

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 2, 2025

TO: Acting Technical Director
FROM: Lawrence Livermore National Laboratory (LLNL) Cognizant Engineer
SUBJECT: LLNL Report for April 2025

2024 Annual Unreviewed Safety Question Determination (USQD) Summaries: On April 8, 2025, Lawrence Livermore National Security, LLC (LLNS) submitted summaries of USQD activity at the LLNL nuclear facilities (Buildings 239, 331, 332, 334, and Waste Storage Facilities) for the period January 1, 2024, through December 31, 2024, as required by 10 CFR 830.203(f), *Unreviewed Safety Question Process*. LLNS also included USQDs initiated in 2023 that were not completed until 2024. LLNS will incorporate the changes resulting from these activities into the appropriate Documented Safety Analyses (DSA) for the respective facilities in the next annual update(s).

Transportation Safety Basis Document at LLNL Site 200: On April 11, 2025, the Livermore Field Office (LFO) approved a request to use the National Nuclear Security Administration (NNSA) Supplemental Directive (SD) Guidance 1027, Admin Change 2, *Guidance on Using Release Fraction and Modern Dosimetric Information Consistently with DOE-STD-1027-92, Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports, Change Notice No. 1*, for the Transportation Safety Basis Document at Site 200. LFO agreed that transporting diagnostic samples in support of National Ignition Facility activities qualifies as a Less-Than-Hazard Category 3 activity using NNSA SD 1027, Admin Change 2.

Approval of the Downgrade of the Safety Significant Fire Suppression System (FSS) to Defense-in-Depth/Equipment Important to Safety (DID/EITS) in Building 332: On April 14, 2025, LFO approved the downgrade of the Safety Significant FSS to DID/EITS in the Plutonium Facility. LLNS submitted proposed page changes to the Building 332 DSA and Technical Safety Requirements (TSRs), describing the activity, hazards, and controls for downgrading the safety classification of the Safety Significant FSS to DID/EITS. LLNS noted that the specific portions of the FSS being downgraded are the Increment 1 Glovebox Exhaust System (GBES) plenum spray and its dedicated water supply. This downgrade results in the removal of FSS credit in the hazard and accident analysis, as well as the removal of FSS safety function, functional requirements, performance criteria, limiting conditions of operations, and surveillance requirements. The page changes also include an update to the DSA requiring the replacement of Increment 1 and Increment 3 room ventilation systems and GBES plenum fusible plugs with sprinklers by Fiscal Year 2034. LFO included one condition of approval requiring LLNS to update the glovebox exhaust maximum temperature calculation using a higher maximum room fire temperature as a more conservative approach and to revise relevant sections of the Building 332 DSA and subordinate documents accordingly. LFO required LLNS to submit the updated calculation within 30 calendar days.

Request for Overnight Furnace Operations in Inert Gloveboxes in Building 332: On April 16, 2025, LLNS transmitted a request to designate overnight furnace operations in an inert glovebox as a Type 2 Standby Operation, which would eliminate the need to staff "Operations Mode" shifts overnight. LLNS submitted the 14 key criteria for a safety basis amendment and the associated page changes to the Building 332 DSA and TSRs. LFO is reviewing the request.