

John T. Conway, Chairman  
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# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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March 25, 2002

The Honorable Everet H. Beckner  
Deputy Administrator for Defense Programs  
National Nuclear Security Administration  
U. S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0104

Dear Dr. Beckner:

The Defense Nuclear Facilities Safety Board was pleased to learn of the recent progress made in material disposition activities at the Y-12 National Security Complex (Y-12). Particularly noteworthy were the actions taken to remove non-Material Access Area material from storage in inadequate facilities, the demolition of one of these facilities, and the imminent transfer of another facility to the Infrastructure Reduction organization. The progress being made in reducing the highly enriched uranium inventory in Building 9206 as well as developing disposition pathways for unique items currently stored in the warehouse is also laudable.

We look forward to further reduction in risk at Y-12 through the accomplishment of your long-term plan for material disposition. The enclosed staff report is forwarded for your information.

Sincerely,

John T. Conway  
Chairman

c: The Honorable Jessie Hill Roberson  
Mr. Mark B. Whitaker, Jr.

Enclosure

# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

## Staff Issue Report

February 28, 2002

**MEMORANDUM FOR:** J. K. Fortenberry, Technical Director

**COPIES:** Board Members

**FROM:** M.V. Helfrich and T.L. Hunt

**SUBJECT:** Material Disposition at the Y-12 National Security Complex

This report documents a review by the staff of the Defense Nuclear Facilities Safety Board (Board) of the disposal of various radioactive and hazardous materials stored at the Y-12 National Security Complex (Y-12). The Board has sent a number of letters to the Department of Energy (DOE) regarding the hazards associated with storage of radioactive and hazardous materials at Y-12 and the need to expedite disposal of these materials. The purpose of this review was to evaluate the progress that has been made in response to the issues raised by the Board. The scope of this review, which was conducted by staff members W. Andrews, B. Broderick, M. Helfrich, and T. Hunt, included a discussion of ongoing disposal efforts and plans for future efforts, as well as walkdowns of storage facilities that had been part of previous staff reviews.

**Non-Material Access Area Materials.** On May 29, 2001, the Board sent a letter to DOE raising the issue of the significant amount of excess hazardous and radioactive material stored in an inadequate manner in non-Material Access Area (MAA) facilities at Y-12. In response to this letter, DOE transmitted a copy of BWXT Y-12's *Project Plan for Ten Year Non-MAA Storage Management Program*. During this review, the staff discussed the implementation of the plan and conducted a walkdown of storage facilities. Progress has been made toward the reduction of material inadequately stored in several of the non-MAA facilities cited in the May 2001 issue report. All material has been relocated from Building 81-22, an old wooden warehouse, and the structure has been demolished. The vast majority of material has been removed from Building 9720-14. The remaining material is scheduled to be removed in the near future and the building will be turned over to Infrastructure Reduction. In addition, the staff learned that 3 of the 15 Sea Land containers on a slab in the 9720-18 complex are scheduled to be emptied of thorium this fiscal year. BWXT Y-12 plans to store much of the relocated material in Building 9204-4 for the next 5-7 years; however, personnel with the material disposition program are also exploring options for selling the material or disposing of significant portions of it as waste.

**Building 9206.** In its October 31, 2000, letter to DOE, the Board raised the issue of the pursuit of more timely hazard reduction in Building 9206. The Board observed that "[T]he principal difficulty with DOE's approach to deactivation of Building 9206 is that it does not ensure the commitment of adequate resources to the stabilization of the most hazardous

residues . . . [and that] deactivation and materials stabilization activities continue to be deferred without technical justification.” Since that time, DOE and its contractors have made significant progress on carrying out the project to stabilize pyrophoric uranium in Building 9206—the DOE Operational Readiness Review for this activity began on February 25, 2002. In addition, during this review of material disposition activities at Y-12, the Board’s staff made several positive observations regarding Building 9206. A total of 81 percent by weight of the highly enriched uranium has been removed from the building, and the MAA is scheduled to be eliminated in the latter part of 2002. Cooperation with Enriched Uranium Operations in Building 9212 has improved. It is expected (funding and priority permitting) that the remainder of the surplus material in Building 9206 can be processed through the Building 9212 chemical recovery system (for higher-assay material) or special chemical processing (for lower-grade material), or be blended for disposal. In addition, progress is being made on establishing discard limits for various material types stored in Building 9206 and other buildings on the Y-12 site as Y-12 attempts to disposition some of this inventory as waste.

**Unique Materials Stored in Warehouse.** During the staff’s recent review of the design of the new Highly Enriched Uranium Materials Facility (HEUMF), some of the discussion was focused on the requirements for long-term storage of canned subassemblies, as well as uranium metal and oxides, in HEUMF. At that time, the staff raised the issue of material currently being stored in buildings at Y-12 that would not meet HEUMF acceptance criteria, and the need to properly disposition these forms of highly enriched uranium, in particular the one-of-a-kind items stored in the current warehouse. While the majority of the material stored in this building is identified for long-term storage in HEUMF, the remaining material is considered excess to national security requirements and needs to be dispositioned. During this review, BWXT Y-12 presented disposition pathways (including time frames) throughout the nuclear weapons complex for each of the items stored in the current warehouse that will not be transferred to HEUMF. The Board’s staff found it encouraging that these disposition plans are being developed and that resources have been identified to implement these plans. The staff noted, however, that many of the final disposition dates are 5 years in the future, during which time funding priorities could change significantly.