

June 30, 2005

MEMORANDUM TO: Scott Flanders, Director
Environmental & Performance Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Nuclear Materials Safety
and Safeguards

THRU: Ryan Whited, Chief
Low-Level Waste Section
Environmental & Performance Assessment Directorate

FROM: Anna Bradford /**RA**/
Senior Project Manager
Low-Level Waste Section
Environmental & Performance Assessment Directorate

SUBJECT: JUNE 20, 2005 MEETING SUMMARY: MEETING WITH U.S.
DEPARTMENT OF ENERGY TO DISCUSS REQUESTS FOR
ADDITIONAL INFORMATION FOR SALT WASTE PROCESSING AND
DISPOSAL AT THE SAVANNAH RIVER SITE

On June 20, 2005, staff and management from the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy (DOE) met to discuss the Request for Additional Information regarding salt waste processing and disposal at the Savannah River Site, which was transmitted to DOE on May 26, 2005. The meeting summary is attached for your use.

Attachment 1: Summary of Meeting
Attachment 2: Attendee List
Attachment 3: DOE Presentation Slides

cc: K. Picha/DOE

Distribution: EPAD r/f D. Esh A. Ridge M. Call
C. Brown E. Jensen M. Thaggard M. O'Shaughnessy

June 30, 2005

MEMORANDUM TO: Scott Flanders, Director
Environmental & Performance Assessment Directorate
Division of Waste Management
and Environmental Protection
Office of Nuclear Materials Safety
and Safeguards

THRU: Ryan Whited, Chief
Low-Level Waste Section
Environmental & Performance Assessment Directorate

FROM: Anna Bradford /**RA**/
Senior Project Manager
Low-Level Waste Section
Environmental & Performance Assessment Directorate

SUBJECT: JUNE 20, 2005 MEETING SUMMARY: MEETING WITH U.S.
DEPARTMENT OF ENERGY TO DISCUSS REQUESTS FOR
ADDITIONAL INFORMATION FOR SALT WASTE PROCESSING AND
DISPOSAL AT THE SAVANNAH RIVER SITE

On June 20, 2005, staff and management from the U.S. Nuclear Regulatory Commission and the U.S. Department of Energy (DOE) met to discuss the Request for Additional Information regarding salt waste processing and disposal at the Savannah River Site, which was transmitted to DOE on May 26, 2005. The meeting summary is attached for your use.

Attachment 1: Summary of Meeting
Attachment 2: Attendee List
Attachment 3: DOE Presentation Slides

cc: K. Picha/DOE

Distribution: EPAD r/f D. Esh A. Ridge M. Call
C. Brown E. Jensen M. Thaggard M. O'Shaughnessy

ML051810155

OFFICE	DWMEP:PM	DWMEP:SC			
NAME	ABradford	RWhited			
DATE	6/30/05	6/30/05			

OFFICIAL RECORD COPY

ATTACHMENT 1: SUMMARY OF JUNE 20, 2005, OPEN MEETING TO DISCUSS REQUESTS FOR ADDITIONAL INFORMATION FOR SALT WASTE PROCESSING AND DISPOSAL AT THE SAVANNAH RIVER SITE

Introduction

On June 20, 2005, staff and management from the U.S. Nuclear Regulatory Commission (NRC) and the U.S. Department of Energy (DOE) met to discuss the Request for Additional Information (RAI) regarding salt waste treatment and disposal at the Savannah River Site (SRS), which was transmitted to DOE on May 26, 2005. This meeting was open to the public and was held at NRC Headquarters in Rockville, MD.

In addition to NRC and DOE staff and contractors, the meeting was attended by a representative from the Defense Nuclear Facilities Safety Board and a reporter for Nuclear Engineering and Fuel Cycle Week. Representatives of DOE-SRS, DOE-Office of River Protection, DOE-West Valley, and the Center for Nuclear Waste Regulatory Analyses participated via conference call.

The list of attendees is included as Attachment 2. The presentation slides used by DOE at the meeting are Attachment 3. NRC's RAI letter is available in ADAMS under ML051440589.

Discussion

The purpose of the meeting was to allow DOE to obtain feedback from NRC staff on DOE's proposed responses to several of the questions in the RAI. DOE did not provide the proposed responses to the staff for review prior to the meeting and staff stated that any information it provided during the meeting was preliminary. DOE indicated that it intends to provide NRC staff with a RAI response document, as well as additional references used in the responses.

DOE stated that it has completed the 2005 Special Analysis for SRS. This Special Analysis supersedes the 2002 Special Analysis, and there are significant differences between the 2002 and 2005 versions. For example, the 2005 version evaluates all-pathway doses, and also has differences in the sensitivity and uncertainty analyses. DOE stated that some portions of the 2005 Special Analysis will be redacted due to security concerns. In 2006, DOE plans to complete an update of the entire performance assessment.

For RAI #1, DOE stated that it will not provide a stand-alone list of assumptions but will review and modify applicable documents to more clearly identify the assumptions and the bases of the assumptions. NRC staff responded that the described approach sounded reasonable.

For RAI #10, DOE indicated they will compare three alternatives: 1) baseline case, 2) Actinide Removal Process (ARP)/Modular CSSX Unit (MCU) and Salt Waste Processing Facility (SWPF) case, and 3) SWPF-only case. DOE will also assess and compare public dose, intruder dose, worker dose, risk in terms of old-style tank years, and risk in terms of Curie years. The NRC staff responded that the response sounded reasonable, but cautioned DOE against comparing worker dose to intruder dose, because workers have explicitly accepted the risk while intruders would be inadvertently exposed to the risk. DOE agreed that the doses may

not be directly comparable. DOE will estimate costs as lifecycle costs, and will include Defense Waste Processing Facility slowdown and shutdown.

For RAI #11, DOE is considering establishing screening criteria, as applied to the solidified waste form, to determine which radionuclides need to be considered. The conceptual screening criteria were: 1) exceeds Class A limits, and 2) exceeds some undefined percentage of the dose limits in 10 CFR 61, Subpart C (e.g. 25 mrem for a member of the public). DOE asked for NRC staff's opinion on the correct percentage of the dose limit. Staff stated that DOE should be careful in using Class A limits since the table of 10 CFR 61 does not include all radionuclides that may contribute to the risk. Staff also stated that DOE must have already made decisions regarding which radionuclides needed to be considered and it was DOE's responsibility to explain its process and bases, and NRC staff would review it, rather than NRC proposing a percentage DOE should use for screening thresholds. NRC staff asked if DOE agreed with the interpretation of "highly radioactive radionuclides" as described in RAI #11. DOE responded that "highly radioactive radionuclides" is an undefined statutory term and DOE will base its interpretation on scientific information regarding what contributes to short-term and long-term risk. NRC staff stated that the RAI asked DOE to list the radionuclides because the draft determination did not specifically identify such radionuclides or provide detailed information on the removal efficiencies of the various technologies.

For RAI #12, DOE will provide information on the process alternatives that were examined prior to selection of the Deliquification, Dissolution, and Adjustment Process (DDA), and on the criteria used for selecting which tanks will undergo DDA. Staff noted that it would be helpful if the response describes the waste in terms of radiological characteristics (e.g., characteristics of the sludge, supernate, saltcake), and presents the information in terms of unit processes. DOE stated it had new data on filtration efficiency and would provide that information in its RAI response.

For RAI #19, DOE's sensitivity analysis will focus on those parameters that most affect the dose. Most of the sensitivity cases will change one variable at a time, and one case will assess the combined effects of more than one change. The sensitivity analysis will also look at cover degradation, saturated hydraulic conductivity, effective diffusivity, K_d , and loss of reducing capacity. The combination scenario will assess the combination of infiltration and degradation, but will not assess changes in K_d . NRC staff noted that it would like to see the effects of a changing K_d , as it could strongly affect the results. The NRC staff stated that DOE should consider evaluating the effect of various states of degradation of the vaults and saltstone, and that all relevant properties (e.g., hydrologic and chemical) should be evaluated.

For RAI #31, DOE stated it would be difficult to do direct comparisons between modeling results and lysimeter tests because the lysimeter tests did not include the clean grout shell of the vault. NRC staff noted that if the clean grout shell has large effects on the results, then DOE should determine what modeling support it has for the performance of the clean shell, as well as possibly perform sensitivity analyses for the performance of the shell.

For RAI #63, DOE stated that the 2005 Special Analysis includes assessment of natural disruption of the cover over the vaults.

Public Comment

None.

Closing Remarks and Action Items

DOE stated it would take into account the NRC staff's feedback. Both agencies agreed to meet in the future to continue discussions on the RAI.

**ATTACHMENT 2: Attendees at NRC and DOE Meeting
to Discuss SRS RAIs
June 20, 2005**

NAME	AFFILIATION	PHONE NUMBER
Anna Bradford	NRC	301-415-5228
A. Christianne Ridge	NRC	301-415-5673
David Esh	NRC	301-415-6705
T. Frank England	WSRC	803-557-8825
Ginger Dickert	WSRC	803-208-1527
Steve Thomas	WSRC	803-208-8064
Eloy Saldivar	WSRC	803-208-0245
Ken Picha	DOE-HQ/EM	202-586-9726
Mark Gilbertson	DOE-EM/HQ	202-586-5042
Bill Clark	DOE-SR	803-208-0231
Robert Hoggard	DOE-HQ/EM	202-586-5784
Jim Lieberman	DOE consultant	301-299-3607
Thecla Fabian	Nuclear Engineering & Fuel Cycle Week	301-869-0721
Matt Duncan	DNFSB	202-694-7149
Mark Thaggard	NRC	301-415-6971
Ryan Whited	NRC	301-415-5135
Neil Jensen	NRC/OGC	301-415-1637
Scott Flanders	NRC	301-415-6717
Kathy Martin	DOE GC	202-586-4467
DOE-SRS (on phone)		
DOE-West Valley (on phone)		
DOE-Office of River Protection (on phone)		
CNWRA (on phone)		

ATTACHMENT 3:
DOE Presentation Slides