

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Timothy Dwyer, Technical Director
FROM: William Linzau and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending December 14, 2012

D. Andersen and J. Blackman attended a meeting with the Uranium Processing Facility (UPF) structural design team. The purpose of the meeting was to discuss the structural design changes required to address (1) identified space management issues and (2) the plan to defer Building 9204-2E and Building 9215 operational capabilities from the initial operational phase of UPF.

Microwave Casting: This week, B&W successfully melted uranium metal in the production microwave caster for the first time. B&W performed two runs, each with a low-enriched uranium metal charge. As previously reported (see 10/26/12 and 8/17/12 reports), B&W has encountered several engineering challenges and equipment issues that have prevented successful performance of this unit for the past year. As a result, both of this week's runs were performed cautiously, with gradual power ascension to minimize the potential for component damage. The quality of the product from the first run appeared satisfactory, per visual inspection from the B&W microwave casting subject matter expert (SME). Regarding the second run, the microwave casting SME believes a misalignment between the crucible and the pull rod affected both the pour rate and yield during this run. B&W is awaiting the results of a chemical analysis of both products. There are concerns that some lingering equipment issues (leakage in the vacuum system and energy leakage from one of the magnetrons) will prevent consistent successful performance of the unit moving forward.

Transuranic Waste Processing Center (TWPC): Late last week, while performing maintenance on an air compressor that supplies the breathing air for TWPC's main processing facility, a maintenance technician inadvertently cut off the breathing air supply to the workers in the box breakdown area. Workers egressed the area and doffed their personal protective equipment in an orderly manner, per the TWPC atypical events procedure. No personnel injuries occurred. Following the event, the maintenance technician acknowledged that he did not perform the valve lineup or the lockout/tagout (LO/TO) of the inlet and outlet compressor valves in accordance with the applicable procedure. This procedure is categorized as a Use-Every-Time procedure, which is the strictest level-of-use category at TWPC, requiring direct use and verbatim compliance. Wastren Advantage, Inc. is currently developing corrective actions in response to the event.

Building 9212: This week, B&W performed wiped-film evaporator and denitrator operations in Building 9212 for the first time in approximately nine months. The site reps observed these operations. The operational downtime for these systems was primarily caused by a series of issues with upstream systems (e.g., secondary extraction and intermediate evaporator) and limited programmatic need for the denitrator's UO₃ product (last fiscal year, despite these equipment issues, B&W met all production deliverables in Building 9212). The changes B&W made to improve its work planning and control processes, particularly those that added steps to the process for planning permitted LO/TO activities, also contributed to the operational downtime of these systems.