

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 31, 2003

TO: J. Kent Fortenberry, Technical Director
FROM: Donald Owen, Oak Ridge Site Representative
SUBJ: Activity Report for Week Ending October 31, 2003

Staff members Bamdad, Duncan, Gutowski, and Hunt and outside expert West visited Y-12 to review preparations for the enriched uranium oxide conversion process in Building 9212.

A. Building 9212 Oxide Conversion Facility (OCF) Startup. The OCF will convert enriched uranium oxide (UO_3) to uranium tetrafluoride (UF_4) through reduction and hydrofluorination steps. The hydrofluorination step involves use of anhydrous hydrogen fluoride (HF), a very hazardous chemical (tissue burn hazard). Construction and testing of OCF equipment and systems is being completed and "cold" operations using water and nitrogen is expected to start by January. Operational Readiness Reviews are projected to start by May. The staff and site rep. reviewed the currently designated OCF safety significant equipment and authorization basis controls, resolution of prior assessment issues, and planned OCF readiness activities. (2-A)

B. Y-12 Work Planning/Control. Three events/issues with planning and control of maintenance or modification activities have been recently identified at Y-12. These include: (1) as reported last week, poor definition of work scope and other informality under "skill-of-the-craft" work control led to identification of incorrect valves to be worked in Building 9204-2 (special materials operations); (2) a speaker that is part of the Building 9204-2E criticality accident alarm system, in an office adjacent to Building 9204-2E, was removed without proper review and compensatory measures; this effort was accomplished under skill-of-the-craft work control when a specific "Planned Job Package" was required; and, (3) an effort to replace the main ram packing on the 7500-ton press used for depleted uranium operations in Building 9204-4 had been inappropriately planned with a "standing work package (SWP)," intended for a wide variety of general shop and other miscellaneous work, and without a specific job hazard analysis (JHA). By mid-week, BWXT management for both special materials and depleted uranium operations had established a compensatory measure requiring senior operations management review prior to authorization of skill-of-the-craft and SWP work (note that such work is generally performed by a central Y-12 maintenance organization). Such a compensatory measure, however, was not put in place for other Y-12 nuclear operations/facilities. The site rep. inquired with YSO management on reasons for not having such a compensatory measure for all major nuclear facilities. On Friday, BWXT management indicated to YSO management and the site rep. that such a compensatory measure will be implemented in all major nuclear facilities. (1-C)

C. Building 9204-4: Storage of Machine Chips - Update. As reported last week, work planning issues were noted by the site rep. and staff on an effort to vent unvented drums containing depleted uranium chips with a remotely operated brass punch. An update on the issues follows:

- BWXT has obtained the results of the investigation of an August occurrence involving a deflagration in the head-space of a transuranic waste drum being vented at the Idaho National Environmental Engineering Laboratory. BWXT has decided to incorporate certain recommended controls to electrically ground the drums and have fire department personnel on-scene for quick response, should a response be needed.
- The negative Unreviewed Safety Question Determination (USQD) screen was considered by YSO management to be inappropriate. A USQD will be developed for this activity.
- The approved JHA for the chip disposition activities was considered by BWXT and YSO management to need revision. Determination of any broader implications to activity work planning at Y-12 is in progress. (2-A)