

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 1, 2011

Board Member Visit. Board member Joseph Bader and staff members Farid Bamdad, David Campbell, David Grover, and Roy Kasdorf visited Y-12 to review the status of the Uranium Processing Facility (UPF) project. Noteworthy items from the visit include the following:

- Safety-in-Design and Project Planning — B&W issued its corrective action plan and causal analysis in response to NNSA's 'vertical slice' review (see the 2/11/11 report). B&W's corrective action plan includes revising the Safety Design Strategy, preliminary hazard evaluation studies, and accident analyses and conducting an internal (B&W) 'vertical slice' review prior to issuing a full-scope Preliminary Safety Design Report. B&W is still revising its project execution strategy in response to NNSA Headquarters direction regarding the project's schedule and funding (see the 2/11/11 report).
- 'Standard Industrial Hazards' — The staff questioned the project team's proposal to apply consensus fire codes and standards for worker protection from toxicological hazards involved in a design basis fire in lieu of including evaluation of these hazards in the documented safety analysis (see the 3/4/11 report).
- Seismic Analysis and Controls — The staff questioned the project team's proposal to (a) neither analyze nor prevent criticality accidents following a seismic event and (b) reduce the Seismic Design Category (SDC) of the confinement ventilation system to SDC-1.

Safety Analysis Research. Due to funding issues, B&W's research efforts to obtain data on bounding airborne release fraction (ARF) and respirable fraction (RF) values of uranium metal in a fire environment were indefinitely suspended this week (see the 9/10/10 report).

Highly Enriched Uranium Materials Facility (HEUMF). Last week, B&W completed its Implementation Validation Review (IVR) to independently confirm implementation of safety basis controls associated with the first annual update of the Documented Safety Analysis (DSA) and Technical Safety Requirements (TSRs) for HEUMF (see the 11/5/10 and 10/2/09 reports). The IVR team identified 10 pre-implementation findings including the following: (1) several changes to both surveillance requirements and requirements in the Fire Hazard Analysis were not properly incorporated into facility-level procedures, (2) several inconsistencies exist between the DSA and TSR, and (3) training impact assessments had not been performed for some revised procedures. Facility management had conducted a prior review and identified 13 issues that were still unresolved when the IVR was initiated. The IVR team identified a lesson learned that future IVRs should be delayed if it is known that a significant number of issues are unresolved.

Unreviewed Safety Question Determination (USQD) Process/Criticality Safety. Four weeks ago, B&W requested YSO approval of a Standing Order that would limit applicability of the USQD Process to proposed revisions of criticality safety documents (see the 3/4/11 report). Last week, YSO concluded that implementation of the Standing Order could result in non-conservative decisions. YSO recommended that B&W consider applying the 'Expert USQD' process to evaluate changes to criticality safety documents (see the 6/11/10 report).

Building 9212 Operations. B&W completed its Readiness Assessment (RA) for startup of the new carbon burner system. The RA team identified zero prestart findings, one post-start finding, and five observations and recommended approval to startup carbon burner operations.