

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Steven Stokes, Technical Director
FROM: William Linzau and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending October 25, 2013

Building 9204-2E Operations: This week, during a pre-operational check, operators identified a bend in one of the load-bearing trunnions on a lifting fixture used to lift and rotate a weapon component. After pausing work, the supervisor contacted the process engineer, who unscrewed the trunnion from the rest of the fixture and found a crack that had propagated through approximately two thirds of the interface between the threaded and unthreaded portion of the trunnion. The process engineer inspected the trunnion on the other side of the fixture and found indications of the same failure occurring, though not to the same degree. During the fact finding meeting for the event, operators indicated that the trunnions had been backing out gradually and would need to be tightened periodically prior to use. B&W has identified several follow-up actions from the event, including: redesigning the fixture; performing an extent-of-condition review to identify and evaluate for redesign other fixtures with removable, load-bearing pieces; and evaluating the annual inspection criteria for this fixture and other similarly designed fixtures for potential improvements.

Uranium Processing Facility (UPF): NNSA recently approved a revision to the safety design strategy (SDS) for UPF. One of the key changes to the SDS involves a modification to the safety basis roadmap to incorporate new safety basis documents called process safety reports (PSRs). The safety basis roadmap defines the project team's approach to aligning the safety basis and supporting documents with the critical decision strategy. The project team will generate these PSRs in order to demonstrate continued integration of safety into the design evolution during the two-year interval between approval of the preliminary safety design report and submittal of the initial preliminary documented safety analysis. The PSRs will be developed for Building 9212 processes and the general building. The first PSRs should be issued next spring and will include process descriptions; a summary of the preliminary hazard evaluation study and accident analysis results; a listing of safety class and safety significant controls with updated safety functions, functional requirements, and performance criteria; and a discussion of the effectiveness of the control suite. The project team plans to submit the PSRs to NNSA for review and comment, but not approval. This revision to the SDS also documents the project's strategy for addressing several of the issues identified in the Board's August 26, 2013, letter regarding weaknesses in planned UPF safety controls. NNSA is finalizing its response to the Board's letter.

Solid Waste Storage Area (SWSA)-5: The site representative conducted a walkdown of SWSA-5 facilities with the OREM Facility Operations Division Director and the assigned OREM facility representative (FR). The contractor, URS/CH2M Oak Ridge LLC (UCOR), has started retrieval of 173 drums containing contact-handled transuranic (TRU) and high fissile material from two underground bunkers. About half of the drums have been retrieved and a campaign to vent these drums will start next month. UCOR is updating the operating procedures in preparation for the start of the venting operation. During the walkdown, the site rep noted that exterior appurtenances (electrical boxes, air conditioning unit, etc.) and labeling on the portable venting station looked weathered and questioned if there was a plan to inspect and test the equipment prior to the start of the venting campaign. The OREM FR provided these observations to the UCOR's Waste Disposition Operations management and they updated the planned preparation actions to include additional checks of the equipment. The drums containing high fissile material will be processed next year at the TRU Waste Processing Center and certified for disposal at the Waste Isolation Pilot Plant (see 6/21/13 report).