



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

**JUL 31 1998**

Mr. Richard Weller  
U.S. Nuclear Regulatory Commission  
11545 Rockville Pike  
Rockville, MD 20852-2738

Dear Mr. Weller:

**SUBJECT: Review of Melt and Dilute Technology**

Based on the videoconference held July 22, 1998, between the Department of Energy Savannah River Operations Office (DOE-SR) and the Nuclear Regulatory Commission (NRC), it was agreed to continue work under the Interagency Agreement and Memorandum of Understanding. The focus of the reviews has changed from the direct co-disposal technology to the melt and dilute technology for disposition of the aluminum based spent nuclear fuel. Subsequently, we are now sending you three documents to review. You will find them listed below along with the type of review requested:

1. "Evaluation of Co-disposal Viability for Aluminum-Clad DOE-Owned Spent Fuel: Phase II, Degraded Co-disposal Waste Package Internal Criticality," April 2, 1998. Review methodology and assumptions that could affect the melt/dilute criticality analysis, i.e., review in conjunction with document 2.
2. "Criticality Evaluation of DOE Spent Nuclear Fuel Co-disposal Canister with Melt and Dilute Materials Test Reactor Fuel," March 4, 1998. Review methodology, assumptions and conclusions that could affect our melt and dilute process requirements.
3. "Thermal Analysis of Repository Co-disposal Waste Packages Containing Aluminum Spent Nuclear Fuel (U)," Si Young Lee and Robert L. Sindelar. Review methodology, assumptions, and conclusions that could affect repository acceptance.

It was also agreed that DOE-SR would provide the NRC an updated "overview" document which indicates the change in technology focus, the nature of the expected reviews, and the projected technical papers expected in fiscal year 1999 which the NRC will be asked to review. This overview document should be complete by the end of August.

Please direct questions related to this matter to Jean M. Ridley, P.E. of my staff at (803) 557-3758.

Sincerely,

John E. Anderson  
Acting Assistant Manager for Material  
and Facility Stabilization

RSFD:JMR:ddc

UE-98-0189

Three Enclosures  
(See Above Description)

cc w/encl:  
N. Sridhar, CNWRA

cc w/o encl:  
M. Federline, NRC