

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 April 25, 2014

Staff members Z. Beauvais, D. Campbell, and M. Duncan were at Y-12 to review toxic material storage conditions in Buildings 9204-2E and 9720-82. T. Hunt was at Y-12 to observe CNS due-diligence walkdowns for Buildings 9212 and 9215.

Transuranic (TRU) Waste Processing Center (TWPC): Late last week, OREM and WAI briefed the site rep and staff on the actions WAI was taking to address the suspension of shipments of TRU waste to the Waste Isolation Pilot Plant (WIPP). For the last several years, WAI had been stockpiling remote-handled and contact-handled (CH) TRU waste while awaiting the resumption of shipments, which were scheduled to start last month. By the time the events at WIPP occurred in February, TWPC waste storage areas had almost reached their physical and radiological limits. The TWPC Documented Safety Analysis (DSA) credits a specific administrative control (SAC) to maintain the radiological inventory of the facility's TRU waste storage areas below a specific limit. As an operational best practice, WAI maintains a margin of 20 percent below the SAC limit. Currently, one of the storage areas is within 21 percent of the SAC limit. To address this condition, WAI is planning to ship CH TRU waste drums back to ORNL's waste storage facilities starting in June. If necessary, WAI is prepared to ship more than 800 drums to ORNL during the next year. Further complicating WAI's efforts to address these storage issues are plans to update the TWPC DSA to incorporate new site-specific dispersion analysis calculations (see 2/21/14 report). If other elements of the DSA remain unchanged, the new dispersion analysis would increase the 1 REM offsite consequence from a pool fire event by a factor of 70. To minimize the impact of the new dispersion analysis, WAI is considering new control strategies and the refinement of certain event scenarios in the upcoming DSA revision. The DSA revision is scheduled to be submitted to OREM by the end of May.

Aging Infrastructure: Building 9201-5 is a legacy facility in which various uranium processing operations were previously conducted. In 2010, NNSA approved an exemption to 10 CFR 830 that downgraded the facility from Hazard Category-3 to a chemically hazardous facility. The facility is not normally occupied, but personnel must periodically enter to monitor various in-service systems, such as fire protection systems. B&W recently increased the evaluated risk of personnel entry in the facility's risk register from medium to high because of degraded facility conditions. The degradation is largely due to water intrusion from roof leaks, water accumulation in the basement, and leaks from steam and condensate systems. The water intrusion has spread radiological and chemical contaminants, promoted biological hazards, such as mold, and caused concrete degradation and spalling. As a result of these conditions, B&W plans to eliminate personnel entries in Building 9201-5 to the fullest extent possible.

In response to the spalling concrete event in Building 9204-2 (see 3/21/14 report), B&W is implementing a corrective action that requires inspection of areas known to have similar degradation. The B&W structural engineers conducting these inspections are evaluating whether the controls to protect workers from falling debris are adequate. In general, the controls consist of a personnel boundary such as a rope or caution tape with attached signage that provide entry requirements. In addition, some areas have wire netting installed to catch spalled concrete. Examples of the type of degradation being inspected include: cracked wooden roof beams in Building 9737 (a non-nuclear facility), and significant concrete spalling in a roof fan room in Building 9202 (Technology Development). The inspections are scheduled to continue for the next few weeks and a report should be completed next month.