

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Timothy Dwyer, Technical Director
FROM: Wayne Andrews and David Kupferer, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending March 25, 2011

Highly Enriched Uranium Materials Facility (HEUMF). On March 10th, 2011, one of the two batteries (same manufacturer and type) for starting the safety-significant diesel fire pump at HEUMF ruptured during testing (see last week's report). This week, B&W conducted a formal critique of this event. During the critique, facility personnel highlighted that on numerous occasions since September 2010, both batteries were identified as performing unsatisfactorily during weekly preventive maintenance testing. B&W had not identified replacement batteries as critical spares. Therefore, in September, B&W initiated efforts to procure replacement batteries using the new Technical Evaluation and Acceptance (TE&A) process (see the 3/5/10 report). On December 9th, 2010, a fuse blew on the trickle charger that was connected to the battery that ruptured. After seven weeks of using the TE&A process to procure a new fuse, facility safety personnel downgraded the trickle charger from safety-significant to defense-in-depth to facilitate procurement (i.e., the TE&A process only applies to safety-significant and safety-class equipment). The battery that ruptured remained in use while the charger was out-of-service. This Wednesday (12 days after the battery ruptured), B&W's fire protection engineering department identified that the second battery had exceeded the manufacturer's recommended battery life several months ago and instituted a compensatory measure to functionally test the electric fire pump on a weekly basis. Thursday—over six months after B&W initiated efforts to procure replacement batteries—B&W installed two new batteries for the diesel fire pump.

Transuranic Waste Processing Center (TWPC)/Conduct of Operations. At the request of TWPC's general manager, B&W recently completed an independent assessment of conduct of operations at TWPC (see the 7/9/10, 9/10/10, and 1/14/11 reports). B&W performed a thorough assessment that included observing more than 100 hours of operations during both day and night shifts. The assessment team noted numerous positive observations including the following: (1) good integration of conduct of operations into maintenance practices, (2) thorough pre-job briefs, (3) robust document control processes, and (4) well-written procedures that contain an appropriate level of technical detail. The team also identified the following weaknesses: (1) some procedure use practices were not consistent with TWPC requirements (e.g., sections of procedures were performed out of sequence), (2) in one instance, a lockout/tagout was performed without using the procedure and completing the necessary forms, and (3) some identified procedural non-compliances were not documented and communicated to management. Wastren Advantage is developing corrective actions.

W71 Operations. On Monday, B&W conducted a pre-job brief for quality assurance (QA) personnel to place a W71 component in a horizontal configuration with the intent of having the component moved from the radiography vault to a storage vault for additional evaluation. Material management personnel typically transport W71 components in a vertical configuration. During the pre-job brief, material management personnel informed QA personnel that it was unclear, logistically, whether the component could be transported in the horizontal configuration. The site representatives note that this situation highlights the need to improve work planning activities (see the 4/25/08 report).

Building 9212 Operations. This week, B&W initiated its readiness assessment for startup of a new carbon burner system. The carbon burner system consists of electric furnaces that will be used to process the backlog of slag and liners from reduction operations. B&W is scheduled to complete the RA next week.