

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 18, 2012

**MEMORANDUM FOR:** Timothy Dwyer, Technical Director  
**FROM:** Jonathan Plaue, DNFSB Site Representative  
**SUBJECT:** LLNL Activity Report for Week Ending May 18, 2012

**DNFSB Staff Activity:** On May 17, 2012, the staff held a teleconference with personnel from the Livermore Site Office (LSO). The purpose of the teleconference was to discuss the temporary deviation from a technical safety requirement (TSR) for a portion of the safety class fire suppression system in the Plutonium Facility.

**Plutonium Facility:** On May 7, 2012, a facility operator discovered a leak on a pressure relief device supporting the safety class nitrogen skid. The skid provides motive force to drive water flow from a tank to safety class deluge systems that protect HEPA filters in the event of a post-seismic fire. The operator secured gas flow (there is no replacement once the supply is depleted) and entered the TSR limiting condition of operation (LCO) to place the facility in STANDBY and subsequently in the MAINTENANCE modes. The approved LCO further required the facility to enter REPAIR mode if operability of the system was not restored within three days. The intent of these TSR mode changes is to limit operations thereby reducing the likelihood of certain accident scenarios to compensate for the loss of credited safety systems.

On the same day, the laboratory submitted and LSO approved a temporary deviation to the LCO using the safety basis amendment process. The deviation allowed the facility to be in OPERATION mode without programmatic restrictions (e.g., limiting activities with the potential to initiate fires) for up to 14 days. LSO's approval memo cited the continued operation of normal water supplies and the compressed air system as adequate compensatory measures and placed temporary TSRs to ensure adequate pressures for these systems. These systems are the normal flow delivery modes for the fire suppression system with the nitrogen skid effectively acting as the third tier back-up; however, it is the only system credited to perform following an evaluation basis earthquake. Facility personnel restored operability to the skid on May 16.

Facility personnel have secured funding and plan to reconfigure the fire water tanks by the end of this calendar year (a planned improvement long identified in the safety basis). The reconfiguration leverages the larger tank to provide adequate volume for water and gas pressure storage to meet flow demands without an external gas supply thereby eliminating the need for the nitrogen skid.

In a letter dated May 12, 2012, the LSO Manager approved the start of operations associated with the classified experiment. The approval letter further stipulated to the contractor that the authorization was limited to a single experiment and that the safety basis provisions for these types of experiments were to be removed in the next annual update. The operations approval followed completion of the LSO readiness assessment, which identified two pre-start findings concerning: (1) a training requirement for hoisting and rigging that was not identified on the qualification card for certain individuals and (2) a lack of documentation associated with the maintenance of two-person control of mock explosives prior to arrival in the facility. Corrective actions for these issues were verified as closed by LSO as part of their approval process. Program personnel expect to conduct the experiment in the next few weeks.