

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 15, 2010

TO: Timothy Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending January 15, 2010

Highly Enriched Uranium Materials Facility (HEUMF). As reported last week, YSO intends to request startup authorization from NNSA Headquarters during the week of January 18th. The site reps. and staff discussed resolution of prestart findings from the NNSA Operational Readiness Review (ORR) with Y-12 personnel. In particular, B&W discussed the finding on inoperability of the Secondary Confinement System (SCS, see the 12/18/09 site rep. report). B&W has completed procedural changes to use the SCS exhaust fans only in the variable inlet vane mode. B&W is continuing investigation to determine why exhaust fans have unexpectedly shutdown in the variable frequency drive mode following a loss of normal power. YSO and B&W management committed to develop a safety basis change on this SCS restriction by June if their investigation does not provide a resolution. The site reps. and staff also discussed: (1) the observed complexity of the HEUMF criticality safety postings and whether the postings are consistent with Y-12 guidance; and (2) the computer program used during recontainerization operations and whether that program should be approved and controlled as a formal operator aid. In response, YSO and B&W management indicated that B&W will conduct reviews in the next several weeks and determine any improvements.

Special Material Capability Project. B&W has completed construction of the new negative-pressure glovebox and made significant progress on system-level testing, procedure development, and operator training (see the 1/9/09 site rep. report). The glovebox includes a complex seal assembly (made of Teflon and stainless steel) that allows more than 3 feet of vertical travel for a lathe that penetrates the side of the glovebox. During testing several weeks ago, B&W discovered that this seal is leaking when the lathe is raised toward the upper-end of its range and allowing air into the glovebox. B&W is working with the vendor of the glovebox to solve this problem.

Transuranic Waste Processing Center (TWPC). In January 2009, EnergX questioned whether the drum venting enclosure installed by DOE's Central Characterization Project (CCP) would adequately confine a drum deflagration event (see the 3/6/09 site rep. report). Subsequent to EnergX's inquiry, CCP developed and installed engineered solutions (i.e., a plunge valve and protective grating) to protect the inlet and outlet of the enclosure. It is not yet apparent to DOE-ORO and EnergX that the engineered solutions are adequate to confine the design basis deflagration. Personnel representing CCP, the Carlsbad Field Office, EnergX, and DOE-ORO are jointly evaluating potential solutions to this issue. Wastren Advantage is scheduled to assume responsibility for TWPC operations this weekend (see the 10/30/09 site rep. report).

Building 9201-5 Fire Protection. On Tuesday, B&W conducted a critique of water leaks and possible damage to the safety-significant fire suppression system that occurred last week in a small building adjacent to the Annex of 9201-5/5E (see the 1/8/10 site rep. report). B&W confirmed that a three-foot section of piping had been removed in the past and capped and that the cap and a sprinkler head had failed causing the water leak. No record of the piping modification was found. Investigation of the cause of the failure and configuration management of the modification is in progress. By Thursday morning, however, B&W had not externally reported this safety system degradation as required by DOE occurrence reporting criteria and Y-12 procedures. The site reps. inquired with YSO management on the lack of reporting. Later that day, B&W initiated an external report of the event.