

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 3, 2009

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending July 3, 2009

The site rep was out of the office on Thursday.

Radioactive and Hazardous Waste Management: A work permit has been prepared to support an activity to sample and volumetrically measure the hydrogen generation rate associated with a vented drum containing non-enriched uranium materials. These uranium materials were previously treated using the glovebox process associated with the December 2008 over-pressurization incident. This work activity supports a corrective action to ensure that the materials had been adequately stabilized. As currently planned, the hydrogen generation rate will be compared to several other drums with similar materials that had also been previously processed and are assumed to be stabilized and in a safe condition. The basis for this assumption is primarily historical experience and has not been otherwise substantiated. Overall, there are about 40 of these drums containing similar materials awaiting decisions on their disposition.

This week, the work permit underwent some revisions to clarify and strengthen controls. In particular, a peer review was performed by a subject matter expert to ensure reactive material hazards were adequately controlled. This review resulted in the specification of vented packaging for the sampled material. The controls for the hazard posed by opening a drum with a potentially elevated hydrogen concentration are also being revised to include non-sparking tools and use of a meter calibrated for hydrogen. The appropriateness of these controls hinges on whether the hazards associated with the materials in the drum have been conservatively bounded. Given the history and uncertainties associated with this material, additional review of the approach and associated control set by individuals with appropriate expertise appears warranted. The work permit is not expected to be approved until next week at the earliest.

Institutional Directives: On June 24, 2009, the Livermore Site Office provided clarification to the laboratory contractor regarding the implementation of Department of Energy Standard 1189-2008, *Integration of Safety into the Design Process*. The clarification sets a screening threshold of \$500K total estimated cost for capital acquisition activities in nuclear facilities above which use of the standard's major modification criteria is required. Physical modifications to nuclear facilities below this cost threshold will continue to follow the Unreviewed Safety Question process.