

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

May 15, 2009

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending May 15, 2009

Mr. Kupferer was out of the office this week. Staff members Abrefah, Andersen, and Seprish visited Y-12 to review B&W efforts to address damage to an elevated concrete slab in Building 9204-2E and to review progress on the Special Material Capability Project.

Enriched Uranium Processing Options Study. At the direction of NNSA Headquarters, Y-12 has started an effort to define options for long-term processing of enriched uranium. The options would be used for comparison and evaluation against the current baseline plans for constructing the Uranium Processing Facility (UPF) and starting UPF operation in 2018. Several options have been identified with various approaches to upgrade and maintain existing Y-12 facilities that process enriched uranium. This week, personnel from NNSA Headquarters, LANL, LLNL and Y-12 met at Y-12 to develop detailed information for each of the options. Evaluation of the options (a ranking based on cost, safety risks and program risks) is being started and results are to be provided to NNSA Headquarters by early June. Separately, NNSA Headquarters is chartering an independent review of the size and scope of UPF by a team staffed with outside experts. The on-site portion of this review is planned for mid-June.

Criticality Safety. Results of a B&W corporate team review of the Y-12 nuclear criticality safety program were issued last week (see the 4/24/09 site rep. report). The corporate team noted the new B&W Standard Review Plan as an improvement for developing criticality safety evaluations. The corporate team identified Judgments of Need regarding communications with YSO, quality improvement for criticality safety submittals, and conduct of peer reviews. B&W is developing an action plan and intends to brief YSO on the plan.

Building 9204-2E Concrete Degradation. The staff reviewed B&W's inspection plan for an elevated concrete slab in Building 9204-2E that has been subject to damage in prior years from leakage of lithium chloride liquid used in dehumidification equipment. While actions were taken to reduce leakage and repair damage to the top side of the slab several years ago, spalling of concrete was observed on the underside of the slab in early 2008. Following questions by the Board staff last year, B&W has developed an inspection plan that includes drilled samples to assess concrete chloride levels and core samples to test concrete strength. Initial assessment under the plan has resulted in identification of some spalling on the top surface. Based on the review of the inspection plan, the staff discussed suggestions with B&W personnel to provide more focus on determining areas with high chloride levels that should reduce the number of required core samples.

Fire Protection. B&W has completed an extent-of-condition evaluation regarding the recent violation of a 120-gallon limit for flammable/combustible liquids in a fire zone in the Assembly/Disassembly Building (see the 4/17/09 site rep. report). B&W's initial investigation determined that the facility's fire protection procedures did not properly implement this limit, which is called out in the Y-12 Fire Protection Manual. The extent-of-condition evaluation determined that Building 9201-5 and the Machining Building also did not have this limit properly implemented, though the limit was not exceeded in these facilities. B&W noted in its evaluation that implementation of the limit is through monthly combustible loading inspections. This approach is being reviewed by B&W.