process, LFO also required LLNS to update its Unreviewed Safety Question Determination procedures to ensure well-defined and timely determinations of PISAs.

Building 332 - Centralized Waste Processing Line (CWPL) Readiness Assessments: On May 31, 2022, LLNS began the Contractor Readiness Assessment (CRA) for the restart of operations in the CWPL. The CWPL was specifically designed to process transuranic (TRU) waste from other areas in Building 332 to meet the Waste Isolation Pilot Plant waste acceptance criteria. The CWPL glove box was installed and underwent a readiness review in 2015. LLNS designed the CWPL to process waste in a batch process. The radioactivity in each batch varies but may exceed the upper threshold for Category 3 defined in DOE Standard 1027-2018, *Hazard Categorization of DOE Nuclear Facilities*. Therefore, LLNS categorized the operation as Hazard Category 2. The CRA team will evaluate CWPL operations including handling TRU waste containers, bagging waste into and out of the glovebox, visually examining, sorting, and segregating waste, repackaging TRU waste, and standard glovebox maintenance (e.g., surveillances, housekeeping, glove changes). Following the completion of the CRA and any required corrective actions, LFO will conduct a Federal Readiness Assessment (FRA). On May 5, 2022, LFO approved the Plan of Action (POA) for the CWPL FRA in accordance with DOE Order 425.1D, *Verification of Readiness to Start Up or Restart Nuclear Facilities*. In the approval correspondence, LFO verified that the POA provides the appropriate breadth, criteria, and prerequisites and is sufficient to assess the readiness of personnel, programs, and equipment to safely perform work in the CWPL glovebox. The CWPL FRA is currently scheduled for July 2022.

Building 332 – Infrastructure Improvements: LLNS is completing a number of improvements to the physical infrastructure of the Plutonium Building. The improvements include replacement of the safety significant liquid argon tank, replacement of safety class corridor doors in the radioactive materials area (RMA), upgrade of continuous air monitors in the RMA, and replacement of the Plenum Equipment Building stairs. The Board's cognizant engineer continues to monitor these improvements during routine oversight visits to LLNL.