



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

JUL 12 2012

Mr. Mark A. Satorius, Director  
Office of Federal and State Materials  
and Environmental Management Programs  
U.S. Nuclear Regulatory Commission  
11545 Rockville Pike, Mail Stop T8F5  
Rockville, MD 20852-2738

Dear Mr. Satorius:

**SUBJECT:** Letter of Concern (Type IV) Regarding US Department of Energy Disposal Activities at the Savannah River Site Saltstone Disposal Facility (Your Letter dated April 30, 2012)

**References:** 1) Technical Evaluation Report for the 2009 Performance Assessment for the Saltstone Disposal Facility at the Savannah River Site (Letter, Camper to Gilbertson dated 4/30/12)  
2) Transmittal of Updated Saltstone Disposal Facility (SDF) Information Developed since August 2011 (Letter, Spears to Camper dated 6/13/12)

This letter provides additional information in response to the subject Letter of Concern related to disposal operations at the Savannah River Site Saltstone Disposal Facility (SDF) and the accompanying Technical Evaluation Report (Reference 1). The Department of Energy (DOE) is carefully considering the Nuclear Regulatory Commission (NRC) observations, and appreciates NRC's review of DOE's *Performance Assessment for the Saltstone Disposal Facility at the Savannah River Site* dated October 2009 (SDF PA). Disposal operations are scheduled to resume in SDF later this fiscal year (FY), beginning with Saltstone Disposal Unit (SDU) 2 in August 2012. After filling SDU 2, operations in SDU 3 and 5 are anticipated to occur through FY 2015.

Enclosure 1 is an updated technetium-99 inventory projection for SDUs 2, 3, and 5. These projections reflect the current salt waste batching, treatment, and disposal plans for these three SDUs. Enclosure 1 indicates much lower technetium-99 inventories will be placed in SDUs 2, 3, and 5 than DOE previously assumed and evaluated in the SDF PA. Enclosure 2 provides sensitivity analyses based on Enclosure 1 projected inventory for SDUs 2, 3, and 5; as well as inventories in Vaults 1 and 4 for the SDF performance assessment sensitivity cases designated as Cases K and K1 utilizing the enhanced GoldSim model provided to NRC with Reference 2. These analyses, along with the SDF PA base case and other sensitivity analyses were performed by DOE, as part of DOE's performance assessment maintenance under DOE Manual 435.1-1, pursuant to DOE's Atomic Energy Act responsibilities. The May 22, 2012 DOE Transmittal letter for the Disposal Authorization Statement for the Savannah River Site Saltstone Disposal Facility (including its enclosure and attachments), was prepared as part of the Department's internal procedures consistent with DOE Manual 435.1-1 and is publicly available at the website location [http://www.em.doe.gov/stakepages/wmdi\\_sw\\_d\\_orig.aspx?PAGEID=WMDI](http://www.em.doe.gov/stakepages/wmdi_sw_d_orig.aspx?PAGEID=WMDI). DOE is submitting Enclosure 2 Cases K and K1, sensitivity analyses based on NRC's Technical Evaluation Report and Letter of Concern, irrespective of DOE's decision making process described in the Disposal Authorization Statement. DOE is confident that based on this information, the NRC, in coordination with the State of South Carolina, will conclude reasonable assurance that DOE's disposal operations at SDF through FY 2015 will be compliant with the


public dose performance objective in 10 CFR Part 61.41, in accordance with Section 3116(b) of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005.

DOE will provide further information in response to the Technical Evaluation Report (Reference 1). The additional response, which DOE anticipates completing by the end of this month, will identify DOE's planned approach and path forward to fully address the Technical Evaluation Report and the subject Letter of Concern for all disposal actions planned at SDF beyond FY 2015. As explained in the May 22, 2012 Disposal Authorization Statement for the Savannah River Site Saltstone Disposal facility, DOE will not proceed with disposal operations in SDU 2 until after this latter transmittal.

DOE looks forward to continuing discussions with NRC pertaining to SDF operations and is scheduling a public meeting on August 6, 2012 in Aiken, SC. At this public meeting, DOE recommends detailed technical discussions between our staffs related to the information contained in Reference 2 and this transmittal.

If you have any questions regarding this letter, please call me at (803) 208-6072, Ms. Sherri Ross at (803) 208-6078, or Ms. Patricia Suggs at (803) 208-6804.

Sincerely,



Terre J. Spears  
Assistant Manager  
Waste Disposition Project

WDPD-12-62

Enclosures:

- 1) Projected Tc-99 Inventory in SDU 2, 3, and 5
- 2) Sensitivity Analysis for Disposal Operations into SDF Vault 1, Vault 4, and SDUs 2, 3, and 5

cc:

Nishka Devaser, NRC (w/ Enclosures)  
Shelly Wilson, SCDHEC (w/  
Enclosures)