

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 23, 2009

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending January 23, 2009

Uranium Processing Facility (UPF). Recent information regarding certain planned security features has prompted the UPF project to reevaluate the facility layout during the past few months. YSO and B&W personnel discussed these efforts with the staff and site reps. this week. The UPF project has proposed substantial facility layout changes and structural modifications to YSO. B&W personnel noted that the layout changes and structural modifications should generally result in a reduction in facility design and construction challenges and some cost savings. For example, in lieu of separate mechanical/electrical utility equipment areas, utility equipment would be more closely located with process system equipment. YSO management has given verbal approval for the UPF project to proceed with the proposed changes and determine revised cost and schedule estimates for inclusion in the project baseline.

Furnace Reduction Operations. Furnace reduction operations remain suspended as a result of damage to two safety-significant reactor vessels identified in September (see the 11/21 and 12/12/08 site rep. reports). The damage is a melting of the base metal in localized areas. B&W personnel noted that recent metallographic examination of the damaged vessel lid indicates cracking into the lid base metal beyond the melted area. Engineering and safety basis evaluation of this issue continues.

Freeze Protection Program. This past weekend, at least 15 Y-12 facilities were impacted by extended freezing weather including several nuclear facilities. This follows numerous freeze protection issues last winter (see the 1/11/08 site rep. report) and other impacts a few weeks ago (see the 1/9/09 site rep. report). Examples of the issues encountered last weekend include the following:

- a frozen condensate line in C-Wing of Building 9212
- a demineralized water line burst outside of Building 9204-2E,
- a chilled water line burst on the roof of Building 9998,
- both a water main ruptured and a hot water line burst outside of Building 9204-2, and
- a few sprinkler heads burst including one in Building 9215,

During the past few weeks, B&W has been working to revise the top-level Y-12 freeze protection program procedure. B&W management has directed cognizant personnel to identify the cause of each individual event and to identify common causes. These assessments are to be completed by next week. As previously reported, the site reps. consider the lack of defined roles/responsibilities for nuclear facility operations managers and the lack of a clear requirement for individual facilities to preplan specific actions to be taken during the onset of freezing weather as factors in some of these issues.

Wet Chemistry Operations. Last month, operators in the Enriched Uranium Operations Building discovered a crack in the top glass section of one of the primary extraction columns (see the 12/26/08 site rep. report). During the past few weeks, B&W has twice replaced the subject glass column section. Subsequent to both installations, the replacement glass cracked and operations personnel took appropriate actions to drain the column and avoid any spill. B&W plans to replace this cracked glass column section by next week.