

May 15, 2000

Brigadier General Thomas F. Gioconda  
Acting Deputy Administrator for  
Defense Programs  
Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0104

Dear General Gioconda:

The Department of Energy (DOE) and its contractor at the Oak Ridge Y-12 Plant have been working for several years to address safety-related requisites for restarting hazardous but vital national security operations at Y-12. The Defense Nuclear Facilities Safety Board (Board) has highlighted a number of safety issues requiring attention, including those described in the enclosed reports: (1) delays in stabilizing fissile materials in Building 9206, (2) deficiencies in the implementation of consensus safety standards and contractual requirements in activity-level procedures that control work, (3) prolonged reliance on cursory or limited-scope safety analysis documents for nuclear facilities, and (4) deficiencies in emergency management.

These reports are provided for your information. The topics identified have been included among those discussed by the Board with your senior staff and staff of the Y-12 contractor during a trip to the Y-12 Plant in April 2000. The Board will continue to advise you on our observations as we continue our oversight efforts.

Sincerely,

John T. Conway  
Chairman

c: Ms. G. Leah Dever  
Mr. Mark B. Whitaker, Jr.

Enclosures

# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

## Staff Issue Report

March 22, 2000

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

**COPIES:** Board Members

**FROM:** Dudley Thompson

**SUBJECT:** Status of Implementation of Corrective Action Plan for Emergency Management, Oak Ridge

During March 1–2, 2000, members of the staff of the Defense Nuclear Facilities Safety Board (Board) W. Andrews, P. Gubanc, D. Moyle, I. Pyatt, and D. Thompson met with representatives of the Oak Ridge Operations Office (ORO), Oak Ridge contractors, and the State of Tennessee at the Y-12 Plant. The purpose of this site visit was to review the status of implementation of the Department of Energy's (DOE) corrective action plan (CAP) for addressing deficiencies in emergency management identified in previous visits by the Board's staff and in various internal DOE evaluations.

**Background.** In a letter dated July 9, 1999, the Board called on DOE to develop and implement a plan for correcting deficiencies in emergency management involving ORO and various contractors operating facilities on the Oak Ridge Reservation. On October 29, 1999, DOE responded to the Board's letter, outlining proposed corrective actions and setting forth a schedule for their completion.

**Discussion.** During this site visit, the Board's staff noted some progress on the CAP, but several key elements of the plan are behind schedule, including scheduling and conduct of drills and exercises at the Y-12 Plant, preparation of the implementing procedures for emergency response, and implementation of a new Reservation-wide dispersion model for determining potential consequences of a release of hazardous material. Furthermore, additional slippage appears likely.

An Emergency Management Working Group has been established, comprising representatives from each of the contractors and ORO, led by an experienced and knowledgeable member of the Emergency Management Program Office (EMPO). The working group appears to be working harmoniously, with due regard for the priorities and the available resources to accomplish the actions outlined in the CAP. Unfortunately, progress on the CAP remains slower than desirable, despite the good intentions and cordial working relationship among members of the working group.

A consolidated Reservation-wide Emergency Plan has been developed and is proposed for implementation by March 31, 2000. However, completion of the associated Emergency Plan Implementing Procedures (EPIPs) is currently forecast to slip to mid-summer. The Board's staff suggested that ORO evaluate the relative merits of prematurely implementing the revised Emergency Plan versus delaying implementation and concurrently expediting (1) completion of

the EIPs, and (2) implementation of a common plume model for determining potential consequences of release of hazardous material from any site on the Oak Ridge Reservation.

EMPO has adopted the Y-12 contractor's standard for the review and approval of emergency management hazard assessments (EMPO-558, *Oak Ridge Y-12 Plant Emergency Management Hazards Assessment Process*). This standard appears to be adequate. Unfortunately, ORO has only informally directed its use by all Oak Ridge contractors. As of the staff's review, ORO had not yet decided whether a Y-12 contractor revision to EMPO-558, currently being prepared, would be promulgated for implementation to all contractors.

The Y-12 Plant has made commendable progress in developing comprehensive hazard assessments for the highest-priority materials in its inventory. Completion of hazard assessments for materials presenting relatively low hazards will require an extended period of time, however, primarily because of limited resources. In examining the hazard surveys (which provide the basis for determining whether a hazard assessment is required), the staff noted that each individual chemical hazard was dispositioned on the basis of that hazard alone (per the guidance of EMPO-558). For some facilities (such as laboratories), the aggregate hazard of many small sources demands consideration for treatment with a hazard assessment.

The senior Lockheed Martin Energy Systems (LMES) representative at the meeting expressed his frustration at the limited availability of knowledgeable personnel. He candidly noted his inability to establish a meaningful schedule for emergency drills and exercises, due to the lack of sufficient personnel resources to develop drill and exercise scenarios while addressing other pressing emergency management issues.

ORO has decided to employ a single-plume model, the Computer-Assisted Protective Action Recommendation System (CAPARS), for assessing the potential consequences of the release of hazardous materials from any of the facilities on the Oak Ridge Reservation. This model will replace the various other plume models previously used at the facilities involved. Although CAPARS is an accepted model used at the Rocky Flats Environmental Technology Site, and possibly at other DOE sites, this decision appears to have been made without the benefit of a rigorous and formalized technical and cost-benefit analysis that would support abandonment of the previously used and accepted models.

LMES has developed a Web-based training program for emergency responders, which has been completed satisfactorily by 190 staff members from across the entire Oak Ridge Reservation. However, after expending considerable effort to establish and implement its own training program, ORO has exercised essentially no configuration management over the Reservation-wide training program. The Board's staff encouraged ORO to institute an effective program for configuration management of the training of emergency responders, as well as for other emergency management functions and activities.

The ORO Assistant Manager for Environment, Safety, and Health (AM/ESH) stated that a decision has been made to establish a GS-15 position of Division Director for Emergency Management and Assessment. The staff believes that this will enhance the priority attached to that function. However, the AM/ESH stated his intention to attempt to fill the position from within DOE. This decision was subsequently reaffirmed by the ORO Manager, who cited manpower ceilings and the need to use the available external hiring flexibility for filling vacant

legal staff positions. The Board's staff encouraged both the AM/ESH and the ORO Manager to reconsider their positions and advertise nationally to better ensure selection of the highest-quality candidate.

EMPO and senior managers in ORO continue to demonstrate only limited leadership and assertiveness in the integration of Reservation-wide emergency management functions. In view of the number of independent contractors operating facilities at Oak Ridge, ORO needs to exercise a stronger role in these functions. In addition, EMPO needs to be more aggressive in its internal self-assessments to address long-standing emergency management issues. The ORO Deputy Assistant Manager for ESH acknowledged that to date, ORO's self-assessment capability was essentially nonexistent, but that this capability would be established under the Director position described above.