

August 15, 1995

SECY-95-211

FOR: The Commissioners

FROM: James M. Taylor /s/
Executive Director for Operations

SUBJECT: FINAL "REVISED GUIDANCE ON DISPOSAL OF NON-ATOMIC ENERGY ACT OF 1954, SECTION 11e.(2) BYPRODUCT MATERIAL IN TAILINGS IMPOUNDMENTS," AND FINAL "POSITION AND GUIDANCE ON THE USE OF URANIUM MILL FEED MATERIALS OTHER THAN NATURAL ORES"

PURPOSE:

To obtain Commission approval of two final guidance documents related to the Uranium Recovery Program (Attachment 1).

BACKGROUND:

Over the past several years, the U.S. Nuclear Regulatory Commission staff has developed guidance on proposed activities, other than the normal processing of native uranium ore, at uranium mills. On August 7, 1991, SECY-91-243 informed the Commission of the staff's proposed approach for responding to applicant requests to dispose of material other than Atomic Energy Act (AEA) of 1954, Section 11e.(2), byproduct material in mill tailings impoundments. On January 17, 1992, the staff provided revisions to the guidance proposed in SECY-91-243, to address concerns raised by the Commission, in a Staff Requirements Memorandum (SRM) dated September 20, 1991.

The Commissioners

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SECY-91-347, dated October 25, 1991, requested Commission approval of proposed staff guidance on a related uranium recovery issue. This guidance defined "ore" to encompass a broad range of uranium mill feed materials, but included procedures to ensure that approval of a specific feed material would not be given if the proposed processing were primarily to permit the disposal of the feed material in a tailings impoundment.

In an SRM dated December 3, 1991, the Commission directed the staff to publish the two proposed policy guidance documents in a single Federal Register notice, for public comment. On April 30, 1992, the Commission approved a Federal Register notice combining the two guidance documents. The notice was published in the Federal Register on May 13, 1992, requesting public comment within 30 days. Additionally, copies of the Federal Register notice were sent to the U.S. Department of Energy (DOE), the U.S. Environmental Protection Agency (EPA), Agreement States, and Low-Level Waste Compacts, for review and comment. The Federal Register notice (Attachment 2) provides an in-depth discussion of the issues related to the guidance documents.

There were several requests for extension of the comment period. Staff assured all such requesters that it would consider comments received after the end of the comment period, to the extent practical. Staff received 24 letters, all of which it fully considered. Comments were received from Federal agencies, States, industrial groups, NRC licensees, a member of the U.S. Congress, a law firm, an environmental group, and an individual.

On October 28, 1992, in a separate initiative, an Advance Notice of Proposed Rulemaking (ANPRM) on 10 CFR Part 40 was published in the Federal Register (57 FR 48749) for public comment. Two of the issues identified in the ANPRM were the disposal of non-11e.(2) waste materials into tailings impoundments and the use of alternate feed materials (i.e., the issues discussed the proposed guidance documents published in the Federal Register on May 13, 1992). Although the ANPRM addressed a much broader range of issues, some of the comments received related to these two issues. However, these comments were consistent with comments received on the May 13, 1992, Federal Register notice. No new issues were identified, in the ANPRM comments, that would result in reconsideration of the proposed guidance documents. The summary, analysis, and response to those comments will be included in the document, to be published by the Office of Nuclear Regulatory Research, addressing comments on the ANPRM.

The NRC staff reviewed all the comments received on the proposed guidance documents and carefully analyzed, categorized, and grouped them by subject areas. Staff categorized comments, based on which guidance document was addressed: Category A refers to

comments on Part A of the guidance document, pertaining to non-11e.(2) byproduct material; Category B refers to comments on Part B of the guidance, pertaining to alternate feed materials; and Category C refers to comments that are applicable to both Parts A and B. A summary of the comments received and NRC staff responses are provided in Attachment 3.

In reviewing the comments on the proposed guidance documents, NRC staff identified 11 subject areas of issues raised by commenters: six in Category A, four in Category B, and one in Category C.

There was an issue that delayed finalization of the guidance documents. In an October 1992, mixed waste meeting between NRC, EPA, and DOE staff, EPA identified potential inconsistencies in NRC's interpretation of the definition of source material in conjunction with the exclusion of source material from the definition of solid waste in the Resource Conservation and Recovery Act (RCRA). In making its point, EPA cited the May 13, 1992, Federal Register notice on the disposal of non-11e.(2) byproduct material. The staff had delayed finalization of the uranium recovery policy guidance documents, pending resolution of the source material definition issue. However, the staff has now decided that these two policy guidance documents can be finalized, independent of the source material issue, because the guidance is not dependent on the interpretation of the definition of source material.

DISCUSSION:

In addition to minor editorial changes, the final "Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments" contains three changes from the version published in the Federal Register on May 13, 1992. First, Item 2 of the guidance has been revised to exclude, from disposal in tailings impoundments, radioactive material not regulated by NRC or an Agreement State under the AEA. The guidance published in the Federal Register had excluded naturally occurring and accelerator-produced radioactive material (NARM). Several commenters requested a definition of NARM and pointed out that uranium would likely qualify as NARM. The change in wording was made, since the intent always was to preclude disposal of radioactive material not regulated by NRC or an Agreement State under the AEA. In view of the elimination of reference to NARM in the guidance, the phrase "non-11e.(2) byproduct material" has been defined in a more narrow sense. The second change was that Item 4 of the guidance has been revised to provide additional specificity to ensure that no RCRA material is included in non-11e.(2) byproduct material. Finally, Item 9 of the guidance has been revised to require concurrence and a

commitment, from either DOE, or the State in which the tailings impoundment is located, to take title to the site after closure.

The final "Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores" contains two changes to Item 3b of the guidance, in addition to minor clarifying editorial changes from the version published in the Federal Register. First, the licensee certification with regard to RCRA aspects of the proposed alternate feed material has been eliminated as unnecessary, since Item 2 requires a licensee demonstration that the material would not be regulated under RCRA. The second change is that the licensee certification that the proposed feed material is to be processed primarily for its source material content, has been expanded to require licensee justification.

After Commission approval, the staff plans to publish the final guidance documents in the Federal Register and to implement the guidance. A proposed Federal Register notice is provided in Attachment 4. As proposed in SECY-92-138, and approved by the Commission on May 13, 1992, the staff used the guidance on alternate feed materials in approving a license amendment request from Umetco Minerals Corporation.

RECOMMENDATION:

The staff recommends that the Commission approve the two enclosed final guidance documents.

COORDINATION:

The Office of the General Counsel has reviewed this paper and has no legal objection.

These policies have been coordinated with the Agreement States by letter dated May 14, 1992, which requested the Agreement States to comment on the policies. The Agreement States' responses were varied and did not present a consistent position on the policies. Their responses are included in the discussion in Attachment 3.

Staff does not believe further coordination with the Agreement States on the content of the final policies is required since no significant changes have been made to the policies and Agreement State comments have been considered. The staff will distribute copies of the final policies to the Agreement States after these have been published.

original /s/ Taylor

James M. Taylor
Executive Director
for Operations

Attachments:

1. Final staff guidance documents
2. May 13, 1992, Federal Register notice
3. NRC staff's responses to
comments on proposed
guidance documents
4. Proposed Federal Register notice

FINAL GUIDANCE DOCUMENTS

FINAL REVISED GUIDANCE ON DISPOSAL OF NON-ATOMIC ENERGY ACT OF 1954, SECTION 11e.(2) BYPRODUCT MATERIAL IN TAILINGS IMPOUNDMENTS

1. In reviewing licensee requests for the disposal of wastes that have radiological characteristics comparable to those of Atomic Energy Act (AEA) of 1954, Section 11e.(2) byproduct material [hereafter designated as "11e.(2) byproduct material"] in tailings impoundments, staff will follow the guidance set forth below. Since mill tailings impoundments are already regulated under 10 CFR Part 40, licensing of the receipt and disposal of such material [hereafter designated as "non-11e.(2) byproduct material"¹] should also be done under 10 CFR Part 40.
2. Radioactive material not regulated under the AEA shall not be authorized for disposal in an 11e.(2) byproduct material impoundment.
3. Special nuclear material and Section 11e.(1) byproduct material waste should not be considered as candidates for disposal in a tailings impoundment, without compelling reasons to the contrary. If staff believes that such material should be disposed of in a tailings impoundment in a specific instance, a request for approval by the Commission should be prepared.
4. The 11e.(2) licensee must demonstrate that the material is not subject to applicable Resource Conservation and Recovery Act (RCRA) regulations or other U.S. Environmental Protection Agency (EPA) standards for hazardous or toxic wastes prior to disposal. To further ensure that RCRA hazardous waste is not inadvertently disposed of in mill tailings impoundments, the 11e.(2) licensee also must demonstrate, for waste containing source material, as defined under the AEA, that the waste does not also contain material classified as hazardous waste according to 40 CFR Part 261. In addition, the licensee must demonstrate that the non-11e.(2) material does not contain material regulated under other Federal statutes, such as the Toxic Substances Control Act. Thus, source material physically mixed with other material, would require evaluation in accordance with 40 CFR Part 261, or 40 CFR

¹"non-11e.(2) byproduct material" as used here is simply an encompassing term for source, special nuclear, and 11e.(1) byproduct materials.

Part 761. (These provisions would cover material such as: characteristically hazardous waste; listed hazardous waste; and polychlorinated biphenyls.) The demonstration and testing should follow accepted EPA regulations and protocols.

5. The 11e.(2) licensee must demonstrate that there are no Comprehensive Environmental Response, Compensation and Liability Act issues related to the disposal of the non-11e.(2) byproduct material.
6. The 11e.(2) licensee must demonstrate that there will be no significant environmental impact from disposing of this material.
7. The 11e.(2) licensee must demonstrate that the proposed disposal will not compromise the reclamation of the tailings impoundment by demonstrating compliance with the reclamation and closure criteria of Appendix A of 10 CFR Part 40.
8. The 11e.(2) licensee must provide documentation showing approval by the Regional Low-Level Waste Compact in whose jurisdiction the waste originates as well as approval by the Compact in whose jurisdiction the disposal site is located.
9. The Department of Energy (DOE) and the State in which the tailings impoundment is located, should be informed of the Nuclear Regulatory Commission findings and proposed action, with a request to concur within 120 days. A concurrence and commitment from either DOE or the State to take title to the tailings impoundment after closure must be received before granting the license amendment to the 11e.(2) licensee.
10. The mechanism to authorize the disposal of non-11e.(2) byproduct material in a tailings impoundment is an amendment to the mill license under 10 CFR Part 40, authorizing the receipt of the material and its disposal. Additionally, an exemption to the requirements of 10 CFR Part 61, under the authority of § 61.6, must be granted. (If the tailings impoundment is located in an Agreement State with low-level waste licensing authority, the State must take appropriate action to exempt the non-11e.(2) byproduct material from regulation as low-level waste.) The license amendment and the § 61.6 exemption should be supported with a staff analysis addressing the issues discussed in this guidance.

FINAL POSITION AND GUIDANCE ON THE USE OF URANIUM MILL FEED MATERIAL OTHER THAN NATURAL ORES

Staff reviewing licensee requests to process alternate feed material (material other than natural ore) in uranium mills should follow the guidance presented below. Besides reviewing to determine compliance with appropriate aspects of Appendix A of 10 CFR Part 40, the staff should also address the following issues:

1. Determination of whether the feed material is ore.

For the tailings and wastes from the proposed processing to qualify as 11e.(2) byproduct material, the feed material must qualify as "ore." In determining whether the feed material is ore, the following definition of ore must be used:

Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.

2. Determination of whether the feed material contains hazardous waste.

If the proposed feed material contains hazardous waste, listed under subpart D §§ 261.30-33 of 40 CFR (or comparable RCRA authorized State regulations), it would be subject to EPA (or State) regulation under RCRA. To avoid the complexities of NRC/EPA dual regulation, such feed material will not be approved for processing at a licensed mill. If the licensee can show that the proposed feed material does not contain a listed hazardous waste, this issue is resolved.

Feed material exhibiting only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) would not be regulated as hazardous waste and could therefore be approved for recycling and extraction of source material. However, this does not apply to residues from water treatment, so acceptance of water treatment residues as feed material will depend on their not containing any hazardous or characteristic hazardous waste. Staff will consult with EPA (or the State) before making a determination of whether the feed material contains hazardous waste.

3. Determination of whether the ore is being processed primarily for its source-material content.

For the tailings and waste from the proposed processing to qualify as 11e.(2) byproduct material, the ore must be processed primarily for its source-material content. There is concern that wastes that would have to be disposed of as radioactive or mixed waste would be proposed for processing at a uranium mill primarily to be able to dispose of it in the tailings pile as 11e.(2) byproduct material. In determining whether the proposed processing is primarily for the source-material content or for the disposal of waste, either of the following tests can be used:

- a. Co-disposal test: Determine if the feed material would be approved for disposal in the tailings impoundment under the "Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments," or revisions or replacements to that guidance. If the material would be approved for disposal, it can be concluded that if a mill operator proposes to process it, the processing is primarily for the source-material content. The material would have to be physically and chemically similar to 11e.(2) byproduct material and not be subject to RCRA or other EPA hazardous-waste regulations, as discussed in the guidance.
- b. Licensee certification and justification test: The licensee must certify under oath or affirmation that the feed material is to be processed primarily for the recovery of uranium and for no other primary purpose. The licensee must also justify, with reasonable documentation, the certification. The justification can be based on financial considerations, the high uranium content of the feed material, or other grounds. The determination that the proposed processing is primarily for the source material content must be made on a case-specific basis.

If it can be determined, using the aforementioned guidance, that the proposed feed material meets the definition of ore, that it will not introduce a hazardous waste not otherwise exempted, and that the primary purpose of its processing is for its source-material content, the request can be approved.

U. S. Nuclear Regulatory Commission
Staff Response to Public Comments
on

"Revised Guidance on Disposal of Non-Atomic Energy Act of 1954,
Section 11e.(2) Byproduct Material in Tailings Impoundments"

and

"Position and Guidance on the Use of Uranium Mill Feed Materials
Other Than Natural Ores"

INTRODUCTION

The U. S. Nuclear Regulatory Commission staff developed two proposed guidance documents: "Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments"; and "Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores." These documents and their associated staff analyses (hereafter referred to as "Staff Analysis") were published in the Federal Register on May 13, 1992, and public comments were requested on the proposed guidance.

Twenty-four letters were received in response to the notice. Comments were received from Federal agencies, States, industrial groups, NRC licensees, a member of the U.S. Congress, a law firm, an environmental group, and an individual. As expected, the comments varied significantly, depending on the affiliation of the commenter. Several commenters indicated that the proposed guidance provided too much flexibility, while other commenters believed that the guidance was too restrictive. Some commenters supported the guidance, while others thought it needed major modifications.

All of the comments were carefully reviewed, categorized, and grouped by subject areas. Comments were categorized based on which guidance document was addressed: Category A addresses comments on Part A of the guidance document, pertaining to non-11e.(2) byproduct material; Category B addresses comments on Part B of the guidance, pertaining to alternate feed materials; and Category C addresses comments that are applicable to both Parts A and B. The following major comment groups were identified:

Category A - Disposal of Non-11e.(2) Byproduct Material

A1. Types of material to be allowed for disposal

- A2. Relation of non-11e.(2) byproduct material to low-level waste
- A3. Mixed waste issues
- A4. Transfer of title and custody
- A5. Uranium mill tailings impoundments as disposal sites
- A6. Other disposal topics

Category B - Alternate Feed Material

- B1. Definition of ore
- B2. Mixed waste determination for feed material
- B3. Determination that material is to be processed primarily for source material
- B4. Other feed material topics

Category C - General Comments Applicable to Both Guidance Documents

C1. Comments Applicable to Parts A and B

The comments in categories A, B, and C are summarized and discussed in the following responses to comments. Included in each comment topic are: (1) a list of commenters that presented one or more issues; (2) a summary of the comments and issues raised by the commenters; (3) discussion and response to the comments by NRC staff; and (4) any modifications made to the guidance in response to these comments.

The numbers in parentheses after the name of the commenter were assigned by the NRC staff during the comment review and refer to a specific comment.

RESPONSES TO COMMENTS

A1.0 Types of Material to be Allowed for Disposal

A1.1 Commenters

- Umetco Minerals Corp. (3-1, 3-2, 3-3, 3-4)
- Fuel Cycle Facilities Forum (5-2, 5-3, 5-4, 5-5)
- Don & Hiller for Envirocare of Utah, Inc. (6-7)
- Colorado Department of Health (9-1)
- Office of the Governor, State of Wyoming (11-7)
- Rio Algom Mining Corp. (13-1, 13-2)
- American Mining Congress (14-5, 14-6, 14-8)
- Washington Department of Health (16-2)
- Utah Department of Environmental Quality (20-4, 20-5, 21-4, 21-5)

A1.2 Summary of Issues

Eight commenters expressed opinions on various types of material that should be authorized for disposal in tailings impoundments. A mill operator and two industrial groups expressed agreement that several types of materials identified in the Staff Analysis

should be permitted in tailings impoundments. Several commenters opposed aspects of the policy that would either exclude or severely restrict other types of waste for disposal.

Six commenters expressed opinions on the prohibition of naturally occurring and accelerator produced (NARM) waste from tailings impoundments. Wyoming and Utah agreed that NARM wastes should not be allowed in impoundments. Colorado and Washington, Rio Algom, and the American Mining Congress (AMC) argued that NARM wastes and mine wastes should be permitted in tailings impoundments.

Wyoming agreed with the policy to allow disposal of 11e.(1) byproduct material (normally considered "byproduct material") or special nuclear material only when the Commission determines that there are compelling reasons to do so, while Utah objected to even the possibility of such disposals.

Rio Algom, Envirocare, and the AMC expressed the opinion that NRC should more clearly define the materials that would or would not be allowed to be disposed of in tailings impoundments. They were primarily concerned with defining and identifying NARM wastes and differentiating them from mine wastes and other radioactive wastes that would be permitted in impoundments.

A1.3 Discussion and Response to Comments

NARM wastes: The policy excluded NARM wastes because of concerns related to NRC's regulatory authority over those materials and over sites containing those materials. This was discussed in the Staff Analysis. To clarify what material will be permitted in impoundments, rather than define NARM, the policy has been revised to indicate that only radioactive material regulated by NRC under the Atomic Energy Act (AEA) will be permitted.

11e.(1) byproduct and special nuclear material: The staff agrees with Utah that it is unlikely that there would be any circumstances where it would approve disposing of 11e.(1) byproduct material or special nuclear material in an 11e.(2) byproduct material tailings impoundment. Nevertheless, staff seeks to have the flexibility to allow such a disposal if special circumstances warrant. In any case this disposal would require specific Commission approval.

A1.4 Modifications to the Guidance

Item 2 of the guidance has been revised to state that radioactive material not regulated under the AEA, rather than NARM, shall not be authorized for disposal in a tailings impoundment.

A2.0 Relation of Non-11e.(2) Byproduct Material to Low-Level Waste

A2.1 Commenters

Umetco Minerals Corp. (3-1, 3-2, 3-3, 3-5)
Fuel Cycle Facilities Forum (5-1, 5-2, 5-3, 5-4, 5-6)
Don & Hiller for Envirocare of Utah, Inc. (6-1, 6-8)
Crain, Caton & James for Rhone-Poulenc Inc. (7-1)
Office of the Governor, State of Wyoming (11-5)
Rio Algom Mining Corp. (13-3, 13-4)
American Mining Congress (14-7)
Utah Department of Environmental Quality (20-8, 21-8)

A2.2 Summary of Issues

Seven commenters responded to Item 8 of the guidance in Part A of the Federal Register notice (FRN), which requires approval of the disposal by the Regional Low-Level Waste (LLW) Compact in whose jurisdiction the waste originates, as well as the one where the disposal site is located. Wyoming and Utah agreed with the requirement. The Fuel Cycle Facilities Forum supported the requirement of LLW Compact approval, except for several categories of waste that both it and Rio Algom contended should not be subject to such approval, because of their similarity to 11e.(2) byproduct material. Rio Algom expressed the opinion that LLW Compact approval should not be required when the non-11e.(2) byproduct material and the impoundment where it is to be disposed of are owned by the same company.

Rhone-Poulenc opposed the requirement of LLW compact approval as unnecessary and restrictive, stating that Compacts would have economic incentives to disapprove such disposals and force such wastes into their LLW disposal sites.

Envirocare raised several issues related to the Low Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA). It objected to the language in the Staff Analysis, which did not clearly state that Compact approval is required by law. It stated that approval of the Governor of the State in which the disposal impoundment is located should be required, in addition to approval by the Compact. It also stated that the guidance should authorize the State or Compact, in which the impoundment is located, to charge or collect fees applicable to disposal in a LLW facility, under the LLRWPA.

Five commenters responded to Item 10 of the guidance, which discusses the regulatory mechanism to authorize disposal of non-11e.(2) byproduct material in tailings impoundments. Umetco, Rio

Algom, and the Fuel Cycle Facilities Forum supported the position that an exemption to the requirements of 10 CFR Part 61 be granted under 10 CFR 61.6. The AMC stated that a joint 10 CFR Part 40 and Part 61 license would be redundant. Envirocare stated that the guidance should expressly provide for a hearing to address the propriety of the Part 61 exemption and other issues that may need to be addressed.

A2.3 Discussions and Response to Comments

LLW Compact approval: As stated in the staff analysis, LLW Compact approval is required because non-11e.(2) byproduct material suitable for disposal in an 11e.(2) byproduct material impoundment would likely be LLW and within the purview of the States, under the LLRWPA. The origin of the material (e.g., mine waste, secondary process wastes, etc.) is irrelevant to this issue, unless the material can be shown to meet the definition of byproduct material under Section 11e.(2) of the AEA. If the material can be shown to be 11e.(2) byproduct material, it can be disposed of in a tailings impoundment without meeting the requirements of this policy. Similarly, ownership of non-11e.(2) byproduct material is irrelevant to the issue of whether it is LLW and thus within the purview of LLW Compacts.

We agree that there may be economic incentive for a LLW Compact not to approve disposal of non-11e.(2) byproduct material in an impoundment, thus forcing it to the Compact's LLW facility. In any event, as discussed above, under the LLRWPA, the material would be within the purview of LLW Compacts.

LLRWPA issues: We agree with Envirocare that the requirement in the guidance for approval by LLW Compacts stems from the LLRWPA, as stated in the staff analysis. Since the guidance is clear on the requirement, we see no need to revise it or add a statement tying it to the LLRWPA. Gubernatorial approval, however, does not follow from the LLRWPA and therefore, will not be added to the guidance. There have been several legislative proposals for such gubernatorial approvals in recent years; NRC has gone on record as considering these proposals unnecessary, and they have not been supported by the U.S. Congress.

The issue of fees and surcharges should be worked out between owners of non-11e.(2) byproduct material, impoundment operators, and LLW Compacts. NRC will neither expressly authorize nor prohibit them. (However, NRC fees and other charges will be handled similar to that for any other mill license amendment.)

Joint Part 40 and Part 61 license: We agree with the AMC that a joint Part 40 and Part 61 license would be redundant and do not

anticipate such a joint license. An exemption to Part 61 (and to a Part 61 license) will eliminate the need to issue such a joint license.

Conduct public hearing on Part 61 exemption: We do not agree that the granting of an exemption to Part 61 under 10 CFR 61.6 should require a mandatory hearing. However, since the mechanism for authorization of a disposal of non-11e.(2) byproduct material in a tailings impoundment is an amendment to a Part 40 license (per Item 10 of the guidance), there would be opportunity for a hearing, in accordance with 10 CFR 2.1205.

A3.0 Mixed Waste Issues

A3.1 Commenters

Cabot Corp. (4-7, 4-8)
Don & Hiller for Envirocare Inc. (6-3, 6-10)
Colorado Department of Health (9-2, 9-3)
American Mining Congress (14-4)
Texan Department of Health (17-1, 17-2)
Utah Department of Environmental Quality (20-7, 21-7)
Office of Environmental Restoration, U.S. Department of Energy
(23-4)

A3.2 Summary of Issues

Three commenters responded to Item 5 of the proposed guidance, which states that the licensee must demonstrate that there are no Comprehensive Environmental Response Compensation and Liability Act (CERCLA) issues. Envirocare and Colorado indicated that meeting the requirement is difficult, if not essentially impossible. Cabot Corp. requested that NRC clarify its concerns on this issue.

The AMC, Colorado, and Cabot Corp. recommended that NRC and the Environmental Protection Agency (EPA) work together to formulate consistent, non-overlapping mixed waste regulations and cooperate on the design and review of mixed waste disposal facilities, so that mixed waste disposal could be allowed in tailings impoundments. Envirocare Inc. recommended that EPA be given the opportunity to comment on the propriety of the disposal of non-11e.(2) byproduct material and the propriety of relying upon Part 40, Appendix A for the management of the combined waste materials.

Four commenters specifically addressed NRC's guidance in relation to EPA's regulations. Texas requested a list of constituents and

their limiting concentrations (and analytical methods) so Resource Conservation and Recovery Act (RCRA) waste could be differentiated from byproduct waste. Texas also stated that the phrase in Part A, Section 6.1 of the FRN, "...containing hazardous constituents regulated under RCRA," is ambiguous and should be replaced by "...containing waste streams classified as hazardous under RCRA." Utah said there must be a sampling protocol for incoming shipments, to ensure that no RCRA wastes were disposed of. The Department of Energy (DOE) was concerned that the tailings impoundment should not be subject to any of EPA's regulations and that there be only one regulator at a site.

A3.3 Discussion and Response to Comments

CERCLA issues: NRC staff realizes that demonstrating that there are no CERCLA issues related to the proposed disposal could be difficult. However, the staff's concern is that sufficient documentation must exist to provide reasonable assurance that CERCLA remedial action will not be mandated later at tailings impoundments. The acceptance of only radioactive non-11e.(2) byproduct material, regulated under AEA, will assist in providing that assurance.

Federal inter-agency cooperation: The NRC staff agrees that more inter-agency coordination with EPA to resolve mixed waste issues is needed, and NRC will continue to work with EPA, as resources permit, to resolve significant issues.

Relation to EPA regulations: The guidance is general and is not intended to provide all implementation details. Guidance exists in other documents regarding concentration limits and procedures for sampling and testing.

The phrase in the staff analysis, "...the staff would not approve co-disposal of non-11e.(2) byproduct material containing hazardous constituents regulated under RCRA," was intended to convey the concept that the staff would not approve co-disposal of non-11e.(2) byproduct material that would bring the tailings impoundment under the purview of RCRA.

NRC staff considers that the tailings impoundments should not be subject to any additional EPA regulation as a result of the co-disposal of non-11e.(2) byproduct material [tailings are already subject to regulation under 40 CFR Part 192 and other EPA standards; in addition, tailings are subject to EPA regulation under Superfund]. Item 4 of the guidance, however, does refer to RCRA regulations or other EPA standards for hazardous or toxic wastes. To further ensure that RCRA hazardous waste is not inadvertently disposed of in mill tailings impoundments, Item 4 has been revised to indicate that the 11e.(2) licensee also must

demonstrate, for waste containing source material as defined under the AEA, that the waste does not also contain material classified as hazardous waste according to 40 CFR Part 261 or polychlorinated biphenyl according to 40 CFR Part 761. Thus, source material physically mixed with other constituents, would require the classification in accordance with 40 CFR Part 261, or 40 CFR Part 761. (These provisions would cover material such as: characteristic hazardous waste; listed hazardous waste; and polychlorinated biphenyls.) The demonstration and testing should follow accepted EPA regulations and protocols.

A3.4 Modifications to the Guidance

Item 4 of the guidance has been revised to provide additional specificity to ensure that no RCRA material is included in the non-11e.(2) byproduct material.

A4.0 Transfer of Title and Custody

A4.1 Commenters

Don & Hiller for Envirocare of Utah, Inc. (6-2)
Colorado Department of Health (9-4)
Office of the Governor, State of Wyoming (11-1)
American Mining Congress (14-9)
Washington Department of Health (16-1)
Utah Department of Environmental Quality (20-6, 21-6)
Office of Environmental Restoration, U.S. Department of Energy (23-1)

A4.2 Summary of Issues

When a mill tailings site owner has completed reclamation and decommissioning, the licensee must transfer title of the 11e.(2) byproduct material and the disposal site to DOE or the State where the site is located. DOE or the State will then become responsible for the care and maintenance of the site, under the general license in 10 CFR 40.28. Two commenters expressed doubt that DOE had authority to accept title to the non-11e.(2) byproduct material at a disposal site. Envirocare noted that the discussion in the Staff Analysis cited Section 83 of the AEA as the authority for the transfer, but that Section 83 only discusses transfer of 11e.(2) byproduct material. Utah stated that there are no other statutory requirements for the Federal government to take long-term custodial care of non-11e.(2) byproduct material and that doing so may be outside the scope of the AEA.

Two States asked for clarification or guidance on the technical findings that need to be made for DOE to take title to a tailings impoundment in which non-11e.(2) byproduct material has been disposed of. Colorado asked for guidance on elements that need to be addressed, stating that Sections C and D of Paragraph 5, "Previous Staff Guidance," offered no such details. Washington asked for clarification of the statement that there be no groundwater restoration issues and whether this applied only to non-11e.(2) byproduct material disposal, or to previous (11e.(2) byproduct material) disposals at the site.

Two commenters expressed opinions on the mechanism to ensure DOE acceptance, for perpetual custody, of an 11e.(2) byproduct material site in which non-11e.(2) byproduct material has been disposed of. Wyoming proposed that the policy continue the requirement, contained in the previous guidance, that DOE (or the State in which the site is located) agree in advance to accept title to the specific site. Alternatively, Wyoming suggested that the licensee be required to provide financial surety of the same kind required of an operator of a LLW disposal facility. The AMC stated that providing DOE with an opportunity to comment on each proposed action to allow disposal of non-11e.(2) byproduct material is unnecessary. AMC stated that there are a number of ways of obtaining generic DOE approval and concurrence short of requiring specific approval for each license amendment and suggested that the Chairman of the NRC work out an alternate approach with the Secretary of Energy.

DOE requested 120 days, rather than the 30 days in Item 9 of the policy, to comment on a proposed license amendment to allow disposal of non-11e.(2) byproduct material in an impoundment.

A4.3 Discussion and Response to Comments

Authority for DOE to take title to non-11e.(2) byproduct material: We agree with Envirocare and Utah that the Uranium Mill Tailings Radiation Control Act (UMTRCA) (and Section 83 of the AEA) do not discuss transfer of radioactive material, other than 11e.(2) byproduct material, to DOE. However, UMTRCA does not preclude DOE from accepting an 11e.(2) byproduct material disposal site that also contained other radioactive material. DOE has agreed to accept custody of such sites, provided that NRC makes specific findings, as discussed in the Staff Analysis. Additionally, Section 151 (b) of the Nuclear Waste Policy Act of 1982 authorizes DOE to assume title and custody of low-level radioactive waste and the land on which it is disposed of. Since the non-11e.(2) byproduct material that would be allowed to be disposed of under this policy would be LLW (which is the reason that approval by LLW Compacts is required), DOE does have

authority to accept title and custody of an 11e.(2) byproduct material site in which such non-11e.(2) byproduct material has been disposed.

Clarification of technical findings: We agree with Colorado that the discussion in 5. *Previous Staff Guidance* does not offer details on the technical elements that need to be addressed to allow DOE to accept a site with non-11e.(2) byproduct material. Section 6.2, "Custody and Title Transfer" discusses findings that NRC must make to satisfy DOE and concludes that those findings will be satisfied by various technical reviews that are part of an NRC licensing review process. However, the policy and the Staff Analysis paper do not, and are not intended to, actually present guidance on technical elements of those reviews.

The statement related to groundwater restoration issues is in the context of disposal of non-11e.(2) byproduct material in tailings impoundments. However, Appendix A of Part 40 requires licensees to clean up groundwater contamination at 11e.(2) byproduct material disposal sites irrespective of whether non-11e.(2) byproduct material is disposed at the site, so the statement on groundwater restoration issues is valid for all 11e.(2) byproduct material sites transferred to DOE.

DOE/State approval of disposal: The NRC staff agrees with Wyoming that an explicit, advance commitment from DOE or the State, to take title to a tailings impoundment in which non-11e.(2) byproduct material has been disposed of should be required, to preclude future problems of title transfer. The guidance has been revised to include a concurrence by the State or DOE, within 120 days of the request, to take title to the impoundment after closure.

A4.4 Modifications to the Guidance

Item 9 of the guidance has been modified to include, within 120 days, a concurrence by DOE or the State in which the tailings impoundment is located.

A5.0 Tailings Impoundments as Disposal Sites

A5.1 Commenters

Cabot Corp. (4-8)

Don & Hiller for Envirocare of Utah, Inc. (6-5, 6-6)

American Mining Congress (14-2)

U.S. Representative Wayne Owens, Utah (15-1, 15-2, 15-3)

Utah Department of Environmental Quality (20-2, 20-3, 21-2, 21-3)

A5.2 Summary of Issues

Three commenters expressed opinions on the technical merits of disposing of non-11e.(2) byproduct material in tailings impoundments. Congressman Owens stated that tailings impoundments were never designed for, and are unsuitable for, disposal of radioactive waste. In contrast, the AMC stated that tailings impoundments are among the most attractive places to dispose of radioactive waste materials similar to uranium tailings and that the guidance should point out the advantages of using tailings impoundments for disposal of non-11e.(2) byproduct material. Cabot Corp. recommended a study of the characteristics of 11e.(2) byproduct material in impoundments and a comparison to source material and mixed waste. If the materials are similar, Cabot recommended that NRC and EPA work together to make regulatory and legislative changes to allow mixed waste to be disposed of in tailings impoundments.

Envirocare of Utah raised two concerns related to standards to be applied to impoundments disposing of non-11e.(2) byproduct material. Envirocare stated that licensees should be required to demonstrate that they have the capacity to dispose of all their existing 11e.(2) byproduct material before being authorized to dispose of non-11e.(2) byproduct material. Envirocare also stated that an 11e.(2) byproduct impoundment owner requesting to dispose of non-11e.(2) byproduct material demonstrate that the entire impoundment will comply with the current standards in Part 40, Appendix A. It was Envirocare's opinion that some older impoundments either do not comply with current standards or that NRC has interpreted standards differently for older impoundments.

Congressman Owens expressed general opposition to the use of mill tailings impoundments for disposal of wastes other than tailings generated at the site. He stated that the proposed policy reverses long-standing NRC policy against such disposals at tailings impoundments. He also stated that the House of Representatives incorporated a provision, in H.R. 776, that would prohibit disposal of non-11e.(2) byproduct material at tailings impoundments, unless the governor of the State agrees to such disposal.

Utah asked if a mill in "standby" status would be eligible to receive non-11e.(2) byproduct material. Utah also stated that such disposal in Utah would require compliance with Utah facility-siting and land-disposal laws that may be stricter than uranium regulatory requirements for siting a uranium mill.

A5.3 Discussion and Response to Comments

Suitability of tailings impoundments for disposals: Staff disagrees that tailings sites are unsuitable for disposal of other radioactive wastes. As the Staff Analysis points out, radioactive waste that would be allowed in tailings impoundments under the guidance is similar to 11e.(2) byproduct material in physical characteristics but doesn't meet the legal definition of 11e.(2) byproduct material. The standards that are applied to such disposals, (i.e., Appendix A of Part 40), were specifically written for 11e.(2) byproduct material and are technically valid for other material with the same characteristics. We agree with AMC that there are important advantages in disposing of non-11e.(2) byproduct material in tailings impoundments and discussed some of them in the Staff Analysis. However, the guidance is meant only to guide NRC staff in the review of a licensee request to allow a specific disposal and is therefore not the place for a general statement on the merits of disposing of non-11e.(2) byproduct material in tailings impoundments.

We agree with Cabot Corp. that 11e.(2) byproduct material in tailings impoundments are both radioactive and exhibit hazardous characteristics; the regulations in Appendix A of Part 40 specifically recognize this dual nature of 11e.(2) byproduct material. Further, at least some material currently classified as "mixed waste" is similar in physical and chemical characteristics to 11e.(2) byproduct material and therefore would appear, from a technical standpoint, to be candidate material for disposal in tailings impoundments. However, current legislation prevents such material from being considered for such disposals. EPA and NRC have worked and continue to work on issues related to mixed waste and regulatory difficulties in its disposal.

Standards to be applied: We agree with Envirocare that licensees should be required to demonstrate the capacity to properly dispose of existing 11e.(2) byproduct material. That demonstration would be part of the demonstration required under Item 7 of the proposed guidance, which requires the licensee to show compliance with the reclamation and closure criteria of Appendix A of Part 40. We agree with Envirocare that an impoundment owner show compliance with the current standards in Appendix A of Part 40. Again, that demonstration is required under Item 7. We disagree with Envirocare's statement that older impoundments are held to different standards than newer impoundments. All reclamation plans for tailings impoundments are evaluated using the same criteria (Appendix A). Although methodologies to evaluate compliance with Appendix A criteria have evolved over the years, the Commission has determined that unless significant health, safety, or environmental concerns are identified, it is not necessary to re-evaluate previously-approved reclamation plans.

Reversal of long-standing NRC policy: Staff disagrees that the proposed guidance reverses a long-standing policy against using uranium mill tailings sites for disposal of radioactive materials other than mill tailings produced at the site. There are two categories of such material; 11e.(2) byproduct material not produced at the disposal site and non-11e.(2) byproduct material. NRC has encouraged the disposal of 11e.(2) byproduct material produced at in-situ mills into tailings impoundments associated with conventional mills, to prevent the proliferation of small disposal sites. Criterion 2 of Part 40, Appendix A specifically addresses this. As for disposal of non-11e.(2) byproduct material in tailings impoundments, the subject of the proposed guidance, NRC has had guidance in place since July 1988. The proposed guidance is an update of the 1988 guidance and can in no way be considered a reversal of that guidance.

H.R. 776: NRC believes that requiring gubernatorial approval for disposal of non-11e.(2) byproduct material in tailings impoundments would be inappropriate because it would be detrimental to the development and implementation of national waste management strategies. NRC staff believes that approval of the disposal of non-11e.(2) byproduct material by regional LLW State compacts, rather than by individual States, would best ensure that neither national nor regional LLW programs are compromised. This provision was considered by Congress and did not survive final passage of the Energy Policy Act of 1992.

Eligibility of mills in standby status: Uranium mills in standby status are prime candidates to receive non-11e.(2) byproduct material, since their standby status allows them to resume processing ore. These sites would need to submit a license amendment request that demonstrated that the site could accommodate the material without significant effect to health, safety, or the environment and the site reclamation plan would need to be revised to address any impacts the additional material could impose.

State requirements for disposal site: We agree with Utah that Utah, or any other Agreement State with LLW licensing authority, could require tailings impoundments to meet State siting and land-disposal laws, before disposing of non-11e.(2) byproduct material. NRC, however, would not enforce State regulations at an NRC licensed site. Additionally, an exemption to LLW disposal requirements (Item 10. of the guidance) would have to be granted by the Agreement State in accordance with its regulations.

A5.4 Modifications to the Guidance

Item 10 of the guidance has been modified to indicate that if the impoundment is located in an Agreement State with LLW licensing authority, the exemption of the non-11e.(2) byproduct material from regulation as LLW must be granted by the State.

A6.0 Other Disposal Topics

A6.1 Commenters

Cabot Corp. (4-9)

Don & Hiller for Envirocare of Utah, Inc. (6-4, 6-9)

Office of Environmental Restoration, U. S. Department of Energy (23-2, 23-3)

A6.2 Summary of Issues

Cabot Corp. requested clarification on the level of documentation a licensee needs to provide in support of a request to dispose of non-11e.(2) byproduct material in a tailings impoundment.

Envirocare was concerned that the guidance was not adequate to address the documentation, required of licensees, to demonstrate that the disposal of non-11e.(2) byproduct material will have no additional effects on health or the environment. Envirocare indicated that a detailed environmental analysis would be required to address the transportation of the non-11e.(2) byproduct materials, and a new or supplemental environmental impact statement (EIS) would be needed for the disposal site. This commenter did not want the guidance to shortcut the National Environmental Policy Act (NEPA) and wanted any license amendment or exemption application to be subject to the environmental protection requirements of 10 CFR Part 51. The commenter also stated that the guidance may result in a proliferation of Part 61 LLW sites and may increase the number of waste transportation corridors.

DOE recommended that the guidance specifically preclude disposal of any materials that would compromise the long-term stability of any Title II site and also pointed out that the guidance should not be applied to Title I sites.

A6.3 Discussion and Response to Comments

Licensee documentation: The proposed policy and accompanying Staff Analysis do not, and are not intended to, provide detailed technical guidance to licensees proposing to dispose of non-11e.(2) byproduct material in tailings impoundments. Items 4 through 8 of the proposed guidance identify demonstrations or documentation that licensees must provide in support of a proposed non-11e.(2) byproduct disposal but do not provide technical details. Section 6 of the Staff Analysis contains general discussions of the demonstrations, but does not actually present guidance on the technical aspects. Detailed technical information is available in various NRC documents, including regulatory guides and technical NUREGs.

Health and environment: The staff agrees that a license amendment to allow disposal of non-11e.(2) byproduct material is subject to environmental review, under Part 51. Any license amendment requires an environmental report from the licensee under 10 CFR 51.61 and, under 10 CFR 51.21, an environmental assessment, unless it meets a criterion for categorical exclusion (10 CFR 51.22). The environmental review process would identify impacts from a proposed non-11e.(2) byproduct disposal, including transportation impacts. Item 6 of the proposed guidance adds an additional constraint in that it requires that there be no significant environmental impacts from the proposed disposal.

Proliferation of sites: The staff agrees with Envirocare that adoption of the proposed guidance will result in additional sites containing low-level radioactive wastes. However, no new disposal sites would be created as a result of the proposed guidance, since existing tailings impoundments would be used for disposals. In fact, the proposed guidance may result in fewer radioactive waste disposal sites, since material that might have been disposed of in a new site or that would take up valuable space in a LLW disposal facility could be disposed of in an existing tailings impoundment. Transportation effects will be addressed in the environmental review; however, most of the material proposed for disposal in an impoundment would have to be transported away from its present location, in any event.

Long-term stability: The staff agrees with DOE that disposal of non-11e.(2) byproduct material that would compromise the long-term stability of a tailings impoundment should be precluded. Item 7 of the proposed guidance requires compliance with the reclamation and closure criteria of Part 40, Appendix A. Reclamation and closure criteria are contained in Criteria 4 and 6 of Appendix A and include criteria to ensure the stability of the impoundment and control of the radiological hazards for 1000 years, to the extent achievable, and in any case, for at least 200 years.

Title I sites: The staff agrees with DOE that the proposed guidance is only intended to apply to currently licensed mill sites and not the UMTRCA Title I sites, which are, by definition, abandoned, inactive sites designated for remedial action under UMTRCA.

B1.0 Definition of Ore

B1.1 Commenters

Umetco Minerals Corp. (3-6)
Cabot Corp. (4-1)

Fuel Cycle Facilities Forum (5-7)
Crain, Caton & James for Rhone-Poulenc Inc. (7-2)
Bureau of Land Management, U. S. Dept. of the Interior
(10-1)
Office of the Governor, State of Wyoming (11-8)
Allied-Signal Inc. (12-2)
Rio Algom Mining Corp. (13-4, 13-5)
American Mining Congress (14-10)
Utah Department of Environmental Quality (21-10)

B1.2 Summary of Issues

Seven commenters agreed with the definition of ore, as developed in the Part B guidance. Several pointed out that this definition would allow secondary process wastes and other material that contained source material to be recycled. Rio Algom and the American Mining Congress indicated that mine waste treatment sludges and a wide variety of other materials should be allowed to be processed as ore. Cabot Corp. indicated that this policy would decrease the number of disposal sites.

Two commenters disagreed with the definition of ore: Rhone-Poulenc stated that it was too restrictive and did not agree with the recent Kerr-McGee court decision; Utah stated that it was overbroad and that NRC should define ore in a manner that would deter waste disposal.

Wyoming indicated that the proposed definition should be established by rulemaking, to avoid inconsistent definitions being applied.

B1.3 Discussion and Response to Comments

Definition of ore: The NRC staff agrees that, under the definition of ore provided in the guidance, materials such as water treatment sludges containing source material (but not EPA-regulated hazardous constituents) could be used as feed material at a uranium mill. The definition does not restrict rare earth tailings from being processed for uranium or thorium.

On April 27, 1990, the U. S. Court of Appeals (Kerr-McGee Corporation v. NRC, 903 F2d 1 [D.C. Cir. 1990]) ruled that NRC improperly interpreted UMTRCA as requiring extraction of thorium or uranium to be the first, chief, or principal reason for processing ore brought to a mill. NRC had decided that ore processed first for its rare earth content and later for thorium was not 11e.(2) byproduct material, because it had not been processed "primarily for its source material content." The court decision pointed out the legislative history of the definition of

11e.(2) byproduct material and that the word "primarily" has a range of meanings (as does ore). If off site tailings are designated as source material, it implies that they may be categorized as ore. The court concluded that UMTRCA was intended to bring previously unregulated radioactive end products of the source material extraction process within the scope of NRC regulation and to provide for safe stabilization of the mill tailings.

The NRC staff does not agree that the proposed definition of ore is overbroad. The definition is consistent with that generally used in the mineral extraction industry. We agree with Utah that the definition of ore alone would not preclude sham disposal; Item 3 of the proposed guidance, which requires a determination that the processing is primarily for its source material content, is intended to address that concern.

Rulemaking: Section 4 of Part B of the FRN, "Results of Staff Analysis," states that the time and resources required for rulemaking on the definition of ore are not justified, in light of the number of expected requests for processing of alternate feed material. As also stated, the staff will include a definition of ore when amendments to Part 40 are proposed. The staff considers that the promulgation of the guidance itself will prevent the application of inconsistent definitions of ore.

B2.0 Mixed Waste Determination

B2.1 Commenters

Umetco Minerals Corp. (3-7, 3-8, 3-10)
Cabot Corp. (4-2, 4-3)
Fuel Cycle Facilities Forum (5-8, 5-9)
Utah Department of Environmental Quality (21-12)

B2.2 Summary of Issues

Several commenters supported the position that feed materials exhibiting only a characteristic of hazardous waste would not be regulated as hazardous waste because of EPA's exemption for certain recycling activities. However, Utah questioned the NRC analysis of recycling and stated that just because a useable product is extracted from mixed waste does not exempt the remaining waste from RCRA, unless it is the extracted product that initially made it RCRA waste.

Cabot Corp. indicated that the phrase "... containing hazardous constituents, regulated under RCRA ...," in mixed waste determinations, was ambiguous, and asked for clarification, especially regarding heavy metals.

Cabot Corp. also suggested that the policy be broadened to allow disposal of additional classes of secondary materials, such as hazardous sludges and spent materials. Umetco Minerals and the Fuel Cycle Facilities Forum indicated that NRC should have the ability to authorize or deny use of feed material (subject to an environmental impact evaluation) containing a compound listed in 40 CFR 261.33, but not derived from activities listed as waste streams under 261.33(a)-(e).

Umetco Minerals agreed that evaluation of other constituents in alternate feed material is needed.

B2.3 Discussion and Response to Comments

Recycling: NRC disagrees with Utah's conclusion on recycling. The interpretation in the Staff Analysis is based on review of EPA regulations and discussions with EPA staff.

Mixed waste determination: In the Federal regulations, "mixed waste" refers to material containing both hazardous waste and source, special nuclear, or by-product material subject to the AEA. The purpose of Item 2 of the proposed guidance is to ensure that hazardous waste, subject to EPA regulation, is not disposed of in a tailings impoundment as a result of processing alternate

feed material. The discussion in the staff analysis is an overview of mixed waste issues, but is not intended to be a detailed technical guidance document. Each proposed request to process alternate feed materials will be evaluated by the staff, who may also consult with EPA or State officials on a specific mixed waste determination. Item 2 of the guidance has been revised to clarify the hazardous waste determination.

Policy considerations: The proposed policy cannot be any broader than existing legislation or regulations will allow nor can NRC expand its authority. The proposed guidance seeks to allow use of alternate feed material, without resulting in a tailings impoundment becoming subject to EPA RCRA regulation.

B2.4 Modifications to the Guidance

Item 2 of the guidance has been revised to clarify the hazardous waste determination.

B3.0 Determination That Processing Is Primarily for Source Material

B3.1 Commenters

- Umetco Minerals Corp. (3-9)
- Cabot Corp. (4-4, 4-5, 4-6)
- Fuel Cycle Facilities Forum (5-10, 5-11)
- Office of the Governor, State of Wyoming (11-3)
- American Mining Congress (14-11, 14-12)
- Utah Department of Environmental Quality (21-9, 21-11, 21-13)

B3.2 Summary of Issues

Several commenters discussed the basis or need for Item 3 of the proposed staff guidance and the related issue of "sham disposal." Cabot Corp. and the Fuel Cycle Facilities Forum argued that "sham recycling" is mostly a false issue, that NRC should not be concerned with the motivation of the mill owner/operator, and should eliminate this from consideration. Umetco Minerals Corp. supported the approach in the proposed guidance. Utah, however, believes that it does not protect against sham disposal.

Several commenters questioned the co-disposal test. Cabot Corp. indicated that the co-disposal test for determining if the ore is being processed primarily for its source-material content is too cumbersome and probably requires the licensee to provide costly documentation and a risk assessment. The commenter also requested that NRC develop more detailed and specific guidance

regarding the licensee's documentation in support of a co-disposal arrangement. The AMC indicated that the test is redundant or only minimally helpful.

Several commenters discussed the licensee certification test. Cabot Corp. recommended that the certification be only that the material is being accepted for bona fide reclamation of its uranium or thorium content. Utah stated that the policy should include licensee documentation, using current RCRA testing procedures to demonstrate that a proposed feed material is not a RCRA waste. Utah further indicated that the policy did not adequately address the potential for sham disposal, because any licensee could "certify" that the primary purpose of processing material, once it was received, was to extract uranium. Wyoming indicated that the test must go beyond a licensee's declaration of intent and should address the actual economics of the transaction. Other commenters stated that financial arrangements in the acquisition of feed materials are not relevant. AMC stated that demonstrating a known market and a willing purchaser for alternative feed is not always possible, but processing is still desirable and should not be considered "sham recycling." The Fuel Cycle Facilities Forum pointed out that some recyclers charge the suppliers of waste to take their material, and this is not sham recycling.

B3.3 Discussion and Response to Comments

"Sham disposal": As discussed in the Staff Analysis, the definition of 11e.(2) byproduct material requires that it be derived from ore processed primarily for its source material content. The determination discussed in Item 3 of the proposed guidance is to address that aspect of the definition. If ore is processed in a uranium mill primarily for its source material content, it is irrelevant whether the ore would have had to have been otherwise disposed of if it were not processed.

Co-disposal test: The NRC staff disagrees that the co-disposal test is redundant or only minimally helpful. The clearest way to show, beyond any doubt, that proposed feed material would be processed primarily for its source material content, is to show that it would be allowed to be disposed of in the tailings impoundment, in any case. Such a demonstration would dispel any accusation of "sham disposal." We agree that it may be cumbersome in some cases and that more detailed guidance would need to be provided to a licensee choosing to apply this test.

Licensee certification test: We agree that the determination of whether proposed feed material is RCRA waste should include demonstrations with documentation. Since Item 2 of the proposed

guidance requires that licensee demonstration, the certification with respect to RCRA aspects has been deleted from Item 3. We agree that a licensee certification may not be sufficient to prevent sham disposal, but also agree that the economic aspects may not be able to differentiate between legitimate uranium processing and sham disposal. We therefore have expanded the test to require both a licensee certification and justification. The licensee justification can be based on financial considerations, on the high uranium content of the ore, or on any other grounds that the licensee determines will justify that the proposed processing is primarily for the uranium content of the material and is not sham disposal. The staff determination of whether the test is met will be made on a case-specific basis.

B3.4 Modifications to the Guidance

Item 3 of the guidance has been revised to eliminate licensee certification of RCRA aspects of the proposed feed material and expanded to include licensee justification that the proposed processing is primarily for the source material content of the feed material. The wording of the co-disposal test has been modified to cite the accompanying guidance on disposal of non-11e.(2) byproduct material rather than the 1988 guidance or the SECY document that presented the draft version of the accompanying guidance.

B4.0 Other Topics on Alternate Feed Material

B4.1 Commenters

Umetco Mineral Corp. (3-11)
Office of the Governor, State of Wyoming (11-2, 11-6)
Allied-Signal Inc. (12-1)

B4.2 Summary of Issues

Umetco Minerals indicated that the disposal of wastes from alternate feed material should be permitted on a case-by-case basis and not be subject to LLW Compact approval, while Wyoming stated that approval should be obtained.

Wyoming indicated that the guidance should further discuss post-closure ownership and should require advance commitment from DOE or the State to take title to the impoundment, for waste generated as a result of the processing of alternate feed materials.

Allied-Signal stated that the term "waste" should not be used in describing alternate feed materials, because of the negative connotation associated with that term.

B4.3 Discussion and Response to Comments

LLW Compact approval: LLW Compact approval is not required for disposal of waste, from processing alternate feed material, under the proposed guidance, since such wastes would not be LLW and thus not under the purview of Compacts. The purpose of the proposed guidance is to ensure that processing of alternate feed materials would only be permitted if the resulting wastes meet the definition of 11e.(2) byproduct material. Processing of feed material that would not result in 11e.(2) byproduct material would not be permitted, under the proposed guidance.

Prior commitment to take title: Prior commitment, by DOE or the State in which the tailings impoundment is located, to take title to a disposal site after closure, is not needed. The purpose of the proposed guidance is to ensure that processing of alternate feed materials would only be permitted if the resulting wastes meet the definition of 11e.(2) byproduct material. DOE (or another Federal agency designated by the President) is required, under Section 83 of the AEA, to take title to such a site.

Use of the term "waste": We agree that the term "waste" should not be used to describe alternate feed materials. If material can be used in accordance with the proposed guidance to recover

source material, it is not waste. However, some material, from which source material could be recovered, would nevertheless meet the definition of hazardous or mixed waste, under EPA regulations. The proposed guidance would not allow such material to be processed in a licensed mill.

C1.0 Comments Applicable to Parts A and B

C1.1 Commenters

Utah Chapter Sierra Club (8-1)
Office of the Governor, State of Wyoming (11-4)
American Mining Congress (14-1, 14-3)
Utah Department of Environmental Quality (20-1, 21-1, 21-14)
John Darke (22-1)

C1.2 Summary of Issues

Two commenters expressed general views related to both of the guidance documents. The Utah Chapter Sierra Club opposed the use of tailings impoundments as disposal sites for materials imported from other locations. The commenter indicated that the problems found at existing sites should not be increased for the benefit of the mill owner. Utah indicated that rulemaking, rather than issuance of guidance, is the appropriate mechanism to institute the practices discussed in the proposed guidance documents.

John Darke questioned whether the guidance would apply only to future actions or would also be used to exonerate past actions. He also asked what written guidance, in each case, did the NRC use for reviewing and accepting license amendments for such disposal and processing activities.

There were several specific comments directed at both Part A and B of the FRN. Wyoming stated that the guidance should more clearly establish how material is to be characterized and should require independent testing and verification. AMC objected to the "definitional" approach to regulation of radioactive material and stated that NRC should develop broader and more flexible policies, to allow more material to be disposed in tailings impoundments.

Utah stated that DOE should sign off on any change in disposal practices at mills.

C1.3 Discussion and Response to Comments

Use of tailings impoundments: We disagree with the Sierra Club in that most tailings impoundments are excellent sites for disposal of high-volume, low-activity radioactive waste.

Rulemaking: The NRC staff does not consider the proposed guidance, with the possible exception of the definition of ore, to fall within the scope of rulemaking. The proposed guidance

provides the staff with procedures for implementing existing regulations. As stated in the Staff Analysis accompanying Part B, the staff concluded that the time and resources required for a separate rulemaking on the definition of ore are not justified, but that the definition will be added when Part 40 is next revised.

Applicability of guidance: Although the guidance is intended to apply to future actions, it draws on, and revises, past and existing NRC policies and practices. Past NRC actions were taken under policies and practices in effect at the time they were taken.

Characterization of material: Both guidance documents require conclusions that are based on required characterization. The presentation of technical implementation criteria and other details related to characterization is beyond the scope of this guidance.

Scope of guidance: The guidance documents address disposal and processing of off site material. The basis for limiting the policy was discussed in the Staff Analyses. NRC must work within the existing legislative mandates and regulatory framework. The Staff Analysis in Part A of the FRN discusses the general position taken by NRC staff.

DOE approval: As noted in Section 6.2 of the Staff Analysis of Part A of the FRN, there was considerable discussion between NRC and DOE during the development of the proposed guidance for disposal of non-11e.(2) byproduct material. Additionally, Item 9 of the guidance has been revised to include a concurrence by the State or DOE, within 120 days.

Prior commitment, by DOE, to take title to a disposal site that has processed alternate feed material, is not needed. DOE (or another Federal agency designated by the President) is required, under Section 83 of the AEA, to take title to such a site.

NUCLEAR REGULATORY COMMISSION

Uranium Mill Facilities, Notice of Two Guidance Documents:
Final Revised Guidance on Disposal of Non-Atomic Energy Act of
1954,

Section 11e.(2) Byproduct Material in Tailings Impoundments;
Final Position and Guidance on the Use of Uranium Mill Feed
Materials Other Than Natural Ores

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of final guidance.

SUMMARY: The U.S. Nuclear Regulatory Commission has finalized two uranium mill licensing guidance documents after consideration of comments received in response to a request for public comment in a Federal Register notice published May 13, 1992 (57 FR 20525). Only minor changes were made to the proposed guidance documents titled, "Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments" and "Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores."

ADDRESSES: Copies of the comments and the NRC staff responses, as well as SECY-91-243, can be examined at the Commission's Public Document Room at 2120 L Street NW. (lower level), Washington DC.

FOR FURTHER INFORMATION CONTACT: Myron Fliegel, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555; telephone (301) 415-6629.

SUPPLEMENTARY INFORMATION:

Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954,

Section 11e.(2) Byproduct Material in Tailings Impoundments

1. In reviewing licensee requests for the disposal of wastes that have radiological characteristics comparable to those of Atomic Energy Act (AEA) of 1954, Section 11e.(2) byproduct material [hereafter designated as "11e.(2) byproduct material"] in tailings impoundments, staff will follow the guidance set forth below. Since mill tailings impoundments are already regulated under 10 CFR Part 40, licensing of the receipt and

disposal of such material [hereafter designated as "non-11e.(2) byproduct material¹"] should also be done under 10 CFR Part 40.

2. Radioactive material not regulated under the AEA shall not be authorized for disposal in an 11e.(2) byproduct material impoundment.

3. Special nuclear material and Section 11e.(1) byproduct material waste should not be considered as candidates for disposal in a tailings impoundment, without compelling reasons to the contrary. If staff believes that such material should be disposed of in a tailings impoundment in a specific instance, a request for approval by the Commission should be prepared.

4. The 11e.(2) licensee must demonstrate that the material is not subject to applicable Resource Conservation and Recovery Act (RCRA) regulations or other U.S. Environmental Protection Agency (EPA) standards for hazardous or toxic wastes prior to disposal. To further ensure that RCRA hazardous waste is not inadvertently disposed of in mill tailings impoundments, the 11e.(2) licensee also must demonstrate, for waste containing source material, as defined under the AEA, that the waste does not also contain material classified as hazardous waste according to 40 CFR Part 261. In addition, the licensee must demonstrate that the non-11e.(2) material does not contain material regulated under other Federal statutes, such as the Toxic Substances Control Act. Thus, source material physically mixed with other material, would require evaluation in accordance with 40 CFR Part 261, or 40 CFR Part 761. (These provisions would cover material such as: characteristically hazardous waste; listed hazardous waste; and polychlorinated biphenyls.) The demonstration and testing should follow accepted EPA regulations and protocols.

5. The 11e.(2) licensee must demonstrate that there are no Comprehensive Environmental Response, Compensation and Liability Act issues related to the disposal of the non-11e.(2) byproduct material.

6. The 11e.(2) licensee must demonstrate that there will be no significant environmental impact from disposing of this material.

¹"non-11e.(2) byproduct material" as used here is simply an encompassing term for source, special nuclear, and 11e.(1) byproduct materials.

7. The 11e.(2) licensee must demonstrate that the proposed disposal will not compromise the reclamation of the tailings impoundment by demonstrating compliance with the reclamation and closure criteria of Appendix A of 10 CFR Part 40.

8. The 11e.(2) licensee must provide documentation showing approval by the Regional Low-Level Waste Compact in whose jurisdiction the waste originates as well as approval by the Compact in whose jurisdiction the disposal site is located.

9. The Department of Energy (DOE) and the State in which the tailings impoundment is located, should be informed of the Nuclear Regulatory Commission findings and proposed action, with a request to concur within 120 days. A concurrence and commitment from either DOE or the State to take title to the tailings impoundment after closure must be received before granting the license amendment to the 11e.(2) licensee.

10. The mechanism to authorize the disposal of non-11e.(2) byproduct material in a tailings impoundment is an amendment to the mill license under 10 CFR Part 40, authorizing the receipt of the material and its disposal. Additionally, an exemption to the requirements of 10 CFR Part 61, under the authority of § 61.6, must be granted. (If the tailings impoundment is located in an Agreement State with low-level waste licensing authority, the State must take appropriate action to exempt the non-11e.(2) byproduct material from regulation as low-level waste.) The license amendment and the § 61.6 exemption should be supported with a staff analysis addressing the issues discussed in this guidance.

Final Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores

Staff reviewing licensee requests to process alternate feed material (material other than natural ore) in uranium mills should follow the guidance presented below. Besides reviewing to determine compliance with appropriate aspects of Appendix A of 10 CFR Part 40, the staff should also address the following issues:

1. Determination of whether the feed material is ore.

For the tailings and wastes from the proposed processing to qualify as 11e.(2) byproduct material, the feed material must qualify as "ore." In determining whether the feed material is ore, the following definition of ore must be used:

Ore is a natural or native matter that may be mined and treated for the extraction of any of its constituents or any other matter from which source material is extracted in a licensed uranium or thorium mill.

2. Determination of whether the feed material contains hazardous waste.

If the proposed feed material contains hazardous waste, listed under subpart D §§ 261.30-33 of 40 CFR (or comparable RCRA authorized State regulations), it would be subject to EPA (or State) regulation under RCRA. To avoid the complexities of NRC/EPA dual regulation, such feed material will not be approved for processing at a licensed mill. If the licensee can show that the proposed feed material does not contain a listed hazardous waste, this issue is resolved.

Feed material exhibiting only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) would not be regulated as hazardous waste and could therefore be approved for recycling and extraction of source material. However, this does not apply to residues from water treatment, so acceptance of such residues as feed material will depend on their not containing any hazardous or characteristic hazardous waste. Staff may consult with EPA (or the State) before making a determination of whether the feed material contains hazardous waste.

3. Determination of whether the ore is being processed primarily for its source-material content.

For the tailings and waste from the proposed processing to qualify as 11e.(2) byproduct material, the ore must be processed primarily for its source-material content. There is concern that wastes that would have to be disposed of as radioactive or mixed waste would be proposed for processing at a uranium mill primarily to be able to dispose of it in the tailings pile as 11e.(2) byproduct material. In determining whether the proposed processing is primarily for the source-material content or for the disposal of waste, either of the following tests can be used:

a. Co-disposal test: Determine if the feed material would be approved for disposal in the tailings impoundment under the "Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments," or revisions or replacements to that guidance. If the material would be approved for disposal, it can be concluded that if a mill operator proposes to process it, the processing is primarily for the source-material content. The material would have to be physically and chemically similar to

11e.(2) byproduct material and not be subject to RCRA or other EPA hazardous-waste regulations, as discussed in the guidance.

b. Licensee certification and justification test: The licensee must certify under oath or affirmation that the feed material is to be processed primarily for the recovery of uranium and for no other primary purpose. The licensee must also justify, with reasonable documentation, the certification. The justification can be based on financial considerations, the high uranium content of the feed material, or other grounds. The determination that the proposed processing is primarily for the source material content must be made on a case-specific basis.

If it can be determined, using the aforementioned guidance, that the proposed feed material meets the definition of ore, that it will not introduce a hazardous waste not otherwise exempted, and that the primary purpose of its processing is for its source-material content, the request can be approved.

Dated at Rockville, Maryland, this ___th day of August 1995.
For the Nuclear Regulatory Commission.

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