

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 14, 2004

Mr. Paul M. Golan  
Acting Assistant Secretary for  
Environmental Management  
U.S. Department of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-0113

Dear Mr. Golan:

The Defense Nuclear Facilities Safety Board (Board) recently learned of a developing issue at the Savannah River Site (SRS) that requires your prompt attention. During a review of the transuranic (TRU) waste retrieval operations at SRS conducted on November 9, 2004, the Board's staff informed representatives of the Department of Energy (DOE) Savannah River Operations Office and Westinghouse Savannah River Company (WSRC) about safety issues regarding unvented TRU waste drums. DOE's complex-wide experience has shown that unvented TRU waste drums can and do contain flammable and explosive mixtures of hydrogen and oxygen gases, and that controls are needed to protect workers from this hazard. This observation is well documented in the Fluor Hanford report *Revised Hydrogen Deflagration Analysis* (HNF-19492, Revision 0-A, March 2004), and was identified as a safety issue in the Board's letters of November 7, 2003, and May 3, 2004, to the Assistant Secretary for Environmental Management. The issue of the safety of the workers at SRS is magnified by the fact that ongoing TRU waste disposal activities involve the handling and storage of as many as 400 unvented drums at a time on open storage pads.

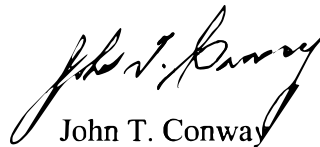
Despite these observations by the Board's staff, WSRC personnel strongly maintained that this safety issue was not credible because there had been no evidence of flammable or explosive gas mixtures during their extensive experience in handling and venting unvented drums. On November 11, 2004, however, a DOE Facility Representative observed a TRU waste drum venting operation and discovered that the drum contained 16.4 percent hydrogen and 13.8 percent oxygen, a mixture of gases capable of an energetic deflagration. This situation led to the declaration of a Potential Inadequacy in the Safety Analysis and the issuance of an occurrence report (SR--WSRC-SW&I-2004-0015). In a subsequent review of records for previously vented drums, WSRC personnel identified more than 100 drums that had contained flammable mixtures of hydrogen and oxygen prior to venting, of which 29 had contained at least 15 percent hydrogen.

The Board recognizes the many years of experience WSRC has in the matter of safe storage of waste drums, but is disturbed and concerned that complacency and incaution seem to have led WSRC not to consider all the relevant data before taking a strong position that a safety issue is not credible. It is also disturbing that, despite the fact that WSRC possessed data showing that this hazard existed, inquiries from both the Board's staff and DOE's Facility Representative were required before WSRC ultimately acknowledged the safety issue.

Furthermore, the Board is concerned about the inaccurate information provided to members of the Board's staff who identified this safety issue. Given that records have now been produced showing that more than 100 drums contained flammable mixtures of hydrogen and oxygen prior to venting, it is clear that WSRC possessed data contradicting the claim that no such drums had been found in WSRC's experience. The Board depends on obtaining accurate and complete information from DOE to carry out its statutory oversight responsibilities. It is essential for DOE and its contractors to ensure that information provided to the Board and its staff is accurate and complete, and that positions adopted in response to issues raised by the Board and its staff are likewise based upon accurate and complete information.

In light of these observations and pursuant to 42 U.S.C. 2286b(d), the Board requests a briefing within 30 days of receipt of this letter that provides a factual review of the issues discussed above as well as a corrective action plan with milestones and dates.

Sincerely,



John T. Conway  
Chairman

c: Mr. Mark B. Whitaker, Jr.  
Mr. Jeffrey M. Allison