

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 2, 2009

**MEMORANDUM FOR:** Timothy Dwyer, Technical Director  
**FROM:** Jonathan Plaue, DNFSB Site Representative  
**SUBJECT:** LLNL Activity Report for Week Ending October 2, 2009

**Tritium Facility Modernization:** Critical Decision 4 was approved by the Livermore Site Office (LSO) on September 30, 2009. Approval followed completion of the LSO readiness assessment and approval of planned corrective actions. The LSO readiness assessment identified two post-start issues: (1) The use of an Operational Safety Plan (OSP) with attached guidance does not meet the intent of Order 5480.19, *Conduct of Operations Requirements for DOE Facilities* and (2) the LSO designation of the Tritium Processing Station (TPS) glovebox as a safety significant boundary without an established basis led to confusion on the functional requirements and boundaries for the system. The first post-start finding will be resolved through an update to the procedure for development of OSPs and will result in an updated OSP for TPS by the end of next July. The second post-start finding is similar to concerns previously identified in both the management self-assessment and the laboratory readiness assessment (see weekly reports dated July 31, August 14, and September 4). The approved LSO corrective action for this issue is to direct the laboratory to either submit a safety basis modification that ensures the development of appropriate technical safety requirements from the hazards analysis or provide justification for removing the safety significant designation of the TPS glovebox. It is important to note that the hazards analysis was not derived utilizing a process specific approach for TPS and that there are other gloveboxes in the facility that are also credited as safety significant.

**Plutonium Facility:** Last Thursday, following facility management approval, the first operation utilizing special nuclear material was performed in the Hydride/Dehydride/Casting (HYDEC) unit. Most of the operation occurred as expected; however, upon attempted removal of the casted ingot, it was discovered that the casted metal had bonded to the copper crucible. While there is no direct safety impact from this unexpected condition, the continued challenges faced by the HYDEC activity highlight the need to strengthen engineering and design practices, including startup testing, for programmatic equipment. Personnel are now developing a disposable alumina insert for the copper crucible. A suitable reusable crucible was not explored due to time constraints and existing equipment geometries. In addition, the System Design Description (SDD) for the associated hydrogen safety significant system remains in final review; an approved SDD was not considered a prerequisite for operations with nuclear material because the work permit controls are still in effect.

**Radioactive and Hazardous Waste Management:** On October 9, 2008, the Office of Environmental Management issued packaging instructions for contact-handled transuranic (TRU) waste in supplement to Manual 435.1, *Radioactive Waste Management Manual*. Of note, these instructions require sites that do not have a certified characterization program to produce a comprehensive, narrated video record of each waste package and its contents as it is generated. Nearly a year has passed since these instructions were issued and there is not yet an approved, funded plan to implement them at the laboratory. As a result, all TRU waste packages generated after the instructions were issued will require repackaging. For planning purposes, the laboratory estimates a nominal generation rate of 80 to 100 drums per year. Priority ought to be given to developing a plan that minimizes the need to double-handle drums.