Department of Energy

Washington, DC 20585

November 14, 2003

Robert A. Pedde, [ ]
Westinghouse Savannah River Company
Savannah River Site
Building 703-A/Room A203
Aiken, SC 29808

Subject: Enforcement Letter for Criticality Safety Violations (NTS-SR-WSRC-HCAN-2002-0001)

Dear Mr. Pedde:

This letter addresses Criticality Safety Violations that have occurred at the H-Canyon facility during a 15-month period from February 2002 through June 2003. The DOE Office of Price-Anderson Enforcement (OE) has reviewed these violations and is dismayed that they are both programmatic and recurring in nature. Indeed, in one case a criticality safety defense noncompliant condition existed since November 1996. Our review of these events identified multiple work process deficiencies that contributed to the loss of a criticality safety defense in each case. In addition, the long-standing nature of the deficiencies in the H-Canyon Cell Flushing Program indicates a significant weakness in your quality improvement and management/independent assessment processes. A summary of these events and the deficiencies is provided below.

In February 2002, you reported (NTS-SR-WSRC-HCAN-2002-0001) a programmatic deficiency relating to the failure to perform periodic flushing of the southern half of cells [ ] and [ ] in the warm canyon. Flushing of these cell floors is a required Criticality Safety Control established by the Double Contingency Analysis (DCA) to prevent a buildup of fissile material in the warm canyon sump, which could exceed the Criticality Safety Limit (CSL).

In March 2002, you reported (SR--WSRC-HCAN-2002-0004) another violation of a single criticality safety defense. The amount of material transferred to an Evaporator Feed Tank was incorrectly calculated, which resulted in the transfer of more material to the tank than allowed by the nuclear criticality control limit established by procedure.

In August 2002, you again reported (SR--WSRC-HCAN-2002-0011) a criticality safety defense violation. A CSL was established for Tank [ ] and two defenses were required prior to neutralization of material in this tank. The first defense requires verification, by feed sample analysis, that the cumulative mass expected to be transferred is less than the CSL for Tank [ ]. In performing this sample analysis, a combination of an incorrect assumption and a calculation error involving material

processed to Tank [ ] during the period 8/7 through 8/11 resulted in underestimating the grams of fissile material transferred.

In December 2002, you reported (SR--WSRC-HCAN-2002-0020) yet another similar violation. A transfer of fissile material was made to the feed tank of a batch evaporator based upon the sampling and calculation of the allowable pounds to be transferred. On December 21, the feed tank was sampled, following the transfer of material, and the amount of fissile material was in excess of the CSL for the evaporator.

In June 2003, you reported (SR—WSRC-HCAN-2003-0012) the fifth in the recent series of violations of a single criticality safety defense. A transfer of an acid solution was allowed to pass through the head tank and directly into sump collection tank [ ]. The operator did not comply with procedural instructions that required the filling of the head tank prior to transfer to tank [ ]. This action violated a single defense of the DCA.

Although these events did not result in Technical Safety Requirement violations, they represent a recurring problem with your compliance to criticality safety controls at H-Canyon established to prevent a more serious consequence. In each of these events one of two criticality safety controls established by your DCA was defeated. Multiple breakdowns in each event contributed to the loss of the criticality safety defense. While the second level of criticality defense functioned in each case, preventing any potential for an inadvertent criticality accident, collectively these incidents indicate that there are programmatic and recurring deficiencies in your Criticality Safety Program that need to be addressed on a priority basis to prevent events of much higher safety significance from occurring.

We have noted, based upon our review of H-Canyon operational information over the past five months that no further criticality safety related problems appear to have occurred during that time. Based on this observation, this office has decided to defer potential enforcement action regarding these deficiencies. However, I request that you provide me with a comprehensive description of the actions that have been taken by WSRC to correct these criticality safety related problems at H-Canyon to include root cause analysis, corrective actions identified/implemented, and criticality related management and independent assessments conducted at H-Canyon over the past two years. It is requested that this information be provided within 30 days of receipt of this letter. My office will continue to closely monitor the effectiveness of your corrective actions to determine if the issues raised in this letter have been resolved. We may decide to pursue additional enforcement action should your corrective actions not effectively remedy these problems.

Sincerely,

Stephen M. Sohinki
Director
Office of Price-Anderson Enforcement

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