

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 2, 2009

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending January 2, 2009

Mr. Owen was out of the office this week.

Freeze Protection Program/Conduct of Operations. One year ago, 11 Y-12 facilities experienced freeze protection issues (see the 1/11/08 site rep. report). On Tuesday, B&W convened a critique to discuss actions taken by facility personnel last week in response to potential freezing issues (see the 12/24/08 site rep. report). Specifically, facility personnel identified sections of safety-class piping in Building 9212 (B-1 wing) that were at 27 °F. There are 6 heaters positioned in Building 9212 to provide backup heat in locations of the facility that have been identified as susceptible to freezing during cold weather. A Daily Order for Building 9212 requires that a specific heater be turned on when the outside air temperature falls below 40 °F. Based on information provided during Tuesday's critique, it is unclear that this requirement has been strictly adhered to and why there is not a similar requirement for the other 5 heaters. In addition, a site-wide procedure, *Freeze Protection Plan*, requires facility management to "ensure that systems which require or deserve special protection due to hazards ... associated with freeze damage have operable temperature alarms and/or back-up heat sources." Given that the low temperature of this safety-class piping was detected by personnel with infrared thermometers and that the area heaters were manually activated, it appears that this requirement for temperature alarms and/or back-up heat sources may not have been fully implemented. B&W appropriately suspended the critique due to a lack of needed personnel (e.g., the individual who initially identified the low temperatures) and is planning to reconvene the critique next week.

Building 9212 Facility Risk Review. More than a month ago, DOE Headquarters approved the Critical Decision-0 (CD-0) package for the Nuclear Facility Risk Reduction (NFRR) project (see the 9/19/08 and 11/14/08 site rep. reports). Two weeks ago, YSO directed B&W to reduce the scope of the NFRR project as it develops the CD-1 package by removing some items that don't warrant Facilities and Infrastructure Recapitalization Program funding including: chip cleaning process fluid disposal, reduction salvage disposal, and Holden Gas Furnace replacement. NNSA Headquarters concurred with this direction.

Highly Enriched Uranium Materials Facility (HEUMF)/Criticality Safety. B&W recently issued three documents related to HEUMF criticality safety: a BoroBond4 Dehydration Study for Rackable Can Storage Boxes (RCSBs), a new revision to the Detector Response Calculation for the HEUMF, and a new revision to the Technical Basis for the HEUMF Immediate Evacuation Zone (see the 9/19/08 and 10/31/08 site rep. reports). A fire could dehydrate the BoroBond in an RCSB; therefore, the Dehydration Study was developed to evaluate the effect of this dehydration on the thermalization of neutrons and, thus, the capture of the neutrons by the boron constituent. The report concludes that the bounding RCSB configurations would remain subcritical in the event of a fire. The Detector Response Calculation document concludes that the HEUMF Criticality Accident Alarm System would detect both the ANSI/ANS-8.3 specified minimum accident of concern and the alternate minimum accident that was developed by B&W.

HEUMF Start-up. This week, B&W submitted the HEUMF Documented Safety Analysis and associated Technical Safety Requirements to YSO for approval (see the 6/27/08 site rep. report). YSO is planning to complete its review of the documents during the next few weeks.