DEFENSE NUCLEAR FACILITIES SAFETY BOARD

TO: Steven Stokes, Acting Technical Director
FROM: William Linzau and Rory Rauch, Site Representatives
SUBJECT: Oak Ridge Activity Report for Week Ending August 30, 2013

Building 9212: B&W held a critique this week to evaluate a problem discovered during completion of a technical safety requirement (TSR) surveillance of equipment in an accountable steam condensate (ASC) unit. The ASC units monitor the conductivity of the steam condensate discharge from heat exchangers that process fissile solutions and isolate the discharge line if process solutions are detected. The TSRs require the ASC units to be operable when the associated process equipment is running or have double-valve isolation on the discharge line when the equipment is in warm standby. After completing a surveillance of an ASC unit last week, workers noted that the lockout/tagout permit specified a restoration valve lineup that placed two valves in an open position. These positions would not have met the requirement for double-valve isolation. The workers immediately communicated the problem to the shift manager, who directed them to leave the valves shut. An extent-of-condition review of the other ASC units revealed that a valve that is normally relied upon to implement the double-valve isolation requirement was in the open position. B&W management determined that this was not a TSR violation because another shut valve in the discharge line provided double-valve isolation. As a corrective action, the Production Facilities Manager directed the Shift Manager to install administrative locks/tags on the valves that implement the double-valve isolation requirement and is evaluating if the position of other valves in Building 9212 need to be similarly controlled.

This week, an electrician received skin contamination while working in C-1 wing. The electrician was crouched in the squatting position to conduct a calibration of a temperature transmitter when a back spasm caused him to lower one knee to the floor. When this occurred, his leg contacted a ball valve causing it to open partially and release a small amount of uranyl nitrate solution onto his protective clothing. The solution soaked through the protective clothing resulting in skin contamination levels on his lower leg greater than 1 million dpm alpha per 100 cm^2. Decontamination efforts at the on-site medical facility were successful and the electrician did not receive further injuries as a result of his exposure to uranyl nitrate. Discussion during the fact finding meeting revealed that communications between workers and responders could have been improved. Specifically, workers aiding in the response to the event did not call 911, which may have delayed the arrival of the ambulance to transport the electrician to the medical facility.

Uranium Processing Facility (UPF): The UPF Project Office (UPO) recently issued a report detailing its assessment of B&W's design solution for the space/fit issue (see 9/21/12 report). The assessment also evaluated whether constructability considerations are being incorporated into the UPF design. The UPO team noted that they were unable to determine, with certainty, if the current design solution (as of June 2013) provides an appropriate amount of space margin because the design and three-dimensional model were not yet sufficiently mature. The team noted that certain unresolved design issues and inputs could present future space management challenges, particularly in the process areas. The team determined that the B&W design process includes constructability considerations, but improvements could be made in the periodic review of the constructability plan. The report also documents some initial corrective actions that B&W started while the assessment was in progress. These corrective actions included improving the processes for completing the three-dimensional model and providing more objective measures for assessing space/fit design solution adequacy.