

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

September 5, 2003

TO: J. Kent Fortenberry, Technical Director
FROM: Donald Owen, Oak Ridge Site Representative
SUBJ: Activity Report for Week Ending September 5, 2003

Staff member Don Nichols was at Y-12 Wednesday and Thursday to observe operations.

A. Y-12 Building 9204-4 - Storage of Machine Chips. During a tour by Board Members, staff and site rep. of Building 9204-4 on July 30th (see August 1st site rep. report), an operation producing depleted uranium machine chips was observed. An inquiry was made at that time on the procedures and protocols for storage of the machine chips. In preparing to address this inquiry in followup discussions with the staff, Building 9204-4 personnel determined that seven drums containing machine chips were not vented. Some of these unvented drums have been loaded since 1990; several other drums containing depleted uranium chips are vented or have pressure relief devices. The chips are supposed to be in water but no drum inspections are known to have been performed and the water levels in the drums are not known. None of the drum lids exhibit any signs of bulging and the drum external surfaces are in good condition.

The chips are being stored as there is no current processing/disposition path for the chips due to a processing concern. A February 2001 Y-12 technical report was identified addressing depleted uranium machine chip storage. This report noted the pyrophoric and reactive (hydrogen generation in water) nature of the material. The report provided "recommendations" that chips be stored in water with vented drums and that inspections be conducted on a regular basis to check for water level, drum condition and any chip corrosion or sludge. The report noted "... interim storage of chips under water is considered acceptable only when it is unavoidable." Fact-finding and determination of near-term actions to address the drums, how this deficient storage situation occurred, and overall long-term corrective actions is in progress. (1-C)

B. Y-12 Building 9212 E-Wing Authorization Basis Controls. A 600 gram mass limit for metal chips in a container during material sampling activities was improperly removed from the sampling procedure during a procedure revision. The mass limit had been highlighted in the procedure as being a control specified in the Building 9212 Basis for Interim Operation (BIO). This was incorrect as the control is based on a 1998 Unreviewed Safety Question Determination (USQD) dealing with chip fire hazards, not the BIO (the control was not picked up in any yearly update to the BIO). This error led personnel to believe that the control could be removed from the procedure. More importantly, however, the USQ screen performed for the procedure revision did not specifically identify that the control was being removed. This resulted in an inappropriate negative screen and no USQD review being performed. Fact-finding is in progress. (1-C)

C. Building 9202-4 Conduct of Operations. During a walk-down of Building 9204-4 by the staff, the staff pointed out that an operator was cutting on the inside of a vacuum lifting fixture to remove metal. Building 9204-4 management immediately stopped this unauthorized work on the lifting fixture and conducted fact-finding. Corrective actions are in development. (1-C)

D. Building 9212 Wet Chemistry Restart. Another unsuccessful attempt (see the August 15th report) to restart the Wiped Film Evaporator resulted from an apparently failed steam regulator this week. The Westfallia Centrifuge process, used to remove solids from uranium-bearing solutions prior to Primary Extraction, was successfully restarted under "first use" controls. (2-A)