

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 6, 2018

TO: Christopher J. Roscetti, Technical Director
FROM: Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer
SUBJECT: Lawrence Livermore National Laboratory (LLNL) Report for June 2018

Defense Nuclear Facilities Safety Board (Board) Staff Activity: The Board's staff provided one person-week of on-site oversight at LLNL during June 2018. During the week of June 4–8, 2018, the Board's cognizant engineer was on site to evaluate the protective action drill completed in the Superblock. In addition, the Board's cognizant engineer met with the Manager of the Livermore Field Office (LFO), the LLNL Acting Associate Director for Nuclear Operations, and the Superblock Facility Representatives to discuss routine nuclear safety oversight items.

Protective Action Drill in the Superblock: LLNL conducted a protective action drill in the Superblock on June 6, 2018. The drill included a combined scenario with participation required from multiple facilities in the Superblock. The drill scenario simulated a major earthquake (magnitude 7.9) impacting the Tritium Facility with a stack collapse and stack alarm and causing a criticality alarm in the Plutonium Facility. All drill participants correctly evacuated to their respective assembly points. On-site and off-site equipment and emergency responders participated in the drill. LLNL staff identified areas for improvement in their follow-up critique of the drill.

Building 331 Ventilation System Fan Replacement: On June 16, 2018, LFO approved LLNL's request to allow active operations in Increment 1 of Building 331 with only one room ventilation system exhaust fan in service. The fans are designated as Equipment Important to Safety, but are not Safety Class or Safety Significant, since they are not credited to reduce the frequency or consequence in any Hazard Analysis event in the approved Building 331 Documented Safety Analysis (DSA). The Hazard Analysis of the approved Building 331 DSA states that active operations (processing, testing, and active experimentation) are not conducted when support systems, including the room ventilation exhaust system (which has redundant fans), are out of service. The authorization expires six months after the start of the project (when the first fan to be replaced is initially taken out of service), or at project completion, whichever occurs first. LLNL added the authorization letter to the Building 331 Safety Basis List effective immediately and will remove it when the authorization expires.

Waste Storage Facilities (WSF) Safety Basis Amendment: On June 27, 2018, LFO approved an amendment to the WSF DSA and Technical Safety Requirements documents to allow for the characterization of transuranic waste in preparation for shipment of this waste to the Waste Isolation Pilot Plant for disposal. The characterization equipment consists of a trailer-mounted non-destructive assay unit, real-time radiography system, headspace gas sampling system, thermal conditioning, and gas generation test canisters. LFO noted that there are no changes to the WSF or the site and that the hazards associated with the WSF and the overall risks to the public and workers are unchanged.