

March 15, 1999

Mr. Roy J. Schepens  
Acting Assistant Manager for High-Level Waste  
U.S. Department of Energy  
Savannah River Operations Office  
P.O. Box A  
Aiken, South Carolina 29802

**SUBJECT: REQUEST FOR MEETING TO CLARIFY THE U.S. DEPARTMENT OF ENERGY'S (SAVANNAH RIVER) RESPONSE TO THE U.S. NUCLEAR REGULATORY COMMISSION'S REQUEST FOR ADDITIONAL INFORMATION OF JUNE 30, 1998**

Dear Mr. Schepens:

The U.S. Nuclear Regulatory Commission (NRC) staff is reviewing your response [letter from R. Schepens/U.S. Department of Energy at Savannah River (DOE-SR) to N.K. Stablein/NRC of September 30, 1998] to our Request for Additional Information (letter from N.K. Stablein/NRC to R. Schepens/DOE-SR of June 30, 1998). There are some areas of your response as to which the staff desires clarification before making any determination regarding your waste classification methodology.

NRC staff and our contractors, from the Center for Nuclear Waste Regulatory Analyses, therefore, propose to meet with you and your staff and contractors on Thursday, April 1, 1999, to resolve the outstanding issues.

The specific areas we would like to discuss are listed in the enclosure. Please contact me to arrange a meeting regarding these issues. I can be reached at (301) 415-6537, or at cbr@nrc.gov. You may also contact Richard Weller [(301) 415-7287, rmw2@nrc.gov] or Jennifer Davis [(301) 415-5874, bjd1@nrc.gov], of my staff..

Sincerely,

/s/

C. William Reamer, Acting Chief  
Engineering and Geosciences Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

Enclosure: As stated

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**LIST OF DISCUSSION TOPICS REGARDING  
RESIDUAL TANK WASTE CLASSIFICATION METHODOLOGY**

1. Measured or estimated radionuclide removal efficiencies for bulk waste removal, water washing, and oxalic acid washing, including data from cleanup of Tank 16.
2. The DOE cut-off (e.g., cost per Curie removed from the tank) which represents a reasonable limit for removal of key radionuclides to an extent that is technically and economically practical.
3. Actual water table levels with respect to tank bottoms (vice 4-year average levels) to ascertain potential effect of fluctuating water table (e.g., description of, and data from, tank farm monitoring wells; data from precipitation records).
4. Basis for the determination that the aquifers are not suitable for future use by an inadvertent intruder.
5. Potential hydrologic effects of future climate variation, over the performance period, based on regional climate history.
6. Description of the monitoring system set up in and around the tank system.
7. Need for additional performance assessment runs:
  - a. Sensitivity analyses to determine relative importance of specific parameters and model assumptions
    - i. Evaluation of model uncertainty from a fluctuating water table using MEPAS (consider a case which eliminates the unsaturated layers, the Congaree Aquifer, and considers the upper two aquifers as one; assume those tanks potentially affected by a fluctuating water table have bottoms submerged below the water table).
    - ii. Sensitivity of radionuclide release to basemat integrity (perform analyses for a range of durations of basemat integrity from 0 to 500 years: 0, 50, 100, 500 yrs.).
    - iii. Evaluation of the effect of narrow, high conductivity zones like the one noted near the F-Area seepage basins (consider case in which dispersivity is sharply reduced or set to zero, and multiple streamtubes are used for groundwater transport).

Enclosure

- iv. Parameter sensitivity analyses for the following:
  - (1) water budget percentages
  - (2) sorption coefficients
  - (3) dispersivity

b. Sensitivity of dose to resident farmer intruder to institutional control; consider:

- i. 100-year active institutional controls, 500-year resident farmer intruder, drinking water wells at 1m, 25m, 50m, and 100m
- ii. 100-year active institutional controls, 100-year resident farmer intruder, drinking water wells at 1m, 25m, 50m, and 100m

8. Please provide the following reference as requested in Request for Information #1:

Cook, J., Interoffice Memorandum (May 17 1996) to B.T. Butcher, "Evaluation of Computer Modeling for High-Level Waste Tank Closure," Aiken, SC: Westinghouse Savannah River Company.