

## 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 October 24, 2014

R. Rauch was out of the office this week. Staff members R. Jackson and R. Oberreuter were at Y-12 to observe a peer review of the Uranium Processing Facility (UPF) project.

**UPF:** This week, a Peer Review Team conducted the on-site portion of its independent review of the UPF project. In September, the NNSA Deputy Administrator requested that the Office of Acquisition and Project Management conduct a review to assess the project's status in addressing the recommendations of the 2013 peer review team and the Red Team Report, and the progress in achieving Critical Decision (CD)-2. The review was focused on answering a set of questions about the project which include: if the project has a clear set of requirements; if there are unresolved issues associated with technology, design, or nuclear safety; and if environmental, safety, and health (ES&H), and quality assurance aspects are being properly tailored and applied. The review was divided into four focus areas: Technical and Facilities; Cost, Schedule, and Risks; Management and Acquisition; and Environment, Safety, Health, Quality Assurance, Nuclear Safety, and Security. Following a set of introductory briefings from UPF management, the team collected information through a series of interviews with CNS, UPO, and NPO personnel. The team's final report is scheduled to be issued in mid-December.

**Building 9212/Nuclear Criticality Safety (NCS):** The CNS Engineering and Quality organizations continue to work to address issues associated with the density of graphite components used during casting operations (see 10/3/14 report). The efforts to sample the density of graphite currently in inventory revealed that the density varied and some samples were above the maximum NCS limit. The Y-12 Engineering Senior Technical Advisor has established the following plan to resume casting activities: fabricate new graphite components from stock that have verified densities below the NCS limit, test new methods to measure density more accurately, and identify graphite components in which density is not a factor in NCS evaluations.

**Transuranic Waste Processing Center (TWPC):** Two weeks ago, workers conducting hot cell operations were using remote manipulators to cut open a cylinder when an acid solution sprayed out of the opening. There were no injuries or reported damage to equipment, but the supervisor immediately suspended the operation due to the unexpected condition and initiated an investigation. The cylinder being cut was one of eight that had been loaded into the hot cell from a concrete waste cask. Workers inspected the other seven uncut cylinders and noted they were bulging, which indicated that they were under pressure. WAI's Nuclear Safety organization reviewed the available information and postulated that the pressure could be due to gas generation from radiolysis. They determined that the presence of a flammable gas under pressure within the geometry of these cylinders (~6 inches in diameter and 10 inches long) could pose a deflagration-to-detonation hazard. This detonation hazard is not evaluated in the safety analysis; therefore, the Operations Manager declared a potential inadequacy in the safety analysis.

The Acting Assistant Secretary for Environmental Management approved the CD-1 package for the Sludge Processing Facility Buildouts Project. This project to process the sludge remaining in the Melton Valley Storage Tanks is scheduled for completion between July 2021 and July 2022.

**Safety Culture:** NPO and CNS sponsored a two-day safety culture workshop in which 65 contractor and DOE employees from across the complex participated to share best practices and lessons learned. The CNS Chief Executive Officer expressed his desire to make this a yearly event with even broader participation.