

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 13, 2009

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending February 13, 2009

Mr. Kupferer was out of the office this week.

Highly Enriched Uranium Materials Facility (HEUMF). YSO review continues of the HEUMF Documented Safety Analysis (DSA) and associated Technical Safety Requirements (TSRs) recently submitted by B&W for approval (see the 1/2/09 site rep. report). Last week, YSO formally transmitted an extensive set of comments on the DSA and TSRs to B&W. YSO requested that B&W respond with a proposed resolution to each of the comments. YSO noted in this transmittal that review of technical documents referenced in the DSA (e.g., the System Design Descriptions) is in progress and comments are to be provided.

In response to the discovery of a lack of Quality Assurance program documentation for sub-tier vendors supplying fastener components for safety-class storage racks, B&W developed a plan to conduct a test program of the installed fastener assemblies (see the 10/3/08 and 3/28/08 site rep. reports). Material to be tested under the plan included: 59 bolts each from the 10 lots of bolts provided by the vendors (590 total bolts), 59 nuts, 236 flat washers, and 295 direct-tension indicating washers. This testing is nearing completion and results are being reviewed and compiled by B&W. An issue recently identified by B&W in executing this test plan is that the vendor Certified Material Test Report (CMTR) for one lot of bolts has not been located. Additionally, for three lots of bolts, there are discrepancies between bolt head-markings and the head-markings indicated on the CMTRs. B&W is obtaining additional chemical property data and continuing investigation of these issues.

Oxide Conversion Facility (OCF). Last week, a small release of hydrogen fluoride occurred during OCF operations. In preparation for running the hydro-fluorination fluid bed (to convert uranium dioxide to uranium tetrafluoride), OCF operators had filled the vaporizer with hydrogen fluoride (HF) from the storage cylinder, closed the cylinder and vaporizer isolation valves, and were completing the process of sweeping the HF supply piping with the dock scrubber running. An operator observed a puff of vapor near a valve in the HF sample loop (used to verify proper purging) that lasted several seconds and stopped. No HF alarms in the area were activated. After evacuation and initial response actions to verify no ongoing HF leak, B&W personnel sampled and confirmed the presence of acidic concentrations on the sample valve insulation indicating the presence of an HF leak.

B&W evaluation of this event continues. Work planning to clean and obtain additional samples around the valve and then to remove the valve for detailed evaluation is in progress. Visual examination of about 70 other HF system valves identified two valves with discoloration indicative of some HF seepage. B&W personnel noted to the site rep. that recent OCF operations have been occurring in cold weather and the impact of potentially increased liquid HF (rather than vapor) in the HF supply piping is being evaluated. B&W intends to conduct the planned hydro-fluorination fluid bed run by next week. B&W personnel noted that full OCF operations may be impacted for several weeks to complete the evaluations and obtain a replacement valve.