

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Steven Stokes, Technical Director
FROM: William Linzau and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending December 6, 2013

Sludge Processing Facility Buildouts (SL-PFB) Project: This week, the Environmental Management Office of Project Assessment conducted an Independent Project Review (IPR) of the SL-PFB project. Per DOE Order 413.3B, an IPR is required to reaffirm Critical Decision (CD)-1 approval. The SL-PFB project is intended to process 2,000 cubic meters of remote-handled transuranic sludge and supernate liquid, most of which is located in the Melton Valley Storage Tanks (see 7/27/12 report). In a presentation during this week's outbrief, the team presented initial conclusions that the safety documentation is sufficient for the project to proceed to preliminary design and that it demonstrates early integration of safety considerations. The team made several recommendations, including: the test program should be integrated with the facility design process, the contractor completing the design (OREM recently revised the acquisition strategy for the project, see 9/6/13 report) should continue efforts on both active and passive ventilation options during preliminary design, and a conceptual design report should be completed prior to CD-1 reaffirmation.

Building 9215: Last week, B&W management held a fact finding meeting to evaluate a procedure execution error associated with loading uranium chips into a chip dolly. A material clerk was tasked with loading chips into one of two cylinders on a dolly. The clerk failed to follow a procedural step to verify that the lot identification number on the tally sheet matched the cylinder's batch card. This resulted in the clerk adding more chips to a cylinder that was nearing its nuclear criticality safety (NCS) mass limit and had been previously marked as full. The clerk noted the discrepancy as he was totaling the tally sheet and notified his supervision who established administrative standoff of the area surrounding the cylinder. NCS personnel determined the actual quantity of uranium was still below the mass limit for the cylinder and issued a minor non-compliance for the procedural violation. The corrective actions include changing the process to require installation of a tamper indicating device on the cylinders immediately after they are declared full.

Building 9212: Operators have completed cleaning the interior of the Holden Gas Furnace as part of the preparations to replace its brick heating surface (see 11/15/13 report). Subsequently, engineering personnel conducted a non-destructive assay and determined that the quantity of fissile material is below the level requiring NCS controls. This permits operators to use tools that do not have an inherently safe NCS geometry (such as the use of a portable HEPA vacuum for local contamination control during brick removal) and the use of water spray bottles for dust control. Maintenance personnel removed exterior appurtenances from the furnace to allow the construction of the HEPA-filtered tent enclosure, which is planned for early next week.

Last week, operators attempted to lower a loaded casting stack assembly inside a vacuum induction melt furnace when they observed that the assembly appeared lodged and did not lower to the bottom of the furnace. The operators followed the abnormal operating procedure for this situation. Under guidance from an NCS engineer, operators inspected the furnace and found some metal in the stack's catch ring. Operators also noted that the bricks lining the interior of the furnace had shifted due to thermal cycling, which reduced the stack's clearance when it was raised into a melt position. In accordance with established procedures, operators were able to free the stack, recover the metal, and they are planning to reposition the brick to improve the clearance for future stack assemblies.