

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 20, 2004

TO: J. Kent Fortenberry, Technical Director
FROM: Donald Owen, Oak Ridge Site Representative
SUBJ: Activity Report for Week Ending February 20, 2004

Staff members Andrews and Deplitch and outside expert McGrew visited Y-12 to review a weapon component disassembly process in Building 9204-2E.

A. Y-12 Conduct of Operations. As reported last week, during a Quality Evaluation disassembly operation, a work crew had rigged hand tools into a leveraging device to help establish vacuum in a lifting fixture. Use of the device resulted in a worker chipping a tooth. The crew had not reported the specific lifting fixture difficulties nor followed a formal change process to authorize use of the rigged device. This week, Quality Evaluation activities in Building 9204-4 were suspended to conduct additional fact-finding to determine cause(s) and implement corrective actions. One corrective action performed this week was a dedicated "safety focus" day to review specific Quality Evaluation processes and workstations with a major objective to elicit any work process issues or difficulties from operations personnel. YSO management noted to the site rep. that YSO has requested a briefing on results of BWXT's investigative efforts on this event.

BWXT externally reported this event under the categorization criteria dealing with shutdown of a process for safety reasons. The site rep. considers that the rest of this Significance Category 4 report (including subject and occurrence description) focused on the injury only and did not clearly convey the conduct of operations concerns surrounding this event. The site rep. noted this observation to YSO management who indicated that they would review the report. (I)

B. Building 9204-2E Disassembly Operation. As reported on January 30th, incorporation of several design changes had been made to a machine to address generation of uranium machining chips in excess of a criticality safety mass limit on multiple occasions. Additional engineered control was to be developed when the limit was unexpectedly approached on recent occasions. BWXT has developed an engineered control that prevents an unfavorable geometry of chips from forming near the item being machined. Based on this change, a much higher chip mass limit has been approved. This control was implemented last week.

The staff and site rep. reviewed implementation of safety controls in general and observed disassembly operations. Inquiry by the staff revealed that a configuration management plan for the machine computerized numerical control input that controls chip quantity was not being used. This plan had been developed in early 2002 in response to a NNSA Readiness Assessment (RA) finding. The staff noted that some recommendations from a Fire Hazard Analysis in 1998 had not yet been adequately addressed, in particular a recommendation to establish a fire barrier evaluation program in Building 9204-2E. The staff also noted that use of an alternate threaded extractor tool could potentially improve the safety of a task to separate components than the gripper tool currently in use. (III)

C. Building 9212 Oxide Conversion Facility (OCF). BWXT submitted a formal response to the Board's letter of December 31, 2003 on OCF to YSO. YSO is reviewing this response. (III)

D. Building 9206 Deactivation. A hazardous, non-routine operation planned for late spring is clean-out of the Skull Oxide Calciner. A primary hazard is airborne contamination. This week, YSO approved a BWXT recommendation to conduct a BWXT RA to provide independent confirmation of readiness for this activity. (II)