

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 1, 2009

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending May 1, 2009

Criticality Safety. In response to the Board's letter of January 23, 2009, YSO and B&W briefed the Board on efforts to address staff observations on criticality safety evaluations (CSEs) for the Highly Enriched Uranium Materials Facility (HEUMF) and to evaluate extent-of-condition in CSEs for other Y-12 nuclear facilities (see the 4/24/09 site rep. report). B&W is planning to issue revisions to the HEUMF CSEs this summer. Regarding the extent-of-condition evaluations, not all active CSEs were evaluated. In response to Board questions, YSO management indicated that it will gather additional information regarding extent-of-condition and determine whether additional actions are necessary.

Building 9212 Documented Safety Analysis (DSA). B&W originally submitted the annual update of the Building 9212 DSA to YSO for review and approval in September 2007. One of the more significant changes proposed in that annual update was to downgrade the classification of four safety-class fire suppression systems. These systems had been previously upgraded to safety-class in response to a February 28, 2006 Board letter. B&W's 2007 proposal to downgrade these systems was based on using the Dose Conversion Factors from the International Commission on Radiation Protection's Publication 72 (see the 3/20/09 site rep. report). After approving several extensions to submit a final revision of the annual update, YSO issued their Safety Evaluation Report (SER) approving the annual update this week (see the 3/27/09 site rep. report). The SER identified Conditions of Approval (COAs) related to the fire suppression systems including the following:

- 1) Consistent with NNSA's commitment to the Board (in a 5/15/08 letter), YSO directed B&W to not downgrade the safety-class suppression systems until B&W incorporates the bounding Airborne Release Fraction (ARF) value for metal into the accident analysis.
- 2) YSO revised a prior COA regarding hydraulic calculations to now direct B&W to perform hydraulic calculations of the most hydraulically remote area (determined using engineering judgment) of the safety-class suppression systems and, if warranted, identify other areas that should be evaluated and any risk reduction actions to be taken.
- 3) YSO revised a prior COA regarding water supply pressure monitoring to now direct B&W to install new wireless pressure monitoring devices on the safety-class suppression systems such that continuous remote pressure indication will be available.

Conduct of Operations/Criticality Safety. During an annual surveillance of a Warehouse storage vault this week, a criticality safety engineer discovered six birdcages stored on a shelf in violation of the applicable criticality safety analysis, criticality postings, and the operating procedure. Specifically, in the subject vault, birdcages are only allowed to be stored up to five-wide on each shelf. Personnel took the appropriate immediate actions, which included declaring a criticality safety deficiency and notifying supervision and shift management. B&W has taken corrective action to emphasize specific criticality safety requirements during pre-job briefings and to issue a standing order that will require additional details (e.g., specific storage locations) to be incorporated into Warehouse movement plans.

During the critique, it was unclear whether there is procedural coverage for moving items within the subject vault (as opposed to moving items in and out of the vault, which has clear procedural coverage). The site reps. note that given the increased pace and breadth of activities associated with preparations to de-inventory the Warehouse, management reinforcement of criticality safety requirements and general conduct of operations principles (e.g., questioning attitude and ensuring procedural coverage) may be warranted.