Department of Energy
Washington, DC 20585

December 11, 2002

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

Reference: HQ letter from C. L. Huntoon to J. T. Conway, DNFSB, Regarding Tank Integrity, dated November 30, 2000.

Dear Mr. Chairman:

The purpose of this letter is to provide the status of the Department of Energy (DOE) commitments on Hanford Tank Integrity as documented in the subject letter. The Hanford Tank Farms now have programs in place to verify and maintain Double-Shell Tank (DST) integrity. Tank waste chemistry limits for corrosion mitigation are part of the safety basis and tank waste chemistry is proactively evaluated to facilitate timely chemical adjustments prior to exceeding these specifications.

The original actions selected to assure issue resolution have been completed with the exception of Action 3.1 to "Adjust chemistry within specification for four DSTs." Sodium hydroxide solution has been added to three DSTs to bring them into specification. Their status is as follows:

241-AY-101 Supernate in specification / Sludge in specification
241-AY-102 Supernate in specification / Sludge in specification
241-AN-102 Supernate in specification / Sludge is expected to come into specification through natural mixing

In addition, 42,000 gallons of sodium hydroxide solution were added to Tank 241-AN-107 in February 2002 and the tank supernate has been confirmed to be within chemistry specifications. However, Tank 241-AN-107 sludge is not expected to reach the required specifications as a result of this addition, and recent laboratory evaluations have concluded that additional data will be required prior to further chemical addition.

Detailed caustic demand laboratory testing was recently performed for Tank 241-AN-107 waste. Results of these tests showed a tendency for solids precipitation with the addition of sodium hydroxide. Based on these laboratory results, further addition of caustic to achieve chemistry specifications in the bulk waste would exceed the Technical Safety Requirements (TSR) Recovery Plan precipitation criterion, which could create the potential for gas release events in the tank.

Core sampling has been completed and laboratory analysis of Tank 241-AN-107 waste is currently underway to provide additional information. Laboratory results are expected by the end of this month. The results will be used to develop an updated plan to bring tank waste chemistry into specification. A careful evaluation and sound technical basis for further actions are required due to the waste characteristics and susceptibility for solids precipitation. The TSR Recovery Plan will be revised to reflect the new technical approach in January 2003.

The DOE remains committed to maintaining the integrity of the Hanford DSTs. DOE believes that actions completed to date, and management of the few remaining activities under the authorization basis Administration Control 5.15 Chemistry Control Program, satisfy Issue 3 to "Implement or revise tank chemistry controls." Therefore, DOE recommends that Issue 3 be closed and that only Action 3.1 remains open as a formal means for communicating status to the DNFSB. The ORP will keep your staff apprised of our ongoing progress.

Sincerely,

Jessie Hill Roberson
Assistant Secretary for
Environmental Management