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## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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November 1, 1996

The Honorable Hazel R. O'Leary  
Secretary of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Secretary O'Leary:

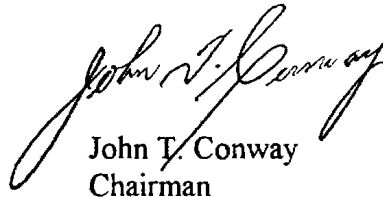
In its Recommendation 96-1, dated August 14, 1996, the Defense Nuclear Facilities Safety Board (Board) notified you of its views concerning the safety of the planned conduct of experiments PVT-1 and PVT-2 at the Savannah River Site. Specific recommendations were made for precautions to be taken during these experiments. The Board viewed these precautions as essential since the experiments will generate safety questions stemming from production of flammable benzene, as will all operations in the In-Tank Precipitation Program.

These views and recommendations were predicated on the statement by representatives of the Westinghouse Savannah River Company that the sodium tetrphenylborate (TPB) addition to Tank 48 would be limited to 200 gallons of fresh 0.5 molar solution. Representatives of Westinghouse and the Savannah River Operations Office have since informed the Board in briefings and in experimental plans provided to our site representatives that they now wish to add 300 rather than 200 gallons of the prescribed TPB solution to Tank 48. The Board has considered the safety aspects of the proposed change, and has concluded that the additional benzene that might be released from the larger amount of TPB would not lead to a significant increase in hazard if the proposed safety measures are in place and followed. These measures are directed to ensuring that the gas mixture in the headspace contains sufficiently low concentrations of oxygen, benzene, and hydrogen under all conditions so that the possibility of ignition is avoided through control of all possible components of a fire.

However, the Board believes that the 300 gallon limit should be regarded as an Operational Safety Requirement for the specific purpose of the conduct of PVT-1. In addition, it would be prudent to ensure specific operations management oversight at times when risers are opened for operational reasons, and the control of oxygen concentration is impaired accordingly.

The Board would like to be informed of any further contemplated changes in the amount of TPB to be added to Tank 48 in the course of experiment PVT-1.

Sincerely,



John T. Conway  
Chairman

c: The Honorable Thomas P. Grumbly  
The Honorable Alvin L. Alm  
Mr. Mark B. Whitaker, Jr.  
Dr. Mario P. Fiori