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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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June 29, 2000

The Honorable Carolyn L. Huntoon
Assistant Secretary for
Environmental Management
Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-0113

Dear Dr. Huntoon:

Members of the staff of the Defense Nuclear Facilities Safety Board (Board) recently completed a review of safety controls for the planned mobilization and removal of high-level waste from Tank 8 at the Savannah River Site's F-Area Tank Farms. This project will use slurry and transfer pumps to mobilize and transfer the waste from Tank 8 to Tank 40 as future feed for the Defense Waste Processing Facility. The primary safety concern is the potential for a hydrogen deflagration in Tank 8 due to hydrogen released from the waste during slurry pump operation.

A safety evaluation performed by the contractor, Westinghouse Savannah River Company (WSRC), identified the need for safety controls because of high postulated dose consequences at the site boundary resulting from a deflagration event. The staff's review of the safety controls to be implemented by WSRC revealed several issues, including uncertainties regarding hydrogen release from the sludge during slurry pump operation and an overreliance on administrative controls, in lieu of engineered controls, to prevent a deflagration event.

Discussions between the staff and personnel from the Savannah River Site have led to a satisfactory plan for resolution of all the identified safety issues. The enclosed report summarizes the staff's observations and documents the site's commitments, and is forwarded for your information.

The Board has observed similar issues regarding the identification and implementation of safety controls in other recent reviews of activities at the Savannah River Site. For example, the Board's review of the authorization basis for the Replacement High-Level Waste Evaporator, documented in a letter transmitted to the Department of Energy on November 22, 1999, identified issues associated with the functional classification of safety-related equipment and the implementation of administrative controls. Similarly, the Board's ongoing review of the phased restart of the Savannah River Site H-Canyon has found problems in the design of safety-related alarms and interlocks relied upon to protect against various accident scenarios.