

## 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 May 27, 2011

**Conduct of Operations/Building 9212 Safety Analysis.** The second floor of C-1 Wing consists of two areas separated by an open doorway; the mezzanine and the decontamination area. To prevent the consequences of an accident from exceeding the consequences estimated in the Building 9212 Documented Safety Analysis (DSA), the DSA identifies the following technical safety requirements (TSRs) related to the storage of organic solutions in C-1 Wing:

- A Limiting Condition of Operation (LCO) states that organic solutions in safe bottles may only be stored on the first floor of C-1 Wing. If B&W discovers that this requirement has been violated (i.e., organic solutions are discovered on the second floor), this LCO requires B&W to (a) immediately stop all hot work in C-1 Wing and (b) re-establish compliance with the requirements within 4 hours.
- A Specific Administrative Control (SAC) requires independent verification that safe bottles do not contain organic solutions prior to storing safe bottles on the mezzanine of the second floor of C-1 Wing. The DSA states that the basis for this SAC is to reduce the consequences of a fire involving safe bottles in the decontamination area. The requirement is implemented via a 'material movement tracking form', which requires operators to initial a box on the form after they have independently verified that safe bottles being moved to the second floor of C-1 Wing do not contain organic solutions.

On May 3<sup>rd</sup>, operators moved two safe bottles, one of which contained organic solutions, from the first floor of C-1 Wing to the decontamination area on the second floor. Operators inappropriately wrote "N/A" in the independent verification box of the material movement tracking form. On May 16<sup>th</sup>, a YSO Facility Representative discovered the error and made appropriate notifications. B&W entered the LCO, moved the subject safe bottle back to the first floor, and conducted a walkdown of C-1 Wing and determined there were no other instances of storage violations. Because the SAC is specific to the mezzanine, B&W determined that this error did not constitute a TSR violation; however, as a follow-up action, B&W is evaluating why the SAC was not written to also apply to the decontamination area.

**Safety Analysis.** In March, B&W submitted a Justification for Continued Operations (JCO) regarding the discovery of a container labeled Niobium Hydride in Building 9204-2 (see the 3/11/11 report). Compensatory measures identified in the JCO include storing the material in a shipping container (i.e. it is 'over packed') in an area with low combustible loading that is protected by a credited fire suppression system. Last week, NNSA approved the JCO. B&W is still planning to transfer the material to Building 9202 to be sampled and dispositioned.

**Beyond Design Basis Events/Safety Analysis.** In response to events at the Fukushima Daiichi nuclear power station, the Secretary of Energy directed DOE entities responsible for Hazard Category 1 and 2 nuclear facilities to (a) evaluate potential vulnerabilities to beyond design basis events, (b) discuss the potential impacts of total loss-of-power events, (c) confirm that safety systems are being maintained in accordance with applicable technical safety requirements, and (d) confirm that emergency management plans include procedures for responding to natural phenomena events. Earlier this month, B&W responded to this request. In summary, B&W concluded that (a) no controls are necessary for protection to beyond design basis events, (b) no safety-class controls could be affected by a loss-of-power event, (c) vital safety systems are being appropriately maintained, and (d) emergency planning hazards assessments and emergency action levels have been developed for Y-12 nuclear facilities.