

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 6, 2024

TO: Timothy J. Dwyer, Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Lawrence Livermore National Laboratory (LLNL) Report for August 2024

Building 332 Seismic Evaluation and Retrofit - Quarterly Update: On August 15, 2024, Lawrence Livermore National Security, LLC (LLNS) provided a quarterly update to the Livermore Field Office (LFO) on the seismic evaluation and retrofit project for Building 332. LLNS hired Constantino & Associates to complete seismic analyses including assessing the sensitivity of ground response to the presence of soil fill under Increment 1 of Building 332, assessing the sensitivity of soil-structure interaction (SSI) response to the presence of soil fill, developing design response spectra and soil properties for use in SSI analyses, and developing appropriate foundation input response spectra for the project. LLNS updated an analysis of the plenum equipment building (PEB) roof after identifying that actual diaphragm span lengths in the roof were smaller than previously assumed. The analysis suggested that PEB roof modifications may not be required to meet current seismic response requirements. LLNS is completing calculations with actual span lengths and will compare the capacities to demands from updated analyses to determine the need for PEB roof strengthening or replacement.

Evaluation of the Safety of the Situation (ESS) Related to Doghouse Exit Doors from Laboratory Rooms in Building 332 Increment 1: On August 22, 2024, LLNS provided an ESS pertaining to the potential inadequacy of the safety analysis (PISA) related to the Building 332 doghouse exit doors from laboratory rooms in Increment 1. The Building 332 facility manager declared the PISA on July 24, 2024, when LLNS staff noted that the doghouse exit doors, which have a 1.5 hour fire rating, were no longer explicitly listed as credited subcomponents in the Building 332 DSA, and therefore the system may not meet its credited safety functions. On August 7, 2024, the unreviewed safety question determination (USQD) was completed and determined to be negative. The doghouse exit doors, which are covered with a thick steel plate and welded shut, continue to meet their safety function. The ESS noted that the facility will continue to operate under the current DSA and TSRs. LLNS will provide clarification to the DSA via the USQD process or a future DSA submittal.

Revised 2024 Annual Update of the LLNL Plutonium Facility, Building 332, Documented Safety Analyses (DSA) and Technical Safety Requirements (TSRs): On March 15, 2024, LLNS submitted the Building 332 DSA and TSR 2024 annual update to LFO. LFO transmitted Review Comment Record (RCR) comments for the DSA and TSRs on May 20, 2024, and directed LLNS to address the RCR comments and resubmit the documents no later than August 16, 2024. Prior to the resubmittal, LLNS provided draft resolutions to the RCR comments for LFO staff consideration. On August 14, 2024, LLNS provided LFO the revised 2024 DSA and TSRs. LFO is currently evaluating this resubmittal.

Waste Storage Facilities (WSF) DSA and TSRs 2024 Annual Update: On August 1, 2024, LFO provided RCR comments to LLNS on the 2024 annual update to the WSF DSA and TSRs. LFO asked LLNS to resubmit revised DSA and TSR page changes incorporating resolution of the RCR comments no later than September 5, 2024.