

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 21, 2003

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

Staff member T. Hunt was on site this week providing site representative coverage. Staff member D. Burnfield and Outside Expert D. Volgenau were at Y-12 reviewing worker protection and work planning.

A. Building 9212 Enriched Uranium Operations (EUO) Wet Chemistry Restart. Wet chemistry first use operations began Friday with the oxide dissolver system. Operations were suspended shortly after startup when pH results from a process condensate sample came back below the threshold level. First use of the oxide dissolver system will continue next week. (2-A)

B. Oak Ridge National Laboratory (ORNL) Sodium Fluoride (NaF) Trap Depressurization. ORNL has completed depressurization of the four NaF traps identified in its initial pressure data collection campaign. The first three traps depressurized measured between 45-60 percent of predicted values; the fourth trap measured about 96 percent of its predicted value (293 psia). Since no firm conclusions about the pressure in all 26 traps can be drawn from the data collected to date, the plans are to extend the depressurization project by venting at least two more heavily loaded and similarly aged traps in an attempt to bound near-term risk. Depressurizing additional traps would further minimize risk. (3-A)

C. EUO Alternative Technologies - Saltless Direct Oxide Reduction. SDOR is an alternative means to produce uranium buttons without using the hydrogen fluoride (HF) and bomb reduction systems. Although the staff has some concerns with the handling of pyrophoric uranium powder, SDOR has the potential to realize safety benefits by eliminating or reducing exposure to HF and other hazardous chemicals. The contractor is currently operating the demonstration gloveboxes at a positive argon pressure to minimize concerns with a potential fire. The production facility expressed a preference to operate the gloveboxes under a vacuum to enhance radiological protection. The safety trade-offs are still being evaluated. The next performance-based incentive is to make one button a day for three consecutive days by April 30. No timeframe has been established for testing prototype equipment or constructing a pilot plant in Building 9212. (2-A)

D. B9212 Enriched Uranium Complex Safety Basis. The Building 9212 is the only facility at Y-12 that does not plan to complete its safety basis upgrade by April 2003. In June 2002 BWXT Y-12 requested approval of a temporary exemption from Title 10, Code of Federal Regulations, Part 830.207(a); specifically, a proposal to submit an upgraded safety basis for Building 9212 to DOE by September 24, 2004. Last week DOE completed a technical review of the request and found that the exemption will not present an undue risk. DOE granted temporary relief from the nuclear safety rule contingent upon BWXT Y-12 meeting interim milestones for completion of the accident analyses and portions of the documented safety analysis. (2-A)

E. Y-12 Environmental, Safety and Health (ES&H) Review. A team from the Office of Independent Oversight and Performance Assurance began its two week ES&H management inspection at Y-12 this week. The inspection focused on feedback and improvement, functionality of safety systems, roles and responsibilities, and the requirements management process. (1-A)