

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

April 8, 2011

MEMORANDUM FOR: Timothy Dwyer, Technical Director
FROM: Jonathan Plaue, DNFSB Site Representative
SUBJECT: LLNL Activity Report for Week Ending April 8, 2011

Startup and Restart: On April 7, 2011, the contractor's Readiness Review Board (RRB) met to screen activities for the upcoming startup notification report. In particular, the RRB discussed a planned activity to disassemble a nuclear explosive-like assembly (NELA), which contains nuclear material, but no explosives. The RRB asserted that the disassembly activity represented an element of ongoing nuclear material unpacking performed under Operational Safety Plan (OSP) 332.179, *Portable Gamma Scanner and Material Handling Activities*, and therefore did not constitute a startup or restart subject to a formal readiness assessment.

In the Site Representative's opinion, disassembly of a NELA is not clearly identified in the scope of the referenced OSP. While the primary hazards involved may be similar to existing operations, there are other substantive differences. For example, the disassembly will utilize specialized equipment, including tooling and a work stand. The contractor has yet to select the specific equipment, but none of the options are reflected in the OSP's approved equipment list or have been utilized in the facility in recent history. The procedure governing the disassembly is also not currently in use and will need to be revised and personnel trained to reflect the choice of tooling and related process flow. Livermore Site Office (LSO) is reviewing the matter.

Configuration Management: During follow-up oversight of last week's discrepant as-found condition in the Tritium Facility stack monitors (see weekly Report dated April 1, 2011), a LSO Safety System Oversight engineer identified that the system data sheet (a graded configuration document for defense-in-depth Equipment Important to Safety) did not reflect the appropriate drawing number or list relevant calibration procedures. Further, system modifications were completed to correct the flow into the monitors, but were not reflected with red-lined drawings; however, the contractor's procedures do not require drawing control for this system. The LSO engineer also noted that a lack of a procedure or detailed training governing development of the system data sheets likely contributed to these configuration management issues.

Tritium Facility: On April 6, 2011, LSO issued a letter to the contractor requesting a briefing within 30 days to discuss ongoing issues associated with the Tritium Grinder System (see weekly report dated March 18, 2011).

Plutonium Facility: On March 29, 2011, contractor personnel declared a nuclear criticality infraction when a casting crucible was determined to contain 83 g of plutonium residue, which exceeded the 65 g limit for the assay workstation where it was located. Immediate response by Materials Management personnel was appropriate and approved recovery operations were completed the same day. The contractor's report on the infraction categorized the event as severity level 4, the lowest level. The report further described that the crucible was originally estimated to contain 64.9 g, but likely contained about 208 g when it was sent from casting to a furnace to be calcined prior to assay. Calcine personnel subtracted resulting oxide material from this errant value, which resulted in a final estimate of 4 g when it was placed into the assay workstation. The contractor's report suggested that the unique crucible design contributed to the event and further noted that experienced handlers did not observe the plutonium holdup. The report emphasized increased awareness and margin for unique equipment, but did not recommend improvements to estimation practices.