

## 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 27, 2013

The operational tempo of Y-12 nuclear facilities was significantly reduced due to the holiday. R. Rauch was out of the office this week and W. Linzau was in on Monday and Tuesday.

**Oak Ridge National Laboratory (ORNL):** Last month, URS/CH2M Oak Ridge (UCOR) declared a potential inadequacy of the safety analysis (PISA) after determining that there is not an adequate technical basis for assuming a damage ratio of 0.25 for events involving the structural failure of tanks larger than 1,500 gallons (see 11/22/13 report). The lack of a technical basis for this damage ratio was discussed in the Board Letter dated November 8, 2013. UCOR has completed its Evaluation of the Safety of the Situation (ESS) but is still working to complete the Justification for Continued Operation. The ESS provides that if the damage ratio was increased from 0.25 to 1.0, the highest off-site consequences from an event in which a tank failed would increase from 0.35 rem to 1.4 rem.

Last week, the site rep conducted a walkdown of some of these tanks with the OREM Facility Representative, OREM Engineering representative, and the UCOR Facility Manager and Nuclear Safety Lead. The tanks in question have controls to detect and mitigate leaks, which include monitoring of tank level, leak detection in the sumps, and the tanks are located in thick concrete containment vaults. In addition, there is significant spare tank capacity available if a leak did occur. In recent years, the volume of liquid waste being generated at ORNL has been minimal resulting in infrequent need to conduct transfers to the long-term storage tanks.

**Building 9204-2E:** Last week, facility operators found one of the high temperature ovens shut down due to activation of the over-temperature function, which tripped off the electrical power to the unit. These ovens are used to condition parts prior to assembly, but there is no hazard present in these ovens that would require the over-temperature function to be a credited safety control. The over-temperature condition was caused by reduced air circulation inside the unit due to slippage of a fan belt. The reduced air flow caused increased temperature in the upper portion of the oven.