

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 8, 2021

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer  
**SUBJECT:** Lawrence Livermore National Laboratory (LLNL) Report for December 2020

**LLNL Operating Status in Response to COVID-19:** On December 3, 2020, California issued a Regional Stay Home Order requiring residents to shelter-in-place and all businesses other than retail or those in critical infrastructure sectors to close in-person operations. This Order required compliance once a region's ICU bed availability dropped to 15 percent. Although the Bay Area region had not yet reached this threshold, Alameda County adopted the restrictions in the Regional Stay Home Order to protect the public health, slow the spread of COVID-19, and prevent overwhelming the county's hospitals and hospital workers. While LLNL is exempted from the order, LLNL remains in Phase 2 of their "Phased Recovery and Re-entry Plan" with a limited number of personnel working on-site and a majority of the workforce continuing to telework.

**Conduct of Operations Matrix for the Radioactive and Hazardous Waste Management (RHWM) Nuclear Facilities:** On December 4, 2020, the Livermore Field Office (LFO) approved the Lawrence Livermore National Security (LLNS) update to the Conduct of Operations Matrix for RHWM nuclear facilities. The LFO review team made two comments related to future waste characterization activities and management oversight for startup activities. LLNS resolved these comments, and LFO approved the matrix without condition.

**Building 332 Structural Analysis Update:** On December 8, 2020, LLNS staff provided a briefing to the Board's staff summarizing the results of a recently completed structural analysis of Building 332. LLNS contracted with Simpson Gumpertz and Heger, Inc. (SGH) to perform a complete facility structural analysis of Building 332 using updated seismic ground motions identified in the most recent natural phenomena hazards assessment for LLNL, as required by Department of Energy Order 420.1C, Change 2, *Facility Safety*. The SGH results indicate that portions of Building 332, Increment 1, have several loft structural steel members and foundation piers that may exceed their capacity for design basis seismic loads. In addition, the SGH results showed that the Plenum Equipment Building had several roof structural members with excessive seismic demands. SGH concluded that the overall structure can withstand evaluated ground motions without collapse or a loss of confinement. Degenkolb Engineers completed a peer review of the SGH evaluation and conclusions. LLNS will evaluate retrofit options based on the SGH results.

**Waste Storage Facilities (WSF), Documented Safety Analyses (DSA) and Technical Safety Requirements (TSR):** On December 22, 2020, LFO approved the 2019 annual update to the WSF DSA and TSR. In the letter of approval, LFO noted that the resubmitted WSF DSA and TSR with updated page changes, together with the LFO Safety Evaluation Report, are sufficient and appropriate to serve as the basis for the safe operation of the WSF. LFO also included conditions of approval associated with additional evaluations of seismic fire scenarios and the waste container deflagration scenario. LLNS must provide these evaluations to LFO for review and approval within 365 calendar days. LFO stated that the DSA and TSR must be added to the WSF Safety Basis effective December 22, 2020, and implementation of the updated DSA and TSR shall be accomplished within 180 calendar days.