

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 1, 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 February 2024

Defense Nuclear Facilities Safety Board (Board) Staff Interactions: On February 6–8, 2024, the Board’s cognizant engineer visited LLNL to conduct routine nuclear safety oversight. The cognizant engineer completed walkdowns of the Superblock and waste storage facilities (Buildings 625 and 696A) and met with Lawrence Livermore National Security, LLC, (LLNS) and Livermore Field Office (LFO) managers and staff. On February 8, 2024, the Board’s cognizant engineer for LLNL also observed the closeout meeting for the on-site portion of a review by the Department of Energy’s (DOE) Office of Enforcement related to quality assurance issues associated with the procurement of safety-related parts manufactured by a non-qualified vendor.

Building 332 Limiting Condition for Operation (LCO): LLNS is in the process of replacing lab room doors and door frames in Increment 3 of Building 332. LLNS recognized that completing this work may require exceeding the allowable time for leaving an unsealed opening between the corridor and an Increment 3 room, which would not meet the requirements of LCO 3.1 Action Statement A. The LCO requires a 1-hr fire barrier to meet the credited fire rating. On January 31, 2024, LFO approved an LLNS request for temporary relief while door replacement is occurring and noted that this approval is for the duration of 30 days from the discovery of the issue, or until completion of the door replacement activity. LFO noted that the information provided in the LLNS request for relief was sufficient to show that an acceptable level of safety will be maintained during the limited window of time that the work will be performed.

Justification for Continued Operation (JCO) for Building 332: On February 8, 2024, LFO approved the JCO related to the suspect material certification of Madruga Ironworks components. LFO’s Safety Evaluation Report (SER) stated that the existing Building 332 controls, coupled with a condition of approval (COA), compensatory measures, and the path forward, are adequate to ensure a sufficient level of safety to workers, the public, and the environment for the operations and events allowed for Building 332. LFO’s COA requires LLNS to obtain LFO approval to return to Operation Mode following a seismic event that exceeds 0.3g peak ground acceleration. Following such a seismic event, LLNS must submit a plan to LFO for approval that identifies all actions with associated completion times, including surveillances, tests, and inspections needed to confirm operability of Madruga components credited as safety significant. LLNS must also evaluate the condition of these systems after such a seismic event to evaluate their ability to meet design requirements. LFO required that the JCO and SER be entered into the Building 332 safety basis immediately.

Approval of National Nuclear Security Administration (NNSA) Supplemental Directive 1027, Admin Change 2, for Hazard Categorization and Accident Analysis: On February 8, 2024, LFO approved an LLNS request to use supplemental guidance provided in NNSA Supplemental Directive 1027, *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, Admin Change 2*. LFO noted that the use of this guidance for facility hazard categorization and accident analysis is consistent with the implementation process previously approved by LFO on December 17, 2015.