Department of Energy
Albuquerque Operations Office
P.O. Box 5400
Albuquerque, New Mexico 87115

MAR 23 1988

Mr. Malcolm Knapp
Director
Division of Low-Level Waste
Management and Decommissioning
Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Knapp:

Reference is made to your letter of February 9, 1988, stating the NRC's position regarding future concurrence with proposed remedial actions at the inactive uranium mill tailings sites. As indicated in this letter, the NRC will no longer conditionally concur in proposed actions without demonstrated compliance with the proposed groundwater standards (FR36000-36008).

Historically, it is important to recognize that the EPA groundwater standards were in effect from March 7, 1983, until the Tenth Circuit Court of Appeals remand on September 3, 1985. Therefore, we feel that all remedial action decisions made during that time were based on valid groundwater standards. After the Court's remand and until issuance of the proposed standards on September 24, 1987, an interim plan for groundwater protection was adhered to by the DOE and the affected states/tribes. This interim plan was reviewed and accepted by the NRC as the appropriate approach until issuance of the EPA groundwater standards (see DOE-NRC Memorandum of Understanding, Mod 1).

Prior to the Court's remand, the DOE received NRC concurrence for remedial actions at Canonsburg, PA, Clive, UT, and Shiprock, NM, in accordance with the then site-specific groundwater standards. Moreover, during the period in which the interim plan was in effect, conditional concurrences were received for Lakeview, OR, and Durango, CO; oral agreement to proceed with construction at Tuba City, AZ, was also received during this time. These latter concurrences/agreement were based, in part, upon specific groundwater protection and cleanup strategies to be developed pending the EPA issuance of groundwater standards. Moreover, by letter dated July 9, 1987, NRC provided conditional concurrence for remedial actions at the Riverton, WY, site pending promulgation of the groundwater protection standards.

As noted in your letter, Section 108(a)(3) of UMTRCA stipulates that planned remedial actions must comply with standards proposed by the EPA after October 31, 1982. In conformance with this section, it is the DOE's intent to comply with Subparts A and C of the proposed groundwater standards as they apply to disposal designs. The provisions of Subparts B and C as they apply to groundwater remediation will be complied with following promulgation of the final standards. We believe that separating restoration remedial actions from disposal design remedial actions is an

acceptable approach under our Section 108(a)(3). In addition, this approach is proper because:

- Final standards will not be promulgated until early 1989 and may differ from those proposed.
- Compliance with Subpart A is, for the most part, independent of compliance with Subpart B.
- DOE intends to optimize disposal design remedial actions to facilitate later compliance with restoration actions (e.g., dewatering practices).
- DOE has requested Congressional authorization to extend UMTRCA to 1994 for disposal design actions and indefinitely thereafter for restoration actions.

A draft DOE UMTRA position statement that expands upon the above issues is enclosed for NRC review and comment.

The DOE has examined several options regarding compliance with the proposed groundwater standards. On the basis of the evaluations and the policy enunciated above, the DOE intends to proceed with disposal designs. However, we also recognize that the additional data needs and analyses necessary to permit the NRC to conditionally concur in these designs remains to be agreed to by our agencies.

The DOE believes that the policy discussed above is proper and we look forward to its implementation with the assistance of the NRC. We propose to meet with NRC management and staff on April 6, 1988, to discuss these issues. Should you have questions with these interpretations, please contact me at FTS 844-3941.

Sincerely,

W. John Arthur, III
Project Manager
Uranium Mill Tailings Project Office

Enclosure

cc w/enclosure:
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DOE UMTRA PROJECT POSITION STATEMENT ON THE TECHNICAL APPROACH TO THE PROPOSED EPA GROUNDWATER STANDARDS

The EPA recently proposed groundwater standards (52 FR36000-36008) applicable to Uranium Mill Tailings Radiation Control Act Title I sites. Subpart A of the proposed standards consists of requirements for control of potential contaminant releases to groundwater at disposal sites. Subpart B lists the standards applicable for remediating groundwater contamination. Subpart C addresses supplemental standards applicable to Subparts A and B.

The DOE has provided comments on the proposed standards. The DOE strongly supports the basic intent of the standards to protect human health and the environment. Specifically, the DOE supports the following provisions of the proposed standards:

- Listing of contaminants of concern and appropriate concentration limits.
- Use of natural and/or synthetic liners when appropriate in special circumstances.
- Use of natural flushing as a means of restoration.
- Use of institutional controls and the 100-year remedial period when needed to provide time for natural flushing.
- Provisions for the release of lands prior to groundwater restoration.
- Allowance for the DOE and the NRC to develop the concept of technical impracticability on a site-specific basis.

The DOE notes, however, that other provisions of the proposed EPA standards (Subpart A) would lead to design requirements that are very difficult to implement within the current Uranium Mill Tailings Remedial Action (UMTRA) Project regulatory framework. Also, the DOE calculates that the cost of implementing the proposed standards (Subpart B) applicable to groundwater remediation could be well in excess of $1 billion, and provision for such funding has not been made or authorized by Congress. In addition:

- The standards will probably not be promulgated until early 1989.
- The standards as promulgated may differ from the proposed standards as a result of comments made by interested parties.
- At the time of publicaton of the draft standards remedial actions at two UMTRA Project sites were complete, remedial work is in progress at four sites, and design of remedial works for the remaining sites is well advanced.

- The UMTRA Project is currently authorized to extend to 1990 (requested extension through 1994). Full implementation of the proposed standards would extend beyond 1994. Congressional authorization of such a project extension would be required.

The proposed standards are known to UMTRA Project participants and are actively being reviewed by interested parties. Because the standards will influence remedial action designs and groundwater protection, and because they affect the attitude of remedial action plan reviewers and agencies that concur in designs, the DOE considers it necessary and prudent to establish an interim position and technical approach regarding the proposed EPA standards.

DOE Interim Position

During the period prior to promulgation of the final standards, the DOE intends to comply with Subparts A and C of the proposed standards as they apply to disposal sites. The provisions of Subpart B and C as they apply to groundwater remediation will be complied with following promulgation of the final standards. The DOE believes that decisions to proceed with disposal designs can be demonstrated to be independent of final decisions for aquifer restoration.

Technical Approach

The technical approach to implementing the position stated herein is as follows:

- The DOE will include in all remedial action plans (RAPs) and environmental documents (EAs and EISs) a statement such as that in Attachment I.

- Environmental documents shall address the ability of the proposed remedial action to comply with the proposed groundwater protection standards and to describe any further measures that may ultimately be required to achieve compliance. Attachment II contains the general guidance to be used to comply with this commitment.

- The DOE will collect data, formulate designs, and prepare documents to facilitate compliance with the proposed standards. The DOE believes, however, that it is technically impracticable to design a remedial action scheme that complies with the proposed EPA maximum concentration limits (MCLs) at the edge of the pile (the proposed point of compliance) while simultan- eously complying with the standard that disposal sites will have a design life of 1000 years to the extent reasonably achievable, and at any rate for 200 years. The DOE will design and construct facilities to lead to (or enhance) compliance with the standards. If this course involves invoking alternate concentration limits or supplemental standards as allowed under the proposed standards, the DOE will establish such facts and undertake the work necessary to justify such approaches.

- In characterizing site conditions and in designing site remedial actions, the DOE will compare water quality at the site to the proposed EPA standards. In addition, the DOE will compare site-specific water quality data with state groundwater quality standards and state drinking water standards.

- To the extent possible, the DOE will characterize groundwater conditions and the properties of the tailings and construction materials so that: (1) remedial action can be designed to meet the proposed standards and; (2) the data are available for implementation of the final standards.

- The DOE will evaluate reasonable design modifications that may lead to (or enhance) compliance with the proposed standards.

- In optimizing remedial action designs, the DOE will strive to incorporate features that will: (1) enhance runoff from the pile; (2) reduce infiltration into the pile; and (3) reduce seepage from the pile. The DOE will strive to achieve: maximum filter hydraulic conductivity; the steepest practical top and side slopes; the shortest possible flow distances off the pile; minimum radon barrier hydraulic conductivity; and the smallest practical pile area.

- In order to reduce concentrations of contaminants in the seepage from the pile and hence minimize groundwater impact, the DOE will evaluate and incorporate (if proven appropriate) hydrogeochemical features. To be considered are: hydrogeochemical basal layers; mixing of part or all of the tailings with an hydrogeochemical modifier; and placement of a hydrogeochemical source over the pile. Accordingly, such modifiers will be installed if they can be demonstrated to be potentially beneficial, cost-effective, and necessary in the future when designs are reevaluated in the light of the final groundwater standards.

- In preparing foundation designs for relocated tailings, the DOE will select designs that lead to reduced hydraulic conductivity of the foundations where beneficial. If reasonable and practicable, compaction of the in-situ soils and placement of low-hydraulic-conductivity layers (that are not less permeable than the cover) will be considered and incorporated.

- The alternate site selection procedure will be revised to incorporate procedures leading to the selection of new disposal sites at which compliance with the standards can be achieved. It is recognized that in relocating piles, it is imperative to select an alternative site at which compliance is very probable.

- In selecting sites for tailings pile relocation, the DOE will seek areas that not only meet existing UMTRA Project site selection criteria, but which also are underlain by appropriate geohydrological features. For example, sites underlain by Class III groundwaters will be sought, as will sites with subsoils with hydraulic conductivities that will facilitate compliance with the proposed groundwater standards.

- In the event that alternate site selection studies indicate an absence, within reasonable distance, of a site to which tailings can be relocated and a pile constructed to comply with the proposed standards, then the DOE will adopt a stabilization in place or on-site design that will comply with the MCLs and/or will consider the use of alternate concentration limits or supplemental standards, as appropriate. This solution will be adopted, in particular, if relocation is likely to result in adverse impacts on groundwater not affected by tailings seepage.

- In the event that the DOE adopts the use of institutional controls as part of a remedial action plan, the DOE will work with the states/tribes to acquire title to the land subject to institutional control. If it is not possible or practicable for the states/tribes to acquire the land, the DOE will strive to acquire the land.

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ATTACHMENT I: DOE POSITION STATEMENT FOR INCLUSION IN EAs AND EISs and RAPs

On September 3, 1985, the U.S. 10th Circuit Court of Appeals remanded the groundwater standards 40 CFR 192.2(a)(2)-(3). The EPA reissued proposed standards for comment on September 24, 1987. Prior to promulgation of the final standards, the DOE intends to implement the provisions of Subpart A and C. When the final EPA standards are promulgated, the DOE will re-evaluate its groundwater protection plan and undertake such action as is necessary to ensure that the revised standards are met.

In response to the Courts' remand, the newly proposed EPA groundwater standards involve:

- Protection of human health, safety, and the environment.
- Consideration of radiological and nonradiological hazards.
- Consistency with the requirements of the Resource Conservation and Recovery Act (RCRA), as amended.
- General standards applicable to all UMTRA Project sites (i.e., not site-specific as was the case for the remanded standards).

Subpart A, (40 CFR Part 192.01-192.02) consists of the requirements for control of potential contaminant releases to the groundwater at disposal sites. It incorporates the following:

- RCRA list of hazardous constituents (40 CFR Part 264.93).
- RCRA Maximum Concentration Limits (MCLs) (40 CFR Part 264.94), background limits, or Alternate Concentration Limits (ACLs). The establishment of ACLs must be concurred in by the Nuclear Regulatory Commission (NRC), be as low as reasonably achievable (ALARA), and satisfy the water-quality protection considerations stipulated in 40 CFR 264.94(b).
- RCRA point of compliance (40 CFR Part 264.95).
- Four hazardous constituents and associated MCLs (molybdenum, radium, uranium, and nitrate) are added to these taken from the drinking water standards. (Note: an MCL for an additional constituent gross alpha, is included separately and without discussion in Subpart A, Table A.)
- A liner or equivalent beneath the disposal site if tailings contain excess water (40 CFR Part 192.20).

- o Monitoring during a post-remedial action period to verify design performance.

- o Corrective action to be initiated within 18 months after monitoring indicates or projects an exceedence of the applicable concentration limits.

Subpart B, (40 CFR Part 192.11-192.12) lists the standards applicable for remediating contaminated groundwater. It incorporates:

- o Cleanup of the listed groundwater constituents to levels specified in Subpart A.

- o Extension of the remedial period to allow for natural flushing if:

  - The groundwater is not, and is not projected to be, a public drinking water source, and
  - Institutional controls will effectively protect health and satisfy other beneficial uses, and
  - Concentration limits (40 CFR Part 264.94) will be met in less than 100 years.

Subpart C, (40 CFR Part 192-20-192-22) addresses supplemental standards applicable to Subparts A and B. The supplemental standards provide for alternative actions which come as close to the standards "as reasonable under the circumstances." NRC concurrence in the application of supplemental standards is required. The supplemental standards may be applied if protection of human health and the environment is assured (40 CFR Part 192.22(d)) and:

- o The proposed action would cause more environmental harm than it would prevent (40 CFR Part 192.21(b)), or

- o Restoration is technically impracticable from an engineering perspective (40 CFR Part 192.21(f)), or

- o The groundwater is Class III (40 CFR Part 192.21(g)).

The need for and extent of aquifer restoration will be determined by a separate NEPA decision making process or RAP after the tailings have been stabilized.

ATTACHMENT II: GENERAL GUIDANCE OF EPA PROPOSED GROUNDWATER STANDARDS

UMTRA Project NEPA documents will include general statements and descriptions regarding the proposed standards and contain data and information specific to Subparts A, B, and C.

- o The NEPA documents will include the following general descriptions and statements:
  - a summary of the proposed standards,
  - a description of the ability of the proposed action to meet the standards,
  - if the proposed action does not meet the standards, a description of additional measures that may be implemented to achieve a reasonable expectation of compliance,
  - a statement of assurance that proposed remedial actions will not preclude subsequent design enhancements that may be needed to achieve compliance,
  - a statement of assurance that proposed actions will not limit the selection of reasonable groundwater restoration methods when final standards are promulgated, and
  - a statement of commitment that future groundwater restoration actions that may be required to comply with the groundwater standards will be evaluated in a separate NEPA document.
- o Specifically, for proposed Subparts A and C, the following information will be provided:
  - a quantification of the differences between present contamination levels, proposed maximum concentration limits (MCLs), and background levels,

    a quantitative description of distances from the edge of the pile at which compliance with proposed MCLs will be achieved, and
  - a description of the design and construction measures that may be taken to enhance the likelihood of meeting the proposed standards. The descriptions of alternative actions should address the effects that physical conditions at the specific UMTRA Project site will have on the alternative pile designs.

    The NEPA document will not indicate that alternate concentration limits (ACLs) will be relied upon as a primary means of compliance. However, if ACLs are discussed as a possible

alternative means of compliance, the NEPA document will evaluate the factors in 40 CFR 264.94(b) for the physical conditions at the specific UMTRA Project site.

- if supplemental standards are proposed, the NEPA document will discuss the applicability of one or more of the proposed Section 192.21 criteria.

o Specifically, for proposed Subpart B, compliance with groundwater standards will be addressed in general terms. The physical characteristics of each UMTRA Project site including existing groundwater contamination levels will be described. Representative conceptual groundwater restoration schemes including natural flushing and active restoration as appropriate and the estimated time required to achieve compliance for each contaminant exceeding the proposed standards will be evaluated.

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