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 June 10, 2011

ORNL Tank W-1A. In May 2001, BJC shutdown activities to remove Tank W-1A and the contaminated soil surrounding the tank after discovering significant radiological contamination in the soil (i.e., contact dose rates ranged from 400 mrem/hr to 6 rem/hr). Subsequent to this discovery, the excavated areas were backfilled, the weather enclosure and excavation equipment were removed, and four feet of clean soil and gravel were placed on top of Tank W-1A.

Several years ago, DOE-ORO approved a Startup Notification Report (SNR), which requires both contractor and DOE Operational Readiness Reviews (ORRs) to be performed prior to resuming Tank W-1A removal activities. On April 11th, 2011, BJC initiated its contractor ORR. By April 14th, the contractor ORR team had identified several dozen issues and BJC decided to terminate the review due to the breadth and significance of the issues (see the 4/15/11 report). Based on cost and schedule pressures in part due to the project's unsuccessful contractor ORR, DOE-ORO is re-evaluating the requirements of DOE Order 425.1C, *Startup and Restart of Nuclear Facilities*, to determine if concurrent (i.e., both contractor and DOE) Readiness Reviews can be performed rather than serial ORRs prior to resuming Tank W-1A removal activities.

On Thursday, the DNFSB staff participated in a teleconference with DOE-ORO personnel to discuss this effort. Given that the scope of the project includes a new safety basis and associated controls, a new weather enclosure, new equipment, and new procedures since the project was shutdown in 2001, the DNFSB staff considers that DOE Order 425.1C requires ORRs prior to the startup of Tank W-1A removal activities.

Small Fire/Building 9212 Operations/Criticality Safety. In E-Wing, operators routinely use a 75-ton press in a glovebox to break enriched uranium bulk metal into smaller pieces. On Monday, during these operations, operators noticed that a roughing filter in the ventilation duct exiting the glovebox had caught fire. Operators immediately made the appropriate notifications, facility personnel shutdown the exhaust fan, and the fire self-extinguished. Radiological control personnel observed that the readings from a continuous air monitor located adjacent to the subject glovebox did not deviate from the normal range during this event.

Last year, B&W modified the ventilation duct for this glovebox to install the subject roughing filter assembly as part of improvements associated with the second phase of the Inadvertent Accumulation Prevention Program (see the 12/12/08 and 7/3/08 reports). The filter was specifically designed to trap uranium particulate and B&W chose to install combustible filter media to facilitate processing for uranium recovery. Given that uranium particulate is pyrophoric, the site representatives believe that non-combustible filter media (e.g., bronze wool) would have been a more appropriate choice for this application. The site representatives also note that nearby the 75-ton press, bronze wool filters are used as roughing filters for casting operations (see the 12/31/09 report). These bronze wool filters are routinely processed for uranium recovery. During the critique, B&W personnel stated that there were no plans or expectations to periodically inspect or replace the subject combustible filter. B&W management directed that follow-up actions include performing (a) an independent investigation of this event, (b) an engineering review of filter suitability, and (c) an extent-of-condition review for all nuclear facilities.