

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

August 13, 2010

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending August 13, 2010

R. Rauch was at the Laboratory this week to augment the Site Representative office. On August 10, 2010, the staff held a teleconference with the Department of Energy's Office of Disposal Operations, the Carlsbad Field Office, and the Livermore Site Office (LSO) to discuss the basis for the *Contact-Handled Transuranic Waste Packaging Instructions* and its application at LLNL.

Livermore Site Office: On August 3, 2010, the LSO Manager approved a request to reassign responsibility for oversight of the Radioactive and Hazardous Waste Management (RHWM) nuclear facilities to Operations Team 6. Oversight responsibility had been temporarily transferred to the Operations Team 1, which is the team responsible for the Superblock facilities, as part of a corrective action resulting from the self-assessment associated with the December 2008 glovebox incident (see weekly report dated December 11, 2009). The approval memorandum cites as the bases for the reassignment the improvements made to work control processes used at RHWM, adoption of corresponding oversight practices from Operations Team 1, and the conversion of the Decontamination and Waste Treatment Facility into two radiological facilities.

Tritium Facility: On August 5, 2010, LSO concurred with the closure of pre-start items from the readiness assessment for the Tritium Grinder System (see weekly report dated July 30, 2010). Grinding operations involving tritium containing materials successfully commenced on August 10, 2010. A second batch of materials was processed the next day. Preliminary indications are that all systems and processes responded as expected. Startup activities for the Tritium Grinder System are governed by the Workstation Operation Start/Restart Process as described in the Superblock Work Control Manual.

Plutonium Facility: Analysis results received this week for samples of the uranium lithium compound involved in the unexpected exothermic reaction (see weekly report dated July 23, 2010) indicated the presence of lithium oxide and uranium oxide. Program personnel are using this information to develop phase 2 of the recovery effort.

The presence of the lithium oxide is consistent with the expected calcination products according to the Operational Safety Plan (OSP) governing the process. The OSP states that the resulting lithium oxide material "is either stored or used as a feed material in other processes or disposed as transuranic waste." The same OSP only specifies "water soluble compounds" and "powdered oxide materials" as the scope of the feed for the oxide washing process, which was the activity underway when the unexpected reaction occurred. The *LLNL Institution-Wide Work Control Process Requirements* document states, "The scope of work shall be described in sufficient detail to allow the work planning process to identify hazards associated with the work..." While a mixture of lithium oxide and uranium oxide powders could be interpreted to meet this definition, it is not evident that the activity level hazards and controls associated with contacting lithium oxide with water were explicitly analyzed in the OSP.