

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 15, 2010

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending October 15, 2010

Plutonium Facility: On October 5, 2010, fissile material handlers conducted the replacement activity of a high dose rate housekeeping HEPA filter (see weekly report dated July 30, 2010). The removal of the existing filter went as planned; however, the cone flange on the replacement filter did not align properly with the ductwork and the job was stopped. At this point, one of the handlers experienced heat exertion symptoms and blood was observed on the inside of his protective hood from an apparent incidental bump against elevated equipment. A wound count was negative and he was transported to medical. Management suspended operations in the affected workstations while personnel examine options to adjust the filter or redesign its support stand. In the Site Representative's opinion, since this workstation is likely to have an enduring role in the facility, this event represents an opportunity to redesign the housekeeping filter manifold to incorporate a modern, open-faced filter design, as suggested in the Department of Energy's *Nuclear Air Cleaning Handbook*.

On October 7, 2010, three handlers experienced a Continuous Air Monitor alarm while bagging out a container of plutonium-238 oxide. The handlers responded appropriately and were wearing the required minimum personal protective equipment, including a half-face respirators and lab coats. Contamination was found on a handler's personal clothing and another had detectable contamination (about 1 dpm) on a nasal swab. The new Facility Manager reported and critiqued the event. Two of the handlers were placed on non-routine bioassay; results are pending.

In response to the above event and a similar event where contamination was detected on nasal swabs for an individual wearing a half-face respirator (see weekly report dated May 28, 2010), the Nuclear Materials Technology Program (NMTP) Leader filed a management concern occurrence report on October 8, 2010. The NMTP Leader further directed the Facility Manager to establish a working group to reevaluate personal protective equipment requirements. The working group held its first meeting on October 14, 2010, and is expected to provide its recommendation by the end of the month. In the interim, the Facility Manager issued a standing order requiring the use of at least a full-face respirator when respiratory protection is required for operations in select rooms deemed to pose an increased risk. The standing order also requires the upgraded respiratory protection in all rooms for opening secondary containers outside of engineered enclosures. The use of coveralls and full-face respirators is consistent with the practice at similar hazard facilities in the complex.

Tritium Facility: On October 6, 2010, Tritium Process Station operations involving the use of tritium commenced per the startup plan.

On October 13, 2010, the Facility Manager held a critique and filed a management concern occurrence report regarding an unexplained high level stack alarm received while testing the low level stack monitor. The approved safety basis designates the stack alarm as equipment important to safety. Under this designation, there are no operability requirements or other required specifications. The system was successfully retested and tritium operations continue in the facility while personnel conduct troubleshooting actions.