

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

November 2, 2007

TO: J. Kent Fortenberry, Technical Director
FROM: R. Todd Davis/Donald Owen, Oak Ridge Site Representatives
SUBJECT: Activity Report for Week Ending November 2, 2007

A. Building 9212 Documented Safety Analysis. In July, BWXT requested an extension for the Building 9212 Documented Safety Analysis (DSA) annual update to October 2007 (see the 8/17/07 site rep. report). BWXT noted the intention to revisit off-site dose consequence calculations based on revised industry guidance (ICRP 72). BWXT estimated that the revised off-site dose consequences would allow for downgrading safety-class fire sprinkler systems to safety-significant and requested YSO concurrence with the approach. In late July, YSO concurred with application of the ICRP 72 to the dose consequence calculations.

In mid-October, BWXT submitted the annual update to YSO that includes a proposed downgrade of the safety-class fire sprinkler systems to safety-significant based on reduced dose consequences that BWXT considers no longer challenge the off-site evaluation guideline. The revised dose consequences are based in part on use of an airborne release fraction for bulk uranium metal that has been questioned by the Board in letters to NNSA dated August 9, 2007 and February 28, 2006. YSO personnel noted to the site reps. that the annual DSA update submittal is under review with a YSO Safety Evaluation Report anticipated by December.

B. Criticality Safety. As noted last week, BWXT management suspended casting of enriched uranium chips pending acceptable guidance from criticality safety following identification of an overloaded container. A process change appears to be impacting the oxide density associated with this activity such that volumetrically full containers could exceed the criticality safety mass limit for the container. Prior to this issue, operators had protected the mass limit based on process knowledge that volumetrically full containers would not exceed the mass limit. Initial Nuclear Criticality Safety (NCS) guidance to production personnel was unclear but was subsequently revised to state that the mass limit should be protected. The site reps. met with YSO, NCS and production personnel this week to discuss the guidance and operational controls to protect the mass limit. Training has been conducted to instruct operators to reduce the volume of oxide loaded during this activity (i.e., to a certain level in the container) pending additional information or revised NCS evaluation. The site reps. and YSO questioned whether this control should be formally captured as a compensatory measure.

C. Oxide Conversion Facility Restart. This week, BWXT was to conduct the first "dry run" of the conversion process in the Enriched Uranium Operations Building since the September 2006 shutdown. The dry run had to be postponed due to potentially hazardous ceiling material that fell in the main process area due to repair activities for roof leaks. Such delays likely mean restart will not occur until January assuming the BWXT and YSO Readiness Assessments occur as now planned by December.

D. Special Material Capability Project. This week, YSO approved Critical Decision-3B, Start of Construction, for the Special Material Capability Project. This project includes a new negative-pressure glovebox in a Y-12 facility that provides additional worker protection. Initial operations of this glovebox are scheduled for Spring-2010.