

From: <John.Reynolds@srs.gov>
To: TWFN_DO.twf4_po(RMW2)
Date: Mon, Feb 1, 1999 7:25 AM
Subject: DRAFT MOU FOR DISPOSITION OF SALT FROM HLW

Rick, A draft of a MOU is attached for evaluation of Savannah River's proposal concerning disposal of the salt fraction of the waste in the HLW storage tanks. As you will see it is very similar to the MOU in place for tank closure. Please review and provide any suggestions/ comments. We also need to establish an estimate for the cost of this evaluation. I will call to let you know this is coming.

Thanks, I am looking forward to working with you. John Reynolds

**MEMORANDUM OF UNDERSTANDING
BETWEEN THE
U.S. DEPARTMENT OF ENERGY
AND THE
U.S. NUCLEAR REGULATORY COMMISSION
ON THE
DISPOSITION OF SALT WASTE FROM HIGH LEVEL WASTE STORAGE TANKS
AT THE SAVANNAH RIVER SITE**

I. Purpose

The purpose of this Memorandum of Understanding (MOU) between the U.S. Department of Energy (DOE) Savannah River Operations Office (SR) and the U.S. Nuclear Regulatory Commission (NRC) is to establish a basic framework for the NRC to provide technical assistance to DOE-SR in regard to disposal of salt waste from the DOE's high-level waste (HLW) storage tanks at the Savannah River Site. Specifically, evaluation is requested of DOE-SR's determination that the salt fraction of the waste is not classified as HLW following removal of long-lived radioactivity to the maximum extent technically and economically practical.

II. Introduction

DOE-SR is evaluating alternatives for disposal of the salt fraction of the waste currently stored in carbon steel HLW storage tanks at the Savannah River Site. Chemically the waste in these tanks is comprised of two forms;

- (1) Sludge waste consisting primarily of metal oxides and hydroxides and long lived radioisotopes, and
- (2) Salt waste consisting primarily of sodium (Na), potassium (K), and cesium (Cs) salts.

The major contributor to the radioactivity in the salt portion of the waste is the cesium 137 isotope, which has a relatively short (approximately 30 year) half life. Long lived radioisotopes will be separated from the Na, K, and Cs salts to the extent that is technically and economically practical and to the extent necessary to protect human health and the environment. After separation from the salt waste the long lived activity will be combined with the sludge waste, stabilized by vitrification in borosilic glass, and permanently isolated in a deep geological repository. Disposal of the salt portion of the waste in this manor is not practical due to the large amount of Na and K salts present. Efforts to develop a practical means for separation of the Cs salts from the Na and K salts have not produced a proven technology to process the waste at SR. There are, however, proven technologies that can be applied to dispose of the salt waste as LLW. Waste forms meeting the requirements of 10 CFR part 61 for near surface disposal of class C LLW are technically and economically feasible. DOE-SR requests assistance from the NRC to validate that, following removal of the major long lived radioactivity, the salt fraction of the waste can be considered incidental waste, and as such does not require specific NRC licensing or regulatory oversight involvement for disposal. Under

Section 202 of the Energy Reorganization Act of 1974, the NRC has licensing and related regulatory authority for DOE HLW disposal facilities. If the salt fraction of the waste is not classified as HLW, South Carolina Department of Health and Environmental Controls (SCDHEC) and Environmental Protection Agency (EPA) regulatory and oversight involvement will be invoked through the current Industrial Wastewater Permit. To make a determination of the applicability of HLW controls for this waste, DOE-SR will provide materials for review by the NRC and reimburse the NRC for its activities under this MOU.

III. Authority

A. Department of Energy

The Atomic Energy Act of 1954, as amended, including sections 31, 33, 91, 161I; the Energy Reorganization Act of 1974, including section 104; the Department of Energy Organization Act of 1977, including section 301(a); and the Economy Act of 1932, as amended.

B. Nuclear Regulatory Commission

Sections 53, 57, 62, 63, 81, 103, 104, and 161b of the Atomic Energy Act of 1954, as amended; section 201(f) of the Energy Reorganization Act of 1974; and the Economy Act of 1932, as amended.

IV. Agreements Between Parties

A. Responsibilities

The Key Program Representatives for this MOU will be:

1. Director, Office of Nuclear Material Safety and Safeguards, NRC
2. Assistant Manager for High Level Waste, DOE-SR

These individuals may designate appropriate staff representatives for the purpose of administering this MOU.

B. General

1. Each agency will be responsible for safeguarding, control of, and accounting for classified, proprietary, and procurement-sensitive information used or furnished in connection with tasks under this MOU in accordance with its established procedures.
2. If an issue arises in the implementation of this MOU which cannot be resolved at the agency working level, the NRC and DOE-SR agree to refer the matter within 30 days to the Director, NMSS, NRC and to the Assistant Manager for High Level Waste for appropriate action.
3. NRC and DOE recognize the importance of providing information to the public regarding activities and regulatory decisions that may affect the public health and safety or protection of the environment. Meetings between the NRC and DOE in connection with these activities shall be governed by the NRC's policy on open meetings (58FR48340, September 20, 1994).
4. Committees such as the Advisory Committee on Nuclear Waste, the Defense Nuclear Facilities Safety Board, and the Nuclear Waste Technical Review Board provide independent review of their respective agency's facilities, activities, and related matters. As appropriate, NRC and DOE agree to support these types of independent reviews by providing readily available information or attending briefings related to their respective areas of responsibilities.

C. Planning and Reimbursement of Costs

1. NRC and DOE-SR will cooperate in planning activities to ensure that both agencies anticipate the magnitude of funding, the allocation of resources, and the timing of events necessary to conduct tasks associated with this MOU.
2. DOE-SR recognizes that NRC seeks reimbursement for the full costs of resources to conduct specific tasks which DOE-SR requests. The parties intend to enter into an interagency agreement for this purpose and to estimate the level of resources and periods of performance associated with DOE-SR requests.
3. DOE anticipates holding face-to-face discussions with NRC approximately once a month or whenever deemed necessary.

D. Specific Tasks

1. The NRC will provide technical assistance to DOE-SR on disposal criteria for radioactive salts removed from DOE's high level waste (HLW) storage tanks at the Savannah River Site. Specifically, evaluation is required of DOE-SR's determination that, following removal of long-lived radioactivity to the maximum extent technically and economically practical, the salt fraction of the waste is not classified as HLW.
2. NRC and DOE-SR will work together to develop an overall schedule for accomplishing specific activities under this MOU.

V. Other Provisions

- A. Nothing in this MOU shall limit the authority of either agency to exercise its authority independently with regards to matters that are the subject of this MOU.
- B. Nothing in this MOU is intended to conflict with any other MOU between the NRC and DOE. In the event of a conflict between this MOU and any other MOU between the NRC and DOE regarding pre-licensing and licensing interactions affecting facilities of the Civilian Radioactive Waste Management System subject to licensing authority of the NRC, the provisions of the other MOU shall govern.
- C. The NRC's activities under this MOU do not constitute a commitment to issue any approval, authorization or license, or in any way affect the NRC's authority in any licensing proceeding.
- D. Nothing in this MOU shall be deemed to establish any rights or provide a basis for any action, either legal or equitable, by any person or class of persons challenging a Government action or a failure to act.
- E. This MOU shall be effective upon signature of both parties and will remain in effect until December 31, 2001 or until terminated by mutual agreement or by written notice of either party submitted at least 180 days in advance of termination. Amendments or modifications to this MOU may be made upon the written agreement of the parties.
- F. The NRC will be reimbursed for the cost of activities within the scope of this MOU, as provided for in the Interagency Agreement implementing this MOU.

VI. Signatures

For the Department of Energy

For the Nuclear Regulatory Commission

Assistant Manager for
High-Level Waste

Director
NRC Office of Nuclear Material Safety
and Safeguards

Date

Date

**INTERAGENCY AGREEMENT
BETWEEN THE
U.S. DEPARTMENT OF ENERGY
AND THE
U.S. NUCLEAR REGULATORY COMMISSION**

**Interagency Agreement
No.**

Page 1 of 4

I. PURPOSE

The purpose of this Interagency Agreement (IA) between the U. S. Department of Energy (DOE) Savannah River Operations Office (SR) and the U. S. Nuclear Regulatory Commission staff (NRC) is to implement the Memorandum of Understanding dated ____?__ for the NRC to provide technical assistance to DOE-SR in regard to disposal criteria for radioactive salts removed from DOE's high level waste (HLW) storage tanks at the Savannah River Site. Specifically, evaluation is required of DOE-SR's determination that, following removal of long-lived radioactivity to the maximum extent technically and economically practical, the salt fraction of the waste is not classified as HLW.

II. STATEMENT OF WORK

The services to be performed are included in the attached Statement of Work.

III. DURATION OF THE AGREEMENT

This agreement shall remain in effect from the date of execution until December 31, 2001, unless it is terminated by mutual agreement or by written notice of either party submitted at least 30 days in advance of termination. This Agreement may be modified at any time by the mutual agreement of both DOE-SR and NRC.

Interagency Agreement
No.

Page 2 of 4

IV. KEY PROGRAM REPRESENTATIVES

DOE and NRC Key Program Representatives are identified below. These individuals may designate appropriate staff representatives for the day-to-day administration of this Agreement.

A. DOE:

Assistant Manager for High-Level Waste

B. NRC:

Director
Office of Nuclear Material Safety and Safeguards

V. ESTIMATED COST AND OBLIGATION OF FUNDS

A. The total cost for performance of the work is estimated at ??????

B. Pursuant to Article VII, Limitation of Funds, funds in the amount of ?????? are initially obligated for payment of allowable costs.

**Interagency Agreement
No.**

Page 3 of 4

VI. PAYMENT

- A. Billing will be accomplished by the On-Line Payment and Accounting Collection (OPAC) system as necessary.

NRC Billing Information

Agency Location Code:

NRC Point of Contact:

Address:

Richard M. Weller

Mail Stop T7C6

U. S. Nuclear Regulatory Commission

11545 Rockville Pike

Rockville, MD 20852-2738

Telephone:

301-415-7287

SR Finance Contact

Agency Location Code: 89-00-601

DOE-SR Point of Contact: Beth O'Rear

Address:

P. O. Box A

Aiken, SC 29803

Telephone:

(803) 725-1345

- B. NRC shall submit a financial report that is satisfactory to DOE on a quarterly basis. Details shall be included on work completed and costs by categories (i.e., personnel, travel, supplies, etc.). The financial reports shall be submitted to the following address:

U. S. Department of Energy

Savannah River Operations Office

ATTN: Donnie L. Campbell, Contracting Officer

P. O. Box A

Aiken, SC 29803

VII. LIMITATION OF FUNDS

- A. It is estimated that the cost to DOE-SR for the performance of work under this Agreement will not exceed the estimated cost set forth in Article V.A, **ESTIMATED COST AND OBLIGATION OF FUNDS**. NRC agrees to use its best efforts to perform the work specified in the Statement of Work.

**Interagency Agreement
No.**

Page 4 of 4

- B. The amount presently available for payment and obligated to this Agreement is specified in Article V.B, ESTIMATED COST AND OBLIGATION OF FUNDS. NRC agrees not to exceed the total amount obligated.

VII. DOCUMENTS ATTACHED AND PART OF THIS AGREEMENT

- A. Statement of Work, Attachment A.
- B. General Provisions for DOE Interagency Agreement, Attachment B.

IX. DOCUMENTS INCLUDED BY REFERENCE

There are no documents incorporated by reference in this Agreement.

X. REAL PROPERTY AND FACILITIES

There is no real property or facilities under this Agreement.

Attachment

A

Interagency Agreement
No.

Page 1 of 2

**STATEMENT OF WORK
FROM THE
U.S. DEPARTMENT OF ENERGY
SAVANNAH RIVER OPERATIONS OFFICE
ON
DISPOSITION OF SALT WASTE FROM HIGH LEVEL WASTE STORAGE TANKS
AT THE SAVANNAH RIVER SITE**

1.0 BACKGROUND

DOE-SR is evaluating alternatives for disposal of the salt fraction of the waste currently stored in carbon steel HLW storage tanks at the Savannah River Site. Chemically the waste in these tanks is comprised of two forms;

- (1) Sludge waste consisting primarily of metal oxides and hydroxides and long-lived radioisotope, and
- (2) Salt waste consisting primarily of sodium (Na), potassium (K), and cesium (Cs) salts.

The major contributor to the radioactivity in the salt portion of the waste is the cesium 137 isotope, which has a relatively short (approximately 30 year) half life. Long lived radioisotopes will be separated from the Na, K, and Cs salts to the extent that is technically and economically practical and to the extent necessary to protect human health and the environment. After separation from the salt waste the long lived activity will be combined with the sludge waste, stabilized through vitrification in borosilic glass, and permanently isolated in a deep geological repository. Disposal of the salt portion of the waste in this manor is not practical due to the large amount of Na and K salts present. Efforts to develop a practical means for separation of the Cs salts from the Na and K salts have not produced a proven technology to process the waste at SR. There are, however, proven technologies that can be applied to dispose of the salt waste as LLW. Waste forms meeting the requirements of 10 CFR part 61 for near surface disposal of class C LLW are technically and economically feasible. DOE-SR requests assistance from the NRC to validate that, following removal of the major long-lived radioactivity, the salt fraction of the waste is considered incidental waste and as such does not require specific NRC licensing or regulatory oversight involvement for disposal.

**Attachment A
Interagency Agreement
No.**

Page 2 of 2

2.0 DESCRIPTION OF WORK TO BE PERFORMED

- 2.1 The NRC staff will review the methodology established by DOE-SR for determination that the salt fraction of the waste is not HLW. NRC will advise DOE-SR of the results of the review.**
- 2.2 The NRC and DOE-SR will work together to develop an overall schedule for accomplishing specific activities under this Interagency Agreement.**
- 2.3 Additional tasks may be identified throughout the course of implementing the agreement.**
- 2.4 DOE-SR will provide office space as necessary to accommodate NRC visits to the Savannah River Site and will coordinate attendance of all parties to any reviews requested by the NRC. Close coordination between the NRC and DOE-SR is essential to timely project implementation.**