

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 25, 2008

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending July 25, 2008

Board member Larry Brown along with staff members David Gutowski and Michael Dunlevy visited Oak Ridge on Tuesday and Wednesday. Mr. Kupferer was out of the office this week.

Board Member Visit. YSO, DOE-ORO and contractor personnel briefed Mr. Brown on recent efforts to improve Y-12 nuclear operations and progress on the Uranium-233 Downblending and Disposition Project at ORNL. Mr. Brown, the staff and the site rep. also walked-down Building 9212 at Y-12 and Building 3019 at ORNL. Some noteworthy items from the visit include:

- Y-12 Conduct of Operations: B&W senior management discussed recent efforts to improve questioning attitude and conservative decision making by operations personnel, improve housekeeping, and improve the conduct of critiques for abnormal events. Regarding critiques, B&W is renewing emphasis on specifically reviewing events against the applicable procedure or other requirements during critiques and is emphasizing to line managers their responsibility to ensure the proper conduct of critiques.
- Building 9212 Facility Risk Review (FRR): Y-12 has been authorized by NNSA Headquarters to prepare a Critical Decision-0 (mission need) submittal on a new project that is intended to fund and accomplish much of the upgrade work items identified in the FRR. The total project scope is under review. NNSA approval is projected in October.
- Uranium Processing Facility (UPF): If ever required, the ability of UPF to accommodate extended periods of operational shutdown was discussed. B&W management indicated further evaluation would be needed. B&W management also indicated their intent to establish a formal mechanism for Y-12 operations personnel to submit operating experience information that could be useful to UPF design or operational planning (see the 5/9/08 site rep. report).
- Uranium-233 Disposition: Structural support issues have been identified regarding the current design of the downblending system (see the 7/11/08 site rep. report). Specifically, the Building 3019 rooms intended for storage of down-blended solution, subsequent denitration, and packaging of uranium oxide requires additional structural support to accommodate the planned processing. As a result, DOE-ORO and Isotek are evaluating options that include construction of a new processing area outside of the current walls of Building 3019. DOE-ORO anticipates a decision on the path forward in the next few weeks.

Furnace Reduction Operations. As reported last week, operators discovered calcium deposits in the lids of three reactor vessels being inspected for use. B&W personnel noted that these are the first such deposits found since resumption of furnace reduction operations in late 2005 with the new vessel design. B&W believes the cause of the calcium deposits is leakage of argon gas (backfilled after reactor vessel loading) past threaded fittings for the relief and pressure sensing lines. Loss of the argon gas would allow calcium vapor to migrate to the ports in the lid. B&W intends to seal weld the fittings to prevent argon leakage.