DEFENSE NUCLEAR FACILITIES SAFETY BOARD

July 13, 2007

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending July 13, 2007

A. Wet Chemistry Spill. On Monday, BWXT identified a spill of approximately 40 liters of solution from the feed tanks for the high capacity evaporator in the Enriched Uranium Operations Building. Operators reduced the recirculation flow that had been in progress through a portion of the feed tanks to stop the spill. The spill area was cleaned up and the solution collected in several safe bottles. BWXT personnel noted that the recirculation flow was set to 100%. Initial evaluation indicates that this flow rate combined with some amount of blockage in the recirculation line caused the system to backup and overflow to secondary tanks. This overflow eventually filled these secondary tanks and led to the spill. The system procedure requires the recirculation flow to be set at greater than 70%. Operators noted that the system is typically set at 100%. To help prevent recurrence, BWXT plans to revise the procedure to maintain recirculation at 70% when the evaporator is not operating. Additional observation of the system is planned to evaluate system performance.

No formal critique was called to evaluate this spill even though the event appears to meet the criteria for a critique in Y-12 procedures. This issue was discussed with YSO and BWXT management.

B. Wet Chemistry Operations. This week, BWXT completed replacement of the gaskets associated with the glass section flanges for the secondary extraction product tanks. Degradation of these gaskets resulted in leaks earlier this year (see the 6/22/07 site rep. report). BWXT noted significant degradation in some of these gaskets. Although there were concerns that torquing of the flanges after gasket replacement might damage the glass section, no damage occurred during the maintenance activity. Post-work testing using demineralized water is expected to occur next week. BWXT also completed a primary extraction operation this week. This is the first primary extraction operation since last Summer.

C. Oak Ridge Transuranic Waste Processing. Melton Valley Waste Processing Facility operations to process contact-handled transuranic waste have been ongoing since startup in late 2005. More than 200 m^3 of drums and boxes have been processed in the main glovebox and box breakdown area of the facility. Preparations for the campaign to process remote-handled transuranic waste have been in progress. Hot-cell outfitting is largely complete and activation and testing of the hot-cell equipment is planned over the next several months. Contractor and DOE Operational Readiness Reviews for the remote-handled transuranic waste campaign are now planned by early-2008. A new criticality safety program to address a limited number of items with higher amounts of fissile material is also in development.

D. Special Material Capability Project. YSO and BWXT anticipate completion of design of the new negative-pressure glovebox to be installed in a Y-12 facility and approval of Critical Decision-3 (approve start of construction) by September (see the 5/25/07 site rep. report). In preparation for Critical Decision-3, BWXT recently submitted the Preliminary Documented Safety Analysis to YSO for approval.