

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 2, 2022

TO: Katherine R. Herrera, Acting Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Lawrence Livermore National Laboratory (LLNL) Report for November 2022

Defense Nuclear Facilities Safety Board (Board) Staff Interaction: From October 31 to November 3, 2022, the Board's cognizant engineer for LLNL was on site to conduct routine oversight activities. The cognizant engineer completed walkdowns of the Superblock and Waste Storage Facilities (WSF), discussions with Livermore Field Office (LFO) facility representatives for each defense nuclear facility, and discussions with Lawrence Livermore National Security, LLC, (LLNS) and LFO senior management. The cognizant engineer met with the Acting LFO Deputy Manager, the LFO Senior Technical Safety Advisor, the LLNS Deputy Principal Associate Director for Operations, and the Weapons & Complex Integration (WCI) Nuclear Operations Manager to discuss recent potential safety issues and the cognizant engineer's general observations from this visit.

Fourth Quarter Fiscal Year 2022 Startup Notification Report (SNR): On November 2, 2022, LFO approved of the Fourth Quarter Fiscal Year 2022 SNR submitted by LLNS on September 29, 2022. LFO approved the startup/restart activity and schedule for the Hydrogen Gas System for the Hydride/Dehydride/Casting (HYDEC) process. The HYDEC restart activity schedule includes a checklist contractor readiness assessment in January 2023 and a National Nuclear Security Administration (NNSA) readiness assessment in March 2023. The HYDEC system, which is being restarted after an extended shutdown, is currently scheduled to return to operation in May 2023.

2022 Biennial Review of Nuclear Safety Performance for the Livermore Field Office: NNSA recently completed a biennial review of nuclear safety performance at LFO. The NNSA review evaluated 12 functional areas, which included a new focus area for chemical safety management. The NNSA review team evaluated the level of compliance, effectiveness, and performance of nuclear safety oversight and implementation by LFO. The review team collected information through interviews (virtual and face-to-face), document reviews, and observations. The review team identified four findings, eleven weaknesses, and three noteworthy practices. The findings included issues with not transmitting an LFO facility representative program assessment to Department of Energy (DOE) Headquarters; lack of coordination with the Nevada Field Office in providing adequate integrated federal oversight of LLNS activities performed at Nevada National Security Site; incomplete evaluation of all elements of DOE Order 420.1C, *Facility Safety*; and not adequately defining the functions, assignments, and responsibilities of the LFO Environment, Safety, and Health organization in the LFO startup/restart Work Instruction. The review team identified no management concerns. The final report noted that all LFO functional areas met their objectives and earned the grade "Meets Expectations." LFO managers and staff are developing corrective actions to address the results of this review.

Waste Storage Facilities (WSF) – Hazardous Waste Facility Permit: On October 31, 2022, the California Department of Toxic Substances Control (DTSC) issued a Hazardous Waste Permit to LLNL. The permit, which is equivalent to a Resource Conservation and Recovery Act hazardous waste permit, replaces the original DTSC permit issued in 1999. The DTSC permit noted that LLNL conducts research programs in physics, chemistry, materials science, computer science and technology, biological sciences, and engineering. These research programs generate hazardous and mixed radioactive waste. LLNL treats and stores these wastes before sending them for final treatment or disposal at an authorized treatment, storage, and disposal facility. The new permit is in effect until October 31, 2032.