



**Department of Energy**  
Washington, DC 20585

March 9, 2018

Mr. John Tappert  
Deputy Director  
Division of Decommissioning, Uranium Recover, and Waste Programs  
Office of Nuclear Material Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Mail Stop T8 F5  
Washington, DC 20555-0001

Subject: Mine Waste Placement on the Church Rock, New Mexico, Uranium Mill Tailings  
Radiation Control Act Title II Disposal Cell Site

Dear Mr. Tappert:

Since 2009, the U.S. Department of Energy (DOE), Office of Legacy Management (LM) has been actively working with you regarding the Environmental Protection Agency's (EPA) proposal to dispose of mine waste from the Northeast Church Rock Mine on the Church Rock Uranium Mill Tailings Radiation Control Act (UMTRCA) Disposal Cell Site (Church Rock) in New Mexico. Our collaboration has been productive, for the good of both the people and the environment, and we would like to thank you for your efforts thus far. Nonetheless, as previously discussed, LM remains concerned from a practical, regulatory and technical standpoint with placing additional material on a completed UMTRCA cell. The existing cell was constructed appropriately for termination of the operator's license issued by the Nuclear Regulatory Commission (NRC). For DOE to assume long term stewardship responsibilities for an envisioned combined disposal structure under a dual post-closure regulatory posture is unfeasible, unsuitable and unacceptable.

DOE has tracked and reviewed the design of the combined mine waste/mill tailings disposal and we appreciate the opportunity to do so. However, DOE is concerned that the mine waste when placed on top of the tailings will affect the integrity of the cell, and the recently revised "95 percent design" would result in a cell with steeper slopes, which is not conducive to low maintenance, and is inconsistent with the 1000 year design life expected under UMTRCA. In addition, DOE does not support the proposal that the site be regulated by both EPA and NRC with post-closure care being carried out by the Department, for the reasons stated below.

Under UMTRCA, DOE can only obtain funding for addressing material that meets the definition of byproduct material under section 11.e.(2) of the Atomic Energy Act of 1954, as amended. There is NRC guidance which provides for the inclusion of non-11.e.(2) material at mill tailing disposal sites. However, NRC must declare the material is acceptable and similar in nature to byproduct material. Additionally, DOE must be given the opportunity to agree that the material is acceptable. Finally, DOE has only accepted non-11.e.(2) material in the past if the new material would not result in any other regulations or regulators to be involved in its long-term surveillance and maintenance of the site.



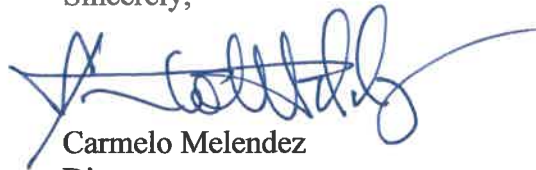
That said, our understanding of what is currently proposed is for EPA to regulate the mine waste portion of the cell and NRC to regulate the 11.e.(2) material. This proposal would effectively result in two separate disposal facilities on top of one another, with a different set of rules applying to each layer. DOE staff predicts that this could result in significantly higher costs for long-term surveillance and maintenance of the site, and potentially create a situation where DOE might face conflicting opinions from the regulating agencies on management of the site. The situation is further complicated by possibly having two EPA regions involved in regulating the long-term stewardship of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) portion of the site, particularly if there were contaminants discovered off the Church Rock Site. Under the applicable UMTRCA regulations, the design of a disposal cell must be protective and not allow any escape of hazardous waste or leachate. However, if there were releases of such material, it could be difficult to determine from what part of the cell it originated.

One possible solution would be to have EPA manage the entire Church Rock disposal cell site under its CERCLA authority with the General Electric Corporation subsidiary as the primary Potentially Responsible Party. Another possible solution would be to allow NRC to retain the General Electric Corporation subsidiary's license for the foreseeable future, at least until all concerned parties agree no further work is anticipated. The United States has already agreed to provide partial funding for post-closure care of the Northeast Church Rock Mine through the 2010 Consent Decree and Judgment. The Atomic Energy Act (AEA) requirement is that a Federal (or State) agency own and manages the site. However, the Federal agency need not necessarily be DOE. Under the AEA, as amended by UMTRCA, any Federal agency, including EPA can potentially fulfill this responsibility. A third possible solution would be that DOE, NRC, and EPA enter into a Memorandum of Understanding (MOU) that would define the respective roles and responsibilities in a manner similar to the 2002 MOU between NRC and EPA. That MOU is enclosed with this letter.

DOE shares with both EPA and NRC a desire that the mine waste and 11.e.(2) materials be managed in a way that protects human health and the environment. DOE further believes each of the three agencies must agree on a path forward that is workable and acceptable to all, and therefore should hold an executive conference to discuss the ultimate end-state and the extent of our respective responsibilities regarding the Church Rock site. We will be looking forward to hearing from you so that we can come up with an appropriate solution that is acceptable to the three agencies.

Thank you for your attention to this matter. Please contact me to discuss this further, you may call me at (202) 586-4882, or contact David S. Shafer, Ph.D., Director of the Office of Site Operations for DOE-LM at (202) 586-8324 or [david.shafer@hq.doe.gov](mailto:david.shafer@hq.doe.gov).

Sincerely,



Carmelo Melendez  
Director  
Office of Legacy Management

Enclosure

cc w/enclosure:

J. Smith, NRC

J. Brooks, EPA R6

C. Edlund, EPA R6

S. Jacobs, EPA R9

E. Manzanilla, EPA R9

A. Kleinrath, DOE-LM (e)

M. Kautsky, DOE-LM (e)

S. Miller, DOE-GC (e)

D. Shafer, DOE-LM (e)

J. Elmer, Navarro (e)

File: CHR 0030.10 (records)

**MEMORANDUM OF UNDERSTANDING BETWEEN  
THE ENVIRONMENTAL PROTECTION AGENCY AND  
THE NUCLEAR REGULATORY COMMISSION**

**CONSULTATION AND FINALITY ON DECOMMISSIONING AND DECONTAMINATION OF  
CONTAMINATED SITES**

**I. Introduction**

The Environmental Protection Agency (EPA) and the Nuclear Regulatory Commission (NRC), in recognition of their mutual commitment to protect the public health and safety and the environment, are entering into this Memorandum of Understanding (MOU) in order to establish a basic framework for the relationship of the agencies in the radiological decommissioning and decontamination of NRC-licensed sites. Each Agency is entering into this MOU in order to facilitate decision-making. It does not establish any new requirements or rights on parties not subject to this agreement.

**II. Purpose**

The purpose of this MOU is to identify the interactions of the two agencies for the decommissioning and decontamination of NRC-licensed sites and to indicate the way in which those interactions will take place. Except for Section VI, addressing corrective action under the Resource Conservation and Recovery Act (RCRA), this MOU is limited to the coordination between EPA, when acting under its Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) authority, and NRC, when a facility licensed by the NRC is undergoing decommissioning, or when a facility has completed decommissioning, and the NRC has terminated its license. It continues a basic policy of EPA deferral to NRC decision-making in the decommissioning of NRC-licensed sites except in certain circumstances, and establishes the procedures to govern the relationship between the agencies in connection with the decommissioning of sites at which those circumstances arise.

**III. Background**

An August 3, 1999, report (106-286) from the House Committee on Appropriations to accompany the bill covering EPA's FY1999 Appropriations/FY 2000 budget request states:

Once again the Committee notes that the Nuclear Regulatory Commission (NRC) has and will continue to remediate sites under its jurisdiction to a level that fully protects public health and safety, and believes that any reversal of the long-standing policy of the Agency to defer to the NRC for cleanup of NRC's licensed sites is not a good use of public or private funds. The interaction of the EPA with the NRC, NRC licensees, and others, with regard to sites being remediated under NRC regulatory requirements--when not specifically requested by the NRC--has created stakeholder concerns regarding the authority and finality of NRC licensing decisions, the duration and costs of site cleanup, and the potential future liability of parties associated with affected sites. However, the Committee recognizes that there may be circumstances at specific NRC licensed sites where the Agency's expertise may be of critical use to the NRC. In

the interest of ensuring that sites do not face dual regulation, the Committee strongly encourages both agencies to enter into an MOU which clarifies the circumstances for EPA's involvement at NRC sites when requested by the NRC. The EPA and NRC are directed to report to the Committee on Appropriations no later than May 1, 2000, on the status of the development of such an MOU.

Since September 8, 1983, EPA has generally deferred listing on the CERCLA National Priorities List (NPL) those sites that are subject to NRC's licensing authority, in recognition that NRC's actions are believed to be consistent with the CERCLA requirement to protect human health and the environment. However, as EPA indicated in the Federal Register notice announcing the policy of CERCLA deferral to NRC, if EPA "determines that sites which it has not listed as a matter of policy are not being properly responded to, the Agency will consider listing those sites on the NPL" (see 48 FR 40658).

EPA reaffirms its previous 1983 deferral policy. EPA expects that any need for EPA CERCLA involvement in the decommissioning of NRC licensed sites should continue to occur very infrequently because EPA expects that the vast majority of facilities decommissioned under NRC authority will be decommissioned in a manner that is fully protective of human health and the environment. By this MOU, EPA agrees to a deferral policy regarding NRC decision-making without the need for consultation except in certain limited circumstances as specified in paragraphs V.C.2 and V.C.3.

One set of circumstances in which continued consultation should occur, pursuant to the procedures defined herein, relates to sites at which the NRC determines during the license termination process that there is radioactive ground-water contamination above certain limits. Pursuant to its License Termination rule, NRC applies a dose criterion that encompasses all pathways, including ground water. In its cleanup of sites pursuant to CERCLA, by contrast, EPA customarily establishes a separate ground-water cleanup standard in which it applies certain Maximum Contaminant Levels (MCLs, found at 40 CFR 141) promulgated for radionuclides and other substances pursuant to the Safe Drinking Water Act. NRC has agreed in this MOU to consult with EPA on the appropriate approach in responding to the circumstances at particular sites with ground-water contamination at the time of license termination in excess of EPA's MCLs or those sites for which NRC contemplates either restricted release or the use of alternate criteria for license termination, or radioactive contamination at the time of license termination exceeds the corresponding levels in Table 1 as provided in Section V.C.2.

#### **IV. Principles**

In carrying out their respective responsibilities, the EPA and the NRC will strive to:

1. Establish a stable and predictable regulatory environment with respect to EPA's CERCLA authority in and NRC's decommissioning of contaminated sites.
2. Ensure, to the extent practicable, that the responsibilities of the NRC under the AEA and the responsibilities of EPA under CERCLA are implemented in a coordinated and consistent manner.

## **V. Implementation**

### **A. Scope**

This MOU is intended to address issues related to the EPA involvement under CERCLA in the cleanup of radiologically contaminated sites under the jurisdiction of the NRC. EPA will continue its CERCLA policy of September 8, 1983, which explains how EPA implements deferral decisions regarding listing on the NPL of any sites that are subject to NRC's licensing authority. The NRC's review of sites under NRC jurisdiction indicates that few of these sites have radioactive ground-water contamination in excess of the EPA's MCLs. At those sites at which NRC determines during the license termination process that there is radioactive ground-water contamination above the relevant EPA MCLs, NRC will consult with EPA and, if necessary, discuss with EPA the use of flexibility under EPA's phased approach to addressing ground-water contamination. NRC has agreed in this MOU to consult with EPA on the appropriate approach in responding to the circumstances at particular sites where ground-water contamination will exceed EPA's MCLs, NRC contemplates either restricted release or the use of alternate criteria for license termination, or radioactive contamination at the time of license termination exceeds the corresponding levels in Table 1 as provided in Section V.C.2.

### **B. General**

Each agency will keep the other agency generally informed of its relevant plans and schedules, will respond to the other agency's requests for information to the extent reasonable and practicable, and will strive to recognize and ameliorate to the extent practicable any problems arising from implementation of this MOU.

### **C. NRC Responsibilities**

1. NRC will continue to ensure remediation of sites under its jurisdiction to a level that fully protects public health and safety.
2. For NRC-licensed sites at which NRC determines during the license termination process that there is radioactive ground-water contamination in excess of EPA's MCLs, or for which NRC contemplates either restricted release (10 CFR 20.1403) or the use of alternate criteria for license termination (10 CFR 20.1404), NRC will seek EPA's expertise to assist in NRC's review of a decommissioning or license termination plan. In addition, NRC will consult with EPA if either the planned level of residual radioactive soil concentrations in the proposed action or the actual residual level of radioactive soil concentrations found in the final site survey exceed the radioactive soil concentration in Table 1. With respect to all such sites, the NRC will consult with EPA on the application of the NRC decommissioning requirements and will take such action as the NRC determines to be appropriate based on its consultation with EPA. For example, if NRC determines during the license termination process that there will be radioactive ground-water contamination in excess of EPA's MCLs at the time of license termination, then NRC will discuss with EPA the use of flexibility under EPA's phased approach for addressing ground-water contamination. If NRC does not adopt recommendations provided by the EPA, NRC will inform EPA of the basis for its decision not to do so.

3. NRC will defer to EPA regarding matters involving hazardous materials not under NRC's jurisdiction.

#### **D. EPA Responsibilities**

1. If the NRC requests EPA's consultation on a decommissioning plan or license termination plan, EPA will provide, within 90 days of NRC's notice to EPA, written notification of its views on the matter.
2. Consistent with this MOU, EPA agrees to a policy of deferral to NRC decision making on decommissioning without the need for consultation on sites other than those presenting the circumstances described in Sections V.C.2 and V.C.3. The agencies will consult with each other pursuant to the provisions of this MOU with respect to those sites presenting the circumstances described in Sections V.C.2 and V.C.3. EPA does not expect to undertake CERCLA actions related to radioactive contamination at a site that has been decommissioned in compliance with the NRC's standards, including a site addressed under Section V.C.2, despite the agencies decision to engage in consultation on such sites. EPA's deferral policy, and its expectation of not taking CERCLA action, continues to apply to sites that are covered under Section V.C.2.
3. For NRC-licensed sites presenting the circumstances described in Section V.C.2 and for which NRC has not adopted the EPA recommendation, EPA will consult with NRC on any CERCLA actions EPA expects to take if EPA does not agree with the NRC's decision.
4. EPA will resolve any CERCLA concerns involving hazardous substances outside of NRC's jurisdiction at NRC licensed sites, including concerns involving hazardous constituents that are not under the authority of NRC. As provided in Section V.D.2, EPA under CERCLA will defer or consult with NRC as appropriate regarding matters involving AEA materials under NRC's jurisdiction.

#### **E. Other Provisions**

1. Nothing in this MOU shall be deemed to establish any right nor provide a basis for any action, either legal or equitable by any person, or class of persons challenging a government action or failure to act.
2. Each agency will appoint a designated contact for implementation of this MOU. The designated individuals will meet at least annually or at the request of either agency to review NRC-licensed sites that meet the criteria for consultation pursuant to Section V.C.2. The NRC designated contact is the Director, Office of Nuclear Materials Safety and Safeguards, and the EPA designated contact is the Director Office of Emergency and Remedial Response, or as each designee delegates.
3. This MOU will remain in effect until terminated by the written notice of either party submitted six months in advance of termination.
4. Within six months of the execution of this MOU, each party will revise its guidance to its Headquarters and Regional Offices to reflect the terms of this MOU.


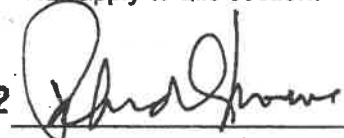
5. If differences arise that cannot be resolved by senior EPA and NRC management within 90 days, then either senior EPA or NRC management may raise the issue to their respective agency head.

**Section VI. Corrective Action under RCRA**

Some NRC sites undergoing decommissioning may be subject to cleanup under RCRA corrective action authority. This authority, administered either by EPA or authorized states, requires cleanup of releases of hazardous waste or constituents at hazardous waste treatment, storage or disposal facilities. NRC sites subject to RCRA corrective action will be expected to meet RCRA cleanup standards for chemical contamination within EPA's jurisdiction. EPA Office of Solid Waste's policy is to encourage regional and State program implementers to coordinate RCRA cleanups with decommissioning, as appropriate, at those NRC sites subject to EPA's corrective action authority.<sup>1</sup>

EPA will continue to support coordination of cleanups under the RCRA corrective action program with decommissioning at NRC sites consistent with its March 5, 1997 policy. In addition, under RCRA the majority of States are authorized to implement the corrective action requirements. States are not signatories to this MOU; however, EPA will encourage States to act in accordance with this policy where they have responsibility for RCRA corrective action at NRC sites undergoing decommissioning.

Items 1 and 3 of the "Other Provisions" of Section V.E. apply to this section:

	SEP 30 2002		October 9, 2002
Christine T. Whitman Administrator US Environmental Protection Agency	Date	Richard A. Meserve Chairman US Nuclear Regulatory Commission	Date

<sup>1</sup>See letter from Elizabeth Cotsworth, Acting Director, Office of Solid Waste to James R. Roewer, USWAG, dated March 5, 1997.



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_____ Christine T. Whitman Administrator US Environmental Protection Agency	_____ Date	_____ Richard A. Meserve Chairman US Nuclear Regulatory Commission	_____ Date
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<sup>1</sup>See letter from Elizabeth Cotsworth, Acting Director, Office of Solid Waste to James R. Roewer, USWAG, dated March 5, 1997.

## MOU Table 1: Consultation Triggers for Residential and Commercial/Industrial Soil Contamination

Except for radium-226, thorium-232, or total uranium, concentrations should be aggregated using a sum of the fraction approach to determine site specific consultation trigger concentrations. This table is based on single contaminant concentrations for residential and commercial/industrial land use when using generally accepted exposure parameters. Table users should select the appropriate column based on the site's reasonably anticipated land use.

Radionuclide	Residential Soil Concentration	Industrial/Commercial Soil Concentration
H-3	228 pCi/g	423 pCi/g
C-14	46 pCi/g	123,000 pCi/g
Na-22	9 pCi/g	14 pCi/g
S-35	19,600 pCi/g	32,200,000 pCi/g
Cl-36	6 pCi/g	10,700 pCi/g
Ca-45	13,500 pCi/g	3,740,000 pCi/g
Sc-46	105 pCi/g	169 pCi/g
Mn-54	69 pCi/g	112 pCi/g
Fe-55	269,000 pCi/g	2,210,000 pCi/g
Co-57	873 pCi/g	1,420 pCi/g
Co-60	4 pCi/g	6 pCi/g
Ni-59	20,800 pCi/g	1,230,000 pCi/g
Ni-63	9,480 pCi/g	555,000 pCi/g
Sr-90+D	23 pCi/g	1,070 pCi/g
Nb-94	2 pCi/g	3 pCi/g
Tc-99	25 pCi/g	89,400 pCi/g
I-129	60 pCi/g	1,080 pCi/g
Cs-134	16 pCi/g	26 pCi/g
Cs-137+D	6 pCi/g	11 pCi/g
Eu-152	4 pCi/g	7 pCi/g
Eu-154	5 pCi/g	8 pCi/g

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Radionuclide	Residential Soil Concentration	Industrial/Commercial Soil Concentration
Ir-192	336 pCi/g	544 pCi/g
Pb-210+D	15 pCi/g	123 pCi/g
Ra-226	5 pCi/g	5 pCi/g
Ac-227+D	10 pCi/g	21 pCi/g
Th-228+D	15 pCi/g	25 pCi/g
Th-232	5 pCi/g	5 pCi/g
U-234	401 pCi/g	3,310 pCi/g
U-235+D	20 pCi/g	39 pCi/g
U-238+D	74 pCi/g	179 pCi/g
total uranium	47 mg/kg	1230 mg/kg
Pu-238	297 pCi/g	1,640 pCi/g
Pu-239	259 pCi/g	1,430 pCi/g
Pu-241	40,600 pCi/g	172,000 pCi/g
Am-241	187 pCi/g	568 pCi/g
Cm-242	32,200 pCi/g	344,000 pCi/g
Cm-243	35 pCi/g	67 pCi/g