

January 8, 2010

MEMORANDUM TO: Patrice Bubar, Deputy Director  
Environmental Protection  
and Performance Assessment Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

THRU: Gregory Suber, Chief **/RA/**  
Low-Level Waste Branch  
Environmental Protection  
and Performance Assessment Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

FROM: Nishka Devaser, Project Manager **/RA/**  
Low-Level Waste Branch  
Environmental Protection  
and Performance Assessment Directorate  
Division of Waste Management  
and Environmental Protection  
Office of Federal and State Materials  
and Environmental Management Programs

SUBJECT: DECEMBER 8, 2009, MEETING SUMMARY: MEETING WITH  
THE U.S. DEPARTMENT OF ENERGY REGARDING THE  
REVISED PERFORMANCE ASSESSMENT FOR THE  
SALTSTONE DISPOSAL FACILITY AT THE SAVANNAH RIVER  
SITE

On December 8, 2009, the U.S. Department of Energy staff and its contractors provided the U.S. Nuclear Regulatory Commission (NRC) staff with an introductory explanation of the Saltstone Disposal Facility Performance Assessment. NRC staff also discussed its path forward on review of the Performance Assessment.

Enclosure: Meeting Summary

CONTACT: Nishka Devaser, FSME/DWMEP  
(301) 415-5196

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**ML100050461**

OFC	DWMEP:PM	DWMEP:BC	DWMEP:BC	DWMEP:PM
NAME	NDevaser	CMcKenney	GSuber	NDevaser
DATE	1/5/10	1/6/10	1/7/10	1/8/10

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A Summary of Meeting: Meeting with the U.S. Department of Energy Regarding the Revised Performance Assessment for the Saltstone Disposal Facility at the Savannah River Site

Date: December 8, 2009

Place: U.S. Nuclear Regulatory Commission  
Executive Boulevard Building, Room: EBB – 1 B 15  
6003 Executive Boulevard  
Rockville, MD 20852

Attendees: See Attachment 1

Purpose:

The purpose of the meeting was for the U.S. Department of Energy (DOE) and its contractors, Savannah River Remediation (SRR), to provide the U.S. Nuclear Regulatory Commission (NRC) staff with an introductory explanation of the "Performance Assessment for the Saltstone Disposal Facility at the Savannah River Site, SRR-CWDA-2009-00017." The NRC is conducting a review of the Performance Assessment (PA) of the Saltstone Disposal Facility (SDF). The review is being conducted under the agency's ongoing monitoring activities in accordance with Section 3116 of the Ronald W. Reagan National Defense Authorization Act for Fiscal Year 2005 (NDAA), which requires the NRC to monitor disposal actions taken by DOE for the purpose of assessing compliance with the performance objectives set out in 10 CFR Part 61, Subpart C.

Discussion:

Nishka Devaser, of NRC, opened the meeting with a brief introduction to the project and described the protocol of a Category I public meeting. After Mr. Devaser's opening remarks, Ms. Patricia Suggs of DOE-Savannah River (DOE-SR) began with a short explanation of the purpose of the meeting and a description of the agenda. Ms. Ginger Dickert of SRR then provided an update on recent activity associated with the construction of the new disposal cell, and operations at the Saltstone Disposal Facility and described the work and effort that went into revising the PA. Following the discussion by Ms. Dickert, the remainder of the day was spent on a presentation of the technical details of the PA revision given by Mr. Kent Rosenberger of SRR (Attachment 2). Mr. Rosenberger provided a background of the Z-Area, with an emphasis on the Saltstone facility, which included some history of both vaults 1 and 4 and the General Separations Area. Mr. Rosenberger continued by describing the design of vaults 1 and 4 and the new disposal cells and clarified the reasons for the differences in the new designs. Mr. Rosenberger then provided a brief status of Disposal Cell 2 construction activities that have occurred since NRC's last onsite observation on August 10, 2009.

*Incorporation of Salt Waste Disposal TER Factors*

Mr. Rosenberger continued by explaining how the eight key factors important to assessing compliance with 10 CFR 61 Subpart C identified in NRC's Technical Evaluation Report (NRC,2005) were addressed in the PA revision. The point was made that DOE must approve

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SRR disposal plans by granting a new Disposal Authorization Statement prior to operation of the new disposal cells under the new PA. SRR expects the Disposal Authorization Statement sometime early 2011 (depending on approval from DOE). Some discussion also centered on incorporation of the Low-Level Waste Disposal Facility Federal Review Group (LFRG) review comments into the PA, such as changes made to the evaluated scenarios of the waste form degradation.

### *Input Parameters*

In the input parameters portion of the presentation, Mr. Rosenberger provided a detailed description of the closure cap design and grout and concrete properties. The model used for the release of technetium was also described. This portion of the presentation also gave insight into the development of residential scenario pathways.

### *Modeling*

The rest of the presentation described the conceptual model and evaluation of parameter sensitivity. Of particular note, the synergistic case, which was incorporated into the PA based on comments generated during the LFRG review, was described in full during the presentation. Mr. Rosenberger explained each of the modeled cases for vaults 1 and 4 and the new disposal cells. Mr. Rosenberger then demonstrated how vault degradation was considered in the various cases by use of some time step films. Results of the various scenarios were also presented and can be found in the Attachment 2.

### *Follow-up Questions*

The NRC staff asked various questions of both the DOE and SRR. Tom Clements of Friends of the Earth asked one question. DOE and SRR responded to each question posed by the NRC staff and the NRC staff responded to the questions asked by Mr. Clements. Each of these questions and their respective answers are shown below.

### *PA Review Path Forward*

Mr. Devaser provided a brief description of the NRC staffs' path forward for the PA review, which will be documented in the form of a Technical Evaluation Report (TER). The staff expects the review to take approximately 9 months, ending September 2010 at which point the staff will review and update its monitoring plan (NRC, 2007) to account for necessary changes to NRC's role as a monitor of disposal actions at SRS.

**Table 1: Question and Answer Catalog**

<b>Question</b>	<b>Response</b>
NRC: What research activities are ongoing to account for Open items previously identified by NRC?	DOE: Ongoing work is being done by SIMCO on the sulfate attack issue, and additional work is continuing to be performed on $K_d$ values and hydraulic properties of saltstone.
NRC: Will a report addressing variability in the removal rates of ARP/MCU be completed in the near future?	DOE: Samples are still being taken of every batch of waste processed at ARP/MCU. If plans are made for sampling frequency to be reduced, a report describing the sampling plan and the basis for this plan will be provided. This plan will include variability observed in previous sample results.
NRC: Could the PORFLOW, GoldSim, and other models used in the revised PA be made available to the public?	DOE: Yes, unlike the F-Tank farm, the models used in development of the revised Saltstone PA do not contain security-related information and can be provided to the NRC and made available to the public.
NRC: How does the PA account for the destruction of organics in Tank 48?	DOE: The PA does not address the destruction of organics in Tank 48; however, the Tank 48 waste will have to meet the Saltstone waste acceptance criteria.
Member of Public: Is there any requirement or plan for the NRC to evaluate the effect of changes from the planned SDF inventory (e.g. if the Saltstone Waste Processing Facility is delayed)	NRC: NRC will evaluate the potential effects of uncertainty in the inventory. In its monitoring role, the NRC serves as a continuous independent monitor of all disposal activities relating to WIR (or non-HLW) at the Saltstone Facility. In this role, the NRC continues to review inventory that has been disposed of at SDF and to evaluate the impacts any of differences from the inventory assumed in the PA.
Member of Public: Does the monitoring role of the NRC have an end date?	NRC: No, the NRC will monitor this aspect of the site indefinitely.

## References

U.S. Department of Energy, "Performance Assessment for the Saltstone Disposal Facility at the Savannah River Site, SRR-CWDA-2009-00017," October 2009

U.S. Nuclear Regulatory Commission (NRC). "Technical Evaluation Report for Draft Waste Determination for Salt Waste Disposal." Letter from L. Camper to C. Anderson, DOE. December 28, 2005. (ADAMS Acc. No. ML053010225)

\_\_\_\_\_. "U.S. Nuclear Regulatory Commission Plan for Monitoring the U.S. Department of Energy Salt Waste Disposal at the Savannah River Site in Accordance with the National Defense Authorization Act for Fiscal Year 2005." Washington, DC: NRC. May 3, 2007. (ADAMS Accession No. ML070730363).

\_\_\_\_\_. "Nuclear Regulatory Commission August 10-14, 2009 Onsite Observation Report for the Savannah River Site Saltstone Facility," October 1, 2009 (ADAMS Acc. Number ML0927104770)

## Meeting Attendees

Nishka Devaser	U.S. Nuclear Regulatory Commission
George Alexander	U.S. Nuclear Regulatory Commission
A. Christianne Ridge	U.S. Nuclear Regulatory Commission
Karen Pinkston	U.S. Nuclear Regulatory Commission
Chris McKenney	U.S. Nuclear Regulatory Commission
Gregory Suber	U.S. Nuclear Regulatory Commission
Patrice Bubar	U.S. Nuclear Regulatory Commission
Michael Fuller	U.S. Nuclear Regulatory Commission
Don Lowman	U.S. Nuclear Regulatory Commission
John Stamatakos	Center for Nuclear Waste Regulatory Analyses
David Pickett	Center for Nuclear Waste Regulatory Analyses
Lane Howard	Center for Nuclear Waste Regulatory Analyses
Roberto Pabalan	Center for Nuclear Waste Regulatory Analyses
F. Malcolm Smith	Savannah River Remediation
Ginger Dickert	Savannah River Remediation
Kent Rosenberger	Savannah River Remediation
Steve Thomas	Savannah River Remediation
Linda Suttora	U.S. Department of Energy
Patricia Suggs	U.S. Department of Energy
Sherri R. Ross	U.S. Department of Energy
John Greeves	Talisman International
Tom Clements	Friends of the Earth