

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 April 8, 2011

Highly Enriched Uranium Materials Facility (HEUMF). Last month, one of the two batteries for starting the safety-significant diesel fire pump ruptured during testing (see the 3/25/11 report). B&W is developing lessons learned and corrective actions to address weaknesses identified in the following activities related to maintenance of vital safety systems: (1) implementation of vendor maintenance recommendations, (2) development of proactive maintenance (i.e., preventive maintenance) requirements, (3) analysis of data collected during proactive maintenance testing, and (4) execution of the new Technical Evaluation and Acceptance procurement process. Last week, B&W's engineering division issued a standing order that specifies new actions for supervisors to take when vital safety systems are identified as performing unsatisfactorily during proactive maintenance activities. Specifically, the standing order requires supervisors to complete the 'maintenance feedback improvement/post-job review' form *prior* to authorizing vital safety systems to be returned to service.

Conduct of Operations/Work Authorization. B&W performs more than 1000 mode changes (e.g., warm standby mode to operation mode or vice versa) associated with Technical Safety Requirements (TSRs) in Building 9212 each year. B&W recently completed a management review of three recent events (February 2011, July 2010, June 2009) during which chemical operators violated procedural requirements and failed to contact the shift manager while changing the mode of a system or process area (see the 2/11/11 report). Each event resulted in a TSR violation. The review team concluded that previously implemented corrective actions have resulted in improvements above the 'normal' range of human error for this type of activity; however, to achieve a higher success rate, changes to operating practices are needed. Specifically, the review team noted that inadequate procedure place keeping techniques contributed to each event (see the 3/11/11 report). The review team made several recommendations, most notably implementation of a standardized place keeping technique for all mode change procedures used in Building 9212. Production management has directed the Operations Performance Improvement department to assess procedure place keeping techniques currently being used throughout the production division. Production management expects that this review will result in the identification of standardized place keeping techniques and criteria for how and when these techniques should be used.

Conduct of Operations/Procedural Compliance. B&W has developed its corrective actions in response to an event during which operators repeatedly skipped a step in their 'continuous use' procedure to perform nondestructive assay of machining chips (see the 1/14/11 report). The corrective actions include the following: require supervisors to spend more time observing operations, improve training for new employees to emphasize expectations for adhering to conduct of operations principles, and develop standardized place keeping techniques.

Microwave Casting/Readiness Assurance. B&W has installed the new production microwave casting unit and is currently conducting startup testing of the equipment (see the 10/9/09 report). Two weeks ago, B&W determined that a readiness certification assurance (RCA) process would be used to validate readiness efforts for startup of the production microwave casting unit. This is the same process that was successfully used during the startup of both HEUMF and the special material capability glovebox (see the 9/17/10 and 1/8/10 reports). B&W plans to conduct its readiness assessment for startup of the production microwave casting unit in July.