

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 3, 2008

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending July 4, 2008

Staff members J. Blackman and J. Kimball and outside experts J. Stevenson and P. Rizzo were at Y-12 to observe a meeting on seismic characterization and building design for the planned Uranium Processing Facility. Mr. Owen was out of the office Wednesday through Friday. Due to holiday schedules, Y-12 nuclear facilities operated at a reduced tempo for the week.

Conduct of Operations: As reported on June 20th, a subassembly was mistakenly dried in an oven at a higher temperature than intended. Follow-up investigations into this event identified the operators did not meet expectations regarding formal and deliberate use of procedures while canning items in preparation for the oven. Specifically, the operators who were involved in canning the items did not fill out the required form identifying the items in the can while performing the general canning task. This week, YSO management discussed their concerns surrounding this event with B&W senior and facility management, emphasizing the following themes:

- B&W management needs to reinforce proper use of procedures with nuclear operations personnel, particularly independent verifications;
- procedures need to be clear and executable and periodic procedure evaluations may be warranted; and
- conduct of operations performance needs to improve.

Highly Enriched Uranium Materials Facility (HEUMF): B&W has reported that all concrete placements for safety-class structures have been completed. As reported on March 28th, B&W was evaluating deficiencies (lack of consolidation) in the loading dock and other localized areas of the HEUMF structure. B&W has since demolished and replaced a large portion of the loading dock roof and has proceeded with repairs of the localized areas. The repairs are largely completed. Non-destructive evaluation (NDE) of the repairs is being performed by a vendor. Completion of the NDE checks and furnishing of NDE reports is projected for mid-July.

Criticality Safety: Recently, YSO has requested and supported two independent, federal reviews of the Y-12 nuclear criticality safety program. The first review—conducted in May—was led by DOE headquarters and focused on the following:

- the Uranium Hold-up Survey and Inadvertent Accumulation Prevention Programs,
- criticality design criteria for the Uranium Processing Facility,
- wet chemistry criticality controls, and
- specific Criticality Safety Evaluations (CSEs).

At the time of the review, the team noted several concerns related to insufficient documentation of contingencies in the CSEs. Last week, YSO led a review using DOE Standard 1158, *Self-assessment Standard for DOE Contractor Criticality Safety Programs*, to assess B&W's compliance with several American National Standards Institute and American Nuclear Society requirements including those regarding process and procedure development, training and qualification, operational awareness, external reporting, establishment of criticality limits and controls, and nuclear CSEs. Both reports are expected to be issued during the next few weeks.