

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 7, 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 September 2022

Approval of the Evaluation of Safety of the Situation (ESS) and Justification for Continued Operations (JCO) for Helicopter Over Flights: On August 30, 2022, LFO approved the ESS and JCO for helicopter over flights of several facilities at LLNL (see LLNL Monthly Report for August 2022). Lawrence Livermore National Security, LLC (LLNS) provided the ESS related to the positive *Unreviewed Safety Question Determination Regarding Helicopter Overflights of Several Facilities at LLNL*, dated July 14, 2022, pertaining to helicopter overflights on December 1, 2021, and February 17, 2022, to inspect utility poles. LLNS completed calculations to evaluate the increase in crash frequency from the helicopter flights compared to the total frequency of an aircraft crash. Based on the exposure screening guideline described in Department of Energy (DOE) Standard 3014-2006, *Accident Analysis for Aircraft Crash into Hazardous Facilities*, LLNS determined that the increase in frequency does not change the existing safety bases, resulting in no significant increase in risk to the facilities. In their approval letter, LFO noted that DOE-STD-3014-2006 identifies a screening threshold of 1×10^{-6} . The LLNS calculation results of the helicopter overflights frequencies were below this threshold, and therefore do not require further analysis in the Documented Safety Analysis. LFO directed that these analyses for each facility be maintained as part of the Superblock facilities and Waste Storage Facilities (WSF) safety bases documentation.

Centralized Waste Processing Line (CWPL) Readiness to Proceed: On September 8, 2022, LLNS submitted a Readiness to Proceed Memorandum for the restart of operations in the CWPL. LLNS stated that the CWPL is ready for startup based on the results of the CWPL Federal Readiness Assessment (FRA) and subsequent actions taken by Nuclear Materials Technology Program line management to resolve the single pre-start finding related to the adequacy of the Startup Plan as identified in final FRA report. LLNS noted that this pre-start finding was resolved with the addition of details provided in the most recent version of the *Plan to Resume Centralized Waste Processing Line Activities*.

Building 332 TSR Violation – Potential Discrepancies Impacting TSR Alarm Setpoints: On September 1st, 2022, while performing a semiannual Surveillance Requirement Procedure (SRP) for the safety significant Building 332 criticality alarm system, Facility Operators noticed an abnormal number of channels requiring recalibration. With the facility in the Maintenance mode and appropriate Limiting Conditions for Operations satisfied, the Facility Manager paused work and the operators placed the system in a safe configuration for investigation. On September 2, 2022, facility operators reviewed calibration documents and processes and determined that a calibrated source utilized during the previous semiannual SRP may not have been conservatively calibrated. This issue called into question the ability of the system to alarm at the Technical Safety Requirements (TSRs) setpoint. Upon discovery, the Facility Manager declared a TSR violation and confirmed with the LLNL Radiation Calibration Lab that the source currently in use met requirements to ensure TSR compliance. The Facility Manager approved the completion of the semiannual SRP after which the system was restored to service.

Transuranic (TRU) Waste Shipments to the Waste Isolation Pilot Plant (WIPP): On September 29, 2022, LLNS sent three shipments of TRU waste to WIPP. The shipments included 38 drums, 38 pipe overpacks, and one standard waste box. Completion of these shipments increased the operating margin in Building 625 by reducing the total material-at-risk.