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 30, 2012

Fire Protection. In November 2010, B&W discovered small leaks in a safety-significant, dry pipe fire suppression system associated with one of two loading docks for Building 9215 (the system unexpectedly 'wet-up'). B&W entered the appropriate Limiting Condition of Operation (LCO), which included performing hourly fire patrols, and initiated a work package to replace the leaking sections of piping. After completing the replacement and returning the system to operable status, B&W performed ultrasonic testing on other sections of the same dry pipe system and discovered areas in which the wall thickness of the piping had degraded. At that time (16 months ago), B&W determined that the entire subject dry pipe system needed to be replaced. Last Monday, March 19th, B&W again entered the LCO and began replacing the subject dry pipe system. While removing the existing piping, B&W discovered significant buildup of debris (suspected to be corrosion products) that, in some areas, was estimated to be blocking about 90% of the pipe. B&W subsequently declared all of the safety-significant dry pipe suppression systems at Y-12 (two associated with Building 9215 and two associated with Building 9212) as inoperable while it performs an extent-of-condition review. Concurrently, B&W has entered its Potential Inadequacies in the Safety Analysis process to determine whether additional surveillance requirements are needed for its dry pipe systems. This Monday, March 26th, B&W discovered that fire patrols for one of the systems had not been performed during the weekend over a six hour period. B&W subsequently declared a Technical Safety Requirement violation.

Uranium Processing Facility (UPF). During February, YSO conducted a Pre-Technical Independent Project Review (Pre-TIPR) of the UPF project focused on assessing (a) the integration of safety in design and (b) the design maturity of key safety systems. Two weeks ago, YSO issued its Pre-TIPR report. The review team identified 11 weaknesses (i.e., non-compliances with requirements) and 5 deficiencies (i.e., non-compliances with requirements that warrant significant management attention) including the following:

- Contrary to the guidance in DOE Standard 1189 and DOE Guide 423.1-3, the Preliminary Fire Hazards Analyses is planned to be updated in parallel with the Preliminary Documented Safety Analysis.
- The Process Change request process has not ensured that Preliminary Safety Design Report requirements are incorporated into the design criteria.
- Container design efforts (hampered by lack of funding) and electrical design efforts (hampered in part by other design changes that impact electrical design) must be significantly improved to support needed progress on the overall design of UPF systems and components.
- Verification that project requirements have been adequately incorporated into design documents has not been completed.
- Technical issues have not been satisfactorily resolved in a timely manner.
- Instrumentation and Controls used to implement criticality safety administrative controls and Specific Administrative Controls are not properly categorized.
- Lack of funding has delayed most of the Environment, Safety and Health reviews associated with the project to be performed as the design reaches 90% design maturity.

In spite of the significant issues identified, the review team concluded that the safety basis is sufficiently conservative, bounding, and detailed to support continued development of the final design. YSO directed B&W to perform extent-of-condition reviews and develop corrective actions plans to address each of the issues identified in its report by tomorrow, March 30th.