

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 February 11, 2011

Uranium Processing Facility (UPF). In response to inquiries from NNSA Headquarters regarding the cost and schedule of the UPF project (see the 9/3/10 report), the UPF project team briefed NNSA Headquarters in November on opportunities and risks associated with a staged approach to the design and construction of UPF (i.e., the first stage included design and construction of the facility and most of the support utilities, the second stage included design and installation of most of the processing equipment). Last week, NNSA Headquarters directed the UPF project team to revise its project execution strategy such that (a) construction will be completed by 2020 and the facility will be fully operational by 2024 and (b) funding will be constrained to limits specified in the Section 1251 Report of the FY2010 National Defense Authorization Act. NNSA also noted its expectation that the revised strategy be consistent with a comprehensive plan for managing enriched uranium production capabilities at Y-12.

This week, YSO issued the final report from its ‘vertical slice’ review of the UPF project (see the 1/21/11 report). YSO’s report identified numerous comments, most of which are related to the Safety Design Strategy (SDS), preliminary hazard evaluation studies, and preliminary accident analyses. YSO directed B&W to develop a corrective action plan by February 21st that will address YSO’s comments and include the following:

- A causal analysis of the weaknesses in the project team’s safety basis development process with consideration of how issues previously identified by DOE Headquarters and B&W were addressed (see the 10/15/10 and 4/23/10 reports).
- Development of a formal process for maintaining the safety Structure, System, and Component (SSC) table that will allow for timely review and approval of changes to safety SSC designations (see the 10/15/10 report). YSO rejected the project team’s statement in its SDS that revisions to the safety SSC table could be based on “forward-looking professional judgment.”

YSO’s report noted that it could not validate the decision to downgrade the confinement ventilation system from safety-significant to defense-in-depth until B&W has resolved YSO comments regarding material-at-risk and worker evacuation assumptions. Independent of its review of the safety designation of the confinement ventilation system, YSO directed B&W to revise the design of the ventilation system based on more realistic assumptions regarding the availability of the system (see the 6/18/10 report). YSO directed this effort to include updating support system (e.g., electrical) design to eliminate unnecessary single point failures.

Conduct of Operations/Work Authorization. During the past 7 months, B&W conducted three critiques regarding events in which workers failed to follow procedural requirements to obtain formal work authorization from the Shift Manager in Building 9212 prior to conducting operations; specifically, operation of the tray dissolver, maintenance of the carbon burner, and operation of the wet vacuum system. Two of these events were externally reported as Technical Safety Requirements violations. B&W is in the process of developing additional corrective actions.