

## 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 November 15, 2013

**Building 9204-2E Operations:** Assembly/Quality Evaluation Production (A/QEP) personnel have accumulated several chip dolly cylinders containing uranium chips that are contaminated with a particular hazardous material. Currently, there is no disposition path for the materials in these cylinders, some of which were originally packed approximately seven years ago and have not been inspected since. B&W is concerned that the non-flammable solvent used to prevent rapid chip oxidation in these cylinders may have partially evaporated. Further, personnel have observed this solvent weeping from one of the cylinders. Engineering personnel are developing a procedure to allow A/QEP personnel to open the cylinders in a hood, inspect the solvent level in each cylinder, and add solvent, if necessary. The procedure will include considerations for how to address any heat or flame generated by the rapid oxidation of uncovered chips. A/QEP management expects the procedure to be completed early next month and plans to establish a requirement to periodically inspect the condition and solvent levels in these cylinders until a disposition path has been defined. Engineering personnel also plan to develop a procedure to address the weeping cylinder, which would likely include steps to apply an epoxy material to the location of the leak.

**Building 9212 Operations:** Over the last several months, Oxide Conversion Facility (OCF) operations have been interrupted on several occasions by hydrogen fluoride (HF) detector alarms in the vaporizer enclosure (see 10/4/13 report). B&W's latest efforts to determine the cause of the alarm were postponed when the site prepared to transition to a minimum staffing condition (see 10/11/13 report). At that time, the system was purged, filled with nitrogen gas, and the HF storage cylinder was returned to the vendor. During the last two weeks, B&W resumed activities to find the cause of the alarm by checking for leaks in the primary confinement barrier inside the vaporizer enclosure. Enriched Uranium Production personnel believe they have detected a leak but have been unable to isolate its exact location through use of an ultrasonic probe; therefore, the process engineer is preparing a procedure to allow operators to pressurize the lines with helium gas in the next attempt to locate the leak.

In March 2013, during an inspection of the Holden Gas Furnace, workers discovered cracks in one of the brick heating surfaces on the furnace interior. The furnace uses a natural gas/air mixture, which diffuses through these porous bricks before being ignited in the interior of the furnace. Since the discovery of the cracks, that heating surface was removed from service and the Production, Engineering, and Facilities, Infrastructure, and Services organizations have been working on plans to replace the bricks. Work planning personnel completed the job hazards analysis and identified controls to address high levels of contamination on the interior of the furnace and asbestos materials in the expansion joints. Engineering personnel have conducted a non-destructive assay (NDA) of the furnace and they believe it will be possible to reduce the quantity of fissile material to below the level requiring criticality controls. Another NDA will be performed to confirm that the levels are below this limit after the furnace is shut down and cleaned in a few weeks. Removal of the old brick is planned to start in December and the entire job is scheduled to be completed in February.

Modifications to the Building 9212 ventilation system associated with upgrading Stack 110 have been completed and the Construction organization has turned over the system to Production personnel. With the ventilation upgrades completed, Production personnel resumed enriched uranium casting operations late this week.