

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 5, 2019

**TO:** Christopher J. Roscetti, Technical Director  
**FROM:** Daniel B. Bullen, Ph.D., P.E., Cognizant Engineer  
**SUBJECT:** Lawrence Livermore National Laboratory (LLNL) Report for March 2019

**Defense Nuclear Facilities Safety Board (Board) Staff Activity:** The Board's staff provided four person-weeks of on-site safety oversight at LLNL during March 2019. On March 11–15, 2019, R.E. Tontodonato, A.R. Powers, and D.B. Bullen conducted walk downs of the Super Block and LLNL waste storage facilities and observed the Chief of Defense Nuclear Safety (CDNS) biennial review of the Livermore Field Office (LFO). On March 25–29, 2019, D.B. Bullen observed the Transuranic (TRU) Waste Characterization Contractor Readiness Assessment (CRA).

**CDNS Biennial Review of LFO:** A Board's staff team observed LFO presentations to, and interviews with, the team performing the CDNS biennial review of LFO. These presentations included an LFO presentation on the Integrated Health of the Program (IHOP) process. LFO uses the IHOP process, which considers assessments, operating experience, issue resolution, performance measures, and continuous improvement, to evaluate LLNL's contractor assurance system. The results of this CDNS review will provide input for the National Nuclear Security Administration (NNSA) Safety Roadmap effort to evaluate key elements of safety oversight, implementation, and effectiveness in NNSA.

**Plutonium Facility (Building 332) High-Efficiency Particulate Air (HEPA) Filter Surveillance:** On March 6, 2019, LFO approved a January 30, 2019, request by Lawrence Livermore National Security, LLC (LLNS) for a temporary extension of age-related replacement requirements for HEPA filters. LLNS stated that this extension was necessary because replacement HEPA filters are not available due to filter qualification and manufacturing issues. LFO approved the request subject to the following condition of approval: "The age of the HEPA filters shall be verified, and the first- and second-stage HEPA filters shall be replaced within 6 and 11 years of the date of manufacture, respectively." This requirement was added to the Building 332 Safety Basis effective immediately.

**Potential Inadequacy in the Safety Analysis (PISA) for Cracked Window in Safety Significant Glovebox:** On March 7, 2019, the LFO Manager issued a PISA related to the cracking of the inner layer of windows on a safety significant glovebox that occurred on December 19, 2018. LLNS had previously concluded that the event was adequately analyzed in the Building 332 Documented Safety Analyses, but LFO noted that the discrepant as-found condition, as represented by the cracked inner layer of glovebox windows, raised questions as to whether the glovebox can adequately withstand the effects of a Performance Category 2 earthquake. LFO directed LLNS to complete an Unreviewed Safety Question Determination within seven days and to submit an Evaluation of the Safety of the Situation within 30 days.

**TRU Waste Characterization CRA:** On March 25–29, 2019, LLNS completed a readiness assessment of TRU waste characterization operations to verify that Waste Isolation Pilot Plant (WIPP) Waste Acceptance Criteria are met prior to shipment of TRU waste from LLNL to WIPP. The CRA team assessed real-time radiography, nondestructive assay, container gas sampling, and gas generation testing operations. The CRA team identified six pre-start findings related to postings in radiological areas; fall hazards; container inspection requirements; radioactive operations document development; the operational drill program; and the completion of an operational drill. The CRA report will be issued in April 2019.