

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 20, 2008

TO: Timothy J. Dwyer, Technical Director
FROM: Donald Owen and David Kupferer, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending June 20, 2008

Wet Chemistry/Criticality Safety: The primary waste product from wet chemistry operations is the raffinate stream from the Primary Extraction (PX) process. PX raffinate is first routed to safe-geometry raffinate storage tanks. Prior to transfer from the storage tanks to a large tank that is not geometrically safe, the raffinate is sampled per the requirements of a Specific Administrative Control (SAC) to ensure the uranium concentration is sufficiently low for safe transfer. This week, YSO issued a Safety Evaluation Report (SER) to allow use of a new gamma radiation monitor in the transfer line. Upon detecting a high gamma level, the gamma monitor would signal to shut an isolation valve and stop the transfer pump. The SER notes that the new gamma monitor is not being credited to prevent a criticality; the sampling per the SAC will remain as the main safety basis control. The purpose of the SER is for YSO to approve certain passive design features of the new gamma monitor (e.g., internal wetted chamber volume) that ensures criticality safety during use of the monitor. B&W personnel noted to the site rep. that gamma monitor installation into the transfer line is expected in July and a B&W Readiness Assessment is to be conducted prior to operation with the monitor. B&W personnel also noted that substantial operating experience and data gathering is expected before B&W would propose crediting the monitor in preventing a criticality.

Small Uranium Fire Update/Feedback and Improvement. NNSA Headquarters issued a Preliminary Notice of Violation and proposed civil penalty to B&W regarding the small fire that occurred in March 2007 during machining chip handling in the Assembly/Disassembly Building (see the 10/5/07 and prior site rep. reports). The site reps. had observed in October that the B&W "Lessons Learned" document on this event did not clearly address a main factor identified by the fire investigation. Specifically, the Lessons Learned document did not clearly address lack of procedural and hazard analysis coverage of the task to transfer the can of chips from an inert environment to a container in air. Following inquiry by the site reps., B&W management revised and reissued the Lessons Learned document in May. The revised Lessons Learned now emphasizes the lack of procedural coverage of the chip transfer task and states the need for workers to stop an operation when procedural coverage does not exist or is not clear.

Conduct of Operations/Feedback and Improvement. Workers in the Assembly/Dissassembly Building discovered that certain subassemblies had been dried in an oven at a much higher temperature than intended for the subassemblies. This was due to mis-identification of the items and lack of formal, deliberate use of the section of the procedure governing the task of canning items in preparation for oven drying. The operators involved in the task to place the subassemblies in the can did not fill out the required form identifying the items in the can during that procedural task. A different operator who was not involved in the canning filled out the form at a later time with incorrect identifying information based on verbal input from the operators who had canned the subassemblies. Since the items were mis-identified, the oven was set at a higher temperature than intended. The site rep. discussed with YSO and B&W management the lack of proper adherence to procedures and the apparent lack of understanding on when an operation should be stopped. The site rep. also noted that the procedure was not used during the critique on this event to analyze what happened against specific procedural steps/requirements until prompting by the YSO Facility Representative.