

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 3, 2007

MEMORANDUM FOR: J. K. Fortenberry, Technical Director
FROM: Michael J. Merritt, DNFSB Site Representative
SUBJECT: Lawrence Livermore National Laboratory (LLNL)
Report for Week Ending August 3, 2007

Plutonium Facility Active Confinement Review: As part of the implementation of Board Recommendation 2004-2, *Active Confinement Systems*, the Livermore Site Office (LSO) directed LLNL to perform a review of the Plutonium Facility confinement ventilation system. The review is to be conducted to meet the requirements of DOE's *Ventilation System Evaluation Guidance for Safety-Related and Non-Safety Related Systems*. Recently, LLNL has identified conflicts with performing the review on the current schedule that has been established by DOE headquarters. Originally, the review was scheduled to be complete in September 2007, but is currently expected by DOE to be completed in December 2007. The initial delay was due to limited LLNL resource being available due to the implementation of the new documented safety analysis (DSA). In a recent letter to LSO, LLNL has proposed an additional extension to the schedule in order to complete a few high-priority safety upgrades in the facility. LLNL has proposed that completion of the review be deferred until February 15, 2008.

In its recent letter, LLNL cites four activities that it believes need to be accomplished prior to performing the ventilation evaluation. The activities are:

- implementation of the glovebox exhaust system portion of the DSA (planned for August 2007);
- implementation of the final HEPA filtration system portion of the DSA (planned for September 2007);
- replacement of a safety-class room ventilation system fan (planned for August 2007); and
- installation of safety-class differential pressure switches to prevent high differential pressures on the HEPA filters (planned for December 2007).

The activities listed are included in the Nuclear Material Technology Program (NMTP) resource-loaded schedule and completion of the tasks is a high priority for LLNL.

To provide perspective on this issue, in 2004 the Board identified issues related to the Plutonium Facility's approach to confinement and these issues were resolved by LSO in September 2004 (see weekly report dated September 10, 2004). Since that time, LLNL has finalized the documented safety analysis (DSA) for the facility and is approaching full implementation of the DSA, including the retention of safety-class confinement ventilation and the emergency power system. Additionally, LLNL and LSO have performed configuration management reviews of the ventilation and emergency power systems. The primary objective of the ventilation system evaluation is to ensure that the functional performance criteria are satisfied. In the case of the Plutonium Facility, some of the performance criteria contained in Table 5-1 of the ventilation system evaluation guidance have already been reviewed. In reviewing LLNL's request for additional time, LSO should consider the progress already made in this area and the likely outcome of the gap analysis between the actual system performance and the ventilation system evaluation guidance criteria.