

John T. Conway, Chairman  
A.J. Eggenberger, Vice Chairman  
Joseph J. DiNunno  
Herbert John Cecil Kouts  
John E. Mansfield

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901  
(202) 208-6400

98-0002730



August 13, 1998

Mr. James M. Owendoff  
Acting Assistant Secretary for  
Environmental Management  
Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Mr. Owendoff:

The Defense Nuclear Facilities Safety Board (Board) has received your letter of June 4, 1998, providing a revised Integrated Program Plan (IPP) for the second phase of Recommendation 94-3 as requested in the Board's letter of October 15, 1997.

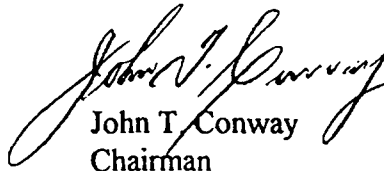
The Board and its staff have reviewed the revised IPP and find it acceptable in meeting the goal of Recommendation 94-3 to ensure a suitable storage location for the large quantity of plutonium material at the Rocky Flats Environmental Technology Site. The Board agrees with the Department of Energy's (DOE) approach of continuing with upgrades to Building 371 in parallel with ongoing planning to ship material off site.

In conjunction with reviewing the revised IPP, the Board's staff reviewed the status of completion of the initial set of upgrades to Building 371 and implementation of the Basis for Interim Operation (BIO). This review is the subject of the enclosed staff issue report. Completion of the upgrades and implementation of the BIO are proceeding reasonably well; however, the Board's staff has concerns with the upgrade work packages. The staff found the work packages extremely difficult to review independently and noted that there were technical errors in both work packages reviewed. The analysis of upgrades to the ventilation system supports was inconsistent with accepted industry practices, and the analysis of the test results on the fire protection system for the ventilation system filters had technical errors. There appears to be adequate margin in the design such that these errors should not affect the upgrades.

The Board believes good progress has been made toward upgrading Building 371 to make it safe for its currently planned mission. However, based on the staff's difficulty in reviewing the packages and the problems found, the Board believes it would be prudent for DOE to evaluate independently the adequacy of the work packages to ensure that the functional requirements of the upgrades have been satisfactorily met.

Accordingly, the Board requests that DOE inform the Board in the next quarterly report for Recommendation 94-3 regarding any independent reviews that have been completed, the results of those reviews, and plans for any future reviews.

Sincerely,



John T. Conway  
Chairman

c: Mr. Mark B. Whitaker, Jr.  
Ms. Jesse Roberson

Enclosure

**DEFENSE NUCLEAR FACILITIES SAFETY BOARD****Staff Issue Report**

July 22, 1998

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director

**COPIES:** Board Members

**FROM:** R. Kasdorf

**SUBJECT:** Implementation of Recommendation 94-3 at the Rocky Flats Environmental Technology Site

This report documents an issue reviewed by members of the staff of the Defense Nuclear Facilities Safety Board (Board) F. Bamdad, J. Blackman, R. Warther, and R. Kasdorf. This review was conducted on June 30–July 2, 1998, at the Rocky Flats Environmental Technology Site (RFETS).

**Background.** The Integrated Program Plan (IPP) for implementation of the second phase of Recommendation 94-3 was issued on July 11, 1996. The IPP committed to completing an initial set of upgrades to the structure, systems, and components in Building 371 in 1997, and to completing implementation of an upgraded authorization basis document (Building 371/374 Basis for Interim Operation [BIO]). Much work has been completed; however, in an October 15, 1997, letter to the Department of Energy (DOE), the Board noted that planning for Building 371 had become inconsistent with the IPP. A revised IPP was submitted to the Board on June 4, 1998. This report documents the staff's review of the status of implementation of upgrades to the building and implementation of the BIO.

**Building 371 Upgrades.** The initial set of 16 upgrades (priority upgrades) is now complete, except for an upgrade to provide building containment for the ventilation system inlet. The ventilation upgrade provides high-efficiency particulate air filters on the supply air inlet and will be complete in July 1998, although the schedule is tight. As a result of preparing the BIO, an additional set of 30 upgrades (BIO-driven) was identified and scheduled for completion in 1998, in accordance with the IPP. Satisfactory progress is being made on the BIO-driven upgrades: 10 are complete or canceled based on other actions, 10 are scheduled to be completed in July 1998, and the remaining 10 will be completed by the end of 1998.

The Board's staff reviewed work packages for two of the completed priority upgrades (seismic heating, ventilation, and air conditioning [HVAC] upgrades and plenum deluge system modifications). The work packages were extremely difficult to corroborate independently. Only with the assistance of the contractor was the staff able to review the packages adequately. The staff was told that the site recognized the problems and is developing a new system for documenting and implementing work packages.

The Board's staff noted that the analysis of upgrades to the HVAC system and supports was inconsistent with accepted industry practices. However, there is sufficient compensatory margin (>70 percent) such that there is no safety issue. Regarding the work package for the deluge system, the staff found that an engineering evaluation of the results of a test to demonstrate adequate nitrogen supply was not included in the work package as required. This evaluation was subsequently 'found' and added to the work package. This evaluation was also technically incorrect, and the staff is not fully convinced that an adequate nitrogen supply has been provided. Based on the difficulty involved in reviewing the packages and the problems found, the staff believes it would be prudent for the DOE to evaluate the work packages independently to ensure that the functional requirements of the upgrades have been met.

**BIO Implementation.** The BIO is being implemented in a phased manner. Consistent with the IPP, the B371/374 Authorization Agreement requires that the BIO be the authorization basis of record by August 1, 1998. During the staff's review, the contractor (Kaiser-Hill) stated that the BIO would not be fully implemented by that date.

The Board's staff reviewed those elements of the BIO that are not anticipated to be complete by August 1998. These include three elements of primary importance to safety—building ventilation, fire suppression and detection, and the combustible control programs. Based on discussions with building and Kaiser-Hill personnel, the staff concluded that building safety is not significantly affected by the lack of full BIO implementation. The existing requirements in the Final Safety Analysis Report, which the building personnel stated are being met, encompass the controls not yet implemented, except for combustibles in several rooms. These rooms are either inerted or highly contaminated such that removal of combustibles must be accomplished in a controlled manner. Building personnel indicated that combustible material would be removed at the earliest opportunity, but they are attempting to reduce high airborne contamination before this is done. Combustibles in inerted rooms will be removed when the rooms are entered for other reasons.

Subsequent to the staff's review, DOE-Rocky Flats Field Office gave Kaiser-Hill technical direction to implement the BIO in accordance with the authorization agreement. The contractor is making efforts to meet this schedule; however, some items will not be implemented on schedule, and a Justification for Continued Operations (JCO) will be submitted. The JCO will cover (1) rooms where combustible loading has not been reduced, (2) interlock for dock doors, (3) storage racks, (4) fan interlocks, (5) ventilation inlet isolation and other tertiary confinement, and (6) fire barriers.