

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 14, 2013

MEMORANDUM FOR: Steven Stokes, Acting Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending June 14, 2013

Plutonium Facility: On Friday, the laboratory contractor submitted to the Livermore Field Office (LFO) a Justification for Continued Operations (JCO) concerning issues with the credited boundaries and engineering capabilities of certain components in the loft (see weekly report dated May 10, 2013). The JCO advocates continued operations under the existing compensatory measures— isolation of the lines and associated equipment that impact the boundary and a reduction of material-at-risk in the affected rooms. The JCO argues that “structural integrity” requirement for the safety class ventilation ducting was never intended to mean zero leakage and that the fans have been demonstrated to maintain adequate performance under conditions that bound degradation from room fires or a break of programmatic equipment connected within the safety class boundary. The contractor notes the results of additional technical analysis and fire modeling will be submitted to LFO by December 6, 2013.

Tritium Facility: On Thursday, the contractor briefed LFO on the results of Technical Safety Requirement (TSR) surveillance leak testing for two tritium gloveboxes during the past year. LFO requested the briefing to assess the difficulty the contractor perceived in meeting the leak test. The approved TSR leak test allows for a less conservative leak rate and is conducted in a less rigorous manner than the applicable industry consensus guideline. Each glovebox was tested twice—once resulting from normal operations and a second time at the request of the Facility Manager to provide additional data. All four tests met the TSR leak criterion and would have met the industry consensus guideline of 0.5 % per hour (the highest observed leak rate was 0.11 % per hour) assuming test conditions with constant temperature and pressure.

The contractor recommended no change to the TSR leak test citing the lack of benefit for the costs of procuring temperature and pressure instrumentation and the extended test duration required to comply with the industry standard. The Site Representative notes that it is likely more cost has been expended developing and justifying the use of an alternative leak test than would have been necessary to comply with the industry consensus guideline. Further, development of the alternative approach is contrary to a White House Office of Management and Budget circular, Department of Energy policy, and senior laboratory management’s expressed desire to utilize industry consensus standards whenever possible.

Emergency Management: On Tuesday, the contractor performed evaluated Emergency Planning Hazards Assessment (EPHA) exercises at the Hardened Engineering Test Building and the Tritium Facility. Facility management originally planned these as facility-level operational drills, but converted them to evaluated exercises at the request of the institution within the past month. The scenarios respectively involved a contamination event with a continuous air monitor alarm and a high-level tritium room alarm. Facility and program personnel responded appropriately to the alarms. The exercise plan included objectives involving the fire department that could not be evaluated for these scenarios. Specifically, the documented response to both events does not involve the fire department. LFO and contractor personnel stated that the fire department participated for training purposes only. The Site Representative notes that this situation suggests that the contractor has not implemented an overall drill/exercise program that systematically identifies appropriate accident scenarios and associated responders to ensure these events are practiced and evaluated on a periodic basis as required.