

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

February 21, 2003

TO: J. Kent Fortenberry, Technical Director
FROM: Tim Hunt, Oak Ridge Site Cognizant Engineer
SUBJ: Activity Report for Week Ending February 21, 2003

Staff member Tim Hunt was on site this week providing site representative coverage.

A. Oak Ridge National Laboratory (ORNL) Sodium Fluoride (NaF) Trap Depressurization. The first NaF trap of $^{233}\text{UF}_6$ was depressurized last week. It contained an initial measured value of 114 psia of primarily (90 percent) fluorine gas. No UF_6 was detected in the 14.6 grams of gas released. Based on previous models, about 300 psia was expected. The measured value was so low that ORNL revised its procedure, repressurized the trap with 100 psia of helium, and then depressurized it again into a known volume to validate its assumptions about the free volume in the loaded NaF trap. This test on the trap yielded a small correction which resulted in an assigned measured value of 130 psia. More data and/or a new theory on radiolytic decomposition are in order based on the results of the first depressurized trap. The trap and its valves, which opened and resealed with no difficulty, appeared to be in excellent condition. (3-A)

B. BWXT Y-12 Highly Enriched Uranium Materials Facility (HEUMF). The staff met with site personnel to discuss their proposed 90-day response to the Board letter of December 27, 2002; specifically, the issue of evaluating the primary containment systems for material storage at HEUMF. The container issue affects other sitewide initiatives (e.g., inactive material, criticality safety) and integration of efforts is important to ensure consistency and efficiency in the establishment of requirements and standards. A logical path forward addressing container, storage, and disposition activities was presented. Many of the issues associated with the containers and storage at HEUMF will take months, if not years, to resolve. In the next few months, BWXT Y-12 will identify unneeded containers and revise current approvals to eliminate them, compile a minimum set of required containers based on container loadings and material forms, and begin to consolidate the number of cans and dollies. The contractor has also begun development of a plan to transfer material from various storage locations on-site to the HEUMF. One element of this transition plan is the establishment of a database of container information for HEU. It is expected that Building 9212 should have the bulk of its material backlog worked off by 2008, making it available to repackage material prior to shipment to HEUMF. In many cases where it does not appear that the current uranium storage standards are being applied, it was stated that in most instances this is the result of material being received that needs processing prior to storage or material that is greater than 10 years old, a casualty of the standdown. (1-C)

C. BWXT Y-12 Alternate Technologies - Microwave Casting. BWXT Y-12 has suspended work on the prototype microwave caster while the Y-12 Site Office (YSO) reevaluates the cost and schedule of contractor activities to date. YSO noted that progress has been disappointing and has requested that the contractor submit another proposal and project execution plan for the path forward prior to resumption of activities. The microwave was recently shipped to Building 9212 and awaits installation. Revised plans show copper melting being demonstrated by the end of fiscal year 2003 and a readiness review in early-2004, followed by uranium casting operations. (2-A)