

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: Lawrence Livermore National Laboratory (LLNL) Report for August 2022

Defense Nuclear Facilities Safety Board (Board) Vice Chairman and Staff Interaction: On August 22–25, 2022, the Board’s cognizant engineer for LLNL and acting cognizant engineer for the Nevada National Security Site (NNSS) were on site at LLNL to conduct routine oversight activities. The cognizant engineers conducted routine walkdowns of the Superblock and Waste Storage Facilities (WSF) and met with the Livermore Field Office (LFO) Acting Manager and the LLNL Deputy Principal Associate Director for Operations, Weapons and Complex Integration. On August 24–25, 2022, the Board’s Vice Chairman, accompanied by the cognizant engineers, was on site to meet with LFO and Lawrence Livermore National Security, LLC (LLNS), managers and walk down numerous LLNL facilities. The Vice Chairman was briefed by the LFO Acting Manager, the LFO Senior Technical Safety Advisor, the LLNL Associate Deputy Director of Operations, the LLNL Principal Deputy Associate Director for Global Security, and the acting Chief of Staff of the LLNL Director’s Office. The Vice Chairman also walked down the Recovery Glovebox Line, Centralized Waste Processing Line, and High-Z Target Fabrication Facility in the Plutonium Building accompanied by the LLNL Deputy Principal Associate Director for Operations, Weapons and Complex Integration. In addition, the Vice Chairman walked down the WSF accompanied by the Radioactive and Hazardous Waste Management Program Manager. The Vice Chairman also toured several LLNL facilities undergoing decontamination and demolition, the National Ignition Facility, the new Emergency Operations Center, and the National Security Weapons Vault. In addition, LLNL leadership briefed the Vice Chairman on safety-related areas of interest in global security.

Facility Managers’ Evaluation of Safety of the Situation (ESS) for Helicopter Overflights: On August 9, 2022, LLNS provided an ESS related to the positive *Unreviewed Safety Question Determinations (USQD) Regarding Helicopter Overflights of Several Facilities at LLNL*, dated July 14, 2022, pertaining to helicopter overflights on December 1, 2021, and February 17, 2022. On June 10, 2022, the Facility Managers for Building 239, Building 331, Building 332, Building 334, and the WSF determined a Potential Inadequacy of the Safety Analysis existed after receipt of new information that helicopters had flown over the LLNL site to inspect utility poles. LLNS determined that two USQDs were negative (for Building 239 and Building 334) and three USQDs were positive (for Building 331, Building 332, and the WSF). LLNS determined that the Building 239 and Building 334 USQDs were negative because their respective safety bases screened out all aircraft crashes based on the exposure screening guideline described in Department of Energy (DOE) Standard 3014-2006, *Accident Analysis for Aircraft Crash into Hazardous Facilities*. LLNS noted that while the safety basis documents for Building 331, Building 332, and the WSF evaluate aircraft crashes, the aircraft crash evaluations performed for these facilities have no evaluation of a helicopter hovering over the site. LLNS completed calculations to evaluate the increase in crash frequency from the helicopter flights compared to the total frequency of an aircraft crash and determined that the increase in frequency does not change the existing safety bases, resulting in no significant increase in risk to the facilities.

Building 334 – 2022 Documented Safety Analyses (DSA) and Technical Safety Requirements (TSR) Annual Update: On August 11, 2022, LLNS submitted the 2022 Annual Update to the Building 334 Hardened Engineering Test Building DSA and TSR. The annual update included USQDs from May 31, 2020, through March 28, 2022, that resulted in no changes to the Building 334 DSA and TSR. In addition, the submission included updates to codes, standards, organizations, and references, which are minor changes that are typically made during the annual update process.