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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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BEFORE THE PRESIDING OFFICER

DEPT. OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of)	
)	Docket No. 40-8681 - <i>MLA</i>
Umetco Minerals Corporation)	
)	ASLBP No. 92-666-01-MLA
(Materials License)	
No. SUA-1358))	

NRC STAFF'S BRIEF AND EVIDENCE ON
ISSUES RAISED BY THE STATE OF UTAH

INTRODUCTION

On June 2, 1992, amendment no. 30 was issued to license SUA-1358, held by Umetco Minerals Corporation (Umetco or licensee) for uranium milling at its White Mesa mill in Blanding, Utah. The amendment authorized plant testing of 600 tons of material received from the Teledyne Wah Chang facility in Albany, Oregon. On July 2, 1992, the Attorney General of the State of Utah requested a hearing concerning the amendment. The request was granted by Order dated August 5, 1992, and five issues of concern were admitted to the 10 C.F.R. Part 2, Subpart L proceeding. The Staff is a party to the proceeding.¹ A prehearing conference was held in Monticello, Utah on October 29, 1992. By Order and Memorandum dated November 6, 1992, a schedule was established for submission of written evidence by the parties on the five issues to be litigated. The

¹ NRC Staff's Response to Request for Hearing filed by the State of Utah, July 30, 1992.

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Staff hereby presents its brief and supporting evidence concerning the issues raised by the State of Utah.²

BACKGROUND

On January 18, 1989, Umetco Minerals Corporation submitted an application for an amendment to its license for uranium milling at the White Mesa Mill in Blanding, Utah.³ The amendment requested was for processing tests using as much as 600 wet tons of feed containing source material received from the Teledyne Wah Chang Company in Albany, Oregon (TWCA). The material consists of a sludge from the V-2 process wastewater storage pond which remained after processing of ore to recover zirconium. The material contains greater than 0.05 percent recoverable uranium, and tests showed no hazardous components. Umetco proposed to test the feasibility of processing the material for its uranium content, and to dispose of the remaining tailings in Umetco's White Mesa Mill impoundment. The State of Utah notified the Staff and Umetco of its objection to this proposal at the time of the amendment application. Utah claimed there was a question of jurisdiction over the material because it might be mixed waste, and that processing of the material would be a "sham disposal" of radioactive waste. In order to verify the contents of the material, the Staff obtained an analysis of the material by Oak Ridge National Laboratory (ORNL). The licensee had previously supplied an evaluation

² On December 14, 1992, counsel for the parties conferred by telephone to explore the possibility of settlement, but were unable to reach agreement.

³ Information regarding the background to the amendment at issue in this proceeding is set out in SECY-92-138 dated April 16, 1992. (See, Hearing File, Attachment 8 to the Staff's July 30, 1992 Response).

of the licensee's analysis by the Oregon Department of Environmental Quality (DEQ). In addition, Umetco certified its intended use of the material to extract uranium. The laboratory analyses by the licensee and ORNL, and the DEQ evaluation showed that (a) the TWCA feed material meets the definition of source material ore as defined in Section 11e.(2) of the Atomic Energy Act (AEA) and implementing Commission policy concerning previously processed feed materials, and (b) the TWCA feed material is not hazardous or mixed waste subject to Environmental Protection Agency regulation, pursuant to the Resource Conservation and Recovery Act (RCRA). These facts showed that the material is under NRC jurisdiction, and the Umetco certification that the TWCA feed material will be processed primarily for the source material content, showed the processing is not a sham disposal. Having ascertained that the proposed amendment complied with all applicable regulations, the Staff issued the amendment on June 2, 1992.

DISCUSSION

The five issues admitted by the Presiding Officer's Order dated November 6, 1992 are as follows:⁴

1. The appropriate characterization of the materials being tested by Umetco;
2. Jurisdictional authority between Utah and NRC;

⁴ Order and Memorandum, November 6, 1992, at 2. The Staff notes that the Presiding Officer provided Utah with a right of rebuttal of the licensee and Staff written presentations, even though the licensee has the burden of proof. 10 C.F.R. § 2.1237(b).

3. Responsibility of the U.S. Department of Energy to assume custody over the byproduct material after processing of the TWCA ore;
4. Responsibility of NRC to provide continuing oversight of Umetco's testing and processing of the TWCA material [for economic viability];
5. Whether conditions should attach to Umetco's license amendment to require submittal of additional information concerning the economics of processing the material.

A. The State Of Utah's Brief

On November 25, 1992, the State of Utah filed its brief (Utah Brief). Notwithstanding the fact that the five issues set out above were admitted to the proceeding, and discussed at the October 1992 prehearing conference, the issues described and the arguments made by Utah in its brief differ significantly from the issues admitted to the proceeding, and the brief makes no reference to the considerable evidence contained in the Hearing File.⁵ Utah now states that the NRC should require submittal of data by Umetco to determine the merits of any future amendment request by Umetco to receive additional TWCA material. Utah Brief at 2; 8. Thus, it appears that Utah no longer challenges the contents of the material on site, or the amendment before the Presiding Officer. Utah raises five new issues and addresses only one admitted issue.⁶

⁵ The evidence provided by Utah is comprised of a photograph of material at the White Mesa Mill; provisions of Utah state law and regulations regarding wastes; dictionary definitions of mining and mineral terms; Teledyne's materials license; and documents concerning the economics of uranium production.

⁶ In its brief, Utah attacks the NRC's policy concerning source material ore, and questions whether preprocessed feed materials "should be" part of the nuclear fuels cycle. Utah Brief at 4-5; 11-15; 19-21. Utah disregards the certification by the Oregon DEQ in
(continued...)

Utah's brief requests that (1) the NRC make an independent analysis of the TWCA materials; (2) controls be instituted by Umetco to assure present and future TWCA material is not hazardous waste; (3) the economic arrangements between Umetco and Teledyne be disclosed; (4) Umetco be required to report the economics of processing the TWCA material; (5) protocols be developed to determine that TWCA material received in the future is not hazardous waste; and (6) the NRC apply the Co-Disposal Test for non-Section 11e.(2) material to the TWCA material. Utah Brief at 29-30. Utah's brief addresses only the admitted issue of a report of the economics of processing the TWCA material, and does not address the other four issues admitted for litigation by the Presiding Officer. The Staff's brief addresses the five issues admitted to the proceeding and also provides responses to the new issues.

B. The Staff's Response

Section 2.1233(c) of Subpart L of the Commission's Rules of Practice requires the initial written presentation of the party that requested a hearing to describe in detail any deficiency or omission in the license application, with references to any particular section

⁶(...continued)

the Hearing File and claims that the NRC relied only on the licensee's determination that the TWCA material is not RCRA mixed or hazardous waste. Utah Brief at 6; 10; 15. Utah asserts that there may be more than one "primary purpose" to processing of ores and that if one primary purpose is waste disposal, then the State has jurisdiction over the material as solid or low level waste. Utah Brief at 8; 23-24. Utah states that the "crux of the issue" of its concern over the TWCA material is the economic arrangement between Teledyne and Umetco which may avoid significant costs for Teledyne to dispose of its zirconium tailings and which benefits Umetco by significantly reducing its costs of uranium production. Utah Brief at 22; 24-26. Utah asserts that the NRC must be required to apply the Commission's Co-Disposal policy for non-Section 11e.(2) waste disposal to the TWCA material. Utah Brief at 16; 26-29.

or portion of the application considered deficient, with detailed reasons why the application is considered deficient.⁷ However, the Utah Attorney General has failed to comply with these requirements and has impermissibly raised new issues not admitted by the Presiding Officer. Utah's request for hearing expressed concern over the mineral and chemical contents of the TWCA material received by Umetco.⁸ This concern led to questions of Utah's possible jurisdiction over the material, if it were actually low level waste, or EPA's jurisdiction, if it were hazardous waste. These concerns led in turn to a question of the Department of Energy's eventual custody of the mill tailings from the TWCA material if they were not accurately determined to be AEA Section 11e.(2) byproduct material. In addition, Utah raised a question as to whether the TWCA material was received by Umetco only for "sham disposal," rather than for extraction of uranium. *See*, Request for Hearing, at 2-3.

Utah's brief, on the other hand, does not question the application or the physical characteristics of the TWCA material received by Umetco, but seeks instead, a requirement for the Staff to follow a different procedure in its review of amendment applications. Utah also challenges the Commission's policy concerning alternate feed materials. Nevertheless, the Staff's review activities; possible future amendments; and the Commission's policy are all beyond the scope of this proceeding. In short, the Utah brief does not challenge Umetco's application for amendment but, rather, raises issues

⁷ The Presiding Officer directed Utah to comply with this provision in his Order and Memorandum (Hearing Procedure and Schedule), dated November 6, 1992, at 2.

⁸ "Request for a Hearing and Request for Action", dated July 2, 1992.

unrelated to the licensee's application for processing of the TWCA material, and the issues admitted to the proceeding. For this reason, the Staff believes Utah's brief should be rejected by the Presiding Officer without consideration. However, if the brief is considered, the Presiding Officer should find in favor of the licensee.

The following discussion of the evidence in the Hearing File and documents attached to this brief demonstrates, with respect to both the five admitted issues and the five new issues, that:

(1) the TWCA material received by Umetco at its White Mesa mill was analyzed by the licensee, Teledyne, and ORNL; evaluated by the Oregon DEQ and demonstrated to be uranium ore and not hazardous or mixed waste; possible future amendments are beyond the scope of this proceeding;

(2) the TWCA ore at the White Mesa Mill is under the NRC's jurisdiction for both milling of the uranium ore and the disposal of the Section 11e.(2) byproduct material pursuant to the Atomic Energy Act (AEA) and the NRC-Utah Agreement;

(3) the U.S. Department of Energy (DOE) is required by Section 83 of the AEA to take custody of all AEA Section 11e.(2) byproduct material but is not required to certify responsibility for any specific material, nor is the Staff obliged to apply procedures for disposal of non-Section 11e.(2) material to source material ore; and

(4/5) economic considerations are outside the zone of interests protected by the AEA and may not be the subject of litigation or Staff review.

1. The TWCA Material Is AEA Section 11e.(2) Ore, And Neither Hazardous Nor Mixed Waste

Prior to issuance of the amendment to the Umetco license, the NRC Staff obtained an analysis of the contents of the TWCA material by Oak Ridge National Laboratory. See, Attachment 6 to the Staff's July 30, 1992 Response. In addition, the Staff was

provided the results of an evaluation of the TWCA material by the Oregon DEQ by letter dated September 1, 1989, confirmed by letter dated July 1, 1992. The Oregon DEQ letters state that the TWCA material does not contain hazardous waste and that the analysis by DEQ was performed in accordance with the "Toxicity Characteristic Leaching Procedure Test" which complies with current EPA and DEQ procedures. *See*, Hearing File, letters from W. H. Dana, Oregon DEQ dated September 1, 1989 and July 1, 1992. Additional analyses of the TWCA material were performed by TWCA and Umetco, and the results were provided to the Staff. *See*, Hearing File, letters: (a) J. Hamrick to R.D. Smith, April 24, 1989, with attachment, "Characterization of V-2 Pond Contents"; (b) J. Hamrick to R.D. Smith, May 1, 1989, with attached letter dated April 24, 1989 from E. Riggs; (c) R.A. Van Horn to Ramon Hall, July 21, 1992, with attachment. The Staff obtained an independent analysis of the material prior to issuance of the amendment, and the Oregon DEQ is the source of the certification that the material is not hazardous waste. Consequently, the chemical content of the TWCA material has been thoroughly and extensively analyzed and determined to be processed ore containing source material and not hazardous waste. Utah's assertion that the Staff relied solely on the licensee's analysis of the TWCA material ignores the evidence in the Hearing File and is simply wrong.

A new issue raised by Utah challenges the contents of material which might be received by Umetco in connection with future amendments. Utah Brief 2; 8. However, any future material Umetco may receive from Teledyne must meet the same standards based on the same type of analyses performed of the material presently on site.

Moreover, consideration of any future amendment request is outside the scope of this proceeding which is limited to amendment no. 30. *See*, "UMETCO Minerals Corp.; Designation of Presiding Officer" 57 Fed. Reg. 33216, July 27, 1992, attached; *Wisconsin Electric Power Co.* (Point Beach Nuclear Plant, Units 1 and 2), ALAB-739, 18 NRC 335, 339 (1983) (jurisdiction of adjudicatory boards is limited to the subject matter designated in the Commission's notice of hearing.) This issue must be dismissed.

Utah substitutes for the admitted issue of the characteristics of the onsite material, a challenge to the Commission's policy concerning feed material which was issued in May 1992. Utah Brief 4-5, 11-15, 19-21. Utah attacks the Commission's "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." 57 Fed. Reg. 20525-20533, May 13, 1992. (Copy attached). This policy clarifies the definition of source material ores under the jurisdiction of the NRC, to include previously processed ores which are not hazardous or mixed waste, which contain source material. The definition of ore had been unclear in the past due to the NRC definitions which categorized materials according to their initial use, rather than the mineral and chemical characteristics. This situation was addressed by a federal court of appeals decision, discussed below, which subsequently led to the development and issuance of Commission policy regarding processed feed materials.

In the case which challenged the Commission's varying definitions of mill tailings, the Court of Appeals defined AEA Section 11e.(2) byproduct material as the residue of

material that is processed for its source material content, even if the material was previously processed for another component. *Kerr-McGee v. U.S. Nuclear Regulatory Com'n*, 903 F.2d 1, 7, (D.C. Cir. 1990). In providing this definition, the Court discussed the Uranium Mill Tailings Radiation Control Act of 1978 ("UMTRCA"), (Pub.L. No. 95-604, 92 Stat. 3021, 42 U.S.C. §§ 7911-7925) which added Section 11e.(2) to the Atomic Energy Act. *Id.* at 2-3. In reviewing the legislative history of the Act, the Court noted that the purpose of the UMTRCA was to subject uranium and thorium mill tailings to the NRC's licensing authority and to provide a comprehensive regulatory regime for the safe disposal and stabilization of the tailings. *Id.* at 3. The Court noted that the statute added a new category to the AEA's definition of byproduct material as follows:

the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

Id. To clarify the statute's definition, the Court noted the Supreme Court's definition of the word "primarily" as capable of a range of meanings extending from "first" or "chief" to "substantially," and concluded that tailings derived from ore that had been "substantially" processed for its source material content would qualify as Section 11e.(2) byproduct material. *Id.* at 7. The Court pointed out that the Section 11e.(2) amendment to the AEA was designed to extend the NRC's regulatory authority over all wastes resulting from the extraction or concentration of source materials in the course of the nuclear fuel cycle. *Id.* Because of this designation, the Court found that the NRC had erred by determining the character of waste materials solely on the objective for which

the feedstock was first or principally processed, rather than the physical characteristics of the material or its relationship to the nuclear fuel cycle. *Id.* Further, the Court stated that the term "ore" can describe material remaining after one component has been extracted. *Id.* Finally, the Court pointed out that Section 101 of UMTRCA states that:

a license for the production of any uranium product from residual radioactive materials shall not be treated as a license for production from ores . . . if such production is in accordance with section 7918(b) of this Title.

Id. (Section 7918(b) authorizes recovery of minerals prior to remedial action by the Secretary of the Interior). Accordingly, from this part of the statute, the Court found the clear implication that, unless production of uranium is performed in conjunction with site remediation by the Secretary of the Interior, extraction of uranium from residual radioactive materials is to be treated as production from ores. *Id.* at 7-8. Thus, the Court defined the word "ore" in AEA Section 11e.(2), as any material used for production of source material regardless of prior processing of the material.

Following the *Kerr-McGee* decision, the Staff prepared two Commission papers which discuss and apply the *Kerr-McGee* decision to the licensing of previously processed feedstock or sludge from mining, such as the TWCA material obtained by Umetco. *See*, SECY-91-347, attached, and SECY-92-138, previously submitted. The Staff sought Commission guidance in expanding the definition of ore in 10 C.F.R. Part 40, in regard to physical characteristics and the nuclear fuel cycle.⁹ In a Staff Requirements

⁹ The Atomic Energy Act, Section 11z. defines source material as (1) uranium, thorium or any other material which is determined by the Commission pursuant to the (continued...)

Memorandum (SRM) dated December 3, 1991, the Commission approved publication of the policy guidance on the use of feed material other than natural ore addressed in SECY-91-347, as well as guidance on the disposal of non-Section 11e.(2) materials at tailings impoundments. See, SRM, SECY-91-347, attached, and 57 Fed. Reg. 20525, referenced *supra*. Part B of this guidance sets out the requirements for approval of requests to process feed materials other than unrefined, unprocessed ores. The criteria to be used in reviewing such requests are as follows:

1. **Determination of whether the feed material is ore,** (defined as "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 is mixed waste.** (Mixed wastes are radioactive wastes that are not Section 11e.(2) byproduct material and contain hazardous wastes. See, 57 Fed. Reg. 20528)¹⁰ and

⁹(...continued)

provisions of section 61 to be source material; or (2) ores containing one or more of the foregoing materials, in such concentration as the Commission may by regulation determine from time to time. "Source material" is defined by 10 C.F.R. § 40.4 as (1) Uranium or thorium, or any combination thereof, in any physical or chemical form or (2) ores which contain by weight one-twentieth of one percent (0.05%) or more of: (i) Uranium, (ii) thorium or (iii) any combination thereof. Source material does not include special nuclear material. "Unrefined and unprocessed" ore is defined by § 40.4, but the single term "ore" is not defined. An October 28, 1992 *Federal Register* Notice indicates that the definition of "ore" in SECY-91-347 is likely to be included in a proposed revision to 10 C.F.R. Part 40. 57 Fed. Reg. 48752.

¹⁰ 10 C.F.R. § 61.2 defines "hazardous waste" as those wastes designated as hazardous by Environmental Protection Agency regulations in 40 C.F.R. Part 261 and "low-level waste" as radioactive waste not classified as high-level radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in Section 11e.(2) of the Atomic Energy Act. (See, "Waste," § 61.2).

3. **Determination of whether the ore is being processed primarily for its source material content** (by either (a) the co-disposal test of materials approved for disposal in the tailings impoundment or (b) the licensee certification test under oath or affirmation that (1) the feed material is being reclaimed or recycled in accord with RCRA or does not contain RCRA hazardous waste and (2) is to be processed primarily for the recovery of uranium and for no other primary purpose)

57 Fed. Reg. 20530-31.

Using these criteria, the Staff first inquired as to whether or not the TWCA material is ore. As indicated by the Umetco application and the Staff's June 2, 1992 report evaluating the Umetco application, the material from TWCA is ore processed to extract zirconium, and contains more than 0.05% uranium, which Umetco intends to extract. See, Attachments 1 and 11 to Staff's July 30 Response in the Hearing File. Consequently, the TWCA material meets the definition of source material ore as defined in *Kerr-McGee, supra*, and the Commission's licensing criteria, since it is "matter from which source material [will be] extracted in a licensed uranium mill," and contains at least 0.05% uranium, defined as source material by 10 C.F.R. § 40.4.

Secondly, the Staff reviewed analyses by Teledyne, ORNL, and Umetco, and the Oregon DEQ evaluation, and found the material to be neither hazardous nor mixed waste. See, Hearing File documents: (1) "Characterization of V-2 Pond Contents, dated June 3, 1987 (attached to letter dated April 24, 1989 from Umetco to NRC); (2) letter dated April 24, 1989, from Teledyne Wah Chang to Umetco; (3) Oak Ridge Laboratory analysis (attached to the NRC Inspection Report dated May 8, 1989); (4) letters dated September 1, 1989 and July 1, 1992 from W.H. Dana, Oregon Department of Environ-

mental Quality, to Teledyne Wah Chang and the NRC, respectively; and (5) the analysis attached to a letter dated July 21, 1992, from Umetco to the NRC.

Thirdly, by letter dated April 1, 1992, Umetco attested that the TWCA material was to be processed primarily for the recovery of uranium and for no other primary purpose. Therefore, the TWCA material at Umetco meets the three criteria for approval for the processing of alternate feed material.

Utah argues that the NRC's policy concerning source material ores looks only at the "back end" of processing. Utah Brief at 4-5. Utah asserts that the NRC must determine whether the TWCA material "should be" part of the nuclear fuels cycle. *Id.* at 5. Utah also states that the NRC's definition of ore is "overexpansive" and goes beyond the UMTRCA definition and intent. *Id.* at 11-13.

Contrary to Utah's characterization, the Commission's policy regarding source material ore does not address the end of processing but deals with the material to be processed. Source material ore is defined as:

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.

57 Fed. Reg. 20530. This definition addresses only the material from which source material can be obtained, and says nothing about the "back end" of processing, which is the tailings or byproduct material.

Utah's question as to whether the TWCA material or other previously processed material "should be" part of the nuclear fuel cycle is irrelevant. Materials either are or are not ores containing source material. There is no discretion in determining the

physical characteristics of material. The UMTRCA definition of AEA Section 11e.(2) byproduct material contains an all-inclusive definition of ore, since it states that byproduct material is the "tailings or waste produced by extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." 42 U.S.C. § 2014 (e)(2) (emphasis added).¹¹ Thus, in light of the statutory definition, there is no opportunity in this proceeding to question whether material such as the TWCA material "should be" defined as source material.

Utah also states that the *Kerr-McGee* decision does not apply to the TWCA material because it is not the "orphaned waste" referred to by the Court; and that the UMTRCA was not intended to foster introduction of a broad range of materials into uranium mills from which it is possible to extract uranium. Utah Brief at 14-15; 20-21. However, these assertions contradict the discussion of UMTRCA in *Kerr-McGee*, set out above. The Court's only use of the term "orphan" was in the context of mill tailings, where the Court stated that it was not valid to construe Section 11e.(2) such that it would "orphan" mill tailings with a source material content of less than the 0.05% minimum in 10 C.F.R. § 40.4. *Kerr-McGee, supra*, at 8. Since the issue in this proceeding is the definition of source material ore, Utah's reference to "orphaned wastes" is not clear. Moreover, Utah's assertion of the purpose of UMTRCA is at odds with the Court's interpretation of the purpose of the Act and is incorrect. As explained previously, the Court interpreted the purpose of the Act to extend the NRC's authority over all wastes

¹¹ The Staff notes that Utah presents multiple definitions of "ore" from several dictionaries, none of which conflict with the Staff's definition of ore. Utah Brief at 19.

from extraction or concentration of source material from any ore. The Commission's policy is based on UMTRCA and is consistent with the *Kerr-McGee* decision. Therefore, Utah's allegation that the Commission's policy is "overexpansive" is without merit.

2. The NRC Has Jurisdiction Over The TWCA Source Material Ore And Disposal Of The Section 11e.(2) Byproduct Material

By agreement dated March 29, 1984, the Commission delegated jurisdiction to the State of Utah over the following materials: (a) byproduct materials defined in Section 11e(1) of the Atomic Energy Act; (b) source materials; and (c) special nuclear materials in quantities not sufficient to form a critical mass. See, "Agreement between the United States Nuclear Regulatory Commission and the State of Utah," Attachment 2, to Staff's July 30, 1992 Response, Article I, pp. 2-3. Article II § F of this agreement specifically retains authority by the Commission over

The extraction or concentration of source material from source material ore and the management and disposal of the resulting byproduct material.

Id. Article II, p.3.¹² Thus, although the Commission delegated some jurisdiction to Utah, the Commission retained jurisdiction over all source material ores and Section 11e.(2) byproduct material in the State of Utah. Utah has changed its reason for claiming jurisdiction. Utah now presents a new argument that there is more than one "primary purpose" pursuant to Section 11e.(2), so that if Teledyne's purpose in shipping the TWCA material to Umetco is waste disposal, the characterization of the material is

¹² A May 8, 1990 amendment to this agreement, not pertinent here, expanded the jurisdiction of Utah over land disposal of nuclear materials under Utah's licensing authority, received from other persons. A copy of this amendment was served on the Presiding Officer and parties by letter from Staff Counsel, dated October 26, 1992. The amendment changed the section discussed here to "E."

somehow changed to mixed or solid waste which is under State jurisdiction regardless of Umetco's certification of purpose. Utah Brief at 8; 23-24.

Utah's interpretation is insupportable. The intention of the supplier of any source material ore is irrelevant to the (1) mineral and chemical contents of the ore and (2) the recipient's use of the ore. Even if Teledyne did transfer material solely to avoid waste disposal costs, the mineral content of the material is not changed, nor could Teledyne's intent alter Umetco's primary purpose of extraction of uranium from the material. As explained by the Court in *Kerr-McGee*, the "primary" or "substantial" purpose referred to by UMTRCA concerns the use of the ore to extract source material. *Kerr-McGee* at 7. The Court and UMTRCA do not even suggest that the purpose of the supplier of the ore is relevant in any way. Thus, Teledyne's purpose has no bearing on the definition of the material pursuant to the Atomic Energy Act. Consequently, since Umetco certified that it received the TWCA material for the primary purpose of extraction of uranium, the Commission has jurisdiction over the processing and disposal of the TWCA source material ore as set out in Article II of the NRC-Utah agreement. Therefore, Utah's argument concerning jurisdiction must be rejected.

3. The Department Of Energy Is Not Required To Attest That It Will Comply With The Statute Requiring Custody Of Section 11e.(2) Byproduct Material At Any Particular Site

As discussed above, the Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978, amended the Atomic Energy Act to specify uranium and thorium mill tailings as radioactive material to be licensed by the NRC as set out in Section 11e.(2) of the AEA. This statute also provides for ultimate custody of this material by the Department

of Energy, if not voluntarily retained by the states. *See*, Section 83 of the Atomic Energy Act, 42 U.S.C. § 2113. The issue admitted to the proceeding asked whether the Department of Energy should be required to certify that it will take ultimate custody of the Section 11e.(2) byproduct material to be produced by processing of the TWCA ore. However, Utah cites no authority for this proposal nor is there any requirement in the statute for DOE to certify its responsibility for any specific material or site. As demonstrated above, the TWCA material is uranium ore and the tailings will be Section 11e.(2) byproduct material. The Department of Energy is required by law to take eventual custody of it if not voluntarily retained by the state. Therefore, the only question raised by Utah, is the one previously answered, namely, whether the tailings from processing of the TWCA material will be Section 11e.(2) byproduct material. Having answered that question, the Department of Energy's legal obligation follows from the AEA, and there is no requirement or need for DOE to make the certification sought by Utah. This issue has no merit and must be dismissed.

As indicated previously, Utah, in its brief, raises a new issue asserting that the Staff should be required to use the procedures set out in the Commission's guidance for disposal of non-Section 11e.(2) wastes at tailings impoundments, for the TWCA material. Utah Brief at 16; 26-29. *See*, Commission Guidance, Part A, 57 Fed. Reg. 20526, attached. However, although Utah discusses the Commission's policy permitting some disposal of non-Section 11e.(2) waste material at the NRC licensed tailings sites, Utah does not explain why the Staff should be required to use non-Section 11e.(2) procedures for source material ore whose tailings will be Section 11e.(2) byproduct material. In

sum, Utah's proposals are factually and legally baseless, and impermissibly raise a new issue. They must, therefore, be rejected.

4/5. Utah's Concerns Regarding The Economics Of Processing The TWCA Material Are Outside The Zone Of Interests Of The Atomic Energy Act

It is well established that the zone of interests protected by the Atomic Energy Act concerns public health and safety and does not include general economic issues of the type raised by Utah. *Public Service Co. of New Hampshire, et. al.*, (Seabrook Station, Unit 2), CLI-84-6, 19 NRC 975, 978 (1984) citing, *Detroit Edison Co.* (Enrico Fermi Atomic Power Plant, Unit 2), ALAB-470, 7 NRC 473, 476 (1978). See also, *Philadelphia Electric Co.* (Limerick Generating Station, Units 1 and 2), ALAB-808, 21 NRC 1595, 1603 (1985) and ALAB-789, 20 NRC 1443, 1447 (1984). Accordingly, although Utah states that the economics of the Teledyne-Umetco transaction are the "crux" of the issue it wishes to raise before the Presiding Officer (Utah Brief at 22), such matters are outside the zone of interests protected by the Atomic Energy Act. The Staff does not and would not address these types of economic concerns during review of applications for licenses and amendments. Thus, the Presiding Officer should not require investigation of the economics of the proposed processing of the TWCA material by Umetco or impose a license condition requiring information about the economics of processing or disclosure of the Teledyne-Umetco financial agreement. Therefore, the issues raised by Utah proposing Staff investigation of the economics of processing the TWCA material, disclosure of the licensee's financial transaction, and a license condition requiring Umetco to submit information regarding the economics of processing the TWCA ore must be dismissed.

SUMMARY

The fundamental issue originally raised by the State of Utah and admitted to the proceeding was the proper characterization of the TWCA material at the White Mesa Mill. The documents referenced in the Hearing File clearly show that the TWCA material has been analyzed by independent laboratories which demonstrate that the material is uranium ore without hazardous waste. Since the TWCA material has been thoroughly analyzed, there is no reason to establish protocols to determine its contents, and possible future amendments are beyond the scope of this proceeding. Additionally, there is no doubt that the Commission has jurisdiction over the TWCA material pursuant to the Atomic Energy Act and the NRC-Utah Agreement, since the material has been shown to be source material ore. Moreover, the purpose of the transfer of the material by Teledyne could not change the characterization of the TWCA material, since the material is defined by its physical properties and Umetco's purpose of uranium extraction, pursuant to *Kerr-McGee, supra*, the AEA Section 11e.(2), and the Commission's policy. Further, as discussed above, there is no reason or requirement for certification by DOE of its eventual custody of the tailings from the TWCA material. Moreover, there is no basis for Utah's proposal that the Staff apply non-Section 11e.(2) disposal procedures to the Umetco application to process source material ore. Further, the economic considerations raised by Utah are not within the zone of interests of the Atomic Energy Act. Consequently, these types of economic considerations may not be investigated by the Staff nor may such information be required of licensees. Finally, it should be noted that, prior to issuance of the amendment allowing processing of the feed

material from Teledyne, the Staff informed the Commission of the Umetco application, the concerns of Utah about the chemical content of the TWCA material and the purpose of the transfer of the material, the Staff's review and findings based on Commission regulations and the published Commission policy, and the Commission itself approved the issuance of the amendment. See, SECY-92-138, April 16, 1992 and SRM, May 13, 1992.

In sum, the Staff properly issued amendment no. 30 to the Umetco license SUA-1358, for processing of the TWCA material. The issues raised by Utah have no basis in fact or law. Accordingly, for the reasons set out above, the issues must be resolved in favor of Umetco.

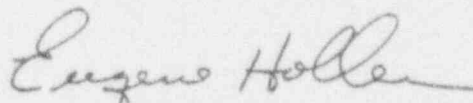
CONCLUSION

For the reasons stated, the Presiding Officer should find that no evidence of fact or law supports any issue raised by the State of Utah concerning the TWCA material at the Umetco White Mesa Mill. The Presiding Officer should, therefore, sustain the issuance of amendment no. 30 to Umetco license SUA-1358.

Respectfully submitted,



Colleen P. Woodhead
Counsel for NRC Staff



Eugene J. Holler
Counsel for NRC Staff

Dated at Rockville, Maryland
this 6th day of January, 1993



POLICY ISSUE

(Notation Vote)

October 25, 1991

SECY-91-347

For: The Commissioners

From: James M. Taylor
Executive Director
for Operations

Subject: URANIUM MILL FEED MATERIALS OTHER THAN NATURAL ORES

Purpose: To obtain Commission approval of staff promulgated guidance to define ore to encompass a broad range of uranium mill feed materials and to ensure that approval for feed material does not result in processing primarily to dispose of waste in tailings impoundments.

Summary: Licensees have proposed processing alternate feed materials (material other than natural ore) in uranium mills and disposing of the wastes as byproduct material, under Sec. 11e.(2) of the Atomic Energy Act of 1954, as amended (AEA). The definition of such material (hereafter referred to as 11e.(2) byproduct material) limits its origin to "ore processed primarily for its source material content," but does not provide a definition of ore. Based on the legislative history and on a 1990 Court of Appeals decision, the staff concludes that the term "ore" in the definition of byproduct material can be read to encompass a broad spectrum of feed materials and proposes a definition that makes this clear.

Contact:
Myron H. Fliegel, NMSS
492-0555

NOTE: TO BE MADE PUBLICLY AVAILABLE
WHEN THE FINAL SRM IS MADE
AVAILABLE

Two significant issues result from the staff's proposed definition of ore. The first is whether alternate feed material would have to be considered a Resource Conservation and Recovery Act (RCRA) regulated waste being treated. This issue has to be resolved on a case-specific basis because it depends on the characteristics of the material.

The second significant issue is the possibility of owners of radioactive material, that would otherwise have to be disposed of as waste, trying to convert that material into 11e.(2) byproduct material by processing it for its source material content. However, since the definition of byproduct material requires that the ore be processed "primarily for its source material content," material processed primarily to enable its disposal in a tailings impoundment would not qualify.

The staff presents four alternatives for Commission consideration and recommends the issuance of guidance on this subject as the preferred option.

Introduction: The Nuclear Regulatory Commission (NRC) and Agreement States have received, and in some cases approved, requests to allow a uranium mill to process feed material that was not natural (native, raw) uranium ore and dispose of the resulting waste in the facility's tailings impoundment. In those cases, the feed material was generally either processing wastes from other extraction procedures or the residue from mine-water treatment. These requests were handled on a case-by-case basis, and approvals were based on the interpretation that the proposed feed material was refined or processed ore. This designation of the feed material as ore is critical to the determination of disposal methods. This stems from the definition under Section 11e.(2) of the AEA, which limits byproduct material origin to "ore processed primarily for its source material content."

If the alternate feed material does not meet the definition of ore, or is not processed primarily for its source material, there are two concerns. The first is that complicated, dual regulation of the tailings pile by both NRC and the Environmental Protection Agency (EPA) under RCRA could result. The second concern is that the requested activity might jeopardize the ultimate transfer of the reclaimed tailings impoundment to the United States Government for perpetual custody and maintenance.

During the past three years, several additional requests for approval of alternate feed materials have been received. Decisions on those requests are pending until

development of a generic agency position. This analysis addresses the need for a definition of the term "ore" as used in the definition of byproduct material in the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA), and for criteria to determine if mill-processing wastes from alternate feed material will meet the requirements for byproduct material under a 10 CFR Part 40 license.

A related issue, also the subject of several recent requests, is the direct disposal in tailings impoundments of materials that are physically similar (radiation levels, chemical) to uranium mill tailings, but do not qualify as 11e.(2) byproduct material. This second category of requests, to dispose of non-11e.(2) byproduct material in tailings piles, was discussed in a previous paper (SECY-91-243).

Background:

The UMTRCA amended the AEA to include uranium and thorium mill tailings and other wastes from the milling process as material to be licensed by NRC. Specifically, the definition of byproduct material was revised in Section 11e of the AEA by adding:

"and (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content."

Such byproduct material includes all the wastes resulting from the milling process, not just the radioactive components. In addition, Title II of UMTRCA amended the AEA to explicitly exclude the requirement for EPA to permit 11e.(2) byproduct material under the RCRA. The definition and RCRA exemption of 11e.(2) byproduct material contrasts significantly with the situation for source material and low-level radioactive waste (LLW), where only the radioactive component is regulated under the authority of the AEA. EPA has to address hazardous constituents in those materials separately.

As a result of UMTRCA, the NRC amended 10 CFR Part 40, to regulate the uranium and thorium tailings and wastes from the milling processes. Thus, under normal operation, all tailings and wastes in an NRC or Agreement State licensed mill producing uranium or thorium are classified as "11e.(2) byproduct material," and are disposed of in tailings piles regulated under Part 40. They are not subject to EPA regulation, under RCRA. However, if material that did not qualify as 11e.(2) byproduct material

was placed in a mill's tailings impoundment, any hazardous constituents it contained could lead to regulation by EPA.

The UMTRCA also required either the United States, or the State in which the byproduct material has been disposed of, to maintain long-term custody of, and surveillance over, the byproduct material and the land used for its disposal. The AEA currently designates the Department of Energy (DOE) as the Federal "custodial agency." However, the UMTRCA specifically referred only to 11e.(2) byproduct material, and contains no provision allowing for the transfer of custody or title of any other material. While the application of Section 151(b) of the Nuclear Waste Policy Act could moot this issue in a specific case, it does not provide a legal basis for avoiding the labeling of a tailings disposal impoundment as either a mixed waste facility or a low-level waste disposal facility with the complex regulatory burdens these labels carry. One of the purposes of the guidance is to avoid these consequences.

The term "alternate feed materials" is used to indicate sources of uranium or thorium (throughout this paper references to uranium mills or ore should be taken to apply to thorium mills or ore, also), for a mill, that are not natural ore (ore is not defined in the AEA nor in UMTRCA). NRC staff has approved requests, in the form of license amendments, to allow processing of alternate feed materials in uranium mills. The requested license amendments generally were to allow the mill to use feed materials that were either processing wastes such as those derived through the extraction of other elements, or the residues from mine-water treatment.

The following are examples of license amendments approved in the past:

1. Processing Wastes from Other Operations

The Rio Algom Lisbon uranium mill in Utah has had its source-material license amended several times in the period from 1982 to 1987, so the mill could receive alternate feed materials. The mill was authorized to use processing wastes from: a uranium hexafluoride conversion facility, a niobium-tantalum recovery facility, and from an yttrium-lanthanides recovery facility. The materials were radiologically consistent with the existing tailings, but, in the first example, the fluoride was in higher concentration (greater than 1 percent) than in the existing tailings. In 1987, NRC also authorized the Quivira Mining Company to process raffinate sludge from a uranium hexafluoride

conversion plant. The uranium content of these wastes (the yttrium-lanthanides wastes averaged 1.17 percent and the uranium hexafluoride waste streams 0.6 to 6.7 percent) was higher than the average natural ore processed in the United States.

2. Wastes from Treatment of Mine Water

Some mines have to be dewatered as the shafts or pits fill with ground water. This water often contains dissolved constituents as a result of flow through and contact with ore bodies. It must therefore be treated before it can be discharged offsite. Treatment is often via ion-exchange columns which concentrate high levels of uranium on resins or the eluate. Several mills (Western Nuclear Inc., Split Rock, Wyoming, and Atlas Minerals Corp., Moab, Utah) have obtained license amendments and processed these residues/wastes through the mill.

The NRC staff approved the processing of these alternate feed materials, considering them to be refined and processed ore based on a legal analysis from Regional Counsel. This designation as ore is essential so that the residue from uranium processing can qualify as 11e.(2) byproduct material for the reasons stated earlier. With this interpretation, the resultant milling wastes were legitimately classified as 11e.(2) byproduct material.

However, because there is not a definition of ore in 10 CFR Part 40 and because of the potential policy issues involved in approving the processing of feed material other than natural ore, the staff has put recent requests on hold, pending establishment of an agency position. Two such requests currently awaiting a policy decision with respect to the definition of ore are:

1. The UMETCO White Mesa mill in Utah has accepted some material from the Teledyne Wah Chang Company (Albany, Oregon), derived from processing ore to recover zirconium. These wastes contain greater than 0.05 percent recoverable uranium and based on an available data review, the Department of Environmental Quality for the State of Oregon determined that these wastes are not "Hazardous Wastes," as defined under 40 CFR Part 261 or the State's hazardous waste regulations. It was understood that in addition to retaining the uranium, UMETCO would be compensated for accepting the material.

2. UMETCO has also requested that they be allowed to process the filtercake sludge from the Dawn Mining Company (Ford, Washington) mine-water treatment facility located at the Midnight Mine. The facility was built to treat the water that has been, and still is collecting in a uranium mine, preventing mine closure and contaminating the ground water. Treatment is necessary to obtain a permit to discharge the water offsite. The facility has performed a test run, treating water with lime to precipitate the uranium, and has generated centrifuge filtercake that has a uranium oxide content between 0.5 and 2 percent. The balance of the filtercake is primarily oxides and hydroxides of other cations. Except for the high lime content, the material is similar to other approved feed materials for the UMETCO White Mesa mill.

Discussion:

Uranium mills were designed and operated to process natural uranium-bearing rock (i.e., ore), usually mined nearby, in order to produce uranium (in the form of yellowcake). There usually was no question of other feed material or what constituted ore. However, there have been occasions when other material has been proposed for processing at uranium mills.

Mill tailings that meet the definition of 11e.(2) byproduct material must be stabilized in accordance with the criteria in Appendix A of 10 CFR Part 40, but are not subject to separate regulation as LLW or as hazardous waste under RCRA. The wastes and tailings produced in a uranium mill processing uranium-bearing rock from nearby mines would meet the definition of 11e.(2) byproduct material. However, it is not obvious, from the definition alone, whether wastes produced from processing feed material that is something other than rock mined from the earth meets the definition of 11e.(2) byproduct material.

Neither the AEA nor Part 40 contains a definition of "ore" as it appears in the definition of 11e.(2) byproduct material. The term "unrefined and unprocessed ore" is, however, defined separately in Part 40, in relation to the exemption in 10 CFR 40.13(b) for source material in ore, as:

"ore in its natural form prior to any processing, such as grinding, roasting or beneficiating, or refining."

The fact that the term "any ore", rather than "unrefined and unprocessed ore," is used in the definition of 11e.(2) byproduct material implies that a broader range of feed materials could be processed in a mill, with the wastes still being considered as 11e.(2) byproduct material.

Legislative history confirms the validity of a broad interpretation of the term "any ore." The definition of 11e.(2) byproduct material as originally presented in UMTRCA was:

"the tailings or wastes produced by the extraction or concentration of uranium or thorium from any source material."

However, the then current NRC Chairman Joseph Hendrie was concerned that tailings resulting from the processing of ore containing less than 0.05 percent uranium (the minimum concentration that would still meet the definition of source material) would fall outside the definition. To preclude that possibility, he suggested that the words "any ore processed primarily for its source material content" be substituted for "any source material."

In its decision in a case involving whether certain material in and near the West Chicago, Illinois, facility of Kerr-McGee Chemical Corporation (Kerr-McGee Corporation v. NRC, 903 F2d 1 [D.C. Cir. 1990]) was 11e.(2) byproduct material or source material, the United States Court of Appeals arrived at a broad interpretation of the definition of byproduct material in which the concept of ore is not restricted to native rock. It also cited Dr. Hendrie's testimony before Congress that led to the wording that now exists, in the AEA, defining 11e.(2) byproduct material as establishing that a broad reading of the definition was in line with Congressional expectations.

The previous discussion leads to the conclusion that the term "ore" in the definition of 11e.(2) byproduct material can be applied to a broad spectrum of feed materials from which uranium or thorium is extracted.

Following the Kerr-McGee court decision, cognizant staff met and agreed on a proposed definition of "ore" (Enclosure 1). The proposed definition, as used in the definition of 11e.(2) byproduct material, is:

"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."

Two major considerations that went into this proposed definition of ore were:

1. It is broad enough to include a wide variety of feed materials.

2. The definition continues to be tied into the nuclear fuel cycle. Because the extraction of uranium in a licensed mill remains the primary purpose of processing the feed material, it excludes secondary uranium side-stream recovery operations at mills processing ore for other metals. Thus, tailings from such side-stream operations at facilities that are not licensed as uranium or thorium mills, would not meet the definition of 11e.(2) byproduct material.

Although the intent of Congress in defining 11e.(2) byproduct material appears to have been to encompass the wastes from all feed material processed primarily for its source-material content, two significant issues result from the proposed definition of ore.

Since some of the feed material could contain hazardous components, in addition to source material, the first significant issue is whether material that would otherwise have to be disposed of as hazardous waste can be processed in a uranium mill and disposed of in the tailings impoundment as 11e.(2) byproduct material. If such feed material were not processed at a uranium mill, it would be classified as mixed waste (radioactivity regulated under AEA, plus hazardous waste regulated by EPA) and would thus have to be disposed of in a mixed waste facility.

To determine if the feed material would be regulated as hazardous waste, one must first determine if it meets the definition of solid waste, since hazardous waste is a subset of solid waste, under RCRA. The EPA regulations that implemented RCRA state (40 CFR 261.1-261.4) that solid waste is any discarded material not excluded in the regulations and includes recycled material. A material is recycled if it is reclaimed. Reclaimed is defined as, "...processed to recover a usable product..." Since alternate feed material would be reclaimed at the mill, it would be considered solid waste. It also would be classified as byproduct, which EPA defines as, "...not one of the primary products of a production process..." However, 40 CFR 261.2 c(3) provides that byproducts that exhibit only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) and that are being reclaimed are not regulated as hazardous waste. To support the "reclaimed" provision, it must be demonstrated that there is a known market for the material and documentation provided, such as contracts showing that a second person uses the material as an ingredient in a production process. An exception to this exemption is sludge from a water treatment plant, so residues from mine-water treatment would not qualify.

Since feed material is being used as an ore from which a useable product (uranium) is to be extracted, it is being reclaimed and thus would meet the EPA exemption to regulation as characteristic hazardous waste, except if it were mine-water treatment residues.

The feed material would still be hazardous waste if it contained a waste listed under Subpart D (Part 261.30-.33) of the EPA regulations. The listed wastes are in three categories: non-specific source wastes such as spent halogenated solvents, specific source wastes exemplified by wastes from wood preserving and petroleum refining, and third, discarded commercial chemical products such as chloroform. It is unlikely that feed material for uranium mills would contain such substances but assurances to that effect would need to be provided.

Constituents with hazardous characteristics that were in feed materials processed at a uranium mill would eventually end up in the tailings impoundment as 11e.(2) byproduct material. As such, they would be regulated under Appendix A of Part 40 which provides for monitoring and control of hazardous constituents. Thus, the ultimate fate of hazardous constituents that might be in uranium mill feed material would not escape regulatory oversight.

The second significant issue that must be addressed is the potential of converting material that would have to be disposed of as LLW or mixed waste into ore, for processing and disposal as 11e.(2) byproduct material. The possibility of converting such wastes to 11e.(2) byproduct material can be very attractive to owners of such material. This is because of the high cost of disposing of LLW and especially of mixed waste. An owner of such material could pay a mill operator substantially less to process it for its uranium content and dispose of the resulting 11e.(2) byproduct material than to dispose of the material as waste at an appropriate facility. Utah officials have already expressed concern (Enclosure 2) over "sham disposal" (i.e., converting a mill into a LLW disposal site).

The proposed definition of ore would include any material from which source material is extracted in a licensed mill and would thus seem to allow such sham disposals. However the definition of 11e.(2) byproduct material requires that the ore be processed "...primarily for its source material content" and thus would not permit such sham disposals. Material that was processed primarily to convert what would have been LLW or mixed waste into 11e.(2) byproduct material does not meet the definition of 11e.(2) byproduct material.

Therefore, as part of its review of a licensee proposal to process material other than natural ore, the staff would have to determine whether the processing was primarily for the source-material content or for the disposal of waste.

This determination would have to be made on a case-specific basis, but either of the following tests can be used:

1. Co-disposal test: If the feed material would be approved for disposal in the tailings impoundment, under the guidance contained in the July 27, 1988, memorandum from Hugh L. Thompson to Robert D. Martin, or subsequent revisions (e.g., as proposed in SECY-91-243), 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 SECY-91-243.
2. Licensee certification test: If the licensee certifies under oath or affirmation that the feed material: (1) is being reclaimed or recycled in accord with RCRA, or does not contain RCRA hazardous waste; and (2) is to be processed primarily for the recovery of uranium and for no other primary purpose, it can be accepted.

Alternatives: To address the issues just identified, the staff has analyzed the following alternatives:

- a. Continue to review each request on an ad hoc basis: This is the present practice of approving, based on the refined or processed-ore interpretation. Under this alternative, review of the requests that are currently pending could begin immediately. However, without clear guidance on a definition of ore and on how to address issues related to wastes from other facilities being proposed as mill-feed material, it may be difficult for staff to deal consistently with each such request. Also, without Agency guidance, it may be difficult to defend a staff decision, if challenged.
- b. Issue Agency guidance: The Agency guidance would include an interpretation of "ore" that is consistent with the definition of ore given previously and provide guidance on the sham-disposal issue just discussed. This would provide the staff with a basis to assess each request and thus contribute to consistent decisions. Review of requests that are currently pending could await promulgation of the Agency guidance which could be accomplished in a relatively short time, or could proceed immediately using the approach described herein until the guidance is finalized.

The disadvantage of this approach is that policy guidance can also be challenged and does not carry the weight of a regulation.

- c. Rulemaking: The proposed definition of ore would be incorporated into 10 CFR Part 40, and considerations relating to sham disposal would be addressed in the statement of considerations. This approach would provide the strongest basis for assessing each request. However, the resources required for a rulemaking addressing only this issue are considerably greater than for issuing already prepared Agency guidance. The relatively small number of requests for processing of alternate feed materials do not justify an immediate rulemaking effort.
- d. Not allow processing of alternate feed material: This approach would allow immediate resolution of pending requests. However, it would reflect a rigid definition of ore and the scope of NRC authority over tailings when a more flexible approach would be in the public interest.

Recommendation:

The staff recommends Alternative b., that is, to issue guidance on the definition of ore and on the issues related to feed material that could be considered waste. Although Agency guidance doesn't carry the weight of a regulation, the staff concludes that the time and resources required for rulemaking would not be justified in this instance. There are only a few mills that are in active or standby status and that would be able to process alternate feed material, and it is estimated that the Agency would receive only one or two such requests a year. However, the staff will incorporate the definition of ore into the regulations the next time amendments to Part 40 are proposed.

Issuance of the guidance would also assist Agreement States. As a policy, the Agreement States are not required to adopt this guidance as a matter of compatibility. However, if an Agreement State implements a similar policy, the State will have some assurance that NRC will not question its policy in program reviews and in making the determination as required in 10 CFR 150.15a(a) prior to the State terminating the license.

The staff has prepared Agency guidance on the use of alternate feed materials in uranium mills (Enclosure 3) and will transmit it to Region IV if the Commission approves Alternative b. Staff would review the pending requests, using this guidance, even if the guidance were issued in draft form.

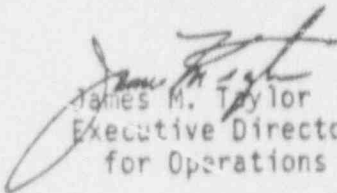
Resource

Implications:

Resources required to implement the recommended alternative, that is, to issue policy guidance in its present form, are minimal. If the guidance were issued in draft form for comment, estimated resources to review comments and finalize the guidance are estimated to be 0.3 full-time equivalent positions. Resources for guidance in the area of uranium recovery are included in the Division of Low-Level Waste Management and Decommissioning budget and are sufficient to cover this task.

Coordination:

The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of Governmental and Public Affairs has reviewed this paper and concurs.


James M. Taylor
Executive Director
for Operations

Enclosures:

1. May 24, 1990, Meeting Notes
2. August 8, 1991, Salt Lake
Tribune Article
3. NMSS Position and Guidance
Memo to RIV

Commissioners' comments or consent should be provided directly to the Office of the Secretary by COB Friday, November 8, 1991.

Commission Staff Office comments, if any, should be submitted to the Commissioners NLT Friday, November 1, 1991, with an information copy to the Office of the Secretary. If the paper is of such a nature that it requires additional review and comment, the Commissioners and the Secretariat should be apprised of when comments may be expected.

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MAY 24, 1990

NOTE FOR: R. Bangart
J. Greaves
J. Austin
P. Lohaus
J. Surmeier
M. Fliegel

FROM: G. Gnugnoli *GNG*

SUBJECT: MEETING BETWEEN OGC, NMSS AND REGION IV IN ROOM 12349 ON
MAY 23, 1990 ON THE WEST CHICAGO D.C. CIRCUIT COURT DECISION.

As a follow-up to our meeting on May 15, 1990, I prepared a list of definitions for ore, which might resolve problems both at the Kerr-McGee West Chicago site, as well as for the generic purpose of the non-byproduct Commingling SEDY Paper. The participants were:

<u>OGC</u>	<u>NMSS</u>	<u>Region IV</u>	<u>URFO</u>	<u>OPA/SP</u>
Crockett Fanner	Swift Gnugnoli	Brown	Hall	Sollenberger

After discussing the advantages and disadvantages of the candidate definitions, the following one was selected:

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.

A number of considerations went into the choice of this:

1. We didn't want to include waste streams from side stream recovery operations. We didn't want to be stuck with licensing other metal extraction tailings, such as copper tailings, because a nearby side stream recovery operation had processed the liquid waste for source material.
2. We wanted a definition that tied into the nuclear fuel cycle.
3. We didn't want to limit the variety of feedstocks, which could be processed at licensed uranium mills.
4. We wanted to include past practices which had used various materials in part of the feedstock inventory.

The OGC participants did not see any way to modify a definition for ore to allow disposal of spent resin and other discrete surface wastes from side stream recovery operations, without opening the door to include the phosphate and metal extraction wastes. OGC staff recommended that we pursue the option of congressional change to permit waste disposal of similar materials at byproduct disposal sites, subject to NRC codified criteria.

Enclosure 1

The OGC participants concluded that the Commission need not take any action to appeal or formally petition the court with regard to the April 27, 1990 decision. The NRC staff will now need to take action to modify 10 CFR Part 40, Section 40.4 to indicate the definition of one for the purposes of Part 40 activities.

Official Calls Plan to Reclaim Uranium a Sham

By Jim Woolf
THE SALT LAKE TRIBUNE

"Sham disposal" is what Larry Anderson calls a proposal to process radioactive industrial waste from Oregon at Umetco's White Mesa uranium mill near Blanding, San Juan County.

"Umetco has never made application to become a disposal site for low-level radioactive wastes, but has tried several devious methods to bring waste into the state of Utah. We will continue to oppose that," said Mr. Anderson, director of the Utah Division of Radiation Control.

Several officials from Umetco complained Wednesday that Mr. Anderson has unfairly prevented their facility from accepting what they consider an appropriate material, while clearing the way for Envirocare of Utah to accept a wide variety of radioactive materials at its Tooele County disposal site.

They have scheduled a meeting with Rep. David M. Adams, R-Monticello, to voice their complaints about Mr. Anderson and seek the legislator's assistance in scheduling a meeting with Gov. Norm Bangerter.

"We want to find out why we don't receive equal treatment from the state of Utah," said Wallace Brice, maintenance superintendent at the mill.

Richard Van Horn, director of operations at the mill, said his company's proposal makes "good environmental sense." And he described the radioactive industrial byproduct that White Mesa wants to process as a valuable source of uranium, not a waste.

The debate is over 3,300 tons of waste produced by Teledyne Wah Chang Albany, the Albany, Ore.-based division of Teledyne Industries. The waste, produced during the production of zirconium, contains low levels of uranium. The company also produces a smaller

quantity of waste containing higher levels of uranium.

Umetco first proposed in 1989 that the material be hauled to the White Mesa mill and be processed to remove the uranium. The waste, which is similar to processed uranium ore, would be deposited in the mill's tailings pond.

Mr. Anderson objected, claiming Umetco was trying to convert its mill into a disposal site for the nation's radioactive wastes. He said the purpose of the mill's tailings pond was to dispose of processed uranium ore, not accept industrial wastes.

As proof that the material is a waste, he estimates it will cost Teledyne between \$200 and \$300 per ton to ship the material to Utah and process it, while the value of the uranium is only \$40 per ton.

John Frost, director of reclamation for Umetco, refused to discuss the costs and business arrangements between Umetco and

Teledyne.

"The economics ought to be le up to us," he said.

Jim Denham, public-affairs coordinator for Teledyne, accused Mr. Anderson of "throwing a monkey wrench in the wheels of environmental progress" by opposing Umetco's plan.

"The whole concept of being environmentally aware is recycling. This is a way of taking a waste material and finding a way to reuse for a beneficial purpose," he said.

The 1989 proposal was stalled when officials from the Nuclear Regulatory Commission said they were uncertain whether Umetco license allowed the company to accept the Teledyne waste. The issue has been in limbo while the agency studied the issue.

Frank Ingram, spokesman for the Nuclear Regulatory Commission, said staff members are preparing a position paper for the commissioners.



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

MEMORANDUM FOR: Robert D. Martin, Regional Administrator
Region IV

FROM: Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards

SUBJECT: POSITION AND GUIDANCE ON THE USE OF ALTERNATE FEED
MATERIAL IN URANIUM MILLS

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

1. Is the feed material 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. Is the feed material mixed waste?

If the proposed feed material were hazardous or mixed waste, it would be subject to EPA 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 license can show that the proposed feed material would not be a hazardous or mixed waste, if not proposed for processing at the mill, 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. However, this does not apply to residues from water treatment, so acceptance of such residues as feed material will depend on their not being hazardous or mixed waste. Additionally, if proposed feed material contained a waste listed under Subpart D (261.30-33) of 40 CFR, it would be a hazardous waste and should not be approved.

3. Is the ore 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 was 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 guidance contained in the July 27, 1998, memorandum to you from Hugh L. Thompson, or subsequent revisions (e.g., as proposed in SECY-91-243). If it would, 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 SECY-91-243.
- b: Licensee certification test: If the licensee certifies under oath or affirmation that the feed material: (1) is being reclaimed or recycled in accord with RCRA, or does not contain RCRA hazardous waste; and (2) is to be processed primarily for the recovery of uranium and for no other primary purpose, it can be accepted.

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.

Robert M. Bernero, Director
Office of Nuclear Material Safety
and Safeguards



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

OFFICE OF THE
SECRETARY

December 3, 1991

MEMORANDUM FOR: James M. Taylor
Executive Director for Operations

FROM: Samuel J. Chilk, Secretary

SUBJECT: SECY-91-347 - URANIUM MILL FEED MATERIALS
OTHER THAN NATURAL ORES

The Commission (with all Commissioners agreeing) has approved the staff recommendation to publish policy guidance on the use of feed material other than natural ores, but directs the staff to formulate a single Federal Register notice combining this guidance with the notice to be published from SECY-91-243.

The issues addressed in SECY-91-347 relate closely to those discussed in SECY-91-243 - Disposal of Material Other than Atomic Energy Act of 1954, as amended, Section 11e.(2) Byproduct Material into Uranium Mill Tailings Impoundments. As such, the staff should prepare a single Federal Register notice that solicits public comment on the guidance contained in both SECY-91-347 and SECY-91-243. The Federal Register notice summary should explain that NRC is requesting public comment on two guidance documents and staff analyses. The content of SECY-91-347 should be placed in a format similar to that used for SECY-91-243 in which the proposed guidance is presented and followed by the staff analyses.

Since the proposed guidance information in SECY-91-347 addresses material that may be under the purview of EPA's RCRA regulations, the staff should specifically solicit the views of EPA on this matter during the comment period. As directed in the SRM dated September 20, 1991, the staff should also seek comments from the Agreement States and LLW compacts.

SECY NOTE: THIS SRM, SECY-91-347, AND THE VOTE SHEETS OF THE CHAIRMAN AND COMMISSIONERS ROGERS, CURTISS AND REMICK WILL BE MADE PUBLICLY AVAILABLE 10 WORKING DAYS FROM THE DATE OF THIS SRM

The combined Federal Register notice should be returned for Commission review in a negative consent format.

{EDG} (NMSS)

(SECY Suspense: 30 days after
Commission approval
of revisions to
SECY-91-243 FRN)

9100285

cc: The Chairman
Commissioner Rogers
Commissioner Curtiss
Commissioner Remick
OGC
OIG

contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

Since the Commission has made a final determination that the amendment involves no significant hazards consideration, if a hearing is requested, it will not stay the effectiveness of the amendment. Any hearing held would take place while the amendment is in effect.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555, Attention: Docketing and Services Branch, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC 20555, by the above date. Where petitions are filed during the last ten (10) days of the notice period, it is requested that the petitioner promptly so inform the Commission by a toll-free telephone call to Western Union at 1-(800) 325-8000 (in Missouri 1-(800) 342-6700). The Western Union operator should be given Datagram Identification Number 3737 and the following message addressed to (Project Director): petitioner's name and telephone number, date petition was mailed, plant name, and publication date and page number of this Federal Register notice. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and to the attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

Duquesne Light Company, et. al., Docket No. 50-412, Beaver Valley Power Station, Unit 2, Shippingport, Pennsylvania

Date of amendment request: January 13, 1992

Description of amendment request: The amendment revises Table 3.2-1 of Technical Specification 3.2.5, "DNB Parameters." Specifically, it lowers the value for the minimum required reactor coolant system (RCS) total flow rate from 274,800 gpm to 270,850 gpm and lowers the flow measurement uncertainty value, specified in the footnote, from 3.5% to 2.0%.

Date of issuance: April 23, 1992

Effective date: April 23, 1992

Amendment No.: 45

Facility Operating License No. NPF-73. Amendment revised the Technical Specifications. Public comments requested as to proposed no significant hazards consideration: No. The Commission's related evaluation of the amendment, finding of emergency circumstances, and final determination of no significant hazards consideration are contained in a Safety Evaluation dated April 23, 1992.

Local Public Document Room location: B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, Pennsylvania 15001.

Attorney for licensee: Gerald Charnoff, Esquire, Jay E. Silberg, Esquire, Shaw, Pittman, Potts & Trowbridge, 2300 N Street, NW., Washington, DC 20037.

NRC Project Director: John F. Stolz
Dated at Rockville, Maryland, this 5th day of May 1992.

For the Nuclear Regulatory Commission
Steven A. Varga,

Director, Division of Reactor Projects - I/II,
Office of Nuclear Reactor Regulation
[Doc. 92-11069 Filed 5-12-92; 8:45 am]

BILLING CODE 7590-01-F

Uranium Mill Facilities, Request for 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

AGENCY: Nuclear Regulatory Commission.

ACTION: Request for public comment.

SUMMARY: The Nuclear Regulatory Commission (NRC) is soliciting public comment on two 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," along with the associated staff analyses.

DATES: The comment period expires June 12, 1992.

ADDRESSES: Send written comments to Chief, Rules and Directives Review Branch, U.S. Nuclear Regulatory Commission, Washington, DC 20555, or hand deliver to 7920 Norfolk Avenue, Bethesda, MD, between 7:45 a.m. and 4:15 p.m. on Federal workdays.

FOR FURTHER INFORMATION CONTACT: Myron Fliegel, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555; telephone (301) 504-2555.

SUPPLEMENTARY INFORMATION:

Discussion

NRC staff has prepared a revision to its licensing guidance, issued July 27, 1988, on the disposal of material other than that defined in section 11e.(2) of the Atomic Energy Act of 1954 (AEA), as amended, in uranium mill tailings impoundments (Part A of the Supplementary Information). The staff has also prepared new licensing guidance on the processing of feed materials other than natural ores in uranium mills (Part B of the Supplementary Information). In developing the guidance, staff analyzed the policy and legal issues involved for each guidance document. In order to solicit input all interested parties on the issues associated with these guidance documents, the NRC is soliciting comments from the public, the Environmental Protection Agency, NRC Agreement States, and regional low-level waste compacts. Comments received will be considered in deciding whether the guidance documents should be revised.

In the guidance documents and associated staff analyses, the term "non-11e.(2) byproduct material" is used to refer to radioactive waste that is similar in physical and radiological characteristics (for example, low specific activity) to byproduct material, as defined in Section 11e.(2) of the AEA but does not meet the definition in that section because it is not derived from ore processed primarily for its source material content.

The staff analyses in Parts A and B contain additional definitions and extensive background information necessary to understand the summary guidance documents. The reader should consult the analyses for the terms and issues presented in context.

Part A—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 source material wastes that have radiological characteristics comparable to those of Atomic Energy Act (AEA) of 1954, section 11e.(2) byproduct material (hereafter designed as "11e(2) byproduct material") in tailings impoundments, staff will follow the guidance set forth below. Licensing of the receipt and disposal of such non-AEA, section 11e.(2) byproduct material (hereafter designated as "non-11e.(2) byproduct material") should be done under 10 CFR Part 40.

2. Naturally occurring and accelerator produced material waste shall not be authorized for disposal in an 11e.(2) byproduct material impoundment.

3. Special nuclear material and Section 11e.(1) product 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 regulations or other U.S. Environmental Protection Agency standards for hazardous or toxic wastes prior to disposal.

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 should be informed of the Nuclear Regulatory Commission findings and proposed action, with an opportunity to provide

comments within 30 days, 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. The license amendment and the § 61.6 exemption should be supported with a staff analysis paper addressing the issues discussed in this guidance.

NRC Staff Analysis of Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments

1. Introduction

Recently, the Nuclear Regulatory Commission (NRC) received several requests to allow activities other than the normal processing of native uranium ore at licensed uranium milling facilities. We have, in the past, received, and, in some cases, approved, similar requests. These requests have fallen into two categories. The first category of requests is to allow the processing of feedstock material that is not usually thought of as ore, for the extraction of uranium, and then dispose of the resulting wastes and tailings in the facility's tailings pile. The second category of requests is to allow the direct disposal of non-Atomic Energy Act (AEA) of 1954, section 11e.(2) byproduct material¹ (hereafter designated as "non-11e.(2) byproduct material"), that was not generated onsite, into tailings piles.

In assessing these requests, the staff has raised two policy concerns related to tailings piles. The first concern is that the requested activity might result in complicated, dual, or even multiple regulation of the tailings pile, and the second concern is that the requested activity might jeopardize the ultimate transfer to the United States Government, for perpetual custody and maintenance, of the reclaimed tailings pile.

This analysis addresses the second category of requests, that is, requests to dispose of non-11e.(2) byproduct material in tailings piles. Issues relating to such proposals requesting regulatory consideration of commingling of tailings with other radioactive wastes are

discussed. This analysis is limited to options involving commingling with existing tailings impoundments.

2. Background

The Uranium Mill Tailings Radiation Control Act (UMTRCA) of 1978 amended the AEA to specifically include uranium and thorium mill tailings and other wastes from the process as radioactive material to be licensed by NRC. Specifically, the definition of byproduct material was revised in Section 11e.(2) of the AEA, to include "... the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content."

The definition of byproduct material² in Section 11e.(2) of the AEA includes all the wastes resulting from the milling process, not just the radioactive components. In addition, Title II of UMTRCA amended the AEA to explicitly exclude the requirement for the Environmental Protection Agency (EPA) to permit 11e.(2) byproduct material under the Resource Conservation and Recovery Act (RCRA). The designation of 11e.(2) byproduct material contrasts significantly with the situation for source material³ and other radioactive materials controlled under the authority of the AEA. This possibility for dual regulation by both NRC and EPA can become an issue when dealing with mixed hazardous wastes. As a result of UMTRCA, NRC amended 10 CFR Part 40 to regulate the uranium and thorium tailings and wastes from the milling process. Thus, under normal operation, all the tailings and wastes in an NRC or Agreement State licensed mill producing uranium or thorium are classified as "11e.(2) byproduct material," and are disposed of in tailings piles regulated under Part 40. They are not subject to EPA regulation, under RCRA. However, the EPA Clean Air Act regulations still result in direct EPA permit authority over the mill tailings, whether or not they are commingled with non-11e.(2) byproduct material waste.

The UMTRCA also required and provided for long-term custody and surveillance of the byproduct material and the land use for its disposal. The Department of Energy (DOE) is the Federal agency currently designated as

¹ For the purposes of this analysis, the term "non-11e.(2) byproduct material" will be used to refer to radioactive waste that is similar to byproduct material, as defined in the AEA in section 11e.(2), but is not legally considered to be 11e.(2) byproduct material.

² Henceforth, byproduct material as defined in Section 11e.(2) of the AEA will be referred to as "11e.(2) byproduct material."

³ Except in the case of source material ore, source material consists only of the radioactive components of the waste, that is, uranium, thorium, or any combination of the two [10 CFR 40.4(h)].

the "custodial agency" by the AEA. However, the UMTRCA specifically referred only to 11e(2) byproduct material. UMTRCA contains no provision allowing for the transfer of custody or title, and hence for eventual long-term custody and surveillance of other material, even if the material were no more radioactive or toxic than the uranium or thorium tailings themselves.

3. The Category of Requests for Commingled Disposal To Be Addressed

Some licensees have proposed to directly dispose of radioactive wastes in existing uranium mill tailings sites. The materials vary from tailings from extraction processes for metals and rare-earth metals (such as copper, tantalum, columbium, zirconium) to spent resins from water-treatment processes. However, because these materials did not result from the extraction or concentration of uranium or thorium from ore, they are not 11e(2) byproduct material. Many of these "orphaned" wastes have elevated concentrations of source material, and unless otherwise exempted, require licensed control, if the materials exceed the 0.05-percent licensable (content of source material by weight) criterion in 10 CFR Part 40. Some of the wastes proposed for commingling contain radioactive material, not regulated by NRC, that classify as naturally-occurring and accelerator-produced radioactive material (NARM) and as such cannot be easily disposed of. In most of the proposals the staff has seen, disposal of these materials in tailings impoundments would not significantly increase the effect on the public health, safety, and environment. Because of the relatively large volumes of these wastes, low-level waste disposal options are limited. These wastes are similar to tailings in volume, radioactivity, and toxicity. Therefore, some waste producers see the mill tailings disposal sites as providing an economical option for such disposal.

4. Types of Wastes Being Proposed for Disposal Into Tailings Piles

The NRC and the Agreement States continue to receive requests for the direct disposal of non-11e(2) byproduct material into uranium mill tailings piles. The following general categories of non-11e(2) byproduct material illustrate the requests submitted to NRC and the Agreement States for disposal into uranium mill tailings piles licensed under authority established by title II of UMTRCA:

4.1 Mine Wastes

To mine uranium or other source material ore from underground or open-pit mines, operators frequently need to dewater the mine cavities. This results in quantities of mine water with suspended or dissolved constituents, some of which are source material. After processing the mine water to satisfy National Pollution Discharge Elimination System or other release requirements, the resultant clean mine water is then discharged offsite. In some cases, the resulting water-treatment filter-cake or sludge residues exceed the 0.05-percent licensable limit for source material. These residues do not satisfy the definition of 11e(2) byproduct material, because they do not result from the extraction or concentration of uranium or thorium from ore.

NRC and the Agreement States have been contacted by licensees and waste generators that desire to dispose of such filter-cake or sludge residue directly into the tailings piles at licensed uranium mill tailings sites. NRC has indicated that such material does not constitute 11e(2) byproduct material.

4.2 Secondary Process Wastes

Frequently, natural ores that are processed for rare-earth or other metals have significant concentrations of radioactive elements. Examples include copper, zirconium, and vanadium ores. Sometimes the uranium is captured in a side-stream recovery operation, in which uranium is precipitated out of the pregnant solution, before or after the rare earth or other metal. Although this side-stream recovery operation is licensed by NRC, the tailings (which consist of the crushed depleted ore and the depleted solution after recovery of metals and rare earths) are not 11e(2) byproduct material. This is because the ore was not processed primarily for its source material content, but for the rare earth or other metal. If the tails contain greater than 0.05 percent uranium and thorium, they would be source material and would thus be licensable and have to be disposed of in compliance with NRC regulations. NRC has received requests from NRC and Agreement State licensees to dispose of such tailings (resulting from processes to extract other metals) into licensed uranium mill tailings piles.

4.3 Formerly Utilized Sites Remedial Action Program (FUSRAP)

These sites primarily processed material, such as monazite sands, to extract thorium for commercial applications. Government contracts were issued for thorium source material

used in the Manhattan Engineering District and early Atomic Energy Commission programs. Wastes resulting from that processing and disposed of at these sites would qualify as 11e(2) byproduct material. However, it is not clear that all the contaminated material at these sites result from processing of ore for thorium. At some sites there was also processing for rare earths and other metals. The DOE, which accepts responsibility for the FUSRAP materials, is investigating options for disposal and control of these materials. DOE estimates that a total of 1.7 million cubic yards of material is located at sites in 13 States. Recent proposals have considered the transportation of FUSRAP materials from New Jersey to tailing piles at uranium mills in other States, such as Utah, Washington, and Wyoming.

4.4 NARM

These wastes result from a wide range of operations, but are not generally regulated by the AEA. Past requests for disposal in uranium mill tailing ponds have included contaminated resins from ion-exchange well-water purifying operations. NRC has also received inquiries regarding the disposal of construction scrap and radium-contaminated soil from old commercial operations. The individual States usually administer the regulatory responsibility over NARM, but many other Federal agencies have jurisdictional responsibilities related to NARM. These include EPA, the Consumer Product Safety Commission, the Department of Health and Human Services, and the Department of Labor. There is a State-licensed NARM disposal facility in Clive, Utah, licensed to Envirocare of Utah, Inc.

Two common elements run through most of the requests we have received for direct disposal of non-11e(2) byproduct material in tailings piles: the material is of low specific-activity, and the material is physically similar to 11e(2) byproduct material. Most of the requests are for bulk material like soil, crushed rock, or sludges, contaminated with source material in relatively low concentrations.

5. Previous Staff Guidance

In response to a request from Region IV, the Director of the Office of Nuclear Material Safety and Safeguards (NMSS) provided guidance for addressing requests to allow the disposal of non-11e(2) byproduct material in licensed mill tailings impoundments. The staff considered that the types of material proposed for such disposal could be

separated into two categories: (1) NARM wastes; and (2) wastes generated by operations regulated under the AEA.

In the guidance, the staff concluded that it would not approve a policy of allowing disposal of NARM wastes in tailings impoundments. A major concern was that NRC did not have authority to regulate NARM. If States or EPA became involved in regulation of NARM, a situation with duplicative jurisdiction with respect to the commingled radioactive materials could be created. Furthermore, the Commission's authority, under section 64c of the AEA, to approve alternatives to requirements, if the NARM wastes were to violate standards, would be impaired.

The staff viewed the other category, wastes generated by operations regulated under the AEA, as potentially acceptable in a mill tailings impoundment. Each such proposal should be considered on a case-specific basis. The guidance identified four findings that would have to be made before NRC would authorize such disposal.

As a result of this guidance, present policy is that NRC will approve of proposed disposals of source material on their individual merits, and only if the licensee can demonstrate the following:

- The disposal will have no significant additional effects on public safety and health, and the environment.
- The disposal will not compromise the reclamation of the tailings impoundment. In effect, disposal must comply with the reclamation and closure criteria in part 40, appendix A.
- The disposal will not result in the tailing becoming subject to RCRA or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- DOE or the State agrees, in advance, to take title to the site, upon completion of the reclamation.

The first two conditions are self-evident and will not be discussed further. The other two conditions can be sufficient obstacles to any routine decisions to allow such commingling of byproduct and non-11e.(2) byproduct materials under UMTRCA, and are discussed, along with other issues, below.

6. Major Issues

Although the technical, economic and societal advantages in some proposals have appeared to encourage such disposal of low specific-activity radioactive material into tailing piles, significant statutory and regulatory issues may complicate such disposal:

6.1 RCRA Authority and Mixed Waste

The NRC and Agreement State licensed uranium and thorium milling facilities do not fall under the jurisdiction of RCRA. The AEA explicitly excludes 11e.(2) byproduct material from RCRA permitting. However, radioactive wastes that are not 11e.(2) byproduct material and contain hazardous wastes are mixed wastes and are not exempted from RCRA. Commingling RCRA-regulated wastes with tailings could result in the application of the EPA RCRA regulations and separate EPA-permitting authority. The licensee would have to comply with both EPA- and AEA-related regulations.

NRC has revised the regulations in 10 CFR part 40 (including appendix A) to conform to the appropriate portions of EPA's RCRA regulations. The UMTRCA, as amended, stipulates that regulations for byproduct material be consistent with the Solid Waste Disposal Act (SWDA). On November 13, 1987, NRC conformed the regulations of part 40 to the EPA standards containing the RCRA provisions of the SWDA. However, if a licensee disposes of source material compounds or mixtures other than uranium or thorium ores, in the tailings piles, only the source material component of that compound or mixture would be excluded from the provisions of RCRA, if the compound or mixture qualifies as "hazardous." The bulk of such material would come under the purview of EPA RCRA regulations, resulting in dual regulation of the tailings impoundment. To preclude this dual regulatory authority and the complications resulting from it, including potential conflicts in requirements, the staff will not approve co-disposal of non-11e.(2) byproduct material containing hazardous constituents, regulated under RCRA.

6.2 Custody and Title Transfer

UMTRCA, title II, section 202 (Section 83 of the AEA) stipulates that such title to the 11e.(2) byproduct material and to the land used for the disposal of 11e.(2) byproduct material shall be transferred to either the United States Government or to the State in which the land is located. UMTRCA identifies DOE, or any other agency so designated by the President, to be the custodial agency for the U.S. Government. However, at its option, the State may elect to become the custodial licensee of the site after closure.

The NRC staff has two concerns relating to this transfer:

- The licensee for any site where the materials would be commingled would

need strong assurances or permission from either the State or DOE that the commingling would not compromise the eventual transfer of title and custody.

- The license cannot be legally terminated, unless the custody and title have been transferred as stipulated in Section 83 b(1)(A) of the AEA. Commingling of wastes could complicate this transfer and, hence, the termination of the license.

Because of these concerns, NRC staff wrote to DOE regarding its position on such transfers. DOE's response of June 10, 1988, indicated its uncertainty regarding authority to accept custodial transfer of tailings sites, where radioactive material not constituting 11e.(2) byproduct material has been commingled. In further correspondence, of October 5, 1988, and March 16, 1990, the NRC staff requested more specificity from DOE.

DOE's initial responses addressed the general issue of DOE acceptance of a Title II site containing non-11e.(2) byproduct material. DOE would have no objection to such a transfer provided it would not incur any additional costs related to the non-11e.(2) byproduct material. To ensure that there would be no additional costs due to the non-11e.(2) byproduct material, DOE suggested that NRC make the following findings before transfer:

- That there is no adverse environmental impact resulting from the disposal of these wastes (e.g., that the reclamation of the impoundment will not be impacted or that there are no groundwater restoration issues).
- There are no outstanding environmental compliance issues under any applicable environmental law (e.g., under RCRA or CERCLA).

These conditions will be met if the first three conditions (a-c) discussed in section 5, above, are demonstrated.

By letter dated January 23, 1991, DOE responded to five specific questions NRC staff had raised. The questions focused on the quantities and concentrations of several categories of non-11e.(2) byproduct material that DOE would find acceptable to dispose of in tailings impoundments without jeopardizing title transfer. DOE's response stated that criteria for determining acceptability should consider three issues:

- Concentrations of hazardous constituents in the non-11e.(2) byproduct materials.

Tables showing concentrations typically found in tailings were presented and the statement made that acceptable concentrations could be

selected from those tables. DOE also recommended that if concentrations in the non-11e.(2) byproduct material exceed those " * * * adopted from the tables (or other sources) * * *," a risk assessment be performed.

Thus, DOE described a process, with an ultimate resort to risk assessment, that could be used to determine acceptable concentrations of constituents in non-11e.(2) byproduct materials. The first demonstration, discussed in Section 5, above (that the disposal have no significant additional effects on public safety and health and the environment), encompasses this DOE consideration. Thus, this consideration will be met if the 1988 staff guidance is adhered to.

b. Impact of the additional material quantity (volume) of non-11e.(2) byproduct materials that the Title II site would have to accommodate.

DOE stated that this determination would have to be made on a site-specific basis, considering cost, schedule, design capacity of the impoundment, and the impact of errors and uncertainties in these projections and estimates. This consideration will be satisfied by the first two demonstrations discussed in section 5 above.

c. Possibility that Radon-222 releases from the disposal site would exceed the limits specified in 40 CFR 192.32, as a result of including non-11e.(2) byproduct materials in the title II site.

The Radon-222 release limits in 40 CFR 192.32 are incorporated in Criterion 6 of 10 CFR part 40, appendix A. Thus, this consideration will be satisfied by the second demonstration discussed in section 5 above.

Therefore, demonstration of the first three findings discussed in section 5 above (health and safety, compliance with appendix A, and no RCRA problems), should result in the fourth finding (DOE acceptance of title) being met. However, there is one remaining concern related to DOE's acceptance of title to tailings impoundments containing non-11e.(2) byproduct material. None of DOE's response to NRC on this question contains an unequivocal statement that, if NRC determines that the above discussed concerns and criteria are satisfied, DOE will accept title to such a site. For example, in the letter of November 8, 1990, DOE states "At this time, we would interpose no objection if NRC transferred * * *." At a meeting on December 11, 1990, NRC staff discussed this issue with DOE and a possible DOE concurrence on individual NRC decisions to allow non-11e.(2) byproduct material disposals. DOE responded by letter dated December 24, 1990, that its

concurrence would not be appropriate or necessary. However, in order to reduce the potential for future problems with transfer to DOE, NRC staff will notify DOE (with an opportunity to provide comments) of each impending decision to allow non-11e.(2) byproduct material disposal in a tailings impoundment.

6.3 Acceptable Wastes

As discussed in section 4 above, most of the requests for commingling non-11e.(2) byproduct material in tailings impoundments pertain to material similar to uranium mill tailings and wastes. These are usually bulk materials like soil, crushed rock, or sludges contaminated with low concentrations of source material or NARM.

For the reasons discussed in section 5 above, the staff will not approve commingling of NARM in tailings impoundments. However, current staff policy is to consider on a case-specific basis, wastes generated by operations regulated under the AEA. This would allow consideration of byproduct, as defined in section 11e.(1) of the AEA, and special nuclear materials (SNM) wastes, in addition to source material waste, for disposal in tailings impoundments. Recently, there have been inquiries to the staff about disposal of SNM-contaminated soils in tailings impoundments. For the reasons discussed below, NRC staff will not normally approve disposal of 11e.(1) byproduct material (hereafter referred to as "byproduct material") or of SNM in tailings impoundments.

Appendix A of 10 CFR part 40 presents criteria for the disposal of 11e.(2) byproduct material. These criteria, to properly dispose of this material, were developed based on the physical, chemical, and radiological characteristics of the material. The basis for most of the requests to commingle non-11e.(2) byproduct material in tailings impoundments is that the proposed material is similar in characteristics to 11e.(2) byproduct material, but does not meet the definition, which is based on process and history, rather than characteristics. Because of this similarity to 11e.(2) byproduct material, the criteria in appendix A are appropriate to use, to ensure safe disposal of this material.

This premise is only valid for the types of materials discussed in section 4, that is, bulk material whose primary radiological contamination is uranium, thorium, and radium in low concentrations. Wastes contaminated with byproduct material are sufficiently different that this premise may not be valid.

Soils contaminated with SNM may be similar to 11e.(2) byproduct material in physical, chemical, and radiological characteristics. There are, however, issues related to the disposal of byproduct material or SNM-contaminated soils in tailings impoundments that preclude routine approval, using the criteria in appendix A of 10 CFR part 40. Possession of byproduct material or SNM would have to be licensed under 10 CFR part 30 or 70, respectively, and not part 40. For SNM, the issues of criticality, material control and accountability, and site security might also have to be addressed.

For these reasons, the staff will not approve the disposal of byproduct material or SNM through the process discussed in this guidance and analysis. If there is a compelling reason, such as an immediate health and safety concern, to consider a specific proposed disposal of byproduct material or SNM in a tailings impoundment, approval of the Commission will be required.

6.4 Regulatory Issues

There are two regulatory issues that require consideration in developing this guidance:

a. Inasmuch as the kind of material under consideration is within the purview of the States under the Low Level Radioactive Waste Policy Amendments Act of 1985 (LLRWPA), the explicit approval of both the originating and the receiving Compact should be obtained if the waste is going anywhere but a designated Regional facility. Although this is not specifically a health and safety issue, it is an issue that could cause problems for the licensee and perhaps interfere with ultimate reclamation of the tailings. As a result, the policy should include a requirement that the licensee's submittal provide evidence of the Compacts' approval of the proposed disposal.

b. The material being proposed for disposal in tailings impoundments is material subject to the Commission's authority under the Atomic Energy Act. It is mostly, if not all, soil contaminated with uranium, thorium, and associated radium (which is a decay product of uranium and thorium) with radiological characteristics similar to those of tailings (11e.(2) byproduct material). The disposal of such material is regulated by 10 CFR 20.301 (10 CFR 20.2001 in the new part 20). That section states that no licensee shall dispose of licensed material except by (a) transfer to an authorized recipient as provided in 10 CFR part 30, 40, 60, 61, 70, or 72; or (b) disposal authorized pursuant to § 20.302

(20.2002) or part 61. Part 61 provides regulations for the disposal of radioactive waste received from others, while § 20.302 (20.2002) allow for disposal by a licensee of licensed material in a manner not otherwise authorized in the regulations.

Since the material proposed for disposal in tailings impoundments will be received from licensees other than the impoundment owner, 10 CFR part 61 is the appropriate regulation for such disposal. Disposal under § 20.302 has been used by licensees to dispose of their own wastes onsite. It does not preclude disposal of radioactive waste received from others. Section 20.2002 (in the new part 20), however, specifically limits disposals under that Part to licensed material generated in the licensee's activities, so it could not be used for the disposals discussed in this paper. The new Part 20 became effective on June 20, 1991, with discretion by licensees to defer implementation until January 1, 1993 (however, the Commission has under consideration a proposal to change the discretionary implementation date to January 1, 1994).

Thus, in order to allow disposal of non-11e.(2) byproduct material at a tailings impoundment, either a part 61 review would have to be performed and a license under 10 CFR part 61 would have to be issued to the mill operator, or an exemption to such a review and license would have to be granted. The part 61 license to allow disposal of the non-11e.(2) byproduct material in the tailings impoundment would be in addition to the amendment to the part 40 license authorizing receipt of the material.

The basic objectives of parts 40 and 61 are the same: protection of public health and safety and the environment by disposal that controls and isolates the wastes for long periods of time. Part 61.6 of title 10 allows for exemptions from the requirements of Part 61 if such an exemption will not endanger life or property. In order to avoid separate part 40 and 61 reviews and licenses for the disposal of non-11e.(2) byproduct material in tailings impoundments, an exemption under Part 61.6 will be granted for each such proposed commingling that meets all of the other requirements discussed in this analysis. The basis for such an exemption is that the proposed disposal will not endanger life and property by virtue of its meeting the criteria discussed in this analysis (which includes demonstrating that the reclamation and closure criteria in appendix A to part 40 will be met).

7. Results of Staff Analysis

NRC staff identified the following course of action with respect to requests for direct disposal of non-11e.(2) byproduct material in tailings impoundments:

1. Each proposal will be treated on its individual merits.
2. The guidance discussed in section 5, will be followed. Specifically, for each such co-disposal request, the staff will:
 - a. Reject the request if the non-11e.(2) byproduct material is NARM waste.
 - b. Determine whether the request is for bulk material contaminated with low concentrations of source material. If the request is for byproduct material or SNM, determine if there is a compelling reason, such as an immediate health and safety concern, to grant the request. If so, a specific request for approval by the Commission will be prepared.
 - c. Determine whether the proposed disposal will cause significant additional effects to public safety, health and the environment.
 - d. Determine whether the proposed disposal will compromise the reclamation of the tailings impoundment by determining whether compliance with the reclamation and closure criteria stated in 10 CFR part 40, appendix A, will be ensured.
 - e. Not approve the request if the non-11e.(2) byproduct material contains hazardous constituents regulated under RCRA.
 - f. Notify DOE (with an opportunity to provide comments) if the staff intends to approve the proposed disposal.
 - g. The licensee must provide documentation showing approval by the Regional LLW Compact in whose jurisdiction the waste originates as well as approved by the Compact in whose jurisdiction the disposal site is located.

3. Approval of the request will be accomplished through an amendment to the part 40 license of the impoundment owner.

Part B—Position and Guidance on the Use of Uranium Mill Feed Materials 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 Is Mixed Waste

Note to Federal Register notice readers: For further explanation of this complex issue, see the discussion section of the Staff Analysis that follows.

If the proposed feed material were hazardous or mixed waste, it would be subject to EPA 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 would not be a hazardous or mixed waste, if not proposed for processing at the mill, 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 being hazardous or mixed waste. Additionally, if proposed feed material contained a waste listed under Subpart D (261.30-39) of 40 CFR, it would be a hazardous waste and should not be approved.

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 was 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 guidance contained in the July 27, 1988, memorandum from Hugh L. Thompson to Robert D. Martin, or subsequent revisions (e.g., as described

in Part A of this notice). If it would, 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 Part A.

b. *Licensee certification test.* If the licensee certifies under oath or affirmation that the feed material: (1) is being reclaimed or recycled in accord with RCRA, or does not contain RCRA hazardous waste; and (2) is to be processed primarily for the recovery of uranium and for no other primary purpose, it can be accepted.

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.

NRC Staff Analysis of the Use of Uranium Mill Feed Materials Other Than Natural Ores

1. Introduction

The Nuclear Regulatory Commission (NRC) and Agreement States have received, and in some cases approved, requests to allow a uranium mill to process feed material that was not natural (native, raw) uranium ore and dispose of the resulting waste in the facility's tailings impoundment. In those cases, the feed material was generally either processing wastes from other extraction procedures or the residues from mine-water treatment. These requests were handled on a case-by-case basis, and approvals were based on the interpretation that the proposed feed material was refined or processed ore. This designation of the feed material as ore is critical to the determination of disposal methods. This stems from the definition under section 11e.(2) of the AEA, which limits byproduct material origin to "ore processed primarily for its source material content."

If the alternate feed material does not meet the definition of ore, or is not processed primarily for its source material, there are two concerns. The first is that complicated, dual regulation of the tailings pile by both NRC and the Environmental Protection Agency (EPA) under RCRA could result. The second concern is that the requested activity might jeopardize the ultimate transfer of the reclaimed tailings impoundment to

the State or Federal Government for perpetual custody and maintenance.

During the past three years, several additional requests for approval of alternate feed materials have been received. Decisions on those requests are pending until development of a generic agency position. The analysis addresses the need for a definition of the term "ore" as used in the definition of byproduct material in the Uranium Mill Tailings Radiation Control Act of 1978 (UMTRCA), and for criteria to determine if mill-processing wastes from alternate feed material will meet the requirements for byproduct material under a 10 CFR part 40 license.

2. Background

The UMTRCA amended the AEA to include uranium and thorium mill tailings and other wastes from the milling process as material to be licensed by NRC. Specifically, the definition of byproduct material was revised in section 11e of the AEA by adding:

And (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content.

Such byproduct material includes all the wastes resulting from the milling process, not just the radioactive components. In addition, title II of UMTRCA amended the AEA to explicitly exclude the requirement for EPA to permit 11e.(2) byproduct material under the RCRA. The definition and RCRA exemption of 11e.(2) byproduct material contrasts significantly with the situation for source material and low-level radioactive waste (LLW), where only the radioactive component is regulated under the authority of the AEA. EPA has to address hazardous constituents in those materials separately.

As a result of UMTRCA, the NRC amended 10 CFR Part 40, to regulate the uranium and thorium tailings and wastes from the milling processes. Thus, under normal operation, all tailings and wastes in an NRC or Agreement State licensed mill producing uranium or thorium are classified as "11e.(2) byproduct material," and are disposed of in tailings piles regulated under part 40. They are not subject to EPA regulation, under RCRA. However, if material that did not qualify as 11e.(2) byproduct material was placed in a mill's tailings impoundment, any hazardous constituents it contained could lead to regulation by EPA.

The UMTRCA also required either the United States, or the State in which the byproduct material has been disposed

of, to maintain long-term custody of, and surveillance over, the byproduct material and the land used for its disposal. The AEA currently designates the Department of Energy (DOE) as the Federal "custodial agency." However, the UMTRCA specifically referred only to 11e.(2) byproduct material, and contains no provision allowing for the transfer of custody or title of any other material. While the application of section 151(b) of the Nuclear Waste Policy Act could moot this issue in a specific case, it does not provide a legal basis for avoiding the labeling of a tailings disposal impoundment as either a mixed waste facility or a low-level waste disposal facility with the complex regulatory burdens these labels carry. One of the purposes of the guidance is to avoid these consequences.

The term "alternate feed materials" is used to indicate sources of uranium or thorium (throughout this analysis references to uranium mills or ore should be taken to apply to thorium mills or ore, also), for a mill, that are not natural ore (ore is not defined in the AEA nor in UMTRCA). NRC staff has approved requests, in the form of license amendments, to allow processing of alternate feed materials in uranium mills. The requested license amendments generally were to allow the mill to use feed materials that were either processing wastes such as those derived through the extraction of other elements, or the residues from mine-water treatment.

The following are examples of license amendments approved in the past:

1. Processing Wastes From Other Operations

The Rio Algom (Lisbon uranium mill in Utah) has had its source-material license amended several times in the period from 1982 to 1987, so the mill could receive alternate feed materials. The mill was authorized to use processing wastes from: a uranium hexafluoride conversion facility, a niobium-tantalum recovery facility, and from an yttrium-lanthanides recovery facility. The materials were radiologically consistent with the existing tailings, but, in the first example, the fluoride was in higher concentration (greater than one percent) than in the existing tailings. In 1987, NRC also authorized the Quivira Mining Company to process raffinate sludge from a uranium hexafluoride conversion plant. The uranium content of these wastes (the yttrium-lanthanides wastes averaged 1.17 percent and the uranium hexafluoride waste streams 0.6 to 6.7 percent) was higher than the average

natural ore processed in the United States.

2. Wastes From Treatment of Mine Water

Some mines have to be dewatered as the shafts or pits fill with ground-water. This water often contains dissolved constituents as a result of flow through and contact with ore bodies. It must therefore be treated before it can be discharged offsite. Treatment is often via ion-exchange columns which concentrate high levels of uranium on resins or the eluate. Several mills (Western Nuclear Inc., Split Rock, Wyoming, and Atlas Minerals Corp., Moab, Utah) have obtained license amendments and processed these residues/wastes through the mill.

The NRC staff approved the processing of these alternate feed materials, considering them to be refined and processed ore. This designation as ore is essential so that the residue from uranium processing can qualify as 11e.(2) byproduct material for the reasons stated earlier. With this interpretation, the resultant milling wastes were legitimately classified as 11e.(2) byproduct material.

However, because there is not a definition of ore in 10 CFR Part 40 and because of the potential policy issues involved in approving the processing of feed material other than natural ore, the staff has put recent requests on hold, pending establishment of an agency position.

3. Discussion

Uranium mills were designed and operated to process natural uranium-bearing rock (i.e., ore), usually mined nearby, in order to produce uranium (in the form of yellowcake). There usually was no question of other feed material or what constituted ore. However, there have been occasions when other material has been proposed for processing at uranium mills.

Mill tailings that meet the definition of 11e.(2) byproduct material must be stabilized in accordance with the criteria in appendix A of 10 CFR part 40, but are not subject to separate regulation as LLW or as hazardous waste under RCRA. The wastes and tailings produced in a uranium mill processing uranium-bearing rock from nearby mines would meet the definition of 11e.(2) byproduct material. However, it is not obvious, from the definition alone, whether wastes produced from processing feed material that is something other than rock mine from the earth meets the definition of 11e.(2) byproduct material.

Neither the AEA nor 10 CFR part 40 contains a definition of "ore" as it appears in the definition of 11e.(2) byproduct material. The term "unrefined and unprocessed ore" is, however, defined separately in part 40, in relation to the exemption in 10 CFR 40.13(b) for source material in ore, as:

Ore in its natural form prior to any processing, such as grinding, roasting or beneficiating, or refining.

The fact that the term "any ore," rather than "unrefined and unprocessed ore," is used in the definition of 11e.(2) byproduct material implies that a broader range of feed materials could be processed in a mill, with the wastes still being considered as 11e.(2) byproduct material.

Legislative history confirms the validity of a broad interpretation of the term "any ore." The definition of 11e.(2) byproduct material as originally presented in UMTRCA was:

The tailings or wastes produced by the extraction or concentration of uranium or thorium from any source material.

However, there was a concern that tailings resulting from the processing of ore containing less than 0.05 percent uranium (the minimum concentration that would still meet the definition of source material) would fall outside the definition. To preclude that possibility, it was suggested that the words "any or processed primarily for its source material content" be substituted for "any source material."

In its decision in a case involving whether certain material in and near the West Chicago, Illinois, facility of Kerr-McGee Chemical Corporation (Kerr-McGee Corporation v. NRC, 903 F.2d 1 (D.C. Cir. 1990)) was 11e.(2) byproduct material or source material, the United States Court of Appeals arrived at a broad interpretation of the definition of byproduct material in which the concept of ore is not restricted to native rock. It also cited Chairman Hendrie's testimony before Congress that led to the wording that now exists, in the AEA, defining 11e.(2) byproduct material as establishing that a broad reading of the definition was in line with Congressional expectations.

The previous discussion leads to the conclusion that the term "ore" in the definition of 11e.(2) byproduct material can be applied to a broad spectrum of feed materials from which uranium or thorium is extracted. In view of the foregoing, NRC staff has recommended a definition of ore as follows:

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.

Two major considerations that went into this proposed definition of ore were:

1. It is broad enough to include a wide variety of feed materials.

2. The definition continues to be tied into the nuclear fuel cycle. Because the extraction of uranium in a licensed mill remains the primary purpose of processing the feed material, it excludes secondary uranium side-stream recovery operations at mills processing ore for other metals. Thus, tailings from such side-stream operations at facilities that are not licensed as uranium or thorium mills, would not meet the definition of 11e.(2) byproduct material.

Although the intent of Congress in defining 11e.(2) byproduct material appears to have been to encompass the wastes from all feed material processed primarily for its source-material content, two significant issues result from the proposed definition of ore.

Since some of the feed material could contain hazardous components, in addition to source material, the first significant issue is whether material that would otherwise have to be disposed of as hazardous waste can be processed in a uranium mill and disposed of in the tailings impoundment as 11e.(2) byproduct material. If such feed material were not processed at a uranium mill, it would be classified as mixed waste (radioactivity regulated under AEA, plus hazardous waste regulated by EPA) and would thus have to be disposed of in a mixed waste facility.

To determine if the feed material would be regulated as hazardous waste, one must first determine if it meets the definition of solid waste, since hazardous waste is a subset of solid waste, under RCRA. The EPA regulations that implemented RCRA state (40 CFR 261.1-261.4) that solid waste is any discarded material not excluded in the regulations and includes recycled material. A material is recycled if it is reclaimed. Reclaimed is defined as, " * * * processed to recover a usable product * * *." Since alternate feed material would be reclaimed at the mill, it would be considered solid waste. It also would be classified as byproduct, which EPA defines as, " * * * not one of the primary products of a productive process * * *." However, 40 CFR 261.2c(3) provides that byproducts that exhibit only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) and that are being reclaimed are not regulated as hazardous waste. To support the "reclaimed" provision, it must be demonstrated that there is a known

market for the material and documentation provided, such as contracts showing that a second person uses the material as an ingredient in a production process. An exception to this exemption is sludge from a water treatment plant, so residues from mine-water treatment would not qualify.

Since feed material is being used as an ore from which a useable product (uranium) is to be extracted, it is being reclaimed and thus would meet the EPA exemption to regulation as characteristic hazardous waste, except if it were mine-water treatment residues.

The proposed feed material would still be hazardous waste if it contained a waste listed under subpart D (part 261.30-33) of the EPA regulations. It is unlikely that feed material for uranium mills would contain such substances. Assurances need to be provided that these proposed feed materials do not contain RCRA or TSCA listed hazardous wastes.

Constituents with hazardous characteristics that were in feed materials processed at a uranium mill would eventually end up in the tailings impoundment as 11e.(2) byproduct material. As such, they would be regulated under appendix A of 10 CFR part 40 which provides for monitoring and control of hazardous constituents. Thus, the ultimate fate of hazardous constituents that might be in uranium mill feed material would not escape regulatory oversight.

The second significant issue that must be addressed is the potential of converting material that would have to be disposed of as LLW or mixed waste into ore, for processing and disposal as 11e.(2) byproduct material. The possibility of converting such wastes to 11e.(2) byproduct material can be very attractive to owners of such material. This is because of the high cost of disposing of LLW and especially of mixed waste. An owner of such material could pay a mill operator substantially less to process it for its uranium content and dispose of the resulting 11e.(2) byproduct material than to dispose of the material as waste at an appropriate facility. Utah officials have already expressed concern over "sham disposal" (i.e., converting a mill into a LLW disposal site).

The proposed definition of ore would include any material from which source material is extracted in a licensed mill and would thus seem to allow such sham disposals. However the definition of 11e.(2) byproduct material requires that the ore be processed "primarily for its source material content" and thus would not permit such sham disposals. Material that was

processed primarily to convert what would have been LLW or mixed waste into 11e.(2) byproduct material would not meet the definition of 11e.(2) byproduct material.

Therefore, as part of its review of a licensee proposal to process material other than natural ore, the staff would have to determine whether the processing was primarily for the source-material content or for the disposal of waste. This determination would have to be made on a case-specific basis, but either of the following tests can be used:

1. *Co-disposal test:* If the feed material would be approved for disposal in the tailings impoundment, under the guidance contained in the July 27, 1988, memorandum from Hugh L. Thompson to Robert D. Martin, or subsequent revisions, 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 this notice.

2. *Licensee certificate test:* If the licensee certifies under oath or affirmation that the feed material: (1) is being reclaimed or recycled in accord with RCRA, or does not contain RCRA hazardous waste; and (2) is to be processed primarily for the recovery of uranium and for no other primary purpose, it can be accepted.

4. Results of Staff Analysis

The staff has determined to issue guidance on the definition of ore and on the issues related to feed material that could be considered waste. Although Agency guidance does not carry the weight of a regulation, the staff concludes that the time and resources required for rulemaking on the definition of ore would not be justified in this instance. There are only a few mills that are in active or standby status and that would be able to process alternate feed material, and it is estimated that the Agency would receive only one or two such requests a year. However, the staff will include the definition of ore in the next time amendments to 10 CFR Part 40 are proposed.

Issuance of the guidance would also assist Agreement States. As a policy, the Agreement States are not required to adopt this guidance as a matter of compatibility. However, if an Agreement State implements a similar policy, the State will have some assurance that NRC will not question its policy in program reviews and in making the determination as required in 10 CFR

150.15a(a) prior to the State terminating the license.

Dated at Rockville, Maryland, this 7th day of May 1992.

For the Nuclear Regulatory Commission,
John Surmeier,
Chief, Uranium Recovery Branch, Division of Low-Level Waste Management and Decommissioning, Office of Nuclear Material Safety and Safeguards.
[FR Doc. 92-11215 Filed 5-12-92; 8:45 am]
BILLING CODE 7590-01-M

[Docket No. 50-416]

Entergy Operations, Inc., Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity for Hearing

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of an amendment to Facility Operating License No. NPF-29, issued to Entergy Operations, Inc. (the licensee), for operation of the Grand Gulf Nuclear Station, Unit 1, located in Clairborne County, Mississippi.

The proposed amendment would increase the trip setpoints of four circuit breakers for the suppression pool makeup (SMPU) valves.

In response to NRC Generic Letter 89-10, the licensee has identified the need to replace four valve actuators for the SPMU valves with larger actuators. During the design change process, it was determined that the required larger valve actuator motors would require circuit breakers with higher trip setpoints. These trip setpoints are specified in the Technical Specifications (TS), and the licensee must request a TS change to permit the use of the higher trip setpoints. Allowing for the standard 30-day Federal Register notice would delay approval of the requested change beyond the scheduled end of the current refueling outage. The staff concludes that the licensee has provided an acceptable basis for its request and that exigent circumstances exist.

Before issuance of the proposed license amendment, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed

SYSTEM EXEMPTED FROM CERTAIN PROVISIONS OF THE ACT:

None.

Dated: July 21, 1992.

Herman G. Fleming,

NSF Privacy Act Officer.

[FR Doc. 92-17815 Filed 7-24-92; 8:45 am]

BILLING CODE 7800-01

NUCLEAR REGULATORY COMMISSION

[Docket No. 80-06681-MLA; ASLBP No. 92-656-01-MLA]

UMETCO Minerals Corp.; Designation of Presiding Officer

Pursuant to delegation by the Commission dated December 29, 1972, published in the Federal Register, 37 FR 28710 (1972), and §§ 2.105, 2.700, 2.702, 2.714, 2.714a, 2.717 and 2.721 of the Commission's Regulations, all as amended, a single member of the Atomic Safety and Licensing Board Panel is hereby designated to rule on petitions for leave to intervene and/or requests for hearing and, if necessary, to serve as the presiding officer to conduct the hearing in the event that an informal adjudicatory hearing is ordered in the following Materials Licensing proceeding.

In the Matter of UMETCO Minerals Corp., P.O. Box 1029, Grand Junction, Colorado 81502. Source Materials License No. SUA-1358.

The Presiding Officer is being designated pursuant to 10 CFR 2.1207 of the Commission's Regulations, "Informal Hearing Procedures for Materials Licensing Adjudications," published in the Federal Register, 54 FR 8269 (1989). This action is in response to requests for a hearing submitted by the State of Utah. The State of Utah desires a hearing on Amendment No. 30 to Source Materials License No. SUA-1358 issued to UMETCO on June 1, 1992.

The presiding officer in this proceeding is Administrative Judge James P. Gleason.

Following consultation with the Panel Chairman, pursuant to the provisions of 10 CFR 2.722, the Presiding Officer has appointed Administrative Judge Thomas D. Murphy to assist the Presiding Officer in taking evidence and in preparing a suitable record for review.

All correspondence, documents and other materials shall be filed with Judge Gleason and Judge Murphy in accordance with 10 CFR 2.701. Their addresses are:

Administrative Judge James P. Gleason, Presiding Officer, Atomic Safety and

Licensing Board Panel, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

Administrative Judge Thomas D. Murphy, Special Assistant, Atomic Safety and Licensing Board Panel, U.S. Nuclear Regulatory Commission, Washington, DC 20555.

Issued at Bethesda, Maryland, this 20th day of July 1992.

B. Paul Cotter, Jr.,

Chief Administrative Judge, Atomic Safety and Licensing Board Panel.

[FR Doc. 92-17867 Filed 7-24-92; 8:45 am]

BILLING CODE 7800-01-01

OFFICE OF PERSONNEL MANAGEMENT

Request for Clearance of Form RI 25-41

AGENCY: Office of Personnel Management.

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1980 (title 44, U.S. Code, chapter 35), this notice announces a request for clearance of a revised information collection. The RI 25-41 form, Initial Certification of Full-time School Attendance, is used to pay a survivor annuity to children who are 18 years of age or older. OPM must determine that the child is unmarried and a full-time student in a recognized school.

Approximately 1200 RI 25-41 forms will be completed per year. The form requires 90 minutes to complete. The annual burden is 1800 hours.

For copies of this proposal, contact C. Ronald Trueworthy on (703) 906-8550.

DATES: Comments on this proposal should be received on or before August 26, 1992.

ADDRESSES: Send or deliver comments to—

Lorraine Dettman, Chief, Operations Support Division, Retirement and Insurance Group, U.S. Office of Personnel Management, 1900 E Street, NW., Room 3349, Washington, DC 20415.

and

Joseph Lackey, OPM Desk Officer, Office of Information and Regulatory Affairs, Office of Management and Budget, New Executive Office Building, NW., Room 3002, Washington, DC 20503.

FOR INFORMATION REGARDING

ADMINISTRATIVE COORDINATION—

CONTACT: Mary Beth Smith-Toomey, Chief, Administrative Management Branch, (202) 606-0623.

U.S. Office of Personnel Management.

Douglas A. Brook,

Acting Director.

[FR Doc. 92-17572 Filed 7-24-92; 8:45 am]

BILLING CODE 5325-01-01

Request of a Revised Information Collection for Expedited Clearance of Standard Form 2809

AGENCY: Office of Personnel Management.

ACTION: Notice.

SUMMARY: In accordance with the Paperwork Reduction Act of 1980 (title 44, U.S. Code, chapter 35), this notice announces a request for an expedited clearance of a revised information collection. Standard Form 2809, Health Benefits Registration, is used by individuals who are eligible to enroll or change their enrollment status under the Federal Employees Health Benefits Program (FEHBP). The form has been revised to collect additional demographic information on individuals covered under FEHBP. This form must be available for the 1992 Federal Employees Health Benefit Open Season.

Approximately 12,000 Standard Forms 2809 will be completed per year. The form requires approximately 45 minutes to complete. The annual burden is 9,000 hours.

A draft copy of this proposal is appended to this notice.

DATES: Comments on this proposal should be received on or before August 1, 1992. OMB will act upon this clearance by August 4, 1992.

ADDRESSES: Send or deliver comments to—

Robert A. Yuran, Deputy Assistant Director, Office of Financial Control and Management, Retirement and Insurance Group, U.S. Office of Personnel Management, 1900 E Street, NW., Room 4312, Washington, DC 20415.

and

Joseph Lackey, OPM Desk Officer, Office of Information and Regulatory Affairs, Office of Management and Budget, New Executive Office Building, NW., Room 3002, Washington, DC 20503.

FOR INFORMATION REGARDING

ADMINISTRATIVE COORDINATION—

CONTACT: Mary Beth-Toomey, Chief, Administrative Management Branch, (202) 606-0623

U.S. Office of Personnel Management.

Douglas A. Brook,

Acting Director.

Federal Employees Health Benefits Program
Standard Form 2809 Revised June 1992

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE PRESIDING OFFICER

93 JAN -6 P4 21

In the Matter of)
) Docket No. 40-8681-MLA
UMETCO MINERALS CORPORATION)
) ASLBP No. 92-666-01-MLA
(Materials License No. SUA-1358))

CERTIFICATE OF SERVICE

I hereby certify that copies of the "NRC STAFF'S BRIEF AND EVIDENCE ON ISSUES RAISED BY THE STATE OF UTAH" in the above-captioned proceeding have been served on the following by deposit into the United States mail or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system this 6th day of January, 1993:

James P. Gleason*
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop: EW-439
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Thomas D. Murphy*
Administrative Judge
Atomic Safety and Licensing Board
Mail Stop: EW-439
U.S. Nuclear Regulatory Commission
Washington, DC 20555

A. Van Horn
Director of Operations
Umetco Minerals Corp.
2754 Compass Drive
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Denise Chancellor, Esq.
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Patrick J. Morgan, Esq.
General Counsel for Umetco Minerals
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39 Old Ridgebury Road
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Danbury, CT 06817

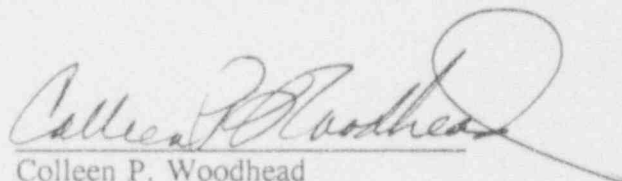
Henry W. Ipsen, Esq.
Holme Roberts & Owen
1700 Lincoln, Suite 4100
Denver, CO 80203

Office of the Commission Appellate
Adjudication*
Mail Stop: 16-G-15 OWFN
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Adjudicatory File (2)*
Atomic Safety and Licensing Board
Mail Stop: EW-439
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Office of the Secretary* (2)
ATTN: Docketing and Service
Mail Stop: 16-G-15 OWFN
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Atomic Safety and Licensing Board
Panel*
Mail Stop: EW-439
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Washington, DC 20555



Colleen P. Woodhead
Counsel for NRC Staff