

John T. Conway, Chairman  
A.J. Eggenberger, Vice Chairman  
John E. Mansfield  
R. Bruce Matthews

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901  
(202) 694-7000



December 2, 2003

The Honorable Spencer Abraham  
Secretary of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Secretary Abraham:

On May 6, 2003, due to the accumulation of combustible material, a fire occurred in the basement of Building 371 at the Rocky Flats Environmental Technology Site (RFETS) as workers were preparing to remove Glovebox 8 from the facility. The fire broke out after operators began cutting a hole near the top of Glovebox 8 to establish a ventilation path for the glovebox. A significant firefighting effort ensued, including the discharge of more than a dozen fire extinguishers and eventual use of a fire hose. No workers were harmed, but the potential for severe injury existed, four firefighters received skin contamination, and a significant cleanup effort was required.

Because of the urgency of the matter, the Defense Nuclear Facilities Safety Board (Board) issued a letter on July 31, 2003, imposing a 15-day reporting requirement to ensure that the Department of Energy (DOE) would take appropriate immediate actions to verify that the conditions contributing to the fire did not exist elsewhere at RFETS. DOE provided an action plan to the Board in a letter dated August 15, 2003.

In parallel to the July 31, 2003, letter, the Board and its staff continued to review the causes and implications of the May 6 fire at RFETS. The enclosed reports prepared by the Board's staff documents the results of this review and the results of the staff's review of documentation and practices related to activity-level work planning at RFETS. These reviews identified problems in all five core functions of Integrated Safety Management (ISM)—defining the scope of work, analyzing the hazards, developing and implementing hazard controls, performing work within those controls, and providing feedback and continuous improvement. Furthermore, the Board's staff observed ineffective oversight by DOE's Rocky Flats Field Office (RFFO) of the events leading up to the fire, of the RFETS contractor's actions in response to the fire, and of the subsequent resumption of work. Each of these areas and a number of specific issues are discussed in the enclosed reports. The following examples illustrate some of the principal deficiencies detailed in these reports.

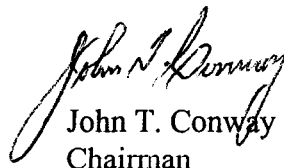
- Despite previous correspondence from the Board regarding the need for improvements in work planning at RFETS and actions committed to by DOE, the RFETS contractor approached the removal of Glovebox 8 using a generic work package that failed to address the unique design of the glovebox and a Job Hazards Analysis that failed to address the uncharacterized combustible contents of the glovebox or other unique hazards associated with its design. As a result, the contractor failed to implement effective safety controls for this task.
- The RFETS contractor inadequately implemented other key safety controls that had been specified for decommissioning work in Building 371, including the combustible control program and the procedure for reducing and neutralizing chemicals used to decontaminate gloveboxes. (Improvements in these areas have been noted subsequent to the Board's letter of July 31, 2003.)
- The materials found in Glovebox 8 after the fire included combustible wastes from chemical decontamination of another glovebox, a condition which violated safety procedures and which was not acknowledged by the site until the Board's staff obtained photographs showing the material amid the debris from the fire.
- The concerted firefighting effort undertaken by the decommissioning workers violated site procedures in which they had been trained and exposed them to severe hazards.
- Despite the ever-changing facility conditions and hazards associated with decommissioning work, RFFO did not perform oversight of decommissioning activities in Building 371 prior to the fire.
- Despite the commitment provided to the Board by DOE's Assistant Secretary for Environmental Management in the letter of August 15, 2003, the Board's staff determined that chemical decontamination of gloveboxes at RFETS had resumed prior to review of the procedure by RFFO and without RFFO oversight.

On October 20–23, 2003, a review team from the Board's staff that included a former Board Site Representative for RFETS conducted an in-depth review of conduct of operations, work control, and safety oversight at RFETS. A summary of the staff's observations from this review is provided in Enclosure 3 to this letter. This review concluded that, although the RFETS contractor has implemented a number of positive practices, its recent safety performance is unsatisfactory, as evidenced by continued lapses in work planning and execution. This review also reinforced the Board's conclusion that the oversight capability of RFFO has degraded considerably in recent years. Improvements are needed to remedy the loss of technical competence within RFFO and to refocus RFFO on performing safety oversight of decommissioning work at RFETS.

Given the scope and significance of the lapses in the implementation of the core functions of ISM at RFETS and the deficiencies in safety oversight by RFFO, the Board concludes that the ISM System at RFETS, including safety management within both the RFFO and its contractor, needs improvement. The Board believes that an independent review is needed to thoroughly evaluate the state of ISM at the site, including an assessment of the effectiveness of RFFO's health and safety oversight of decommissioning activities, and that comprehensive corrective actions are needed to correct the root causes of the specific issues identified in the enclosed reports prepared by the Board's staff and highlighted above.

Therefore, pursuant to 42 U.S.C. § 2286b(d), the Board requests that DOE provide a corrective action plan to the Board within 60 days of receipt of this letter regarding how DOE and its contractor at RFETS will address the findings documented in this letter and the enclosed reports.

Sincerely,



John T. Conway  
Chairman

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

Enclosures

- (1) Staff Report re Glovebox Fire at RFETS
- (2) Staff Report re Documentation & Practices  
Related to Activity-Level Work Planning at the  
RFETS
- (3) DNFSB Review of Conduct of Operations,  
Work Control, and Safety Oversight at RFETS