DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 3, 2016

TO: Steven A. Stokes, Technical Director
FROM: Matthew P. Duncan, Cognizant Engineer
SUBJECT: Lawrence Livermore National Laboratory Report for May 2016

Operational Drill Program: As discussed in the March 2016 report, all certified operators and supervisors are required to participate in drills at least biennially per DOE Order 426.2, *Personnel Selection, Training, Qualification, and Certification Requirements for DOE Nuclear Facilities*. During the management self-assessment and contractor readiness assessment for the Centralized Waste Processing Line, LLNL personnel discovered that none of the involved certified personnel had participated in an operational drill in the previous two years. This led to the discovery that a significant number of other certified personnel have not been participating in biennial drills. Last month, LLNL personnel responsible for the training program ensured that all certified operators and supervisors participated in an operational drill within the previous two years. To prevent reoccurrence of this issue, LLNL personnel plan to formally add the operational drill requirement to the initial certification and recertification processes by September 2016.

Plutonium Facility: While performing the semiannual functional test for the audible and visual alarms of the criticality alarm system, Building 332 facility operators found that a horn was inoperable. There was a similar occurrence last November when two horns were discovered to be inoperable. Both events were officially reportable as they were considered to be a performance degradation of a safety-significant system. In both cases, the actual impact on nuclear safety was minimal as other nearby horns were clearly audible in the coverage zone of the failed horns.

The Technical Safety Requirements currently do not require anyone to be in Building 332 after normal work hours unless there are ongoing operations. An upcoming programmatic operation will require actinide processing lasting longer than a single 9-hour shift. LLNL safety basis personnel are planning to propose a modification to the Technical Safety Requirements to allow for unattended off-hour operations. This will require a modification to the definition of the standby mode and a change to the minimum operations shift complement during such operations. At LFO's insistence, LLNL plans to perform a failure mode and effects analysis to demonstrate that the risk of a malfunction leading to significant consequences is unlikely. LLNL is using this modification as an opportunity to evaluate allowing additional unattended off-hour operations.

Tritium Facility: A laboratory room in Building 331 contains an industrial grinder and a tritium gas collection system. The grinder crushes tritium-containing devices to allow a portion of the tritium to be released. The released tritium is recovered using the vacuum collection system. The shredded devices are disposed of as low-level radioactive waste. The activity involves no more than 600 curies of tritium at any one time. The grinder was last operated in 2011. Since then, two modifications have been made to improve operations. LLNL plans to restart operations using the grinder soon. Given the extended period of inactivity and the modifications to the system, LLNL plans to perform a readiness assessment using a checklist approach as early as July 2016.