Department of Energy
Savannah River Operations Office
P.O. Box A
Aiken, South Carolina 29802

DEC 23 1997

The Honorable John T. Conway
Chairman, Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W., Suite 700
Washington, D.C. 20004

Dear Mr. Chairman:

SUBJECT: Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 96-1 Implementation Plan - Program Status

The purpose of this letter is to inform you that the current level of understanding gained through testing described in the Recommendation 96-1 Implementation Plan (and associated test plans) will prevent the U.S. Department of Energy - Savannah River Operations Office (DOE-SR) from bringing to closure the November and December 1997 commitments for benzene generation, retention and release. Based on the information learned to date, DOE-SR is performing additional laboratory testing and re-evaluating the strategy described in the Implementation Plan for closure of Recommendation 96-1.

Through the laboratory studies conducted to date, it has been determined that benzene is being produced at a high rate due to catalytic decomposition of tetraphenylborate (TPB). Considered initially to only be a soluble reaction, it is now believed that benzene is being produced from both soluble and solid TPB decomposition reactions. The key reaction catalysts have been determined; however, there still appears to be unidentified variables affecting the decomposition rate. Benzene retention mechanisms have been identified and it has been shown that waste slurries have a large benzene retaining capacity, which is consistent with observations in Tank 48. Through completion of laboratory studies, the level of understanding related to benzene generation, retention and release has significantly increased. However, additional work is necessary to bring the level of understanding to a point which supports a comprehensive set of engineered safety features and controls. Additional tests have been scoped and are currently underway to better understand TPB decomposition and to provide the information necessary to support a comprehensive set of engineered safety features and controls.

Given the above information, DOE-SR is currently re-evaluating the strategy described in the Implementation Plan. This includes an assessment of additional chemistry understanding needed, additional testing needed, data quantification needed, and/or any necessary changes to program or safety strategies. It is anticipated that this re-evaluation will be completed so that a formal action plan for bringing Recommendation 96-1 to closure can be issued to the DNFSB in March 1998.

The status of our re-evaluation and development of an action plan will be discussed and coordinated with your staff over the next several weeks. Please direct any questions to me or W. F. Spader at (803) 208-7409.

Sincerely,

Roy J. Schepens
Acting Assistant Manager
for High Level Waste

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