

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

December 7, 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 November 2018

Defense Nuclear Facilities Safety Board (Board) Staff Activity: The Board's staff provided zero person-weeks of on-site safety oversight at LLNL during November 2018.

Building 332 Glovebox Nitrogen Supply System (GNSS): On October 29, 2018, the safety-significant Building 332 GNSS liquid nitrogen storage tank began visibly venting from a safety plate on the top of the tank. Lawrence Livermore National Security, LLC, (LLNS) personnel postulate that the tank has a leak into the interstitial space between the inner and outer tank shells. Building 332 management secured the tank and placed a temporary supply tank in service to ensure the continued supply of nitrogen to the facility. On October 30, 2018, LLNS requested permission from the Livermore Field Office (LFO) to return to the operation mode with the Building 332 GNSS in an alternate configuration. LFO approved the request on November 5, 2018, but noted that the discovery of the failed safety-significant tank represented a discrepant as-found condition and constituted a Potential Inadequacy of the Safety Analysis (PISA) for Building 332. LFO declared that operation of Building 332 in this alternate configuration represented an Unreviewed Safety Question (USQ) and directed LLNS to submit within 14 days an Evaluation of Safety of the Situation (ESS) including a Justification for Continued Operation (JCO) that addresses the programmatic need to remain in the operation mode. On November 19, 2018, LLNS submitted the ESS and JCO with a request to return to the operation mode with the Building 332 GNSS in this alternate configuration. LLNS will procure a replacement nitrogen tank. LLNS plans to brief LFO on the schedule and installation details by January 14, 2019.

Waste Storage Facilities (WSF) DSA and TSR Approval Closing a PISA on Pipe Overpack Containers (POC): On November 14, 2018, LFO approved the DSA and TSR page changes completed by LLNS to close a PISA on POCs in the WSF. Based upon the Operating Experience Level 3 document, *Initial Pipe Over-Pack Container (POC) Fire Test Results*, issued by the Department of Energy Office of Environment, Health, Safety and Security in May 2018, LLNS performed an extent of condition review for containers with POCs at the WSF and declared a PISA on June 18, 2018. In response to this PISA, LLNS incorporated UltraTech 9424S filters into the description of the POCs in the WSF DSA. The DSA change assigns the POCs a Damage Ratio of zero irrespective of whether they contain residues, particulates, combustibles, or any other waste. LFO authorized LLNS to close the PISA once the DSA and TSR page changes are included and the process of installing UltraTech 9424S filters on POCs currently stored in WSF is complete.

Periodic Issues Report (PIR): On November 2, 2018, LFO transmitted its PIR to LLNS. The PIR identified three deficiencies, four observations, and two strengths. The assessments covered operational awareness, conduct of operations (component labeling), and an assessment of personal protective equipment procurement.