

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 22, 2009

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending May 22, 2009

Highly Enriched Uranium Materials Facility (HEUMF). YSO and B&W personnel have informed the site reps. and staff that some safety systems, structures and components (SSCs) were not properly identified as safety equipment in the Construction Specifications used by the HEUMF construction contractor. As a result, the construction contractor may not have invoked appropriate quality assurance (QA) requirements for these SSCs in procurements with sub-tier vendors. The extent of this problem is not clear and YSO management stated that further details are being developed. B&W is evaluating the need for additional tests, inspections or other actions necessary to generate evidence that each safety SSC will perform its credited safety function and provide a basis for acceptance. On Wednesday, YSO formally transmitted two issues regarding QA for HEUMF SSCs to B&W in its Monthly Assessment Report for April. One issue notes inadequate flow-down of QA requirements to a sub-tier vendor that provided the safety-significant diesel fire water pump. The other issue notes deficiencies in B&W's approach for accepting commercial-grade items as SSCs.

Uranium Processing Facility (UPF). NNSA recently completed an independent review of the nuclear safety posture of UPF (see the 4/3/09 site rep. report). The review team focused on assessing the following: (1) whether applicable nuclear safety requirements are being identified and incorporated into the design of UPF using the principles of DOE Standard 1189, *Integration of Safety into the Design Process*, and (2) whether the current UPF design includes overly conservative design assumptions that could lead to a final design that is not optimized with respect to cost. The review team concluded that the current categorization of safety SSCs are reasonably conservative and appropriate. The team identified some recommendations, however, including (1) the project should consider developing a tool to provide additional confidence that the information integration function is being effectively performed across project elements and (2) the project should place emphasis on maintaining the schedule for updating the hazard evaluation studies and developing the accident analyses. The team noted a project risk regarding evolving requirements and the importance of establishing a 'requirements' code of record.

Wet Chemistry Operations. During operation of the secondary extraction (SX) system on Tuesday, liquid was observed flowing into a flow check station that had been declared "out of service." The SX system was shutdown and approval to drain the liquid obtained from the shift manager and criticality safety personnel. About 1.5 liters was drained and was confirmed to be SX product. B&W personnel indicated that the liquid would have entered the flow check station (designed to be geometrically safe from criticality) through system vent piping. Engineering evaluation of the cause of this unintentional transfer is in progress.

Activity-Level Work Planning. The Board's letter of January 22, 2009 noted work planning and control deficiencies at Y-12. One issue identified was that many of the Job Hazard Analyses (JHAs) reviewed by the staff contained numerous standard industrial hazards and controls (e.g., avoiding long reaches, keep work areas dry and free of debris, etc.) that are well within the scope of general workforce training. As part of B&W's response to the Board's letter, B&W issued a revision of its JHA Manual in April. This revision emphasizes that the JHA process is not to be used to specify such standard industrial hazards/controls, but rather to focus on the task-specific hazards/controls the worker needs to implement for safe job performance. B&W is in the process of training and mentoring work planning personnel on this objective.