BEFORE THE UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

IN THE MATTER OF	
INTERNATIONAL URANIUM (USA) CORPORATION	Docket No. 40-8681-MLA-4 ASLBP No. 98-748-03-MLA
(Source Material License Amendment)	March 15, 1999

INTERNATIONAL URANIUM (USA) CORPORATION'S ("IUSA'S") REPLY TO THE STATE OF UTAH'S PETITION FOR REVIEW OF LBP-99-5

I. INTRODUCTION

Pursuant to 10 C.F.R. §§ 2.1253 and 2.786(b)(3), International Uranium (USA) Corporation ("IUSA") submits this Reply to the State of Utah's *Petition For Review Of LBP-99-5* (February 26, 1999) (the "Petition").

The presiding officer was asked to decide whether NRC Staff properly applied the Commission's Final Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores (the "Alternate Feed Policy" or "Policy"), 60 Fed. Reg. 49,296 (1995), when it approved Amendment 6 to IUSA's source material license. That amendment allows IUSA to process at its White Mesa mill (the "Mill") as an alternate feed, tailings and related wastes generated by the Manhattan Engineering District ("MED") in the 1940s and disposed of at the Ashland 2 site in New York. By processing this material, IUSA recovers valuable uranium that would otherwise be discarded as waste and reduces the radioactivity of the resulting waste that is permanently disposed of in the Mill's licensed uranium mill tailings impoundment.

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Utah argues that in approving Amendment 6, the Commission Staff, and then the presiding officer, incorrectly concluded that IUSA had satisfied one of the central requirements of the Alternate Feed Policy – the requirement that an alternate feed be processed "primarily for its source material content." IUSA believes that the presiding officer correctly applied the Alternate Feed Policy to the facts of this case and rightly found that IUSA's processing of the Ashland 2 material satisfies the Policy's requirements. However, because of the important issues involved, IUSA does not oppose review by the Commission of the presiding officer's decision. By such review, the Commission could eliminate uncertainty regarding proper application of the Policy and end the waste of resources involved in repeated litigation of these issues.

II. ARGUMENT

A. The Presiding Officer Correctly Applied the Alternate Feed Policy

Contrary to Utah's assertion, the presiding officer did not fail to apply the Alternate Feed Policy. Petition at 4. Under the Policy, a material can be processed as an alternate feed if, among other things, the material will be processed "primarily for its source material content." The "certification" test is one of two alternative tests in the Policy for demonstrating that this requirement is met (the second test, the "co-disposal" test, is addressed later). Under the certification test, an applicant must certify that a proposed feed will be processed "primarily for its source material content," and justify this certification with "reasonable" documentation. 60 Fed. Reg. at 49,297.

The Policy gives the applicant wide latitude in justifying its certification, allowing the justification to be based on "financial considerations, the high uranium content of the ore, *or on any other grounds*." SECY 95-211, Attachment 3 at 17 (emphasis added). The presiding officer found that IUSA provided adequate justification for its certification. Initial Decision (hereinafter, "I.D.") at 5-7. Among the grounds justifying IUSA's certification were the following: (i) IUSA

would achieve significant economic advantages from processing the Ashland 2 material, including revenue received from the uranium extracted; (ii) IUSA is contractually committed to processing the Ashland 2 material to recover uranium, in consideration of receiving a recycling fee; (iii) recycling the Ashland 2 material through the Mill would recover substantial quantities of uranium (between 8,000 to 70,000 pounds, under Utah's own estimates[1]) that would otherwise be disposed of as waste; and (iv) IUSA has a track record of successfully extracting uranium from alternate feed materials.

Based on these grounds and others, the presiding officer agreed that it was *reasonable to expect* that IUSA would extract uranium from the Ashland 2 material and therefore would be processing the Ashland 2 material *primarily for its source material content,* consistent with Congress' intended meaning of that phrase. I.D. at 6-8. Congress in AEA Section 11e.(2) effectively created a presumption that if ore is processed for the extraction of uranium in a licensed uranium mill that is part of the nuclear fuel cycle (as opposed to being processed for uranium as part of a *secondary* or *side-stream* operation at a *non-fuel cycle* facility), the ore is processed "primarily for its source material content."[2] This same presumption necessarily is

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[1] Herbert Testimony at 6-8, attached to *State of Utah's Brief in Opposition to International Uranium (USA) Corporation's Source Material License Amendment*, Docket No. 40-8681-MLA-4 (December 7, 1998) (hereinafter "Utah Brief").

[2] Thus, for example, in Congressional hearings leading up to the passage of the Uranium Mill Tailings Radiation Control Act ("UMTRCA") then NRC Chairman, Joseph M. Hendrie, explained the meaning of the phrase "processed primarily for its source material content" as follows:

> *Mr. Chairman, the intent of the language is to keep NRC's regulatory authority primarily in the field of the nuclear fuel cycle.* Not to extend this out into such things as phosphate mining and perhaps even limestone mining which are operations that do disturb the radium-bearing crust of the Earth and produce some exposures *but those other activities are not connected with the nuclear fuel cycle.*

Uranium Mill Tailings Radiation Control Act of 1978, Hearings on H.R. 11698, H.R. 12229, H.R. 12938, H.R. 12535, H.R. 13049 and H.R. 13650, Subcomm. On Energy and Power, House Comm. On Interstate and Foreign Commerce, 95th Cong. at 343-44 (1978). Similarly, as NRC Staff explained in the context of the Policy:

> Sometimes [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.

Footnote continued on next page

incorporated into the Alternate Feed Policy, since the statutory language must have the same meaning in the Policy as in the AEA. However, the Alternate Feed Policy also recognizes that unlike conventional ores, alternate feeds can vary widely in their physical characteristics, and that, therefore, it may not be reasonable to expect that uranium will be extracted from every potential alternate feed. Hence, the certification and co-disposal tests are used to determine whether it is reasonable to expect that uranium will be extracted from a proposed alternate feed. If so, it is appropriate to apply the presumption that the feed will be "processed primarily for its source material content." If it is not reasonable to expect that uranium will be extracted from a proposed alternate feed and no uranium is extracted (or if it is reasonable to expect that uranium will be extracted but a good faith effort to extract uranium is not made and no uranium is extracted), then the presumption would not apply and processing that feed through a uranium mill would constitute "sham disposal."[3] I.D. at 6.

Surprisingly, Utah asserts that the presiding officer should not have looked to Congressional intent in interpreting what is meant by the phrase "processed primarily for its

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Footnote continued from previous page

> Although this side-stream operation is licensed by NRC, the tailings . . . 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.

57 Fed. Reg. at 20,527. Similarly,

> The definition [of "ore" as used in the Policy] continues to be tied to the nuclear fuel cycle. Because the extraction of uranium in a licensed mill remains the primary purpose of processing feed material, it excludes secondary uranium sidestream recovery operations at mills processing ores for other metals.

Id. at 20,532. *See International Uranium (USA) Corporation's ("IUSA's") Reply to the State of Utah's Brief in Opposition to IUSA's Source Material License Amendment 6*, Docket No. 40-8681-MLA-4 (Corrected Version January 22, 1999) (hereinafter "IUSA Brief") (included as Attachment 1) at 11-18 for a fuller discussion of this presumption. *See also* I.D. at 4.

[3] Significantly, this understanding of "sham disposal" is consistent with EPA's interpretation of the analogous concept of "sham recycling" under RCRA. *See, e.g.,* 61 Fed. Reg. 2,338, 2,343 (January 25, 1996). *See also* IUSA Brief at 23-29 for a more detailed discussion of "sham disposal" in the context of the Alternate Feed Policy.

source material content." Petition at 6.[4] Utah argues that instead of interpreting the phrase in the manner Congress intended, the presiding officer should have adopted a motivation test based on the economics of the alternate feed transaction to determine whether the alternate feed is being "processed primarily for its source material content." Specifically, if the economic value of uranium recovered from an alternate feed is less than other values associated with processing the material (in particular, the value of any recycling fees), then, according to Utah's economic motivation theory, the feed is not being processed "primarily for its source material content" and processing the feed at a mill constitutes "sham disposal."[5]

There are several flaws in Utah's argument. First, the phrase "processed primarily for its source material content" is a term of art that is central to the definition of "byproduct material" in

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[4] Utah's assertion that Congress only contemplated "conventional" ores when it defined 11e.(2) byproduct material is mistaken. As NRC has noted:

> 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.

57 Fed. Reg. at 20,532.

[5] In its argument before the presiding officer, Utah urged an interpretation that focused on the economics of the alternate feed transaction, without inquiring as to the "motivation" of the mill operator. See, e.g., Utah Brief at 5-10. Apparently recognizing the weakness of that argument, Utah now suggests its economic test is simply an indicator of the *motivation* for processing an alternate feed. Petition at 7-8. However, as NRC Staff noted in the context of another licensing proceeding (and as the presiding officer in the instant case recognized) "motivation" is not relevant in determining whether a feed material is being processed "primarily" for its source material content.

> The intention of the supplier of any source material ore is irrelevant to (1) the mineral and chemical contents of the ore and (2) the recipient's use of the ore. Even if Teledyne did transfer the material solely to avoid waste disposal costs, the mineral content of the material has not changed. . . . 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.

NRC Staff's Brief and Evidence on Issues Raised by the State of Utah in *In the Matter of Umetco Minerals Corporation*, ASLBP No. 92-666-01 (Jan. 6, 1993) at 17. *See also* I.D. at 3, 7. Similarly, the Court of Appeals for the D.C. Circuit in *Kerr McGee v. NRC* found that motivation is not an appropriate basis on which to determine whether a material is being processed "primarily for its source material content. Specifically, the court rejected an interpretation that would have excluded the wastes from certain reprocessed ores from the definition of 11e.(2) byproduct material because, under the rejected interpretation, the determination of whether a material is being processed primarily for its source material content would be made "not on the basis of [the material's] physical characteristics or relationship to the nuclear fuel cycle, but solely on the *objectives* for which the ore is first processed." *Kerr McGee v. NRC*, 903 F.2d 1, 7 (D.C. Cir. 1990) (emphasis added).

AEA Section 11e.(2) and therefore critical in defining the scope of NRC's jurisdiction. It strains credibility to suggest that NRC, when it developed the Alternate Feed Policy, was not deliberate in using this term and did not intend the same meaning intended by Congress.[6]

Second, the economic motivation test urged by the State has no basis in the AEA or its legislative history. Utah's interpretation is inconsistent with Congress' intent that an ore will be presumed to be "processed primarily for its source material content" if the ore is processed for the extraction of source material in a licensed uranium mill.[7]

Third, Utah's position would lead to the untenable result that a mill could one day be generating 11e.(2) byproduct material regulated by NRC and the next day be generating *non-*11e.(2) waste regulated by either a state or EPA, based solely on the relative value of the uranium in the ore being processed as compared to other economic values associated with processing the ore (including recycling fees).[8] Congress could hardly have intended the status of 11e.(2) byproduct material to be determined in such an arbitrary and unpredictable manner.

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[6] Moreover, the Policy itself indicates that NRC specifically intended the phrase to have the precise meaning that Congress intended in AEA Section 11e.(2). *See, e.g.,* 57 Fed Reg. 20,525, 20530 (1992) As discussed further at p. 7, *infra,* the Alternate Feed Policy is primarily intended to ensure that tailings and wastes generated from processing a given alternate feed qualify as 11e.(2) byproduct material, so that the tailings impoundment into which the wastes are placed will not be subject to dual jurisdiction and ultimate transfer of the impoundment to DOE or the state will not be impaired. In order to ensure that the wastes from processing an alternate feed would constitute byproduct material as defined in AEA Section 11e.(2), it was necessary to incorporate the statutory definition of 11e.(2) byproduct material into the policy, including the requirement that the alternate feed be processed "primarily for its source material content." Thus, NRC *must* have intended that the phrase as used in the Alternate Feed Policy would have precisely the same meaning as Congress intended when it used the *identical* phrase in AEA Section 11e.(2).

[7] Utah also argues that because of its age and its disposal history the Ashland 2 material should not be considered part of the nuclear fuel cycle. Petition at 7. Utah confuses Congressional intent on this issue. Congress, in focusing on the nuclear fuel cycle, did not intend to focus on whether the *ores* that would be processed at a facility were from the nuclear fuel cycle (which frequently they would *not* be prior to reaching a licensed mill); rather Congress intended to focus on whether the *facility* was licensed *for the purpose of* producing uranium as fuel (as opposed to producing uranium in a *secondary* or side-*stream process*).

[8] Or, alternatively, whether or not the residues from processing an alternate feed constitute 11e.(2) byproduct material would depend on the commercial acumen of the licensee in negotiating a recycling fee.

Finally, Utah's argument is predicated on the assumption that the sole or primary purpose of the Alternate Feed Policy is to prevent "sham disposal." Although this was a consideration in the development of the Policy, as discussed previously (*see* page 6, footnote 6, *supra*) the primary aim of the Policy is to ensure that the wastes generated from processing an alternate feed qualify as 11e.(2) byproduct material. NRC explained this objective as follows:

> If the alternate feed material does not meet the definition of ore, or is not processed primarily for its source material content there are two concerns. The first is that complicated, dual regulation of the tailings pile by both NRC and [EPA] under RCRA could result. The second 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.

57 Fed. Reg. 20,525, 20,531 (1992).[9]

B. <u>The Presiding Officer's Decision Will Not Cause Undesirable Consequences</u>

Utah's assertions that application of the presiding officer's decision will result in a number of undesirable consequences are unfounded. Moreover, the fact that Utah may not like or agree with the consequences of the presiding officer's decision has no bearing on whether the presiding officer correctly applied the Alternate Feed Policy. Utah's complaint that the presiding

[9] Utah pins its argument on language in the Alternate Feed Policy suggesting that the certification and co-disposal tests are used to evaluate whether a proposed alternate feed is to be processed "primarily for the source material content or for the disposal of waste." Petition at 4-5, citing 60 Fed. Reg. at 49,297 and 57 Fed. Reg. at 20,533. Utah interprets this to mean that the *motivation* of the mill operator determines whether processing an alternate feed constitutes "sham disposal." Although this reasoning may have superficial appeal, it requires the language of the Alternate Feed Policy to be read out of context. In the passages from the Policy that Utah cites to, the Commission is discussing the concern that wastes *that would otherwise have to be disposed of as low level or mixed waste* might be processed through a mill solely for the purpose of enabling disposal of the waste in the mill's tailings impoundment. This is consistent with the notion of "sham disposal" IUSA has articulated above. If an ore is processed at a mill even though it is not reasonable to expect that uranium will be extracted and uranium is not extracted from the ore, then the ore is not being processed "primarily for its source material content," and the resulting tailings and wastes *would have to be disposed of as low level or mixed waste* (unless the ore starts out as 11e.(2) byproduct material, in which case it could be placed directly into the tailings impoundment, and hence could be processed as an alternate feed – *see* footnote 11, *infra*). Under such circumstances, it would be inappropriate to approve use of the ore as an alternate feed. However, if it is reasonable to expect that uranium will be extracted from a feed material, in which case the tailings from processing the material will meet the statutory definition of 11e.(2) byproduct material, the feed can be processed at a mill and *need not be disposed of as low level or mixed waste*. Such a material would appropriately be approved for use as an alternate feed.

officer's decision fails to guard against the possibility that uranium mills will be turned into waste disposal sites (Petition at 5) reveals that Utah fundamentally misunderstands the primary focus of the regulatory program created under UMTRCA to assure long term control of uranium mill tailings. Licensed uranium mills *are* waste disposal sites. As NRC has itself noted, "each mill tailings pile constitutes a low-level waste burial site containing long-lived radioactive materials" 44 Fed. Reg. 50,015, 50,018 (1979).[10]

Utah's allegation that the initial decision would not effectuate the health-based standards of the AEA or UMTRCA is simply not true. The tailings that result from IUSA's processing of the Ashland 2 material will be subject to the health-based standards set out in NRC's regulations at 10 C.F.R. Part 40, Appendix A and EPA's regulations at 40 C.F.R. Part 192, just like any other 11e.(2) byproduct material waste produced from the extraction of uranium in a licensed uranium mill. Moreover, there should be no doubt regarding the propriety of regulating the wastes from processing the Ashland 2 material as 11e.(2) byproduct material, since DOE has independently determined that the Ashland 2 material qualifies as 11e.(2) byproduct material.[11]

Furthermore, Utah's professed concerns regarding the adequacy of the health and environmental protection afforded by 10 C.F.R. Part 40 are belied by the fact that, as the State

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[10] Similarly, Utah raises the specter of contaminants not typically found in conventional ores somehow escaping regulation when alternate feed tailings are placed into a licensed tailings impoundment. Petition at 7. However, licensed tailings impoundments must meet all of the technical requirements set out in 10 C.F.R. Part 40, Appendix A – including Criterion 13, which incorporates RCRA groundwater protection standards *for every single hazardous groundwater constituent regulated under RCRA*. Thus, as a practical matter, it is difficult to conceive of an alternate feed containing contaminants of concern that would not be regulated under Part 40.

[11] In contrast to Utah's characterization (*see* Petition at p.4, footnote 4), NRC Staff took the position that, because the Ashland 2 material already constitutes 11e.(2) byproduct material, the co-disposal test (which, by its terms, only applies to *non*-11e.(2) waste) is technically not applicable in this case. However, Staff recognized that the Ashland 2 material satisfies the *rationale* underlying the co-disposal test because the Ashland 2 material as 11e.(2) byproduct material could be *directly disposed of in IUSA's mill tailings* impoundment, which in turn provides an independent basis for justifying IUSA's certification under the Alternate Feed Policy's rubric of "other grounds." Holonich Affidavit at 7-8, attached to *NRC Staff Response to Written Presentations by State of Utah and International Uranium (USA) Corporation*, Docket No. 40-8681-MLA-4 (January 29, 1999) ("Staff Brief") (Included as Attachment 2).

admits in its Petition, Utah would not object to IUSA processing high uranium concentration alternate feed material at its Mill (presumably because the economic value of uranium extracted would outweigh the value of any processing fee). Petition at 9, footnote 10. The State would have no objection, even though the tailings from such processing – which would be more radioactive (and therefore presumably more hazardous) than tailings from lower uranium concentration feeds – would be regulated under 10 C.F.R. Part 40. In other words, the State's concerns about the adequacy of 10 C.F.R. Part 40 in protecting health and the environment apparently *diminish* as the uranium content (and therefore the degree of hazard) associated with an alternate feed material increases! This result is nonsensical, and it calls into question the significance of Utah's concerns regarding the protections afforded by 10 C.F.R. Part 40.

Finally, Utah's assertion that the presiding officer's decision will "open the floodgates" and allow mills to process as alternate feed any wastes they may desire is incorrect. Under the Alternate Feed Policy, a licensee will receive approval to process an alternate feed only if the licensee can demonstrate: (i) that the alternate feed does not contain a listed hazardous waste; (ii) that processing the alternate feed will not compromise the mill's ability to satisfy the requirements of 10 C.F.R. Part 40 (including Appendix A); and (iii) that it is reasonable to expect that uranium will be recovered from the alternate feed material. Thus, only a specifically defined class of materials can qualify for processing as alternate feed.

C. <u>The Decision Was Based On An Adequate Record</u>

There is more than enough evidence on the record to justify IUSA's certification that the Ashland 2 material is being processed "primarily for its source material content." Indeed, Utah, in its own brief provided evidence that IUSA would likely recover substantial quantities of uranium and receive significant revenue from recycling the Ashland 2 material. Herbert Testimony at 6-8. Moreover, to the extent that the decision to approve Amendment 6 is

supported by evidence adduced at hearing (that was not before the Staff), the presiding officer is entitled to rely upon that evidence in upholding the Staff's decision. *See, e.g., Curators of the University of Missouri*, CLI-95-1, 41 NRC at 121.

III. CONCLUSION

If the Commission agrees to review the initial decision, IUSA urges the Commission to *affirm* the presiding officer's decision and confirm that (i) the relative value of uranium recovered from an alternate feed material and motivation of the applicant are irrelevant in determining whether the feed is "processed primarily for its source material content" for purposes of the Alternate Feed Policy; (ii) an alternate feed is presumed to be "processed primarily for its source material content" for purposes of the Policy if it is processed in a licensed uranium mill and it is reasonable to expect that uranium will be extracted from the material; (iii) processing an alternate feed through a licensed mill will constitute "sham" disposal only f it is not reasonable to expect that uranium will be extracted from a proposed alternate feed and no uranium is extracted (or if it is reasonable to expect that uranium will be extracted but a good faith effort to extract uranium is not made and no uranium is extracted); and (iv) alternate feeds that are 11e.(2) byproduct material will, by definition, satisfy the "other grounds" justification in the Alternate Feed Policy's certification test.

Respectfully submitted,

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UNITED STATES OF AMERICA NUCLEAR REGULATORY COMMISSION

BEFORE THE COMMISSION

IN THE MATTER OF INTERNATIONAL URANIUM (USA) CORPORATION (Source Material License Amendment)	Docket No. 40-8681-MLA-4 ASLBP No. 98-748-03-MLA March 15, 1999

CERTIFICATE OF SERVICE

I hereby certify that I caused true and complete copies of the foregoing INTERNATIONAL URANIUM (USA) CORPORATION'S ("IUSA'S") REPLY TO THE STATE OF UTAH'S PETITION FOR REVIEW OF THE INITIAL DECISION IN LBP-99-5 in the above-captioned matter to be served, in the manner indicated below, on this 15th day of March, 1999 to:

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Document #: 731887 v.2C

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges: Peter B. Bloch, Presiding Officer
Richard F. Cole, Special Assistant

IN THE MATTER OF INTERNATIONAL URANIUM (USA) CORPORATION (Source Material License Amendment)

Docket No. 40-8681-MLA-4
ASLBP No. 98-748-03-MLA
January 19, 1999

CORRECTED VERSION
January 22, 1999

INTERNATIONAL URANIUM (USA) CORPORATION'S ("IUSA'S") REPLY TO THE STATE OF UTAH'S BRIEF IN OPPOSITION TO IUSA'S SOURCE MATERIAL LICENSE AMENDMENT 6

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges: Peter B. Bloch, Presiding Officer
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IN THE MATTER OF INTERNATIONAL URANIUM (USA) CORPORATION (Source Material License Amendment)

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ASLBP No. 98-748-03-MLA
January 19, 1999

CORRECTED VERSION
January 22, 1999

INTERNATIONAL URANIUM (USA) CORPORATION'S ("IUSA'S") REPLY TO THE STATE OF UTAH'S BRIEF IN OPPOSITION TO IUSA'S SOURCE MATERIAL LICENSE AMENDMENT 6

I. INTRODUCTION

International Uranium (USA) Corporation ("IUSA") submits this brief in response to the State of Utah's *Brief In Opposition To International Uranium (USA) Corporation's Source Material License Amendment*, dated December 7, 1998 ("*Utah Brief*"). In its brief, Utah asserts that the Nuclear Regulatory Commission ("NRC" or "Commission") Staff erred in amending the source material license for IUSA's White Mesa uranium mill near Blanding, Utah (the "Mill"). The license amendment Utah complains of, Amendment 6, allows IUSA to process as an alternate feedstock at its Mill certain uranium-bearing material from the Ashland 2 site located in

Tonawanda, New York. See letter from J. Holonich to M. Rehmann Approving License Amendment 6 with enclosures (June 23, 1998) (Attached as Exhibit 1). The Ashland 2 site is administered by the Army Corps of Engineers ("USACE") under the Department of Energy's ("DOE's") Formerly Utilized Sites Remedial Action Program (FUSRAP).[1]

Amendment 6 to IUSA's license was approved by NRC Staff on June 23, 1998 pursuant to the Commission's *Final Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores*, 60 Fed. Reg. 49,296 (September 22, 1995) (the "Alternate Feed Policy"). Among other things, the Alternate Feed Policy requires that a material processed as alternate feed must be processed *primarily* for its source material content.[2] *Id.*

Utah's brief raises a number of arguments intended to support the State's contention that NRC Staff should not have approved Amendment 6 to IUSA's license.[3] However, the primary thrust underlying the State's argument is simple: Utah seeks to displace NRC's jurisdiction and impose its own regulatory program on the operations of IUSA's NRC-licensed mill by arguing that the "primary purpose" for which IUSA is processing the Ashland 2 material is *not* for its uranium content. Specifically, Utah argues that IUSA *cannot* be processing the Ashland 2 material *primarily* for its uranium content because (i) the economic value of the uranium IUSA can expect to recover from the Ashland 2 material, *in and of itself*, is less than the value of fees

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[1] The FUSRAP program was established by the Atomic Energy Commission ("AEC") in 1974, to clean up and control radioactive contamination at sites associated with activities that were previously carried out on behalf of the Manhattan Engineering District, it successor the AEC, and other related entities during the early days of the nation's nuclear program. *See generally* U.S. Department of Energy, *The Formerly Utilized Sites Remedial Action Program (FUSRAP): Building Stakeholder Partnerships to Achieve Effective Cleanup*, DOE/EM-0233 (April 1995). (Attached as Exhibit 2).

[2] Because they are key terms used often in this discussion and for ease of reference, we have highlighted the words "*primarily*," "*secondary*," "*side-stream*," and "*non*-11e.(2) byproduct material" throughout this document.

[3] In its prayer for relief, Utah asks the presiding officer to revoke Amendment 6 and to prohibit IUSA from further processing any Ashland 2 material present at the Mill or received by the Mill in the future.

the company will receive in connection with its processing of the material; and (ii) the average concentration of uranium in the Ashland 2 material is "low."

In addition to its central assertion that IUSA is not processing the Ashland 2 material *primarily* for its source material content, Utah raises a number of other arguments questioning the validity of the Staff's licensing decision. The State argues that the Ashland 2 material may constitute low level radioactive waste ("LLRW") and, as such, would be subject to State, not NRC, regulation. The State contends that NRC's regulation of the tailings and wastes generated from IUSA's processing of the Ashland 2 material would not adequately protect health and safety in the State. And, finally, the State argues that NRC's decision to approve Amendment 6 was based upon an incomplete record and inadequate consideration of the record by NRC Staff.

When analyzed closely, however, all of the State's arguments depend on the resolution of a single issue: what is meant by the phrase "processed *primarily* for its source material content"? The answer to this question will determine whether the State or NRC has jurisdiction over the ultimate disposition of the Ashland 2 material and may help resolve a jurisdictional issue that has spawned considerable public controversy, not to mention substantial litigation. The State wants to exercise jurisdiction because it is not satisfied with NRC's 10 C.F.R. Part 40 regulatory regime and it wants to impose its own requirements on these materials. However, although Utah is an Agreement State for the disposal of LLRW, it is not an Agreement State with respect to the milling of uranium and the disposal of the resulting tailings and wastes. Thus, the only way for the State to exercise jurisdiction over IUSA's milling of the Ashland 2 material and disposition of the resulting tailings and wastes, without having the appropriate Agreement State authority, is to argue that IUSA is not processing the Ashland 2 material *primarily* for its source material content.

IUSA will demonstrate that the State fundamentally misunderstands how NRC's Alternate Feed Policy is intended to operate and completely misconstrues what the policy means when it refers to materials being processed "*primarily*" for their source material content. In particular, IUSA will demonstrate each of the following:

- First, under the Atomic Energy Act, 42 U.S.C. § 2001 *et seq.* (the "AEA"), as amended by the Uranium Mill Tailings Radiation Control Act of 1978, Pub. Law No. 95-604 ("UMTRCA") and its amendments, a *presumption* is created that ore is processed "*primarily*" for its source material content if it is processed for the extraction or concentration of uranium in an NRC-licensed uranium mill that is part of the nuclear fuel cycle. The phrase "processed *primarily* for its source material content" is intended to distinguish between ores processed for the recovery[4] of uranium in licensed uranium mills that are part of the nuclear fuel cycle, on the one hand, and ores processed for the recovery of uranium in *secondary*, or *side-stream* operations at mineral or metal recovery facilities that are not part of the nuclear fuel cycle, on the other hand;

- Second, the Alternate Feed Policy sets out procedures intended to ensure that alternate feeds are processed *primarily* for their uranium content so that the resulting tailings and wastes qualify as 11e.(2) byproduct material under the AEA, as amended by UMTRCA. The phrase, "processed *primarily* for its source material content," must have the same meaning when used in the Alternate Feed Policy as it has in the

[4] In this document the terms "extraction" and "recovery" each mean "extraction or concentration" within the meaning of the AEA.

AEA, in order to ensure that tailings and wastes from processing alternate feed materials will fall within the definition of 11e.(2) byproduct material under the AEA. Thus, NRC's use of the term "processed *primarily* for its source material content" in the Alternate Feed Policy is directly and inextricably linked to Congress' use of the identical phrase in the definition of 11e.(2) byproduct material. In both cases it is presumed that ore is being processed *primarily* for its source material content if it is processed for the extraction of uranium in a licensed uranium mill that is part of the nuclear fuel cycle.

- Third, unlike conventional ores, alternate feeds often are "wastes" generated from some other entity's processing activities. As a result, alternate feeds can vary widely in composition, so it is incumbent upon the licensee, and subsequently NRC, to determine that there is uranium in the alternate feed, that it is reasonable to expect that uranium will be extracted, and that there are no characteristics of the alternate feed material that would prevent the mill from complying with the requirements established in NRC's regulations at 10 C.F.R. Part 40 or that implicate concerns regarding dual or overlapping jurisdiction. If it is not reasonable to expect uranium will be extracted from the alternate feed and in fact uranium is not extracted then the material would *not* be presumed to be processed *primarily* for its source material content within the meaning of the AEA. Tests built into the Alternate Feed Policy effectively ensure that a license amendment will not be granted if it is not reasonable to expect that uranium will be extracted from a particular alternate feed material at a licensed uranium mill (in effect, these tests ensure that the presumption that a licensed mill is processing ore *primarily* for its source material content is not

rebutted). If, based on these tests, the licensee and NRC staff conclude it is reasonable to expect that uranium will be extracted from an alternate feed material, the alternate feed material is presumed under both the AEA and the Alternate Feed Policy to be processed *primarily* for its uranium content and the resulting tailings would be 11e.(2) byproduct material. If, on the other hand, the tests set out in the Alternate Feed Policy indicate that it is not reasonable to expect that uranium will be extracted from an alternate feed material, or if it is reasonable to expect that uranium will be extracted from the material, a good faith effort is not made to extract the uranium and no uranium is extracted, the presumption that the material is being processed *primarily* for its source material content would be rebutted, the resulting tailings may not be 11e.(2) byproduct material, and processing the material might implicate "sham disposal." In addition, as noted above, due to the varying composition of alternate feed materials, the Alternate Feed Policy also contains protections against disposing of materials that might jeopardize compliance with 10 C.F.R. Part 40 and disposing of certain hazardous wastes in the mill's tailings impoundment, in order to avoid problems of overlapping jurisdiction that both the licensee and NRC will seek to avoid in all circumstances.

- Fourth, Congress and NRC did *not* intend to require that an economic test or a profitability test must be satisfied in order to conclude that a material is being processed *primarily* for its source material content; neither did they intend to require a certain minimum concentration of uranium or thorium in feed materials. In fact, the contrary is true.

- Fifth, IUSA satisfies *each* of the two alternative tests set out in the Alternate Feed Policy for determining whether a material is being processed *primarily* for its source material content. Thus, without question, IUSA is processing the Ashland 2 material *primarily* for its source material content and for no other *primary* purpose.

Finally, having established that IUSA is processing the Ashland 2 material *primarily* for its source material content, and that the Ashland 2 material and the tailings and wastes generated from its processing fall within NRC's jurisdiction and not the State's, the remaining arguments offered by Utah, which assume State jurisdiction, fail on their face. Accordingly, IUSA respectfully requests that the Presiding Officer deny the relief requested by the State and affirm NRC Staff's decision to approve Amendment 6 to IUSA's license.

II. THE LEGAL FRAMEWORK CREATED BY UMTRCA

In order to understand the Alternate Feed Policy and NRC's application of the policy in this matter, one must first understand the legal framework within which the policy was created and must operate. At the core of this legal framework is the AEA, as specifically amended by UMTRCA.

A. Creation And Objectives Of UMTRCA

Congress enacted UMTRCA in 1978 in response to growing concerns about the potential health and environmental hazards presented by *uncontrolled* uranium and thorium mill tailings. Thus, one of the central objectives of UMTRCA was to create under the AEA a comprehensive program for the regulation of tailings and other wastes generated from uranium and thorium ore processing activities both at active milling operations and, *in particular*, after termination of such

operations. Pub. Law No. 95-604 at 2(b)(2), 92 Stat. 3022. The centerpiece of this regulatory program was a new category of AEA-regulated material, known as 11e.(2) byproduct material, which Congress created by amending the existing definition of "byproduct material" in Section 11 of the AEA. Specifically, Congress amended the definition of "byproduct material" to include the *tailings and wastes* produced by the extraction of uranium from *any* ore processed *primarily* for its source material content.[5]

This new class of material was (and is) unique among the materials regulated under the AEA because it was defined not solely in terms of its radiologic characteristics, but instead was defined broadly enough to encompass *all* wastes – including both radioactive and *non-*radioactive wastes – resulting from uranium ore processing. As NRC has noted:

> The definition of byproduct material in Section 11e.(2) of the AEA includes *all* wastes resulting from the milling process, not just the radioactive components.

57 Fed. Reg. 20,525, 20,526 (May 13, 1992). Indeed, by developing such a broad definition of 11e.(2) byproduct material Congress sought to ensure that *all* wastes from uranium milling operations would be regulated under UMTRCA's comprehensive regulatory scheme, and that none of the wastes from these NRC-regulated milling operations would become orphaned and go unregulated by the Commission. Thus, following a review of UMTRCA's legislative history, the D.C. Circuit concluded:

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[5] Byproduct material is defined in AEA Section 11e.(2) to mean "the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." 42 U.S.C. § 2014e.(2). Although this definition encompasses wastes produced as a result of activities directed at recovering thorium as well as uranium, since IUSA's mill is licensed to recover uranium and not thorium this brief omits any discussion of thorium, unless required by the particular context.

> It is clear from this exchange [in the legislative history] that the definition of "byproduct material" proposed by [then NRC chairman] Dr. Hendrie and adopted by Congress 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.

Kerr-McGee v. U.S. Nuclear Regulatory Com'n, 903 F.2d 1, 7 (D.C. Cir. 1990).

To complement the broad scope of waste materials encompassed within the definition of 11e.(2) byproduct material, Congress, through UMTRCA, directed the creation of an equally broad and comprehensive regulatory program intended to address all aspects of the management and disposition of uranium mill tailings and related wastes. For example, Congress assigned to the Environmental Protection Agency ("EPA") the authority to promulgate standards of general applicability addressing both the radiological and *non*-radiological hazards of uranium mill tailings and related wastes. For *non*-radiological hazards, these generally applicable standards are to provide protection *equivalent* to that provided by EPA's Resource Conservation and Recovery Act ("RCRA") standards. AEA § 275(b), 42 U.S.C. § 2022(b). UMTRCA calls upon NRC to implement, through licensing, the standards of general applicability created by EPA. In addition, Congress directed NRC to independently develop specific requirements and criteria applicable to licensees that (i) the Commission deems appropriate to protect against both potential radiological and *non*-radiological hazards associated with 11e.(2) byproduct material, and (ii) that are compatible with EPA's generally-applicable RCRA-based standards. AEA §§ 84; 275(d), 42 U.S.C. §§ 2014; 2022(d).

To ensure long-term protection of public health, safety and the environment following disposal, Congress included in UMTRCA the requirement that, following license termination, title to and custody of uranium mill tailings and the land used for their disposal must be

transferred either to the federal government or to the State in which the byproduct material is located (at the State's option) for long-term care and surveillance pursuant to a perpetual NRC license. 42 U.S.C. § 2113. This long-term care and surveillance is financed by funds required to be set aside by licensees prior to site closure. 10 C.F.R. Part 40, Appendix A, Criterion 10.

Prior to the enactment of UMTRCA, the AEC had concluded that uranium mill tailings could not be classified as *licensable* source material, since their source material content was below the licensable level (0.05%) stipulated in AEC's regulations, and, therefore, they were outside AEC's statutory licensing authority and beyond its regulatory reach. *See* AEC General Counsel Memoranda dated December 7, 1960 and April 25, 1960, reprinted in *Uranium Mill Tailings Radiation Control Act of 1978, Hearings on H.R. 11698, H.R. 12229, H.R. 12938, H.R. 12535, H.R. 13049 and H.R. 13650,* Subcomm. On Energy and Power, House Comm. On Interstate and Foreign Commerce, 95th Cong. (hereinafter "*Uranium Mill Tailings Radiation Control Act of 1978 Hearings*") at 343-44 (1978) (attached as Exhibit 3). A fundamental objective of Congress in enacting UMTRCA, therefore, was to extend NRC's regulatory jurisdiction to cover uranium mill tailings directly, and to establish a comprehensive regulatory system for the safe disposal and long-term stabilization of tailings. *See Kerr-McGee* 903 F.2d at 7.

In order to achieve regulatory control over the wide range of waste materials intended to be covered by the definition of 11e.(2) byproduct material, Congress had to ensure that an equally broad range of material would qualify as "ore," so that wastes generated from processing such ore would be covered under UMTRCA's regulatory program. Thus, Congress defined 11e.(2) byproduct material as the tailings and wastes produced by the extraction of uranium from *any* ore. As NRC has noted, Congress used the term "any ore" to ensure that tailings and wastes

from a broad range of feed materials used in uranium milling operations would be covered by the regulatory program applicable to 11e.(2) byproduct material:

> 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.

57 Fed. Reg. at 20,532.

B. UMTRCA's Legislative History Shows That Neither Economics Nor Uranium Profitability Control The Primary Purpose Determination

Contrary to Utah's assertions, UMTRCA's legislative history reveals that Congress did *not* intend to require an economic or profitability showing in order to demonstrate that an ore is being processed *primarily* for its source material content. Committee hearings prior to the enactment of UMTRCA demonstrate Congress' focus on modifying the definition of "byproduct material" in the AEA to encompass *all* wastes and tailings from uranium milling operations. The definition that was ultimately incorporated into Section 11e.(2) of the AEA was suggested by then NRC Chairman, Joseph M. Hendrie, in a dialogue with Congressman Dingell.

> Dr. Hendrie. [T]he Commission would suggest that the definition of byproduct material in H.R. 13382 be revised to include tailings produced by extraction of uranium or thorium from any ore *processed primarily for its source material content.*
>
> Mr. Dingell. *I am curious about why you include in that the word "processed" primarily for source material content. There are other ores that are being processed that do not contain thorium and uranium in amounts and I assume equal in value to those you are discussing here.*
>
> Is there any reason why we ought not give you the same [regulatory] authority with regard to those ores?
>
> Dr. Hendrie. *Mr. Chairman, the intent of the language is to keep NRC's regulatory authority primarily in the field of the nuclear*

> *fuel cycle.* Not to extend this out into such things as phosphate mining and perhaps even limestone mining which are operations that do disturb the radium-bearing crust of the Earth and produce some exposures *but those other activities are not connected with the nuclear fuel cycle.* EPA is looking at those and those appear to me to be things that ought to be left to EPA regulation under the Resource Conservation Recovery Act and general authorities.

Uranium Mill Tailings Radiation Control Act of 1978 Hearings at 343-44 (emphasis added) (*See* Exhibit 3).

As this colloquy reveals, Congress' inclusion of the phrase "processed *primarily* for its source material content" in the definition of 11e.(2) byproduct material was not intended to distinguish between feed materials based upon, in Congressman Dingell's words, the "amount" or "value" or relative profitability of the source material that might be recovered. Instead, the phrase "processed *primarily* for its source material content" was intended to distinguish between ores that are processed in facilities that are licensed to be part of the nuclear fuel cycle and ores that are processed in facilities outside the nuclear fuel cycle, which may recover uranium as a byproduct of their operations or concentrate uranium in a waste stream. (*e.g.*, at mills processing phosphates, rare earths or other metals that are not licensed uranium mills). Certainly, Congress did *not* intend to require that the economic value of recovered source material, by itself, exceed all, or any, other economic values associated with the processing of a feed material in order to demonstrate that the feed material is being processed *primarily* for its source material content.

C. UMTRCA's Legislative History Shows That Uranium Concentration In Ore Is Irrelevant To The Primary Purpose Determination

Similarly, Congress, when it defined 11e.(2) byproduct material, did not intend to prescribe a minimum percentage of uranium or thorium that must be present in an ore before the ore can be considered to be processed *primarily* for its source material content. Indeed, the

opposite is true: Congress intended to include within the scope of 11e.(2) byproduct material *all* tailings and wastes from processing ores for their uranium content at a licensed uranium mill, *regardless* of the concentration of uranium contained in the ore. Thus, as NRC has noted, commenting on the legislative history of UMTRCA:

> 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 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 [licensable] source material) would fall outside the definition.* To preclude that possibility, it was suggested that the words "*any ore processed primarily for its source material content*" be substituted for "*any source material.*"

57 Fed. Reg. at 20,532 (emphasis added). Indeed, the legislative history reveals that in committee hearings prior to the enactment of UMTRCA, Chairman Hendrie suggested Congress modify the definition of 11e.(2) byproduct material specifically to accommodate tailings and wastes generated from the processing of ores containing less than 0.05% uranium.

> The Commission is informed that there are a few mills currently using feedstock of less than 0.05-percent uranium. As high-grade ores become scarcer, there may be a greater incentive in the future to turn to such low grade materials.
>
> *Since such operations should be covered by any regulatory regime over mill tailings,* the Commission would suggest that the definition of byproduct material in H.R. 13382 be revised to include tailings produced by extraction of uranium or thorium from any ore processed *primarily* for its source material content.

Uranium Mill Tailings Radiation Hearings at 343 (emphasis added) (*see* Exhibit 3). Thus, as the legislative history indicates, Congress modified the definition of 11e.(2) byproduct material to

apply to "*any* ore" processed *primarily* for its source material content in a licensed uranium mill, for the specific purpose of ensuring that all wastes from processing such ores, including ores containing less than 0.05% uranium, would fall within the regulatory program established for 11e.(2) byproduct material.[6] Congress clearly intended that an ore could be processed "*primarily* for its source material content" even if the uranium concentration in the ore is below 0.05%. Consequently, even if the Ashland 2 material contains uranium concentrations at or below 0.05% this does not in any way preclude a finding that IUSA is processing the material *primarily* for its source material content.

D. UMTRCA Creates A Presumption That Ores Processed In A Uranium Mill That Is Licensed As Part Of The Nuclear Fuel Cycle Are Processed *Primarily* For Their Source Material Content

As demonstrated above, and contrary to Utah's assertion, the determination of whether a feed material is being processed *primarily* for its source material content does *not* depend on the relative profitability of recovering uranium from the feed material or on the concentration of uranium in the alternate feed material. Instead, as the legislative history of UMTRCA and NRC's interpretation of the statute indicate, the phrase "processed *primarily* for its source material content" is intended to distinguish between ores that are processed at licensed uranium mills that are part of the nuclear fuel cycle and ores that are processed at facilities outside the nuclear fuel cycle (*e.g.*, at mills processing phosphates, rare earths or other metals). Again, as noted earlier, in testimony before Congress prior to the enactment of UMTRCA, Chairman Hendrie explained the significance of the phrase "processed *primarily* for its source material

[6] As it turns out, NRC and Congress were prescient in deciding to modify the definition of 11e.(2) byproduct material to accommodate the processing of ores containing below 0.05% uranium, since higher grade domestic uranium ores are increasingly difficult to find.

content" in the proposed definition of 11e.(2) byproduct material. In Chairman Hendrie's words, "the intent of the language ['processed *primarily* for its source material content'] is to keep NRC's regulatory authority *primarily* in the field of the nuclear fuel cycle." *Uranium Mill Tailings Radiation Control Act of 1978 Hearings* at 343-44 (emphasis added) (*See* Exhibit 3). In other words, Congress wanted to ensure that the comprehensive program it had created for the regulation of 11e.(2) byproduct material would extend only to tailings and wastes *produced as part of the nuclear fuel cycle*, and that waste materials created outside of the nuclear fuel cycle would not be affected.[7] Consequently, feed materials that are processed for the extraction of uranium outside of the nuclear fuel cycle (for example in a *secondary* or *side-stream* process at a phosphate recovery operation) are deemed *not* to be processed *primarily* for their source material content, and, therefore, the tailings and wastes from such processing are not regulated as 11e.(2) byproduct material.

NRC has articulated a position in the context of the Alternate Feed Policy that is consistent with the intent Congress expressed when it enacted UMTRCA: namely, that a material will be presumed to be processed *primarily* for its source material content if it is processed for the extraction of uranium in a licensed uranium mill that is part of the nuclear fuel cycle, rather than in a non-fuel cycle facility as part of a *secondary, side-stream* recovery operation. For example, in the preamble discussing the proposed Alternate Feed Policy, the Commission indicates that an ore processed through a licensed uranium mill is processed as part of the nuclear

[7] Congress' effort to limit the sweep of the regulatory system created under UMTRCA to apply only to tailings and wastes generated in licensed facilities that are part of the nuclear fuel cycle is understandable, given the enormous commitment of resources that must be made in order to become a mill that is licensed as part of the nuclear fuel cycle, and the heavy burden of regulations that apply to such facilities. See discussion at p. 19, footnote 8, *infra*.

fuel cycle and therefore will be *presumed* to be processed *primarily* for its source material content as follows:

> 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 to 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 ores 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 under 11e.(2) byproduct material.

57 Fed. Reg. at 20,532 (emphasis added). As the Commission explains, this stands in sharp contrast to the status of materials processed in a non-fuel cycle mill:

> Frequently, natural ores that are processed for rare-earth or other materials 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 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.*

Id. at 20,527 (emphasis added). In other words, an ore processed in a *side-stream* process to recover uranium is not being processed *primarily* for its uranium content and, therefore, the

tailings and wastes from such processing will not be regulated as 11e.(2) byproduct material, whereas an ore processed at a licensed uranium mill that is part of the nuclear fuel cycle can be *presumed* to be processed *primarily* for its source material content because "*the extraction of uranium in a licensed mill remains the primary purpose of processing the feed material . . .*".

The limited case law in this area also supports the conclusion that an ore is processed *primarily* for its source material content so long as it is processed at a licensed uranium mill that is part of the nuclear fuel cycle, regardless of the relative economic value of the source material as compared to other components of the ore. In the *Kerr McGee* case, the United States Court of Appeals for the District of Columbia was asked to review a decision by NRC regarding the status of tailings produced at Kerr-McGee's West Chicago facility. The facility in question had processed monazite ore starting in the 1930's. Initially the monazite was processed to recover the ore's rare earth content, with only a fraction of the ore being processed for source material. A number of years after this initial processing, however, the tailings from the rare earth processing were *re*processed to recover their source material content. NRC determined that the tailings and wastes from this *re*processing did not qualify as 11e.(2) byproduct material because source material was not the first (or presumably the most valuable) component for which the monazite had been processed. Therefore, the Commission concluded, the ore had not been processed *primarily* for its source material content.

The D.C. Circuit rejected this interpretation as being inconsistent with Congress' intent. The court found that Congress had enacted UMTRCA to accomplish two objectives:

> first, to close the gap in NRC regulatory jurisdiction over the nuclear fuel cycle by subjecting uranium and thorium mill tailings to the NRC's licensing authority; and second, to provide a

> comprehensive regulatory regime for the safe disposal and stabilization of the tailings.

903 F.2d at 7. According to the court, NRC's interpretation would have recreated the regulatory gap Congress had sought to close, because under NRC's approach, the determination of whether a waste material constitutes 11e.(2) byproduct material would be made "not on the basis of [the material's] physical characteristics or relationship to the nuclear fuel cycle, but solely on the objectives for which the ore is first processed." *Id.* The court concluded that NRC had too narrowly construed the phrase "processed *primarily* for its source material content" when it interpreted that phrase to mean that the extraction of uranium had to be the "first, chief or principal reason for processing the ore." *Id.* The court noted that the term "primarily" has a number of meanings, and it suggested that it might be more appropriate to interpret the term "*primarily*" as used in the definition of 11e.(2) byproduct material to require that an ore be processed "substantially" for its source material content. *Id.*

The decision of the court in *Kerr-McGee* is instructive in that it once again underscores the fact that the term "*primarily*" as used in the definition of 11e.(2) byproduct material does not mean "solely" or "only," much less "most profitable." There can be, and frequently are, other good and substantial reasons associated with a transaction involving milling of alternate feed material in a licensed uranium mill, including *secondary* or *side-stream* recovery of other minerals (*e.g.*, vanadium, tantalum) or the provision of recycling services for a fee, which at a given point in time may be more valuable than the source material extracted.

E. Conclusions Regarding UMTRCA

As amply demonstrated by the language and legislative history of UMTRCA, Congress and the Commission carefully crafted a flexible definition of 11e.(2) byproduct material to

provide for the milling of a broad range of feed materials for their source material content and to ensure that resulting tailings and wastes would be subject to the comprehensive regulatory regime created for 11e.(2) byproduct material under UMTRCA. By defining 11e.(2) byproduct material in terms of ore processed *primarily* for its source material content, Congress did not intend to impose an economic or profitability test or a minimum concentration requirement on the determination of what ores, when processed, will yield 11e.(2) byproduct material. Instead, Congress used the term "processed *primarily* for its source material content" to distinguish between ores that are processed for the extraction of uranium as part of the nuclear fuel cycle (*i.e.*, in licensed uranium mills) and ores that are processed for the extraction of uranium outside the nuclear fuel cycle (*e.g.*, at mills processing phosphates, rare earths or other metals). In effect, Congress created a *presumption* that ores processed for their uranium content as part of the nuclear fuel cycle (in licensed uranium mills) are being processed *primarily* for their source material content and that ores processed for their uranium content outside of the nuclear fuel cycle (not in licensed uranium mills) are *not* processed *primarily* for their source material content.[8]

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[8] Indeed, as a practical matter, a facility likely would avoid assuming the substantial financial and regulatory burdens associated with obtaining an NRC source material license and complying with the detailed criteria of 10 C.F.R. Part 40, Appendix A – including long term stabilization and financial assurance requirements – if it did not intend to process feed material *"primarily"* for its source material content. As NRC has noted:

> When construction of a [uranium] mill commences, *nearly irrevocable commitments are made regarding tailings disposal.* Given that each mill tailings pile constitutes a low-level waste burial site containing long-lived radioactive materials, the Commission believes that prudence requires that specific methods of tailings disposal, mill decontamination, site reclamation, surety arrangements, and arrangements to allow for transfer of site and tailings ownership be worked out and approved before a license is granted.

44 Fed. Reg. 50,015, 50,018 (August 24, 1979) (emphasis added). Thus, long-term control over the disposal and stabilization of uranium mill tailings and related wastes was and remains a primary focus of the regulatory system created by Congress and NRC under UMTRCA.

IUSA's Mill is a licensed nuclear fuel cycle facility. It is licensed pursuant to rules promulgated by the Commission for the regulation of uranium recovery operations, and therefore must comply with the rigorous requirements established in 10 C.F.R. Part 40, including Appendix A. Consequently, IUSA's processing of the Ashland 2 material for the extraction of uranium, should be *presumed* to be *primarily* for the Ashland 2 material's source material content.

III. NRC'S ALTERNATE FEED POLICY

The Alternate Feed Policy was developed by NRC to establish a set of criteria to be used in evaluating whether feed materials that are not conventional ores can be processed at uranium mills such that the tailings and wastes generated from such processing will still be considered 11e.(2) byproduct material. The Policy establishes four criteria that must be satisfied before uranium-bearing materials other than conventional ores may be processed at a licensed uranium mill. First, processing the alternate feed material (and disposal of the tailings and wastes associated with such processing) must conform with the requirements of 10 C.F.R. Part 40. Second, the alternate feed material must not contain any "listed" hazardous wastes (*i.e.*, any wastes listed under 40 C.F.R. §§ 261.30-33 or under comparable state law provisions) or residues that constitute hazardous waste from any wastewater treatment process. Third, the alternate feed material must qualify as an "ore."[9] And finally, the alternate feed material must be processed *primarily* for its source material content. Much of Utah's argument centers upon this last prong

[9] Consistent with Congress' intent to include a broad range of materials within the scope of the term "ore" (and, thereby, to encompass a wide range of materials within the regulatory program for 11e.(2) byproduct material), NRC defines "ore" for purposes of the Alternate Feed Policy to mean: "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.* 60 Fed. Reg. at 49,296 (emphasis added).

of the Alternate Feed Policy, the requirement that an alternate feed material be processed *primarily* for its source material content. As the foregoing discussion demonstrates, this last requirement and the one preceding (the requirement that the alternate feed qualify as "ore") are really two ways of looking at the same question: whether a material is processed for its source material content at a licensed uranium mill that is part of the nuclear fuel cycle. The first two requirements set out above reflect the additional factors that must be considered when evaluating alternate feed materials because of their potential qualitative differences from conventional ores. (See discussion at p. 24, *infra*.)

A. The Relationship Between The AEA, As Amended By UMTRCA, And The Alternate Feed Policy

As is evident from the discussion in Section II.A above, Congress' fundamental purpose in enacting UMTRCA was to create a comprehensive system for regulating the management and final disposition of uranium mill tailings and related wastes. Central to this regulatory system was a new class of material known as 11e.(2) byproduct material. In order to ensure that the broad range of wastes generated at uranium mills would be encompassed within the regulatory system it had created, Congress defined 11e.(2) byproduct material broadly, to mean *all* wastes from ores processed for their source material content. To ensure that this regulatory system would be applied only to wastes generated as part of the nuclear fuel cycle, Congress defined 11e.(2) byproduct material as wastes derived from ores that are processed *primarily* for their source material content. Thus, Congress created a presumption that ores processed for the extraction of uranium at licensed uranium mills that are part of the nuclear fuel cycle are processed *primarily* for their source material content.

NRC developed its Alternate Feed Policy in response to requests from licensees to process materials other than conventional ores for the extraction of uranium. 57 Fed. Reg. at 20,531. The Alternate Feed Policy works to avoid the possibility that the tailings and wastes from processing an alternate feed material might be subject to dual (or multiple) jurisdiction by ensuring that the tailings and wastes from processing an alternate feed qualify as 11e.(2) byproduct material. It does this by requiring a uranium recovery licensee to demonstrate that it will be processing the material *primarily* for its source material content. 60 Fed. Reg. at 49,297. Thus, the requirement in the Alternate Feed Policy that an alternate feed be processed *primarily* for its source material content is directly and inextricably linked to the definition of 11e.(2) byproduct material, to ensure that the resulting tailings qualify as 11e.(2) byproduct material. As NRC explained in the preamble to the proposed Alternate Feed Policy:

> For the tailings and waste from the proposed processing [of an alternate feed material] to qualify as 11e.(2) byproduct material, the ore must be processed *primarily* for its source material content.

57 Fed. Reg. at 20,530. The Commission Staff reiterated this point in its response to comments on the proposed Alternate Feed Policy, where it succinctly explained that:

> The purpose of the proposed [alternate feed] guidance is to ensure that processing of alternate feed materials would only be permitted if the resulting wastes meet the definition of 11e.(2) byproduct material.

U.S. NRC, SECY-95-211 (August 15, 1995), Attachment 3 at 18 (attached as Exhibit 4).[10] Consequently, when performing an evaluation under the Alternate Feed Policy to determine

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[10] The Commission explained its concern that wastes from processing alternate feeds qualify as 11e.(2) byproduct material as follows:

> 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

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whether a material is being processed *primarily* for its source material content, it is absolutely necessary to look to the statutory definition of 11e.(2) byproduct material, and to evaluate what Congress intended by the phrase "processed *primarily* for its source material content."

B. Some Alternate Feeds May Require Closer Scrutiny Than Conventional Ores

As demonstrated above, in Section II.D, Congress created a presumption under UMTRCA that an ore is processed *primarily* for its source material content if it is processed for the extraction of uranium in a licensed uranium mill that is part of the nuclear fuel cycle. Since the phrase "processed *primarily* for its source material content" must have the same meaning in the Alternate Feed Policy that it has under UMTRCA, this presumption is also implicit in the Alternate Feed Policy.[11] Indeed, as discussed previously, NRC has articulated a position in the context of the Alternate Feed Policy that is consistent with the presumption that ores processed

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> 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 pile to the State or Federal Government for perpetual custody and maintenance [because Section 83 of the AEA only requires the government to take custody of *11e.(2) byproduct material* and the land used for its disposal, and there is no requirement for the government to take custody of material that is *not* 11e.(2) byproduct material].

57 Fed. Reg. at 20,531. Thus, the requirement that alternate feed material be processed *primarily* for its source material content within the meaning of the AEA, as amended by UMTRCA, was incorporated by NRC into the Alternate Feed Policy in order to ensure that the tailings and other wastes associated with the processing of alternate feed material would qualify as 11(e).2 byproduct material and could be disposed of in a mill's tailings impoundment (along with the wastes from processing conventional ores), without altering the regulatory status of the tailings impoundment.

[11] The AEA defines 11e.(2) byproduct material to mean:

> the tailings or wastes produced by the 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). By comparison, the Alternate Feed Policy requires that alternate feed material (i) qualify as an "ore" and (ii) be processed *primarily* for its source material content.

for the extraction of uranium in licensed uranium mills are processed *primarily* for their source material content. *See* discussion at pp. 15-17, *supra.*

However, in developing its Alternate Feed Policy, NRC recognized that the physical, chemical, and radiological characteristics of alternate feed materials may vary widely in comparison to conventional ores. Accordingly, the Alternate Feed Policy sets out a number of criteria intended to ensure that wastes generated from processing alternate feed material will qualify as 11e.(2) byproduct material and will not otherwise be subject to dual or multiple jurisdiction. Thus, for example, the policy requires a licensee to ensure that processing an alternate feed, and disposing of the resulting tailings and wastes, will not compromise a mill's ability to comply with the regulatory requirements contained in 10 C.F.R. Part 40. *See* 60 Fed. Reg. at 49,296.

Also, in order to avoid the possibility that wastes from processing an alternate feed might be regulated as a mixed hazardous and radioactive waste, the Alternate Feed Policy provides that an alternate feed material must not contain any *listed* hazardous wastes or residues that constitute hazardous waste from any wastewater treatment process. 60 Fed. Reg. at 49,296-97. This requirement recognizes that many alternate feed materials are the residues or wastes from other processing activities that might, unlike conventional ores, introduce listed hazardous wastes into the tailings and wastes generated from processing the materials.

Similarly, it is implicit in the definition of 11e.(2) byproduct material, and in the presumption that an ore is processed *primarily* for its source material content if it is processed for the extraction of uranium in a licensed uranium mill, that uranium will be extracted from the ore. In order to ensure that the presumption under UMTRCA is justified and that the proposed

alternate feed material will be processed *primarily* for its source material content (and the resulting tailings will be 11e.(2) byproduct material) it is necessary to determine, prior to finding that a material may be processed as alternate feed, whether or not it is reasonable to expect that uranium will be extracted from the proposed alternate feed material.[12] This requirement recognizes that, unlike conventional ores, alternate feeds can have wide variations in their physical characteristics, and therefore it may not be reasonable to expect that uranium will be extracted from every potential alternate feed. Hence, the co-disposal and certification tests in the Alternate Feed Policy can assist in determining whether or not it is reasonable to expect that uranium will be extracted from the proposed alternate feed at the mill.[13]

If it is reasonable to expect that uranium will be extracted (*i.e.*, that the alternate feed contains uranium and that the licensee will make a good faith effort to extract uranium from the alternate feed) then, in evaluating the proposed alternate feed material, it is appropriate for the licensee and NRC Staff to apply the presumption that the alternate feed material will be processed *primarily* for its source material content and the resulting tailings will be 11e.(2) byproduct material. If, on the other hand, it is not reasonable to expect that uranium will be

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[12] It is important to note that this is a "reasonable expectation" test, which must be satisfied prior to finding that a proposed alternate feed is acceptable for processing. So long as it is reasonable to expect that uranium will be recovered, regardless of whether or not any uranium ultimately is recovered, the presumption that the alternate feed material is being processed primarily for its source material content is satisfied. The conclusion that an alternate feed may be processed is based on the reasonable expectation at the time a finding is made that a proposed alternate feed is acceptable for processing as alternate feed material and hence the materials are being processed for the primary purpose of satisfying that expectation. This presumption can be rebutted if the licensee does not make a good faith effort to recover uranium. Interestingly, whether or not recycling of hazardous wastes under RCRA is considered recycling rather than "sham recycling" similarly is based on the reasonable expectations of the parties or on the actual results of the recycling. See *infra* at p. 28-29.

[13] The Alternate Feed Policy does not expressly use these words. However, given that the fundamental purpose of the Alternate Feed Policy is to ensure that all tailings resulting from the processing of alternate feed materials are 11e.(2) byproduct material, and given the presumption that a licensed uranium mill that is processing ore for the extraction of uranium is presumed to be processing the ore *primarily* for its uranium content, the only determination that remains to be made in order to conclude that the tailings from processing an alternate feed will qualify as

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extracted from processing the alternate feed material (and as a result the tailings may not qualify as 11e.(2) byproduct material), then the presumption that the alternate feed material will be processed *primarily* for its uranium content would not be satisfied, and neither the licensee nor NRC should permit processing of the alternate feed material.[14]

This is what is contemplated as "sham disposal" within the context of the Alternate Feed Policy, where the Commission states:

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

60 Fed. Reg. at 49,297 (emphasis added). If it is not reasonable to expect that uranium will be extracted from an alternate feed and in fact uranium is not extracted, the tailings will not qualify

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11e.(2) byproduct material is whether or not it is reasonable to expect that uranium will be extracted from the material.

[14] Some examples of proposed alternate feed materials from which it may not be reasonable to expect that uranium will be extracted include:

(a) Alternate feed materials that may be high in other radionuclides, such as radium or thorium, but that do not contain uranium. Although the resulting tailings from the processing of such materials may be essentially similar to the tailings that result from processing conventional ores, the inability to extract uranium may preclude such an alternate feed material from satisfying the statutory requirements for the tailings to qualify as 11e.(2) byproduct material.

(b)Alternate feed materials that do not contain any uranium that can be separated from various contaminants or other metals in the feed materials.

(c) Alternate feed materials where there are not adequate considerations (*e.g.*, financial, uranium content, or any other considerations) that would make it reasonable to expect that the mill operator will make a good faith effort to extract uranium by processing the material through the mill.

as 11e.(2) byproduct material under the AEA and hence *would have to be disposed* of elsewhere as radioactive or mixed waste.[15] However, if it is reasonable to expect that uranium will be extracted from a feed material, in which case the tailings from processing the material will meet the statutory definition of 11e.(2) byproduct material, the feed can be processed at the mill and *need not be disposed of* in a LLRW or mixed waste disposal facility.

Sham disposal therefore occurs when a mill processes a proposed alternate feed even though it is not reasonable to expect that uranium can be extracted from such material, and, in fact, no uranium is extracted. This is because the tailings will not be 11e.(2) byproduct material under UMTRCA and therefore should properly have been disposed of in a LLRW or mixed waste disposal facility. Under such circumstances processing the material through a uranium mill would be considered a "sham" intended to avoid having to dispose of the material in a LLRW or mixed disposal facility. Of course, if uranium is actually recovered, the tailings would be 11e.(2) byproduct material under UMTRCA and processing the alternate feed would not be considered "sham disposal," even if at the outset a reasonable person might not have expected that uranium could actually be extracted. In addition, it would also be "sham disposal" if it was reasonable to expect that uranium would be extracted from a proposed alternate feed but a good faith effort was not made to extract the uranium and no uranium was in fact recovered.[16] These are the *only* situations that could constitute "sham disposal" under the Alternate Feed

[15] This would *not* be the case for 11e.(2) byproduct materials or other materials that satisfy the Alternate Feed Policy's co-disposal test, which provides an *independent* basis for concluding that an ore is being processed *primarily* for its source material content since those materials, by definition, could be disposed of directly in a mill's tailings impoundment. Thus, for example, 11e.(2) byproduct material, which can be disposed of directly into a licensed mill's tailings impoundment, can be processed as an alternate feed.

[16] In these cases of "sham disposal," the presumption that on alternate feed material that is processed for the extraction of uranium at a licensed uranium mill is being processed primarily for the extraction of uranium within the meaning of the AEA, as amended by UMTRCA, cannot be relied upon, or if relied upon, would be rebutted.

Policy because they are the only circumstances where the resulting tailings would not constitute 11e.(2) byproduct material.

It is interesting to note that the concept of "sham disposal" described above is consistent with EPA's concept of "sham recycling." EPA has focused considerable attention on "sham recycling," which the Agency has described as waste treatment or disposal masquerading "under the guise of" recycling. 63 Fed. Reg. 28,556, 28,586 (May 26, 1998). In the context of mineral recovery from mineral processing waste streams (which is closely analogous to uranium recovery from alternate feeds), EPA has identified as "sham recycling" situations where ostensibly desired minerals are not, in fact, recovered from the waste stream and situations where there is no reasonable expectation that the desirable minerals be recovered. *See* 61 Fed. Reg. 2338, 2343 (January 25, 1996). Similarly, in the context of alternate feed material, provided that a mill processing alternate feed is able to extract uranium or was reasonably expected to extract uranium, it would not be sham recycling under EPA's guidance.

Another indication of "sham recycling" in mineral recovery operations, according to EPA, is where the material being recycled is substantially different, chemically, from the customarily used raw material, and, in particular, where toxic constituents are present in the material to be recycled in quantities "significantly in excess" of those normally found in the raw material. The analogous concern with respect to "sham disposal" in the alternate feed context would exist if the tailings and other wastes generated from processing an alternate feed material differed substantially, in terms of chemical or radiological characteristics, from the tailings and wastes already disposed of in the mill's tailings impoundments. However, as NRC has suggested, in order for processing of an alternate feed material to conform with the requirements of 10 C.F.R. Part 40, Appendix A, the wastes and tailings generated from processing such feed

material must be substantially similar to 11e.(2) byproduct material in terms of chemical and radiological characteristics. *See* 57 Fed. Reg. at 20,529. Thus, so long as a licensee satisfies the Alternate Feed Policy's requirement to demonstrate that processing an alternate feed will conform with the requirements of 10 C.F.R. Part 40, Appendix A, this issue is not of concern.

Finally, the term "sham recycling" also implies disposing or recycling of a material in order to circumvent regulation of the material. 61 Fed. Reg. at 2342. Clearly, this last issue is not a concern with respect to the processing of alternate feed material at licensed uranium mills, since the wastes and tailings generated from such processing are subject to the rigorous and comprehensive regulatory regime established under 10 C.F.R. Part 40 for the disposal and long term management of uranium mill tailings and related wastes. This regulatory regime requires, among other things, that tailings impoundments (i) provide protection of public health and safety without the need for *active* maintenance (i.e., relying solely on *passive* controls) for a period of 1,000 years, to the extent practicable, and for no less than 200 years; (ii) achieve levels of protection against hazardous constituents in groundwater equivalent to those provided by RCRA; (iii) incorporate a radon barrier to limit radon emissions to no more than 20 $pCi/m^2/s$; and (iv) that mill operators clean-up any soils on or off of the mill site contaminated by radionuclides (primarily from windblown tailings) to meet the so-called 5/15 pCi/g radium in soil standard that allows unrestricted use of such property. 10 C.F.R. Part 40, Appendix A. The regulatory regime also requires that either DOE or the State take title to and custody of the tailings impoundment following site closure, pursuant to a perpetual NRC license, to provide for long term monitoring and surveillance. *Id.*

C. The Primary Purpose Requirement In The Alternate Feed Policy

As indicated previously, the Alternate Feed Policy provides that in order to process an alternate feed material, a licensee must demonstrate that the feed will be processed *primarily* for its source material content. We have just discussed what this "primary purpose" requirement is intended to mean and how it will be satisfied if it can be established that it is reasonable to expect that uranium will be extracted from a particular proposed alternate feed. The Alternate Feed Policy sets out two tests to be used in determining whether a proposed alternate feed material will be processed *primarily* for its source material content (*i.e.*, whether it is reasonable to expect that uranium will be extracted from a material). These two tests are: (i) the certification test, and (ii) the co-disposal test.

Under the certification test, the licensee must certify that the feed material is to be processed *primarily* for its source material content and for no other *primary* purpose. The licensee must justify its certification with "reasonable" documentation, which can be based on "financial considerations, the high uranium content of the feed material, or other grounds." 60 Fed. Reg. at 49,297. The co-disposal test evaluates whether the alternate feed material could be disposed of directly into the mill tailings impoundment, consistent with NRC's policy on the disposal of *non*-11.e(2) byproduct material.[17] The rationale underlying the co-disposal test is straightforward: if an alternate feed material can be disposed of directly into a licensed mill tailings impoundment without having to be processed through the mill first it can be presumed that the mill operator is processing the alternate feed *primarily* for its source material content. *Id.*

[17] *Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments*, 60 Fed. Reg. 49,296 (Sept. 22, 1995) (hereinafter referred to as the "*Non*-11e.(2) Disposal Policy").

Importantly, the primary purpose requirement will be satisfied if *either* the co-disposal or the certification test is met. It is not necessary to satisfy both tests.[18] The Alternate Feed Policy specifically states that the determination of whether an alternate feed material is to be processed *primarily* for its source material content, using either the certification test or the co-disposal test, must be made on a case-specific basis. *Id.*

1. The Certification Test

If a licensee certifies that it will be processing an alternate feed *primarily* for its source material content and for no other *primary* purpose,[19] that certification must be justified with reasonable documentation. Under the Alternate Feed Policy, this justification *can* be based on (a) financial considerations, (b) the high uranium content of the feed material, (c) or other grounds. As discussed above, this test is intended to demonstrate whether or not there is a reasonable expectation that uranium will be extracted from the proposed alternate feed material (*i.e.*, whether it is appropriate to apply the presumption under UMTRCA that ore processed in a licensed uranium mill is processed *primarily* for its source material content). If it is reasonable to expect that uranium will be extracted from the proposed alternate feed material at a licensed mill based on any one of the grounds described above, then the proposed alternate feed material will be presumed under UMTRCA to be processed *primarily* for its uranium content and the resulting tailings and wastes will be 11e.(2) byproduct material.

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[18] Notably, in its Technical Evaluation Report ("TER") and approval of the Ashland 2 Amendment, NRC staff concluded that IUSA in fact satisfied both tests.

[19] The inclusion of the phrase "and no other *primary* purpose" in the Alternate Feed Policy indicates that a licensed mill may legitimately have one or more *secondary* purposes in processing an ore (*e.g.*, to recover other metals such as vanadium or tantalum, or to provide recycling services for a fee), in addition to its *primary* purpose of recovering uranium.

a. Financial Considerations

Although the Alternate Feed Policy provides that a licensee's certification can be justified on the basis of "financial considerations," the Policy does not specify or limit the meaning of that term nor is it a mandatory component of a licensee's justification for certification. Neither, does the Alternate Feed Policy certainly state anywhere that the term "financial considerations" means, let alone is limited to, a comparison of the profitability of processing the alternate feed material for uranium compared to the magnitude of a toll milling or recycling fee. Instead, for the reasons discussed earlier, at pages 24-25, financial considerations as used in the Alternate Feed Policy's certification test should be interpreted to mean any financial consideration that supports the conclusion that it is *reasonable to expect* that uranium will be extracted from the feed material. Some examples of financial considerations that lead to this conclusion include the following:

(1) The Expected Incremental Cost of Processing the Material for Uranium is Less than the Expected Incremental Benefit of Producing Uranium from the Materials

If the expected incremental cost of processing the alternate feed material is less than the expected incremental benefit from producing uranium from the material, it is reasonable to expect that uranium will be recovered from the material. In this context several points must be considered. First, when looking at "financial considerations" it is appropriate to consider the total economic impact on the licensee. There may be indirect cost savings associated with processing alternate feed material, in the form of mill scheduling efficiencies and the like that create benefits that can effectively be deducted from other costs of production. For example, if the mill were on standby during the period that the materials were to be processed, the incremental cost of processing the materials would not include the cost of certain categories of

labor, utilities and overhead that would have been incurred anyway. If keeping the mill operating on a more regular basis reduces employee training and retention costs (both in terms of time and effort and in terms of operating inefficiencies to be expected during training) these types of benefits can be factored against other costs of production in determining the true incremental costs of production. In addition, IUSA's Mill due to its size, historically has run conventional ores in campaigns between which ore is stockpiled. To the extent that alternate feed materials reduce the standby time between campaigns, operating efficiencies are increased; and the benefit of these operating efficiencies must be factored into the calculation of incremental benefit. Similarly, if running alternate feeds reduces the time between conventional ore mill runs the licensee can better assess and adjust to commodity price fluctuations.

Similarly, there may be factors that increase the value of production. For example, there may be commercial benefits to the production of U.S. origin uranium at a given time, such as delivery into long term matched sales contracts at prices significantly higher than current or expected spot prices or to allow production against expected royalties.

There can also be a net benefit to processing even low-grade uranium if it is easy and cost effective to process a feed for uranium. Some alternate feeds have proven very easy to process for uranium requiring little processing effort and cost. And finally, a toll milling or recycling fee can add to the net incremental benefit of processing an alternate feed.

In short, if the licensee determines that it is better off by processing the alternate feed material for uranium than it is by not processing it, then it is reasonable to expect that uranium will be extracted from the alternate feed material, in which case the presumption in the AEA, that

the alternate feed material is being processed at the mill primarily for its uranium content, will be applied.

(2) Other Valuable Metals That Can be Extracted as Co-products

Often uranium is found in nature with other minerals such as vanadium, tantalum, niobium, scandium, and zirconium. Depending on the type of processing that originally generated the alternate feed material, the alternate feed may contain recoverable quantities of these other metals in addition to uranium. IUSA's Mill has a *secondary, side-stream* recovery circuit, originally designed to extract vanadium from the uranium/vanadium ores found in the Colorado Plateau regions of Utah and Colorado, that makes it possible for the Mill to extract other metals in addition to uranium from alternate feeds. If a licensee can process for other metals and there is little incremental cost of also processing for uranium, it is reasonable to expect that uranium will be extracted as well. Again, this is true regardless of any toll milling or recycling fee that may be paid to the mill operator. Also, depending on relative commodity prices, the net value of the other metals may exceed the net value of the uranium, but this does not make it unreasonable to expect that uranium will not be extracted.

(3) Contractual Obligations to Process

The licensee may commit contractually with the generator of the alternate feed material to process the material for the extraction of uranium, either to separate the unwanted uranium from the metal or mineral that the generator wants returned after processing or to ensure that the licensee satisfies the statutory presumption, thereby eventually extinguishing the generator's

potential long term liability for final disposition of the waste, since it becomes 11e.(2) byproduct material subject to 10 C.F.R. Part 40.

In addition, the licensee could have contractually committed to rebate a certain portion of the regulatory fee based on the uranium content of the material.

(4) Receipt of a Recycling Fee

In general in the United States, recycling a waste stream to extract valuable resources is considered to be desirable and worthwhile; consequently, people are prepared to pay for recycling services. One commentator on the Alternate Feed Policy noted:

> In many cases, it is necessary to charge a fee to the customer to make a recycling system economically viable; and yet, nobody claims that these systems are "sham recycling" because the waste "generator" is compelled to pay to support the recycling process. For example . . . used oil and used tires are almost never purchased from the customer by recyclers; rather, the consumer pays to get rid of them. Yet bottles, used oil and used tires that are accumulated and are actually reprocessed and reused are clearly being "recycled" despite the fact that the money is going in the "wrong direction." . . . . *In fact, none of these programs involve sham recycling. They involve real, bona fide recycling because used materials are really being processed and valuable components are really being recovered and reused . . . Reclamation of source material wastes in uranium mills will serve these same beneficial purposes.*[20]

[20] Letter from Anthony T. Campitelli, Cabot Performance Materials to Chief, Rules and Directives Review Branch, U.S. Nuclear Regulatory Commission 7 (June 11, 1992) (Attached as Exhibit 5). In fact, virtually all forms of recycling – including perhaps processing of such source material wastes as alternate feed – require some type of subsidy or fee, because none of it is very profitable. In his article published in the New York Times under the title, "Recycling Is Garbage," John Tierney pointed out that for every ton of glass, plastic and metal that the City of New York recycles, it spends $200 more than it would spend to bury the material in a landfill. John Tierney, *Recycling Is Garbage*, N.Y. Times, June 30, 1996 (Attached as Exhibit 6). Simply put, "recycling costs money."

A commitment to process an alternate feed material for the extraction of uranium, together with the payment of a recycling fee to the licensee is sufficient evidence that it is reasonable to expect that the material will be extracted at the mill.

These are some illustrative examples of the types of financial considerations that are relevant in determining whether it is reasonable to expect that uranium will be extracted from an alternate feed material. Any one of these factors would be sufficient to justify a licensee's certification, although no single one is required in order to justify the certification.

b. High Uranium Content of the Feed Material

The second factor identified in the Alternate Feed Policy as potentially justifying a licensee's certification is the high uranium content of an alternate feed. 60 Fed. Reg. at 49,297. Significantly, the Alternate Feed Policy speaks in terms of justifying a certification on the basis of high uranium *content*, not high uranium *concentration*. The word *content* can mean content per ton (*i.e., concentration*), or the *total quantity* contained in the entire volume of feed material to be processed.

If an alternate feed material contains a high enough *concentration* of uranium, it is reasonable to assume that uranium will be extracted from the feed material, and there is no need to inquire further. There are also circumstances, however, where it is reasonable to expect that uranium will be extracted from a large quantity of relatively low *concentration* alternate feed material so long as the *total quantity* of uranium in the feed material is "high." This may be particularly so where the composition of the feed material is relatively well-understood and

where it would normally be expected that reprocessing would yield uranium, such as with 11e.(2) byproduct material.

The Alternate Feed Policy does not specify what is to be considered a high uranium content, so the licensee and NRC have wide discretion in interpreting what constitutes "high" uranium content. *See Bernstein v. Sullivan*, 914 F.2d 1395, 1400 (10th Cir. 1990). However, for the reasons discussed previously, the content should be high enough so that it is reasonable to expect that uranium will be extracted from the feed material.[21].

c. Other Grounds

In its response to comments on the proposed Alternate Feed Policy, the Commission Staff stated that:

> The licensee justification can be based on financial considerations, on the high uranium content of the ore, *or on any other grounds* that the licensee determines will justify that the proposed processing is *primarily* for the uranium content of the material and is not sham disposal.

SECY 95-211, Attachment 3 at 17 (emphasis added) (see Exhibit 4). In other words, the certification can be justified on *any* grounds that the licensee determines will lead to the reasonable expectation that uranium will be extracted from the feed material in a licensed uranium mill, thereby ensuring that the resulting tailings are 11e.(2) byproduct material. Examples of such other grounds may include the following:

[21] It would seem that if an alternate feed had a uranium concentration at least as high as the average grade of uranium in conventional ores processed at the mill, it would be reasonable to expect that uranium will be extracted from the material – particularly since there typically are no mining or transportation costs associated with milling alternate feeds.

- Contractual obligations with a generator of the alternate feed material to process the material for the extraction of uranium;

- A pressing national or local need, which might strongly encourage a mill operator to recover uranium from whatever source possible;

- The public policy considerations underlying recycling. Such recycling service provides low cost environmental clean-up or consolidation of waste to as few sites as possible. Recycling is a favored national environmental policy; furthering that national policy is another ground upon which a licensee's certification that it is processing a proposed alternate feed primarily for its source material content may be justified;

- Processing alternate feeds may be beneficial to the overall operation of the Mill process, and in fact enhance the value of other feed streams. For example, test work has shown that combining alternate feed materials containing calcium fluoride with conventional uranium/vanadium ores results in small increases in the leach recovery rates. The alternate feed material provides the fluoride component and the contained uranium. Also, materials with lower radionuclide content (including uranium) can have beneficial impacts in tailings impoundments. Properly managed, the tailings solids with lower levels of radioactive elements can act as a shield for the higher levels of radiation present in wastes from processing higher grade ores. This shielding also assists in lowering radon emanation from the tailings (the primary public health concern associated with uranium mill tailings) and puts less of a

performance burden on the final radon barrier, essentially increasing the factor of safety in the design of the barrier; and

- The licensee's past experience in processing similar types of alternate feed materials. Indeed, when determining whether any justification provided to the NRC is sufficient to support a certification, it is appropriate for the NRC to take into consideration the past experience the mill has had in processing alternate feeds, and the level of trust the NRC has in the licensee and in the licensee's ability to successfully process alternate feeds for the extraction of uranium.

d. Conclusions Regarding the Certification Test

In summary, the purpose of the certification test is to provide evidence to NRC to allow the Commission to conclude that it is reasonable to expect that uranium will be extracted from a proposed alternate feed material. We have provided above some examples of factors that might support such a conclusion. No single factor is required; any grounds that support that conclusion are sufficient to justify the licensees certification.

2. <u>The Co-Disposal Test</u>

The co-disposal test provides an alternative method for demonstrating that an ore is being processed *primarily* for its source material content (*i.e.*, that it is reasonable to expect that uranium will be extracted from the alternate feed at a licensed uranium mill). Under the co-disposal test, an alternate feed material will be presumed to be processed *primarily* for its source material content if the feed material would be approved for disposal in a licensed mill tailings impoundment consistent with NRC's *Non*-11e.(2) Disposal Policy. 60 Fed. Reg. at 49,297. The

rationale underlying this position is straightforward: if an alternate feed material can be disposed of for a fee, *directly* into a licensed mill tailings impoundment without having to be processed through the mill first, it can be presumed that the licensee milling this material must be processing it *primarily* for its source material content. As NRC has explained:

> The clearest way to show, beyond any doubt, that proposed feed material would be processed *primarily* for its source material content, is to show that it would be allowed to be disposed of in the tailings impoundment in any case. Such a demonstration would dispel any accusation of "sham disposal."

SECY 95-211, Enclosure 3 at 17 (see Exhibit 4).

IV. UTAH'S ARGUMENTS ARE WITHOUT MERIT

As demonstrated below, IUSA's processing of the Ashland 2 material satisfies all of the criteria set out in the Alternate Feed Policy, including, most importantly, the requirement that the alternate feed be processed *primarily* for its source material content. NRC Staff's decision to approve Amendment 6 to IUSA's license was based on a reasonable and proper application of the Alternate Feed Policy and was adequately supported by the administrative record. Accordingly, the Staff's decision to approve Amendment 6 should be affirmed.

A. The State Of Utah Has Fundamentally Misconstrued The Meaning Of "Processed *Primarily* For Its Source Material Content" As Used In NRC's Alternate Feed Policy

1. Summary of Utah's Argument

Utah asserts that IUSA is not processing the Ashland 2 material *primarily* for its source material content. *Utah Brief* at 3, 5, 9. The State makes two arguments to support this core assertion. First, the State argues that IUSA is processing the Ashland 2 material *primarily* for the

purpose of collecting a "handling and disposal fee". *Id.* At 3, 9. It makes this assertion based on calculations it has performed that purport to show that the revenue IUSA will generate from the "handling and disposal fees" it receives in connection with the Ashland 2 material will be substantially greater than the potential revenue IUSA will receive from the uranium it recovers. The State argues that this disparity – the fact that the value of the uranium recovered from the Ashland 2 material may not be as great as the value of the fees IUSA collects – requires the conclusion that IUSA is not processing the Ashland 2 material *primarily* for its source material content but instead is processing the material *primarily* for handling and disposal fees. *Id.* at 7-8. In other words, according to the State, because the recovered uranium, in and of itself, is not the most profitable aspect of IUSA's processing of the Ashland 2 material, IUSA is not processing that material *primarily* for its uranium content.

The State's second argument is a conclusory one. According to the State, IUSA cannot justify its certification that it is processing the Ashland 2 material *primarily* for its uranium content based on "high uranium content," because the average concentration of uranium in the Ashland 2 material is "low." *Utah Brief* at 10-12.

As discussed below, the State's arguments regarding the uranium content and relative profitability of the Ashland 2 material are wrong and in any event, are *irrelevant* in determining whether IUSA is processing the Ashland 2 material *primarily* for its source material content.

2. Neither Congress Nor NRC Intended That An Economic Or Profitability Test Be Imposed to Determine Whether A Material Is Processed *Primarily* For Its Source Material Content

As demonstrated above in Section II.B, UMTRCA's legislative history reveals that Congress did not intend to require an economic or profitability showing in order to demonstrate

that an ore is being processed *primarily* for its source material content. There certainly is no suggestion in the legislative history that the extracted source material must be the most profitable aspect of the milling of an ore in order for the ore to be processed *primarily* for its source material content. Instead, as discussed in Sections II.C and II.D above, Congress used the word "*primarily*" to distinguish between ores processed in licensed uranium mills that are part of the nuclear fuel cycle and ores processed in *secondary* or *side-stream* operations at facilities that are not nuclear fuel cycle facilities.[22]

Given their aim of sweeping a broad range of materials into the definition of 11e.(2) byproduct material (to ensure that all wastes and tailings from licensed uranium recovery operations would be covered by UMTRCA's comprehensive regulatory scheme for 11e.(2) byproduct material), it is difficult to imagine that Congress or NRC would have intended to link the determination of whether a material qualifies as 11e.(2) byproduct material (*i.e.*, whether a feed material is processed *primarily* for its source material content) to something so ephemeral as the relative profitability of the uranium produced from the processed feed material. For example, depending on normal market fluctuations, on any given day uranium might be the most profitable mineral to be extracted from a feed material – whether conventional ore or alternate feed -- while on the next day a different mineral present in the feed material (*e.g.*, vanadium, tantalum, etc.) might be more profitable than uranium. If Congress intended to link the determination of whether an ore is being processed *primarily* for its uranium content solely to the

[22] Similarly, there is no suggestion in the Alternate Feed Policy that NRC intended the term *primarily* to mean "most profitable" when it provided that an alternate feed must be processed *primarily* for its source material content. Indeed, a careful reading of the Alternate Feed Policy suggests just the opposite conclusion: a material may be found to be processed *primarily* for its source material content *regardless* of the profitability of the source material that may be recovered. Thus, financial considerations only one of several different grounds for justifying a licensee's certification under the Alternate Feed Policy, and the co-disposal test does not involve any profitability considerations whatsoever.

relative profitability of extracting the uranium, mills would be put in the untenable position of producing wastes which are regulated by NRC as 11e.(2) byproduct material on one day and on the following day producing wastes, from the same ore, which are regulated under a different regulatory regime (*e.g.*, RCRA), solely because fluctuations in the market price of uranium (and corresponding shifts in the relative profitability of uranium as compared to other mineral values in the ore) might cause the ore to be deemed to be processed "*primarily*" for uranium on one day and "*primarily*" for a different mineral on the following day.

Similarly, adopting a profitability test such as Utah urges would ignore years of established NRC precedent. Historically, licensed uranium mills processing conventional ores have recovered other minerals in addition to uranium as part of *secondary* or *side-stream* operations. Vanadium is a mineral that is typically recovered in such *side-stream* processes, particularly when processing uranium ores from the Colorado Plateau. Often in the past, when ores containing vanadium and uranium have been processed at the Mill, the value of the vanadium contained in the ore (and the relative profitability of extracting the vanadium) has exceeded the value of uranium recovered from the ore. However, neither NRC nor the State has *ever* suggested that uranium ore processed under such circumstances is not being processed *primarily* for its source material content, nor has NRC ever asserted that the tailings from such processing do not qualify as 11e.(2) byproduct material. Indeed, as discussed previously, the D.C. Circuit has indicated that ores that are processed first to recover rare earths and later to recover uranium or thorium may still be deemed to be processed "*primarily*" for their source material content. *See Kerr McGee*, 903 F.2d at 7-8.

Given Congress' desire to create in UMTRCA a comprehensive, uniform, national program for the long-term regulation and control of 11e.(2) byproduct material (and given its

intent to include within the definition of 11e.(2) byproduct material the broad range of materials generated as wastes from licensed uranium recovery operations), it is inconceivable that Congress could have intended that a material's status as 11e.(2) byproduct material (or as an ore that yields 11e.(2) byproduct material) would be so uncertain as to shift from one day to the next based upon the market value of uranium.

Furthermore, tying the concept of 11e.(2) byproduct material to a profitability test such as that urged by the State leads to the absurd result that the determination of whether or not a licensee's process wastes will be regulated as 11e.(2) byproduct material could be based upon the licensee's ability to negotiate favorable commercial terms with the generator of the alternate feed material. For example, IUSA's predecessor accepted alternate feed materials for processing at the Mill in the past without requiring fees of the magnitude associated with the Ashland 2 material. Under the profitability test urged by the State, the processing of this alternate feed material in the past would have resulted in the creation of 11e.(2) byproduct material (*i.e.*, IUSA, or its predecessor, would have been deemed to be processing the alternate feed material *primarily* for its source material content) simply because IUSA, or its predecessor, was unable to, or chose not to, negotiate handling and recycling fees as favorable as those IUSA negotiated for the Ashland 2 material. It seems unlikely that Congress would have intended to have a material's status as 11e.(2) byproduct material hinge on the ability of a licensee to negotiate favorable commercial contractual terms, yet this could be one result of the profitability test urged by the State. [23]

[23] For example, in 1997 the Mill's license was amended to allow the processing of another DOE material, known as the "Cotter Concentrate," as an alternate feed at the Mill. The Cotter Concentrate had been stored as a strategic material in inventory at the Nevada test site. Originally, it had been anticipated that the material would undergo

Footnote continued on next page

Utah's assertion that the value of the uranium must be the most profitable aspect of processing conventional ores or alternate feeds, has no basis in the statute, the Alternate Feed Policy, in case law or in NRC practice.

3. The State of Utah Misconstrues The Meaning Of The "High Uranium Content" Justification

Utah's second argument, that Ashland 2 material contains a "low" uranium content and as such fails another possible justification under the Alternate Feed Policy, is similarly without merit.

Based on its review of the history of the Ashland 2 site, the State of Utah concludes that "the Ashland 2 Material probably contains very little recoverable uranium" (*Utah Brief*, p. 10). Nevertheless, the State of Utah estimates that the average grade of uranium in the Ashland 2 Materials ranges between 0.008% and 0.058%, yielding a total of approximately 8,000 to 70,000 pounds of yellow cake (Herbert testimony at p. 6-8).

Footnote continued from previous page

further processing for uranium extraction, to support the nation's nuclear weapons program. However, suspension of large-scale weapons production eliminated the need for this material. This led DOE to contract with IUSA to process the Cotter Concentrate to extract its uranium content, and to dispose of the tailings and related processing wastes in the Mill's existing tailings impoundment. Significantly, the State of Utah did not object to IUSA's processing of this alternate feed material, and ultimately, IUSA was able to recover approximately 60,000 pounds of uranium from the Cotter Concentrate.

DOE has estimated that it *saved* approximately $3 million in disposal costs by recycling the Cotter Concentrate at IUSA's Mill. O'Laughlin *et al.*, *Saving Time, Expense, and a Valuable Resource by Recovering Uranium From Surplus DOE Strategic Material at a Conventional Uranium Mill*, reprinted in Proceedings of WM'98, Tucson, Arizona. This suggests that IUSA *could have* assessed DOE fees on the order of close to $3 million, had it chosen to do so. Under Utah's theory, had IUSA in fact charged such a fee, the whole nature of IUSA's processing of the Cotter Concentrate would have been altered, as would the legal status of the tailings and related wastes generated from such processing. Specifically, IUSA would no longer be presumed to be processing the Cotter Concentrate *primarily* for its source material content and the tailings and wastes generated from processing the material would no longer be considered 11e.(2) byproduct material – *even though IUSA would be processing exactly the same material.* This result makes no sense.

The State of Utah misunderstands two points. First, as mentioned above, the Alternate Feed Policy does not define what is meant by "high" uranium content, so the licensee and NRC have wide discretion in interpreting what constitutes "high" uranium content. As will be discussed in Section IV.B. below, the Ashland 2 material should be considered to have "high" uranium content within the meaning of the Alternate Feed Policy. In coming to its conclusion that the Ashland 2 material probably contain very little recoverable uranium, the State does not set out a standard for comparison. Certainly 8,000 to 70,000 pounds of uranium is a significant amount of uranium. If the State means that "high" uranium content requires that the value of the uranium must be the most economic aspect of the processing, then the State is confusing the "high" uranium content justification with its interpretation of the "financial considerations" justification.

Second, the State appears to ignore the fact that even if one could argue that the uranium *concentration* is not "high," the total uranium *content* can still be considered to be "high."

4. Utah Is Incorrect In Suggesting That IUSA's Processing Of The Ashland 2 Material Might Implicate "Sham Disposal" Issues

Utah correctly points out that NRC, in the Alternate Feed Policy, states that potential problems of "sham disposal" are eliminated if a licensee seeking to process an alternate feed demonstrates that it will be processing the feed *primarily* for its source material content. *Utah Brief* at 4. To the extent that Utah's discussion of "sham disposal" is intended to suggest that IUSA's processing of the Ashland 2 material raises sham disposal concerns, that suggestion is baseless.

First, as IUSA has demonstrated, the mere fact that the value of the uranium recovered from the Ashland 2 material may not be as great as other values associated with IUSA's processing of the material does not preclude a determination that IUSA's processing of the material is *primarily* for its source material content. Neither does the fact that the Ashland 2 material may not contain "high" concentrations of uranium. This is because neither Congress nor NRC intended to impose a profitability test or a minimum uranium concentration requirement in determining whether a material is being processed *primarily* for its source material content. Indeed, NRC has expressly indicated that a finding of "sham disposal" cannot be based solely on the economics or relative profitability of uranium recovered from an alternate feed material. In its response to comments on the proposed Alternate Feed Policy, the Commission Staff stated that:

> We agree that a licensee certification may not be sufficient to prevent sham disposal, but also agree that the *economic aspects may not be able to differentiate between legitimate uranium processing and sham disposal.* We therefore have expanded the test to require both a licensee certification and justification. *The licensee justification can be based on financial considerations, on the high uranium content of the ore, or on any other grounds* that the licensee determines will justify that the proposed processing is *primarily* for the uranium content of the material and is not sham disposal.

SECY 95-211, Attachment 3 at 17 (emphasis added) (*see* Exhibit 4).

This approach is similar to that recently adopted by EPA when addressing "sham recycling" concerns in the context of mineral processing wastes. The Agency specifically declined to adopt an economic test or a minimum concentration requirement for determining whether such wastes are being processed to recover their mineral content or for sham recycling purposes. According to the Agency:

> The main issue in this rulemaking was whether the Agency should develop quantified criteria for use in assessing the legitimacy of reclamation activities within the mineral processing industry. The Agency proposed quantitative criteria including the potential use of an ore grade cut off, normal operating range, efficiency standard, and an economic test.
>
> . . .
>
> Industry commenters also rejected the proposed use of an economic test because recycling need not be profitable to be legitimate. They specifically pointed out the cases where recycling was economical only relative to disposal, and yet, the company was legitimately reusing the recycled materials.
>
> For these reasons the Agency has declined to adopt any of the proposed quantitative tests.

63 Fed. Reg. at 28,587.

As discussed in Section III.B. above, "sham disposal" within the meaning of UMTRCA and the Alternate Feed Policy, is intended to mean situations where it is not reasonable to expect that uranium will be recovered from an alternate feed material and in fact no uranium is recovered, or where it may be reasonable to expect that uranium will be recovered from an alternate feed material, a good faith effort is not made to recover the uranium and no uranium is recovered. In these cases, the presumption that an alternate feed material that is processed for the extraction of uranium at a licensed uranium mill is being processed *primarily* for the recovery of uranium within the meaning of the AEA, as amended by UMTRCA, cannot be relied upon or if relied upon, would be rebutted.

However, even the State's calculations indicate that IUSA is likely to recover between roughly 8,000 to 70,000 pounds of uranium from the Ashland 2 material. Herbert Testimony at 7-8. Therefore, it is difficult to conclude that it is not reasonable to expect that uranium will be extracted from the Ashland 2 material.

Moreover, using RCRA's definitions of "sham recycling" as a comparison, the processing of the Ashland 2 material bears none of the indicia of "sham recycling" under RCRA, described previously in Section III.B. above. First, it is reasonable to expect that uranium will be recovered from the Ashland 2 material. Secondly, the tailings and wastes generated from processing the Ashland 2 material are substantially similar to the tailings already disposed of in the Mill's tailings impoundments and NRC Staff has determined that IUSA's processing of the Ashland 2 material will conform with the requirement of 10 C.F.R. Part 40, Appendix A. Finally, the tailings and wastes generated from IUSA's processing of the Ashland 2 material will not escape regulation by virtue of being processed at the Mill, as they will be subject to the same comprehensive regime for regulating the disposal and long term management of uranium mill tailings and related wastes, under 10 C.F.R. Part 40, that already applies to the tailings and wastes disposed of at the mill from processing conventional ores.

B. IUSA Has Provided NRC With Documentation Sufficient To Demonstrate That IUSA Is Processing The Ashland 2 Material *Primarily* For Its Source Material Content.

IUSA has provided NRC with documentation sufficient to demonstrate that IUSA is processing the Ashland 2 material *primarily* for its source material content. In fact, IUSA has satisfied *both* the certification and co-disposal tests.

1. IUSA Has Satisfied The Alternate Feed Policy's Certification Test

Utah argues that IUSA cannot justify its certification that it is processing the Ashland 2 material *primarily* for its source material content because the "handling and disposal fees" IUSA expects to receive from processing the Ashland 2 material will exceed the economic value of the

uranium IUSA will recover and because the alternate feed's uranium content is "low." *Utah Brief* at 7-10. Neither of the State's arguments has merit.

a. IUSA Has Provided NRC Staff With Sufficient Evidence To Justify Its Certification On Financial Grounds

In its brief, Utah offers several calculations that it uses to compare the revenue IUSA could receive from "handling and disposal fees" imposed on the Ashland 2 material versus the revenue IUSA might generate from the uranium recovered from the alternate feed material. *Utah Brief.* at 7-8. Utah uses these calculations, which are based on a number of assumptions regarding the composition and physical characteristics of the Ashland 2 material and the nature of the world market for uranium, to demonstrate that IUSA will receive substantially more revenue from "handling and disposal fees" than it will receive from the sale of uranium extracted from the Ashland 2 material (on the order of $4 million versus approximately $70,000 to $600,000). *Id.* The State argues that this apparent disparity indicates that IUSA cannot use "financial considerations" to justify its certification that it is processing the Ashland 2 material *primarily* for its source material content.

The State assumes, without any basis, that when the Alternate Feed Policy speaks of justifying a certification on the basis of financial considerations, those considerations must be limited to the value or profitability of the uranium recovered from the alternate feed relative to the magnitude of any recycling or processing fees. In fact, as discussed in Section III.C.1.a. above, the Alternate Feed Policy does not limit in any way the specific types of "financial considerations" that might justify a licensee's certification. Certainly, the Policy does *not* require that the licensee demonstrate that the market value of the recovered source material outweighs any other economic benefit that might flow from processing the alternate feed.

In its license amendment application, IUSA provided NRC with considerable evidence to support the conclusion that IUSA will receive a *substantial* economic benefit from processing the Ashland 2 material to recover the material's uranium content. Even the State acknowledges that the value of the uranium recovered from the Ashland 2 material, on its own, may total more than $600,000. These anticipated revenues plus the additional economic advantages addressed in IUSA's application for Amendment 6 represent a substantial economic benefit to IUSA associated with its processing of the Ashland 2 material to recover uranium. In addition, IUSA committed contractually to process the Ashland 2 materials at the Mill for the recycling of uranium in consideration of receiving a recycling fee. Furthermore, IUSA has agreed to rebate a portion of the recycling fee to USACE based on uranium content of the Ashland 2 material. These factors alone provide a sufficient basis to conclude that it is reasonable to expect that uranium will be extracted from the Ashland 2 material.

Thus, it was reasonable for NRC to conclude that there was a reasonable expectation that uranium would be recovered from the Ashland 2 material and, therefore, that the Ashland 2 material would be processed *primarily* for its source material content. The State of Utah may disagree with this conclusion; however, since the Alternate Feed Policy does not prescribe any specific showings that must be made or standards that must be applied in order to justify a certification based on financial considerations, NRC should have wide discretion in deciding what constitutes *reasonable* documentation to justify such a certification. *See Bernstein v. Sullivan,* 914 F.2d 1395, 1400 (10th Cir. 1990). Thus, any reasonable interpretation by the Commission should be upheld. *See, e.g., Udall v. Tallman,* 380 U.S. 1 at 24 (1965).

b. IUSA's Certification May Also Be Justified On The Basis Of High Uranium Content

Utah also argues that IUSA failed to justify its certification under the Alternate Feed Policy on the basis of the Ashland 2 material's uranium content. *Utah Brief* at 10-12. Since IUSA's certification was adequately justified on the basis of financial considerations, as just discussed, no further justification is required in order to satisfy the Alternate Feed Policy's certification test. However, the uranium content of the Ashland 2 material provides a *second, independent* basis for justifying IUSA's certification.

In written testimony submitted with its brief, the State provides a range of uranium concentrations that it estimates are likely to be found in the Ashland 2 material. The State's low-end estimate puts the uranium concentration of the Ashland 2 material at 0.008 percent by weight; the high-end estimate puts the uranium concentration at 0.058 percent by weight. Herbert Testimony at 6-7. The State concludes from this that "the Ashland 2 material probably contains very little recoverable uranium" and, therefore, IUSA's certification cannot be justified on the basis of the uranium content of the alternate feed. *Utah Brief* at 12.

IUSA believes that the State's characterization of the uranium concentration in the Ashland 2 material is misleading. As explained in IUSA's application for Amendment 6 and in responses to NRC comments on the application, IUSA has estimated an average uranium concentration in excess of 0.05 percent based upon data provided by the USACE. However, the real flaw in Utah's argument lies not with the State's estimates of uranium concentration but with the premise underlying the State's argument, which is that the uranium content of the Ashland 2 material is "low."

There are three flaws with Utah's argument. First, "high" uranium content is an inherently relative concept, that will vary depending on whether one looks at uranium content from the perspective of current market conditions (*e.g.*, the uranium content of an alternate feed as compared to conventional ores available on the domestic or international market), historical values (*e.g.*, the uranium content in an alternate feed compared to the highest average content in conventional ores over the past 40 years), or anticipated trends (*e.g.*, the uranium content in an alternate feed as compared to the expected content in conventional ores over the next 20 years). Generally speaking, the vast majority of conventional ore mined and processed in the United States would not be classified as "high" grade in relation to ores available in other parts of the world. Moreover, some estimates suggest that uranium concentrations as low as 17.6 parts per million (*i.e.*, 0.00176%) could lead to exposures of 25 mrem/y which would satisfy NRC's new dose criteria for "unrestricted" use, and would require disposal or other types of remediation in certain cases. The estimated average grade of the Ashland 2 material of 0.05% is approximately 28 times as high as levels estimated to satisfy the 25 mrem clean-up standard, and by comparison to that standard is "high."

Second, because the Alternate Feed Policy does not specify what constitutes "high" uranium content, and does not provide any standards to be applied in evaluating whether a feed material's uranium content is "high," NRC has discretion in determining what constitutes "high" uranium content sufficient to justify a licensee's certification. *See, Bernstein* 914 F.2d at 1400. Any reasonable interpretation by the Commission should be upheld. *See, e.g., Udall v. Tallman*, 380 U.S. 1 at 24 (1965). Compared to 0.00176%, .05% is "high." It is clearly "high" enough to expect that uranium can be extracted from it. In fact, the Mill is currently purchasing

conventional ores for the extraction of uranium that contain average grades of uranium of between 0.05 and 0.07%.

Finally, as discussed previously in Section III.C.1.b, the Alternate Feed Policy speaks in terms of justifying a certification on the basis of high uranium *content*, not high uranium *concentration* This distinction is significant. In its license amendment application, IUSA provided NRC with sufficient evidence to support the conclusion that the Ashland 2 material being processed by IUSA will yield a substantial quantity of uranium, even assuming *arguendo* that the average concentration of uranium in the Ashland 2 material might not be characterized as "high." Indeed, the State of Utah itself estimates that somewhere between roughly 8,000 to 70,000 pounds of uranium will be recovered from the Ashland 2 material being processed by IUSA. (Herbert Testimony at 7-8.) Thus, even based on the State's analysis, it is evident that a significant amount of uranium will be recovered from the Ashland 2 material by IUSA, and it is well within NRC's discretion to conclude that the ability to recover such a substantial quantity of uranium from the Ashland 2 material indicates that the material has a "high" uranium content. Consequently, NRC could appropriately conclude, based on the *total quantity* of uranium in the Ashland 2 material, that it is reasonable to expect that uranium will be extracted from the Ashland 2 material and, therefore, that the Ashland 2 material will presumed to be processed *primarily* for its source material content within the meaning of the AEA, as amended by UMTRCA, and the Alternate Feed Policy.

c. IUSA's Certification Can Also Be Justified On "Other Grounds"

Under the Alternate Feed Policy, a licensee's certification that it is processing an alternate feed *primarily* for its source material content can be justified "based on financial

considerations, the high uranium content of the feed material, *or [any] other grounds*." 60 Fed. Reg. at 49,297 (emphasis added). In addition, "[t]he determination that a proposed processing is *primarily* for the source material content must be made on a case-specific basis." *Id.*

IUSA believes that its certification can be justified on a number of grounds in addition to the financial considerations and uranium content issues just discussed. Specifically, these "other grounds" justifying IUSA's certification include the following:

- First, IUSA will be recycling substantial quantities of a valuable material. As already discussed, even based on the conservative numbers calculated by the State, IUSA is likely to recover between 8,000 to 70,000 pounds of uranium from its processing of the Ashland 2 material. In all likelihood, if IUSA were not processing the Ashland 2 material this substantial quantity of valuable uranium would be lost to disposal. Recovering and recycling such a substantial quantity of valuable uranium is an important benefit, and provides an additional justification for IUSA's certification.[24] This was perceived to be a benefit by USACE, the agency administering remediation of the Ashland 2 site, which is one of the reasons why IUSA was chosen by USACE and committed contractually to process the Ashland 2 materials for the recovery of uranium;[25]

[24] Indeed, as EPA has noted, recycling can be legitimate and beneficial even if it is not profitable. *See generally*, 63 Fed. Reg. at 28,556.

[25] Thus, in its value engineering proposal for disposition of the Ashland 2 material, the USACE specifically listed among the advantages associated with IUSA's processing of the material:

> ADVANTAGES
>
> 1. Conforms to Congressional and regulatory mandates which encourage use of recycling.

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- Second, by recovering uranium from the Ashland 2 material, IUSA's processing makes the material less radioactive, thereby reducing the hazards associated with its ultimate disposition and, in effect, making it safer for disposal. This was also perceived to be a benefit by the USACE and hence is another reason that IUSA was chosen to and contractually committed to process the Ashland 2 materials for the recovery of uranium;

- Third, recycling the Ashland 2 material provides a benefit to the government, and therefore to the public at large, by allowing the FUSRAP program to reduce its inventories of unwanted materials and accomplish environment clean-up in a manner that is environmentally sound, that is cost efficient, and that allows for the recovery of a valuable product that would otherwise be disposed;

- Fourth, the Ashland 2 materials are 11e.(2) byproduct materials that originated from conventional ores and are therefore chemically, radiologically and physically similar to the existing Mill tailings and should be expected to be able to be processed for the recovery of uranium at the Mill; and,

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> 2. Reduces radioactivity of the material to be disposed of.
>
> 3. Recycles uranium and other minerals.
>
> ...
>
> 7. Actual cost savings for treatment and disposal versus cost of direct disposal can only be greater than projected in this proposal, depending upon the actual content of recoverable uranium or other minerals found in the waste stream.

See USACE, Value Engineering Proposal, Proposal No. C-11, originally included with IUSA's license amendment application, by letter from Michelle R. Rehmann to Joseph J. Holonich (May 8, 1998). (A copy of the value engineering report is included here as Exhibit 7)

- Finally, IUSA has a history of successfully extracting uranium from alternate feed materials and has developed credibility with the NRC, not only for being technically competent, but also for fulfilling its proposals to recover uranium from alternate feeds.

These factors must be taken into consideration in determining whether or not the NRC acted reasonably in relying on IUSA's justification of its certification. In order to justify its certification, IUSA provided the Commission with "reasonable" documentation for NRC to conclude that there is a reasonable expectation that IUSA will extract uranium from the Ashland 2 materials

2. IUSA's Processing Of The Ashland 2 Material Satisfies The Alternate Feed Policy's Co-Disposal Test

The co-disposal test provides an alternative method for demonstrating that an ore is being processed *primarily* for its source material content. Under the co-disposal test, an alternate feed material is presumed to be processed *primarily* for its source material content if the feed material would be approved for disposal in a licensed mill tailings impoundment consistent with NRC's *Non*-11e.(2) Disposal Policy. 60 Fed. Reg. at 49,297. This is because a licensee that is processing a feed material that could simply be disposed, for a fee, *directly* into a licensed mill tailings impoundment can be presumed to be processing the feed material *primarily* for its source material content.

It will be noted that the co-disposal test references NRC's *Non*-11e.(2) Policy, by providing that an alternate feed material will be presumed to be processed *primarily* for its source material content if the alternate feed would be approved for disposal in the tailings pile

pursuant to the Non-11e.(2) Disposal Policy. The *Non*-11e.(2) Disposal Policy was developed by NRC to establish a uniform set of criteria to be applied in evaluating whether materials that are radiologically, physically, and chemically similar to 11e.(2) byproduct material, but that are not regulated as 11e.(2) byproduct material, can be disposed of in a licensed mill tailings impoundment.[26] As such, the *Non*-11e.(2) Disposal Policy is applicable only to materials that are *not* 11e.(2) byproduct material. The policy is not directly relevant to the direct disposal of materials that qualify as 11e.(2) byproduct material.

Utah argues that IUSA has failed to demonstrate how its processing of the Ashland 2 material will satisfy certain of the criteria set out in the *Non*-11e(2) Disposal Policy. For example, the State asserts that IUSA "has not provided any documentation of [Regional Low Level Waste] Compact approval." *Utah Brief* at 13. In addition, the State notes that "Utah, as an Agreement State with low level waste licensing authority, has not granted [IUSA] any exemption from its regulations." *Id.* at 14 Finally, the State complains that "NRC staff made no attempt to address further issues under this [*Non*-11e.(2) Disposal] guidance, such as a demonstration that there are no CERCLA issues related to disposal of the Ashland 2 material." *Id.*

[26] In developing its *Non*-11e.(2) Disposal Policy, NRC Staff determined that two classes of material – Special Nuclear Material ("SNM") as defined in Section 11aa of the AEA, and byproduct material as defined in AEA Section 11e.(1) -- were qualitatively too different from 11e.(2) byproduct material to be evaluated for disposal under the *Non*-11e.(2) Disposal Policy. Accordingly, SNM and 11e.(1) byproduct material are not evaluated for disposal in uranium mill tailings impoundments under the *Non*-11e.(2) Disposal Policy. *See* 57 Fed. Reg. at 20,529. In addition, the Commission Staff concluded that Naturally Occurring and Accelerator-produced Radioactive Materials ("NARM") also could not be approved for disposal into licensed uranium mill tailings impoundments because of concerns regarding dual jurisdiction (*i.e.*, because states, not NRC, regulate NARM and therefore disposal of NARM in an NRC-licensed mill tailings pile might give rise to dual state/NRC jurisdiction over the materials in the pile. *Id.*

All of the factors raised by Utah relate to specific substantive requirements under the *Non*-11e.(2) Disposal Policy.[27] As NRC has explained, these criteria are designed to achieve two ends: (i) to prevent the possibility of dual (*e.g.*. NRC/EPA) jurisdiction over the materials present in the tailings impoundment as a result of the placement in the impoundment of *non*-11e.(2) materials subject to regulation by EPA or a State; and (ii) to ensure that the government custodian (DOE or the State in which the impoundment is located) will accept title and custody over the tailings impoundment following site closure, as provided for in Section 83 of the AEA.[28] *See* 57 Fed. Reg. at 20,528-29. In other words, the substantive criteria of the *Non*-11e.(2) Disposal Policy are intended to address potential jurisdictional and site transfer concerns that could arise from the placement of *non-11e.(2) material* into a licensed uranium mill tailings impoundment containing 11e.(2) byproduct material.

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[27] For example, the policy sets out the following substantive criteria that must be satisfied in order for non-11e.(2) material to be approved for disposal in a licensed mill tailings impoundment:

> The non-11e.(2) material must not be subject to regulation under the Resource Conservation and Recovery Act ("RCRA") or other U.S. Environmental Protection Agency ("EPA") standards for hazardous or toxic wastes prior to disposal;
>
> Disposal of the non-11e.(2) material must not implicate any issues under the Comprehensive Environmental Response, Compensation and Liability Act ("CERCLA");
>
> Disposal of the non-11e.(2) material must not result in significant environmental impact; and
>
> Disposal of the non-11e.(2) material must comply with the reclamation and closure requirements for tailings impoundments, set out at 10 C.F.R. Part 40, Appendix A.

60 Fed. Reg.,at 49,296.

[28] This latter concern is triggered by the fact that Section 83 of the AEA only requires the government to take custody of 11e.(2) byproduct material and the land used for its disposal, and there is no requirement, under AEA Section 83, for the government to take custody of material that is not 11e.(2) byproduct material

However, as DOE has determined, *the Ashland 2 material is 11e.(2) byproduct material.*[29] Therefore, the substantive criteria of the *Non*-11e.(2) Disposal Policy, set out above, are simply inapplicable, since those criteria are only intended to apply to *non*-11e.(2) byproduct material. Indeed, 11e.(2) material such as the Ashland 2 material can be disposed of directly into a licensed uranium mill tailings facility (provided that the tailings facility's license permits such disposal) without demonstrating compliance with any of the substantive criteria set out in the *Non*-11e.(2) Disposal Policy. As NRC has itself noted in responding to comments on the *Non*-11e.(2) Disposal Policy:

> If the material [being considered for disposal] can be shown to be 11e.(2) byproduct material, *it can be disposed of in a tailings impoundment without meeting the requirements of this[Non-11e.(2) Disposal] policy.*

SECY 95-211, Enclosure 3 at 4 (emphasis added) (Exhibit 4).[30]

Indeed, NRC has stated with respect to the Ashland 2 material specifically that:

> Based on DOE's characterization [of the Ashland 2 material as being 11e.(2) byproduct material], USACE could have opted to remediate the [Ashland 2] site by disposing of the material in question *directly into a mill tailings impoundment* authorized to take material other than that generated as part of milling operations. . .

[29] This determination is entitled to deference, since DOE is granted specific authority under Title I of UMTRCA for making determinations regarding the status of materials as "residual radioactive material" and "residual radioactive material" is defined in UMTRCA to subsume 11e.(2) byproduct material. *See* 42 U.S.C. § 7911. Moreover, DOE's determination that the Ashland 2 material is 11e.(2) byproduct material was concurred in by the ACE, which is administering the Ashland 2 site, and by NRC. *See* NRC Technical Evaluation Report ("TER") for Amendment 6 at 4 (included in Exhibit 1)

[30] It should be noted that this result is consistent with NRC's regulations in 10 C.F.R. Part 40, Appendix A, which specifically allow, and indeed require, that 11e.(2) material generated at in-situ leach ("ISL") or small heap leach facilities be disposed of in a licensed uranium mill tailings impoundment. *See* 10 C.F.R. Part 40, Appendix A, Criterion 2. In fact, the license for IUSA's Mill allows IUSA to accept 11e.(2) byproduct material from ISL sites for direct disposal, and IUSA has accepted and disposed of such materials at the Mill.

Letter from Richard L. Bangart, Director, Office of State Programs, to Paul J. Merges, Director, Bureau of Pesticides and Radiation [New York Department of Environmental Conservation] (Sept. 15, 1998) at 2 (attached as Exhibit 8).

Since the co-disposal test is premised on the notion that "the clearest way to show, beyond any doubt, that proposed feed material would be processed *primarily* for its source material content, is to show that it would be allowed to be disposed of in the tailings impoundment in any case," SECY 95-211, Enclosure 3 at 17 (see Exhibit 4), the fact that the Ashland 2 material could be disposed of directly into IUSA's mill tailings impoundment (without having to satisfy the *Non*-11e.(2) Disposal Policy criteria) provides conclusive proof that the co-disposal test is satisfied and the Ashland 2 material is being processed *primarily* for its source material content.[31]

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[31] In addition, NRC also included in its *Non*-11e.(2) policy two additional criteria intended to address compliance with existing regulatory regimes that could be applicable to certain types of non-11e.(2) material. Specifically, the Commission required that:

- To the extent that the non-11e.(2) material is regulated under the Low Level Radioactive Waste Policy Amendments Act of 1985 ("LLRWPA"), disposal of such material must be approved by the Regional Low Level Waste Compact in whose jurisdiction the material originates, and by the Compact with jurisdiction over the tailings impoundment in which the non-11e.(2) material is to be disposed; and
- The licensee must obtain an exemption from the requirements of 40 C.F.R. Part 61, pertaining to the disposal of radioactive wastes received from others.

57 Fed. Reg. at 20,529-60. Section 11e.(2) byproduct material, such as the Ashland 2 material, is specifically excluded from regulation under LLRWPA. *See* 42 U.S.C. § 2021b(9). Therefore, Compact approval is not required for the Ashland 2 material to be disposed of in a licensed uranium mill tailings impoundment. Similarly, 11e.(2) byproduct material that is disposed of in a licensed uranium mill tailings impoundment in quantities of 10,000 kg or more, and that contains more than 5 millicuries of radium-226, is specifically excluded from regulation under Part 61 of NRC's regulations. 10 C.F.R. § 61.1(b). The Ashland 2 material satisfies these criteria (*see* Affidavit of JoAnn Tischler at 7) (attached as Exhibit 9); consequently an exemption from Part 61 requirements also is not needed to allow the Ashland 2 material to be disposed of in a licensed uranium mill tailings facility.

Consequently, Utah's assertion that "the NRC Staff's determination about the Co-Disposal Test is completely unsupported" (*Utah Brief* at 14) has no merit.

C. IUSA's Processing Of The Ashland 2 Material Satisfies All Of The Criteria Set Out In The Alternate Feed Policy.

IUSA has conclusively established that it is processing the Ashland 2 material *primarily* for its source material content. In particular, IUSA has demonstrated that because it is processing the Ashland 2 material through the primary circuit in a licensed uranium mill, IUSA is entitled to a presumption that it is processing the Ashland 2 material *primarily* for its source material content. In addition, IUSA has provided ample proof that it satisfied both the certification test and the co-disposal test, thereby leading to the conclusion that it is appropriate to apply the presumption in this case and that IUSA is in fact processing the Ashland 2 material *primarily* for its uranium content. Thus, IUSA has clearly satisfied the most important of the four criteria set out in the Alternate Feed Policy.

The State of Utah has not challenged IUSA's satisfaction of the remaining three criteria in the Alternate Feed Policy. Nevertheless, it should be noted that IUSA has provided sufficient evidence to demonstrate that those three remaining criteria are also satisfied. First, IUSA has demonstrated and NRC Staff has concluded that the Ashland 2 material qualifies as "ore" (indeed, since the definition of "ore" is so closely tied to the concept of processing *primarily* for source material content, IUSA's satisfaction of the primary purpose test necessarily implies satisfaction of the "ore" requirement). (*See* Exhibit 1.) Second, IUSA has demonstrated, NRC Staff concurs, and the State of Utah agrees that the Ashland 2 material does not contain any *listed* hazardous wastes. (Exhibit 1.); Letter from Fred Nelson (Counsel for the State of Utah) and Frederick Phillips (Counsel for IUSA) to Hon. Peter Bloch, Oct. 26, 1998 (attached as

Exhibit 9). And finally, NRC Staff has concluded that processing of the Ashland 2 material and disposal of the tailings and wastes from such processing will not undermine IUSA's compliance with the requirements of 10 C.F.R. Part 40. (Exhibit 1.) Therefore, IUSA has successfully demonstrated that processing the Ashland 2 material satisfies all of the criteria of the Alternate Feed Policy.

D. The Ashland 2 Material Is Not LLRW

Utah asserts in its brief that the Ashland 2 material "may be" LLRW, and therefore subject to regulation by the State, not NRC. (*Utah Brief* at 14-15.) To support this speculation, the State offers two arguments.

First, Utah argues that since IUSA is not processing the Ashland 2 material *primarily* for its source material content, waste from processing the material "may not" qualify as 11e.(2) byproduct material and, therefore, would be subject to the State's jurisdiction as LLRW. As demonstrated, processing the Ashland 2 material at the Mill satisfies *both* of the tests developed by NRC to establish that a material is being processed *primarily* for its source material content. Consequently, under the Alternate Feed Policy, tailings and wastes from processing the Ashland 2 material will qualify as 11e.(2) byproduct material that can be disposed of in IUSA's licensed uranium mill tailings impoundment without invoking state jurisdiction. *See* discussion at pp. 21-23, *supra*. There is no basis upon which to suggest that processing the material through the Mill

might cause the tailings and other wastes to be considered anything other than 11e.(2) byproduct material.[32]

Second, the State argues that because the original 8,000 pounds of 11e.(2) byproduct material disposed of at the Ashland 1 site have subsequently been dispersed and mixed with soils at the Ashland 2 site the material that is being excavated from the Ashland 2 site is no longer 11e.(2) byproduct material and instead may be regulated as LLRW. (*Utah Brief* at 15-16.) There is no foundation for this argument. The dispersal of 11e.(2) byproduct material, and its subsequent mixing with soils, does not convert that 11e.(2) byproduct material into LLRW. When 11e.(2) byproduct material is dispersed and mixed with soils, the material retains its character as 11e.(2) byproduct material. For example, when uranium mill tailings at a licensed mill tailings impoundment are dispersed by the wind, the tailings retain their character as 11e.(2) material. These so-called windblown tailings, *and the soils into which they have been dispersed* are *required* to be retrieved and disposed of in the licensed tailings impoundment as 11e.(2) byproduct material. *See, e.g.*, USEPA, *Final Environmental Impact Statement for Standards for the Control of Byproduct Materials from Uranium Ore Processing (40 C.F.R. 192)*, EPA pub. no. 520/1-83-008-1 (September, 1983) at 9-14 to 9-16 (addressing clean-up standards for windblown tailings) (attached as Exhibit 10).

For these reasons, the State's musings that the Ashland 2 material "may be" LLRW are baseless and unworthy of further consideration. In any event, even if the Ashland 2 material is

[32] Moreover, as we have seen, the Ashland 2 material already qualifies as 11e.(2) byproduct material. As such, the material can be processed through IUSA's mill under the authority of 10 C.F.R. Part 40 without invoking State jurisdiction over either the Ashland 2 material itself or the tailings and other wastes generated in connection with its processing. Indeed, when Congress enacted UMTRCA it specifically contemplated that 11e.(2) byproduct material would be processed in uranium mills, and that the resulting tailings and wastes would be disposed of in licensed uranium mill tailings impoundments. *See* 42 U.S.C. §7918(b).

classified as LLRW, this does not preclude it from being processed at the Mill *primarily* for its source material content and the tailings disposed of as 11e.(2) byproduct material in the Mill's tailings impoundments. So long as the requirements of Part 40 are met and the LLRW does not contain *listed* hazardous wastes or characteristic hazardous wastes from waste water treatment residues, the LLRW can qualify as an alternate feed and the resulting tailings as 11e.(2) byproduct material. Moreover, as with the processing of conventional ores, so long as the Ashland 2 material qualifies as alternate feed, the State (since it is not an Agreement State for uranium recovery operations) has no authority over IUSA's processing of the material or its disposal of the resulting tailings.

E. Approval Of Amendment 6 Would Not Undermine Policy And Guidance And Would Not Harm The State Of Utah.

The State argues that NRC regulation of the tailings and wastes generated from IUSA's processing of the Ashland 2 material under 10 C.F.R. Part 40 would not adequately protect health and safety in the State. *Utah Brief* at 13. To the extent that the State wants to challenge the adequacy of NRC's regulations governing 11e.(2) byproduct material, the State has chosen the wrong forum and is more than a decade too late to do so. NRC's regulations, and the EPA regulations to which they were required to conform, were promulgated more than ten years ago. Upon promulgation, those regulations were subjected to several court challenges in the United States Court of Appeals. Utah's opportunity to challenge the sufficiency of NRC's mill tailings regulations has long since passed; moreover, this licensing proceeding is not the appropriate forum for such a challenge.

As a factual matter, the State's allegations regarding the inadequacy of the protection afforded by NRC's regulation of the wastes from IUSA's processing of Ashland 2 material are

incorrect, since they ignore the comprehensive system established under the AEA, as amended by UMTRCA, for regulating uranium milling operations and the tailings and wastes produced as a result of such operations. *See supra* at 7-11.

The State's generalized ruminations about IUSA subverting NRC and State regulatory programs for LLRW by processing the Ashland 2 material are misguided. For the reasons discussed at length above, the resulting waste from processing the Ashland 2 material is 11e.(2) byproduct material and must be disposed of in accordance with UMTRCA and its implementing regulations set forth at 10 C.F.R. Part 40, including Appendix A. Contrary to the State's assertions, IUSA's Mill is not operating as a "land disposal facility" but rather as a uranium mill, licensed to process various uranium-bearing feeds *and to dispose*, in an NRC-regulated, on-site containment cell, the tailings and other wastes generated from such processing.[33]

With respect to the State's concerns about harm, specifically harm to groundwater, that may result from the regulation of the material by NRC, the State ignores several fundamental facts. First, wastes generated by operations at the Mill are disposed onsite in impoundments that are designed and constructed to minimize the potential for seepage of any fluids into the subsurface soil, surface water, or groundwater in accordance with 10 C.F.R. Part 40, Appendix A. The impoundment design incorporates natural and synthetic liners and a leak

[33]As discussed above, the operation of the Mill is authorized by an NRC source material license originally issued in 1979, and subsequently renewed, under 10 C.F.R. Part 40, which allows IUSA to process feedstocks for their uranium content and to possess the waste generated from such milling operations. *See* Letter from R. Scarano, NRC to R. Adams, Energy Fuels Nuclear, Inc. (Aug. 7, 1979) (issuing Source Material License SUA-1358); Letter from R. Smith, NRC, to UMETCO Minerals Corp. (Sept. 26, 1985); and Letter from J. Holonich, NRC, to H. Roberts, IUSA (March 14, 1997). The State cites William J. Sinclair, Director of the Division of Radiation Control, Utah Department of Environmental Quality ("DEQ") and Robert F. Herbert, Geologist, DEQ for the proposition that the Mill "as currently regulated does not satisfy the way in which Utah regulates land disposal facilities." *Utah Brief* at 14. For the reasons set forth above, the Mill need not meet the State's regulations for land disposal facilities as the Mill is not a "land disposal facility" but an "operating uranium mill" that produces 11e.(2) byproduct material as waste which must be disposed of in accordance with UMTRCA and its Part 40 license.

detection system that is monitored daily. *See Environmental Assessment for Renewal of Source Material License No. SUA-1358*, Energy Fuels Nuclear, Inc., White Mesa Mill, dated Feb. 1997 (Renewal EA), at 15, 18; *IUSA*, LBP-98-21 at 11. The Staff concluded in its "Technical Evaluation Report: Request to Receive and Process Ashland 2 FUSRAP Material," dated June 23, 1998 (included in Exhibit 1), that (1) the feed material qualified as "ore," (2) no hazardous wastes had been identified on the Ashland 2 property and confirmatory measures to guard against the presence of listed hazardous wastes would be taken prior to shipment and upon receipt at the Mill, (3) the Licensee had provided adequate certification that the material is being processed *primarily* for recovery of uranium, and (4) there would be no significant increase in environmental impacts particularly since the annual yellowcake production limit would not be exceeded, tailings would be stored in an existing impoundment, disposal would increase the total amount of tailings in the cell by only one percent, and the Ashland 2 material is similar in composition to tailings currently stored in the impoundment. *Id.* Moreover, analysis indicates that the tailings and related wastes generated from processing the Ashland 2 material are substantially similar, chemically and radiologically, to the tailings and wastes already disposed of in the Mill's tailings impoundment. In fact, the radioactivity is significantly lower than that assumed in the Renewal EA for worker exposure or airborne environmental impacts, and the organic content is two orders of magnitude lower than that assumed for the composition of disposed tailings. *See* Affidavit of JoAnn Tischler at 6 (Attached as Exhibit 11).

Second, as the Staff noted in response to the petition filed by the State of Utah in a pending case pertaining to another license amendment to accept alternate feed at the Mill (*In the Matter of International Uranium (USA) Corporation*, Docket No. 40-8681-MLA-5) ("Ashland 1"), seepage from the White Mesa Mill tailings cells would have to travel through

approximately 1,300 feet of low permeability rock before reaching the Entrada/Navajo aquifer (the regional aquifer) and it is unlikely that potential seepage would ever impact the water quality of that aquifer. *See NRC Staff Response to Utah Request for Hearing*, Dkt. No. 40-8681-MLA-5, n. 13 (Dec. 14. 1998).

Third, the State's reliance on the testimony of Sinclair regarding groundwater contamination is misplaced. On page 5 of his testimony, Sinclair states: "it is my opinion that the groundwater protection system in place at the White Mesa facility is inadequate to protect the State's groundwater resources." *Sinclair Testimony* at 5. Sinclair's conclusion is based, in part, on the affidavit prepared by Loren Morten, a member of Sinclair's staff, that attempts to describe the groundwater protection system in place at the White Mesa Mill. *See* Affidavit of Loren Morten, (Attached to State's Amendment to its Request for Hearing and Petition for Leave to Intervene, dated Aug. 18, 1998). The State's claims are not grounded upon any evidence of leakage at White Mesa over the 18 years of operation, but on a gross misinterpretation of predictive modeling. *See* Affidavits of Loren Morten at ¶¶ 8-12 and S. Billin at 5-7 (attached as Exhibit 12). The perched groundwater zone used to monitor tailings impoundment performance cited in the Morten Affidavit is located in the Burro Canyon formation and is about 73 to 109 feet below the land surface in the area of the Mill. However, as pointed out above, any seepage would have to travel through approximately 1,300 feet of low permeability rock before reaching the Entrada/Navajo aquifer that supplies local drinking water. *See* Renewal EA at 9. Yields from the Burro Canyon perched groundwater zone are low, and non-sustainable, and the water quality is poor. *See* Affidavit of S. Billin at 12. Estimates using the 1994 Titan modeling, also used by Morten, which were based on unrealistically conservative assumptions meant to predict worst-case transport potential, including the total absence of the liner (i.e., total liner failure),

show that, if such seepage scenarios were to occur, it would still take from 50 to 150 years for moisture to travel from the bottom of the tailings disposal cell to the perched groundwater zone in the Burro Canyon formation and more than 8,500 years for the seepage to travel in this perched water zone to the downgradient edge of the Mesa, where it could seep into the environment. Renewal EA at 16.

These hydrogeologic conditions described in the EA and the Titan report point to the conclusion that it is extremely unlikely that any potential seepage from the impoundment would ever impact the water quality of the regional aquifer, the Entrada/Navajo. This conclusion is further confirmed by a review of data collected over the past 18 years of operation, and recent detailed analyses of cell 3, including modeling based on actual site data, which indicate that there is no probable cause to believe that tailings solution could impact even the perched groundwater zone underlying the site, much less the deep Entrada/Navajo aquifer located 1,300 feet below the site. Affidavit of S. Billin at 7-8. Based on these facts, the State's assertion that its groundwater resources would be harmed as a result of the regulation of the Ashland 2 material by NRC is unfounded.

Fourth, the tailings cells were constructed with state-of-the-art technology that continues to provide adequate protection of groundwater resources. Affidavit of S. Billin at 6. Contrary to the testimony of Herbert, the tailings impoundments were not designed and constructed using "obsolete" technology. *See Herbert Testimony* at 9. In fact, the tailings cells were designed and constructed in accordance with standards and requirements of the NRC, which approved both the design and construction. Many years of intensive monitoring of the tailings cells have developed a proven record of performance that attests to the quality of their construction and their continuing protectiveness. This 18 year record of no impacts to groundwater quality allows a

better forecast of future cell performance than if a new, unproven cell were to be constructed today. Affidavit of S. Billin at 7. Construction inspection records indicate that the tailings cells were built in accordance with NRC approved specifications and significant effort was exerted to prevent any damage to the installed PVC liner. Affidavit of S. Billin at 4.

In addition, infiltration and groundwater flow modeling conducted by Knight Piesold LLC, based on observations documented throughout the facility life, indicates that *de minimis* quantities of fluid could permeate the PVC liner system and infiltrate the Burro Canyon bedrock formation. These *de minimis* quantities are inherent to PVC liners according to EPA guidance documents. *See* Knight Piesold LLC, *Evaluation of Potential for Tailings Cell Discharge – White Mesa Mill* (Nov. 23, 1998) ("Knight Piesold Report") (attached as Exhibit 13). This seepage, however, "would require more than 1,300 years to reach the perched water zone. Even then, impacts to water quality are unlikely due to closure of the facility, regional changes in groundwater hydrology, microfiltration by the low permeability liner and attenuating processes occurring in slowly moving groundwater." *Id.* at 8. As impact to the perched water zone is unlikely, the likelihood of impact to the Entrada/Navajo aquifer, some 1,300 feet below the site, is even more remote. *Id.*

While Herbert is correct that the leak detection system employed at the Mill does not have a secondary synthetic liner beneath the primary synthetic liner to divert and accumulate leakage to the leak collection pipe, Herbert Testimony at 9, any leakage of significant quantities should be detectable because construction documents indicate that the native sandstone below the synthetic liner was ripped and crushed to a sand consistency and recompacted to form the bedding layer for the PVC liner. The liner 6-inch thick bedding material was specified to have hydraulic conductivity 1,000 times greater than the underlying formation. All areas of bedding

have at least 6 inches of prepared material below the liner. This creates a permeable hydraulic connection between the leakage collection pipes and all areas directly beneath the liner. Thus, although no secondary synthetic liner is employed, the difference in hydraulic conductivity serves the same purpose as a secondary liner would of forcing horizontal flow of any leakage to the collection pipe where it may be observed during daily inspections. *See* Affidavit of S. Billin at 9 (*Exhibit 12*).

Finally, relying on the testimony of Sinclair, the State claims it will suffer harm because it has developed "its own siting criteria for radioactive and hazardous waste facilities, and by approving sham disposal, the NRC is allowing the White Mesa Mill to snub the State's siting criteria." *Sinclair Testimony* at 5-6. IUSA is a Part 40 facility regulated by NRC and is not subject to State jurisdiction or siting requirements. Thus, although the State might suffer harm as a result of being unable to collect fees from IUSA's operations (*see* Sinclair testimony at 5-6), it cannot legitimately complain of any harm to health and safety. Utah's complaints of harm are particularly ironic given its suggestion, in its petition to intervene in this matter, that the State would not object to IUSA's processing of alternate feed materials if they have a higher radioactive content than the Ashland 2 material. *See State of Utah's Request for Hearing and Petition for Leave to Intervene*, Docket No. 40-8681 (July 23, 1998) at 16.

F. IUSA's License Amendment Is Based Upon A Complete And Adequately Reviewed Record That Does Not Violate Due Process.

The State alleges that NRC's decision to approve Amendment 6 to IUSA's license was based upon an incomplete record that was inadequately considered by NRC Staff. In addition, the State asserts that NRC Staff violated "procedural due process" by failing to provide adequate notice. The State's allegations regarding the incompleteness of the record and allegations

concerning the inadequacy of the Staff's review of the record are factually and legally incorrect, as well as being largely irrelevant. Moreover, the Staff did not violate any norms of "procedural due process."

1. Procedural Due Process

The State asserts that NRC Staff "violated procedural due process by failing to provide adequate notice of the receipt and approval of the Ashland 2 license amendment." *Utah Brief* at 19. It bases this claim on the fact that the NRC published a notice of IUSA's amendment request in the Federal Register on November 3, 1998 "only after the State filed . . . a request for Hearing and Petition to Intervene." *Id.* The State is correct that the notice was published in the Federal Register on November 3; however, this fact alone does not result in a violation of "procedural due process." NRC regulations do not require the issuance of a notice in the Federal Register following the grant of a materials license to an applicant. *See* 10 C.F.R. § 2.1205(d)(2). Thus, NRC Staff has not violated "procedural due process," as notice is not required by the regulations and, therefore, is not "process" that is due. In any event, the State has suffered no harm as a result of the failure to publish the notice at an earlier date as it has been granted party status in the proceeding.

2. The Record Is Adequate To Support The Decision Of The Staff

In support of the State's claim that the record is inadequate, the State asserts that NRC Staff relied "solely on conclusory statements contained in the Record of Decision and the Baseline Environmental Report instead of conducting a firsthand review of the Ashland 2 contaminants provided in Section 4.0 of the Remedial Investigation report ["RI"] and evaluating them for potential hazardous wastes." *Utah Brief* at 20. Moreover, the State argues that "the

hazardous waste determination in the [RI] was based on RCRA hazardous characteristic determination, *not listed* hazardous waste constituents." *Id.* The State concludes by stating: "[h]ad the NRC Staff adequately reviewed available contaminant data contained in the [RI], it would have noticed that several chemical constituents were detected in the Ashland material that could potentially be associated with *listed* hazardous wastes generated by oil refineries." *Id.* Contrary to the State's claims, the record supporting the Staff's determination is adequate and the State's concerns regarding *listed* hazardous wastes in the Ashland 2 material are unfounded.

The record supporting the decision of the Staff to grant the license to IUSA permitting the processing of the Ashland 2 material is legally adequate generally. *See e.g., Vermont Yankee Nuclear Power Corp. v. NRDC,* 435 U.S. 519, 534 (1977).

With regard to the adequacy of the record with respect hazardous wastes specifically, the State is incorrect that the RI was based on RCRA hazardous characteristic determinations alone, and not on *listed* waste constituents. The RI reflects the efforts of Bechtel, a DOE contractor, to report sources of potential RCRA *listed* hazardous contaminants at Ashland 2. For example, the Introduction "History" identifies process sources and annual generation rates of wastes known to have been disposed by the Ashland refinery at the landfill area of the Ashland 2 site. None of the waste streams identified in this section are RCRA *listed* sources. (*See* RI at 1-26.) The RI also reflects the fact that Bechtel considered the source of refinery wastes other than those known to be disposed of in the landfill portion of Ashland 2. *Id.* In addition to the discussion in the RI regarding *listed* waste, NRC Staff reviewed the Radioactive Waste Profile Record (EC-0230) Soil/Building ("Radioactive Waste Profile") which is part of the record. The Radioactive Waste Profile states:

> Bechtel has no reason to believe, after historical research, personal interviews, and physical inspection, that any of this waste stream contains any amount of *listed* waste. Furthermore there have been no spills of *listed* waste into this stream, none of this waste has been generated as a result of the treatment, storage or disposal of a *listed* hazardous waste, and no waste has been mixed with, or is contained in, or commingled with this waste stream.

Radioactive Waste Profile at Attachment 1. Moreover, the Radioactive Waste Profile states that the Ashland 2 material is 11e.(2) byproduct material and does not contain *listed* hazardous waste. *Id.* at 1-2.

Thus, the record supporting the Staff's determination is adequate and the State's concerns regarding *listed* hazardous wastes in the Ashland 2 material are unfounded; NRC is not required to itself repeat several years worth of site characterization, but is instead entitled to rely upon reports and documentation developed by other qualified entities.

IUSA provided NRC with sufficient information to allow the Staff to come to its decision, as evidenced by the fact that the State of Utah withdrew its concern that the Ashland 2 material could contain *listed* hazardous wastes.

3. <u>The Staff Conducted An Adequate RCRA Review</u>

The State argues that NRC Staff failed to conduct an adequate RCRA review to determine whether *listed* hazardous waste may be present in the Ashland 2 material. *Utah Brief* at 20. Pursuant to RCRA, it is the generator's role, not NRC's, to conduct a RCRA review. As stated above, Bechtel developed the Radioactive Waste Profile which concludes that the Ashland 2 material does not contain *listed* hazardous waste. The Radioactive Waste Profile was part of the record NRC reviewed prior to granting the license amendment. Moreover, as further evidence, the New York State Department of Environmental Conservation ("NYSDEC"), based

upon its own Site Investigation ("SI"), review of supplementary characterization data generated after the SI reports, and inspection of the site, determined that the Ashland 2 material does not contain *listed* hazardous waste. *See Letter from Stephen Hammond, P.E., NYSDEC to Don Verbica, Utah DEQ*, Oct., 1998 (attached as Exhibit 14); see also, Affidavit of J. Tischler at 4-5 (Exhibit 11).

Even assuming *arguendo* that the State is correct that the Staff's determination to grant the license amendment was based on an inadequate record and failure to conduct an adequate RCRA review to determine whether *listed* hazardous waste may be present in the Ashland 2 materials, the license amendment should not be revoked.

Because licensing boards and presiding officers have no authority to direct the Staff in the performance of its safety reviews, *Carolina Power & Light Co.* (Shearson Harris Nuclear Power Plant, Units 1,2,3, and 4), CLI-80-12, 11 NRC 514, 516 (1980); *Recoil International Corp.* (Rocketdyne Division), ALAB-925, 30 NRC 709, 721-11 (1989), *aff'd*, CLI-90-5, 31 NRC 337 (1980), and the applicant has the burden of proof in this proceeding, the adequacy of the Staff's review is not determinative of whether an action should be approved. *Curators of the University of Missouri*, CLI-95-1, 41 NRC at 121. Even if a presiding officer or board determines that the NRC Staff failed to conduct a sufficient review, to deny a meritorious application for a license based on the Staff's error would be "grossly unfair." *Id.* Thus, the "sole focus of the hearing is on whether the application satisfies NRC regulatory requirements, rather than the adequacy of the NRC Staff performance." *Id.*

Importantly, as indicated above, the State of Utah withdrew its concern that the alternate feed material could contain *listed* hazardous wastes. Thus, it would be "grossly unfair" to revoke

the license amendment based on a failure of the Staff to create an adequate record with respect to hazardous waste issues and to conduct an adequate RCRA review as the State has agreed that *listed* hazardous waste in the alternate feed material is no longer at issue in this hearing.

In addition. as discussed above, operation of the Mill is authorized by an NRC source material license issued under 10 C.F.R. Part 40, which allows IUSA to process feedstocks for their uranium content and to possess the waste generated from such milling operations. In processing the amendment request regarding material from the Ashland 2 site, the Staff concluded that processing of the material would not result in (1) a significant change or increase in the types or amounts of effluents that may be released offsite, (2) a significant increase in individual or cumulative occupational exposures, (3) a significant construction impact, or (4) a significant increase in the potential for, or consequences from, radiological accidents. *IUSA.* LBP-98-21, slip op. at 12-13. The bases for these conclusions include that (a) the annual yellowcake production limit would not be exceeded, (b) tailings from the processed material would be disposed onsite in an existing impoundments (c) disposal of the tailings would increase the total amount of tailings in the cell by only 1-2 percent, and (d) the Ashland 2 material is similar in composition to mill tailing currently in the Cell 3 impoundment. *Id.* at 13.

Because the State has failed to present any facts demonstrating how the material from Ashland 2 will be compositionally different from materials, whether from conventional ores or alternate feed materials, previously or presently processed and disposed of at the Mill under the existing license, or how the tailings represent an increased health or safety hazard, it has failed to show how it will be harmed by the amendment or how the licensing amendment fails to satisfy NRC regulatory requirements. *See In the Matter of International Uranium (USA) Corporation,* 46 NRC 55, 1997 NRC LEXIS 17, *3 (1997).

Thus, even if the Staff's determination was based on an inadequate record and a failure to conduct an adequate RCRA review, the license should not be revoked as it would be "grossly unfair" to do so.

Finally, the State's claim that NRC failed to review whether its regulatory requirements at the Mill are adequate to protect groundwater resources from contamination by alternate feed materials is unfounded. The State's claim is based on its assertion that the "uppermost aquifer" associated with the Mill is used as a groundwater resource and the bald assertion that the liner system, the number of compliance monitoring wells, and the number and type of groundwater monitoring parameters that NRC requires at the Mill are "totally inadequate to allow the disposal of alternate feed material, such as the Ashland 2 material." *Utah Brief* at 17. The State is wrong.

The Staff conducted a thorough review of water rights in the area of the Mill in the *Final Environmental Statement* (U.S. NRC, May 1979) and through its review of the *Hydrogeologic Evaluation of White Mesa Mill*, Titan Environmental (July 1994). These reviews indicate one water right downgradient of the Mill owned by L. Hawkins. This well was dry at the time of drilling and has long been abandoned. One water right identified by the State as downgradient of the Mill is, in fact, cross-gradient, where it could not be impacted by potential tailings cell discharge. This well produced only limited, intermittent flows before being capped many years ago. Affidavit of S. Billin at 10-11. Given these facts, it is unlikely that these water rights represent a viable groundwater resource as they cannot dependably yield the water quantities sufficient to sustain stockwatering, domestic or irrigation uses. Affidavit of S. Billin at 11-12. In fact, the natural water quality of the perched water is not acceptable for irrigation or domestic use. Affidavit of S. Billin at 12; *Final Environmental Statement (U.S. NRC, May 1979)*; *Hydrogeologic Evaluation of White Mesa Mill*, Titan Environmental (July 1994).

The liner system, monitoring parameters and number of monitoring wells were all developed in accordance with NRC requirements. Detailed statistical evaluations have shown that the existing groundwater monitoring program, developed in concert with the NRC, is adequate to detect potential impacts by tailings solution. Affidavit of S. Billin at 9. Eighteen years of operation and monitoring have resulted in no indication that operation of the Mill has impacted the water quality of the perched water zone or the deep Entrada/Navajo aquifer. *See* Affidavit of S. Billin at 5.

V. CONCLUSION

This controversy centers upon the State of Utah's efforts to impose its own regulatory requirements on IUSA's processing of the Ashland 2 material in IUSA's NRC-licensed uranium mill, pursuant to a license amendment granted by NRC for the specific purpose of processing the Ashland 2 material (Amendment 6).

Utah attempts to argue, in a number of different ways, that NRC acted inappropriately in approving Amendment 6. First and foremost, Utah argues that IUSA failed to satisfy the criteria set out in NRC's Alternate Feed Policy. The State contends that IUSA cannot satisfy the Alternate Feed Policy's "primary purpose" requirement (*i.e.*, that IUSA cannot be processing the Ashland 2 material *primarily* for its source material content) for two reasons. First, the State argues that because the value of the uranium IUSA will recover from the Ashland 2 material is less than the value of certain "handling and disposal fees" the company will collect in connection with the processing of the feed material, IUSA cannot be processing the Ashland 2 material *primarily* for its source material content. Second, the State contends that IUSA's certification that it is processing the Ashland 2 material *primarily* for its uranium content cannot be justified,

because the average uranium concentration in the Ashland 2 material is low. In other words, the State interprets the phrase "processed *primarily* for its source material content" in the Alternate Feed Policy to mean that either (i) the value of the uranium extracted from an alternate feed must be greater than any other aspect of processing the feed material, or (ii) the alternate feed material must have a "high" uranium concentration.

IUSA has demonstrated that the State's interpretation of the "primary purpose" requirement in the Alternate Feed Policy is incorrect, as follows:

First, the phrase "processed *primarily* for its source material content" as used in the Alternate Feed Policy is intended to have the same meaning as the identical phrase as used in UMTRCA.

Second, neither Congress nor NRC intended to require an economic or profitability showing in order to demonstrate that a material is being processed *primarily* for its source material content. Instead, the phrase "processed *primarily* for its source material content" is intended to distinguish between ores processed for the extraction of uranium in a licensed uranium mill that is part of the nuclear fuel cycle, versus ores processed for the recovery of uranium in *secondary*, or *side-stream* processing operations in non-nuclear fuel cycle facilities.

Third, Congress and NRC, when they used the term "processed *primarily* for its source material content" did not intend to prescribe a minimum percentage of uranium or thorium that must be present in an ore before the ore can be considered to be processed *primarily* for its source material content. Indeed, the opposite is true. The legislative history reveals that Congress intended to include within the scope of 11e.(2) byproduct material *all* tailings and wastes from the processing of ores for their uranium content, *regardless* of the concentration of

uranium contained in the ore. NRC did not intend anything different when it used the phrase "processed *primarily* for its source material content" in the Alternate Feed Policy.

Fourth, Congress and NRC intended that ores processed for the extraction of uranium in licensed uranium mills that are part of the nuclear fuel cycle would be *presumed* to be processed *primarily* for their source material content. However, because of the variability of alternate feed materials, NRC created in the Alternate Feed Policy a multi-part test to ensure that, with any given alternate feed, it is reasonable to expect that uranium will be extracted, and therefore appropriate to apply the presumption that the feed will be processed *primarily* for its source material content. So long as these tests are satisfied, "sham disposal" is not a concern.

Fifth, the "certification test" set out in the Alternate Feed Policy will be satisfied if, on the basis of financial considerations, considerations of uranium content, or any *other* considerations a licensee can justify that it is reasonable to expect that uranium will be extracted from an alternate feed. NRC has wide discretion in determining what constitutes adequate justification in a case-specific manner; however, in appropriate cases adequate justification for the expectation that uranium will be extracted from an alternate feed material can be based on considerations such as: contractual commitments to recover uranium; the presence of other valuable minerals to be recovered from the alternate feed, along with uranium; the receipt of a toll milling or recycling fee; increased production efficiencies associated with recovering uranium from the alternate feed, and so forth. In another proceeding involving different parties, the Presiding Officer stated, perhaps rhetorically, that the petitioners in that case had not demonstrated "why it would be improper to operate an unprofitable milling operation that reduced the cost of waste disposal by recovering valuable yellowcake." There is nothing improper about assessing a fee (or receiving other consideration) in order to offset the

incremental costs of recovering uranium from an ore, and to do so does not mean that the ore is not being processed *primarily* for its source material content or that the mill is engaging in "sham disposal."

Sixth, IUSA provided the Commission with sufficient documentation to justify its certification that it is processing the Ashland 2 material *primarily* for its source material content based on financial grounds, considerations of uranium content, and other grounds even though satisfaction of an one of these tests would be sufficient.

Seventh, the Alternate Feed Policy's co-disposal test provides a separate and independent basis for concluding that an alternate feed material is being processed *primarily* for its source material content, and that a proposed material will satisfy this test if it would be approved for direct disposal in a uranium mill tailings impoundment. We have demonstrated that, because the Ashland 2 material is 11e.(2) byproduct material it would be approved for direct disposal in IUSA's mill tailings impoundment, and therefore would satisfy the co-disposal test.

Thus, Utah's assertion that IUSA is not processing the Ashland 2 material *primarily* for its source material content is without merit, as are its suggestions that IUSA is attempting to engage in "sham disposal."

Utah's remaining arguments that the Ashland 2 material might be LLRW, that NRC's regulatory program is inadequate to protect health and safety in Utah, that there are deficiencies in the administrative record and that there were inadequacies in NRC Staff's review of the record, are baseless.

Accordingly, for all of the foregoing reasons, the State of Utah lacks jurisdiction over the Ashland 2 material, therefore, IUSA respectfully requests that the Presiding Officer deny the relief requested by the State of Utah and affirm NRC Staff's decision to approve Amendment 6 to IUSA's license.

Respectfully submitted,

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January 29, 1999

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE PRESIDING OFFICER

In the Matter of	)	
	)	
INTERNATIONAL URANIUM (USA) CORPORATION	)	Docket No. 40-8681-MLA-4
	)	
(Receipt of Material from Tonawanda, New York)	)	

NRC STAFF RESPONSE TO WRITTEN PRESENTATIONS BY
STATE OF UTAH AND INTERNATIONAL URANIUM (USA) CORPORATION

Pursuant to 10 C.F.R. § 2.1233, the State of Utah (State) filed its written presentation opposing Amendment 6 to License No. SUA-1538 (Amendment), which was issued June 23, 1998. State of Utah's Brief in Opposition to International Uranium (USA) Corporations' Source Material License Amendment, dated December 7, 1998 (State Brief). International Uranium (USA) Corporation (IUSA or Licensee) filed its reply on January 19, 1999. International Uranium (USA) Corporation's ("IUSA's) Reply to State of Utah's Brief in Opposition to IUSA's Source Material License Amendment 6, dated January 19, 1999 (IUSA Brief).

The Staff files this response to the State and IUSA filings in accordance with the Presiding Officer's "Memorandum and Order (Stipulated Schedule)," dated October 27, 1998. As set forth below, the State of Utah (State) has failed to show that the application is deficient, that the application is inconsistent with Staff guidance and that the amendment authorizing IUSA to process at its White Mesa mill, uranium-bearing material received from the Ashland 2

Formerly Utilized Sites Remedial Action Program (FUSRAP) site, near Tonawanda, New York, should be revoked. *See* State Brief at 22.[1]

BACKGROUND

IUSA, the owner and operator of the White Mesa mill in Blanding, Utah, is authorized pursuant to a source material license issued under 10 C.F.R. Part 40 to process natural uranium ore and certain other materials for their uranium content and to possess the waste generated from such millings operations. *International Uranium (USA) Corporation* (Receipt of Material from Tonawanda, New York), LBP-98-21, 48 NRC 137, 143 (1998).[2] By application, dated May 8, 1998, as amended May 27, June 3, and June 11, 1998,[3] IUSA requested that its license be amended to allow it to receive and process approximately 25,000 dry tons of uranium-bearing material (*i.e.*, alternate feed material -- material other than natural uranium ore) from Ashland 2 FUSRAP site, which is currently being managed by the U.S.

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[1]Written presentations by intervenors must describe in detail any deficiency or omission in the license application, why any particular portion is deficient or why the omission is material, and what relief is sought. Statement of Consideration, "Informal Hearing Procedures for Materials Licensing Adjudications," 54 Fed. Reg. 8269 (Feb. 28, 1989); *see also, id.*, Proposed Rule, 52 Fed. Reg. 20089, 20090 (May 29, 1987).

[2]The NRC originally issued the license for the White Mesa mill in 1979, and renewed this license in 1985 and again in 1997. *IUSA*, 48 NRC at 143.

[3]*See* Letter from M. Rehmann, IUSA, to J. Holonich, NRC, dated May 8, 1998, forwarding amendment application (Hearing File Document 1); Facsimile from M. Rehmann, IUSA, to J. Park, NRC, dated May 27, 1998 (Hearing File Document 2); Letter from M. Rehmann, IUSA, to J. Holonich, NRC, dated May 29, 1998 (transmitting Record of Decision, dated April 1998) (Hearing File Document 3); Letter from M. Rehmann, IUSA, to J. Holonich, NRC, dated June 3, 1998, forwarding response to Request for Additional Information (RAI Response) (Hearing Document 5); Letter from M. Rehmann, IUSA, to J. Holonich, NRC, dated June 11, 1998 (Hearing Document 6). Collectively, these submittals constitute the "Application."

Army Corps of Engineers (ACE).[4] The material consists of uranium ore processing residues and contaminated soils associated with activities conducted by the Manhattan Engineering District (MED) during the mid-1940s that were originally disposed at the site now called Ashland 1, but later moved to the Ashland 2 site by the Ashland Oil Company, which acquired the property in 1960. TER at 1.

Based on a determination that the Application could be approved under NRC guidance entitled "Final Position and Guidance on the Use of Uranium Feed Material Other Than Natural Ores, 60 Fed. Reg. 49,296, 49,297 (September 22, 1995) (Alternate Feed Guidance) (Hearing File Document 10), the Staff prepared a TER and issued the license amendment authorizing IUSA to receive and process the Ashland 2 material at its White Mesa mill. *See IUSA,* 48 NRC at 144-45. The State of Utah's petition for leave to intervene was granted based on its claim that the Ashland 2 material could contain listed hazardous wastes and that the excavation, storage, processing, and disposal of the same material could violate applicable law and NRC guidance, and harm the State's natural resources. *See IUSA*, 48 NRC at 145-47.

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[4]*See* Technical Evaluation Report: Request to Receive and Process Ashland 2 FUSRAP Material (TER), at 1, attached to Letter from J. Holonich, NRC to M. Rehmann, IUSA, forwarding Amendment 6 to Source Material License SUA-1358, dated June 23, 1998 (Hearing File Document 12 and IUSA Exhibit 1). A similar request to allow IUSA to receive, process and dispose of uranium-bearing material from the nearby Ashland 1 and Seaway Area D FUSRAP sites is pending before the NRC Staff and is the subject of requests for hearing. *See* Notice of Opportunity for Hearing, 63 Fed. Reg. 59,340 (November 3, 1998); Designation of Presiding Officer, 63 Fed. Reg. 69,684 December 17, 1998).

Thereafter, the Staff made a hearing file for the proceeding available in accordance with 10 C.F.R. § 2.1231(a).[5]

In its written presentation the State asserts: (1) that the Application did not satisfy criterion three of the NRC Alternate Feed Guidance -- that the material is to be processed primarily for its source material content -- since the application "omitted several material facts" and the material is being processed primarily to obtain a disposal fee and not for the extraction of its source material content; (2) that the Amendment was based on an inadequate administrative record because documents addressing whether the material contained listed hazardous wastes were not provided until requested by the State and the NRC did not conduct an adequate review; and (3) that the Application did not address the impacts of receipt, processing and disposal of the Ashland 2 material on the environment, particularly the impact on State water resources. *See* State Brief at 2-3, 12, 14-18. The thrust of these arguments is the Amendment authorizes a "sham disposal" of unprofitable uranium-bearing material that could be low-level waste that should be placed in a Utah regulated disposal facility. *See id.* at 3, 12, 16-18.[6]

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[5]Letter from M. Young, NRC, to Administrative Judges, dated September 30, 1998.

[6]IUSA asserts that the Amendment should be affirmed given that the Ashland 2 material is 11e.(2) byproduct material that is being processed primarily for its source material content. *See e.g.*, IUSA Brief at 49-63. It reasons that Utah, an Agreement State for the disposal of low level radioactive waste (but not the milling of uranium and the disposal of resulting tailings and wastes), challenges the amendment in an inappropriate attempt to assert its jurisdiction due to the State's dissatisfaction with the regulatory regime in 10 C.F.R. Part 40. *See id.* at 3, 78-82.

As demonstrated below, the Amendment was approved consistent with the Alternate Feed Guidance and concerns that applicable laws and regulations were violated lack merit.

DISCUSSION

I. The Adequacy of the Staff Review is Not Determinative

Before addressing the State's arguments, the Presiding Officer should be mindful that, while the State may rely on Staff guidance to allege that the Application is deficient, such guidance cannot prescribe requirements. *See Louisiana Energy Services, L.P.* (Claiborne Enrichment Center), LBP-95-41, 34 NRC 332, 338-39, 347, 354 (1991); *Curators of University of Missouri*, CLI-95-1, 41 NRC 71, 98, 100 (1995) (*University of Missouri*). In addition, because licensing boards and presiding officers have no authority to direct the Staff in the performance of its safety reviews, *Carolina Power & Light Co.* (Shearon Harris Nuclear Power Plant, Units 1, 2, 3, and 4), CLI-80-12, 11 NRC 514, 516 (1980); *Recoil International Corp.* (Rocketdyne Division), ALAB-925, 30 NRC 709, 721-11 (1989), *aff'd,* CLI-90-5, 31 NRC 337 (1980), and because the applicant or licensee has the burden of proof in this proceeding, the adequacy of the Staff's safety review is not determinative of whether an action should be upheld. *University of Missouri,* CLI-95-1, 41 NRC at 121. As the Commission has noted, with the exception of National Environmental Policy Act, 42 U.S.C. 4321 *et seq.*, issues, the sole focus of a hearing is whether the application satisfies NRC regulatory requirements. *Id.* at n. 67. Therefore, the Presiding Officer need not consider arguments that the inadequacy of the Staff's review warrants revocation of the Amendment.[7]

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[7]Notably, the Commission has found that there is no requirement that the Staff even (continued...)

II. NRC Regulation of Byproduct Material

On November 9, 1978, Congress enacted the Uranium Mill Tailings Radiation Control Act of 1978, 42 U.S. § 7901 *et seq.* (UMTRCA). The legislation was intended to address growing concerns about the potential hazards of uranium mill tailings by closing a regulatory gap that existed as a result of NRC being able to only indirectly regulate tailings at active mills through the licensing of source material milling and NEPA. *See* H. R. Rep. No 95-1480, Part 2, 95th Cong., 2d Sess. 28 (1978). Congress expressed its concern that "uranium mill tailing located at active and inactive mill operations may pose a potential and significant public health hazard to the public" and that efforts were needed "to prevent or minimize radon diffusion into the environment and to prevent or minimize other environmental hazards from tailings." UMTRCA Section 2.(a), 42 U.S.C. § 7901(a). Thus, as stated in Section 2.(b), 42 U.S.C. § 7901(b), the purpose of the UMTRCA was to provide:

> (1) in cooperation with the interested States, Indian tribes, and the persons who own or control inactive mill tailings sites, a program of assessment and remedial action at such sites, including where appropriate, *the reprocessing of tailings to extract residual uranium and other mineral values where practicable, in order to stabilize and control such tailings in a safe and environmental sound manner and to minimize or eliminate radiation health hazards to the public,* and

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[7](...continued)
prepare a safety evaluation for a materials license amendment since such finding may be implied and it would be difficult for the Staff to handle the approximately 5,000 materials license actions annually if there were a requirement to prepare a written evaluation for each action. *University of Missouri,* 41 NRC at 122-23 and n.68. The Staff, however, maintains that its review was sufficient to determine whether the IUSA Amendment could be granted under 10 C.F.R. Part 40, addressed the relevant aspects of Staff guidance, and reached the necessary environmental findings. *See* Affidavit of Joseph J. Holonich, dated January 29, 1998 (Holonich Affidavit) (attached) at 3-12.

> (2) a program to regulate mill tailings during uranium or thorium ore processing at active mill operations and after termination of such operations in order to stabilize and control such tailings in a safe and environmentally sound manner and to minimize or eliminate radiation health hazards to the public.

Pivotal to UMTRCA was the amendment of the Atomic Energy Act, 42 U.S.C. § 2011 *et seq.* (AEA), to add an additional definition of byproduct material (designated as Section 11.e(2)) to include "tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content." 42 U.S.C. § 2014.e(2). As a result, the AEA definition of 11.e(2) byproduct material includes all wastes from the milling process, not just the radioactive components. Draft Guidance, 60 Fed. Reg. 20525, 20526; *Kerr-McGee v. NRC*, 903 F.2d 1, 7 (D.C. Cir. 1990).[8]

Similarly, pursuant to Section 81 of the AEA, 42 U.S.C. § 2111, "[n]o person may transfer or receive interstate commerce, manufacture, produce, transfer, acquire, own, possess, import, or export any byproduct material, except to the extent authorized by this section

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[8] Due to the potential for dual regulation, UMTRCA specifically directed the NRC to ensure that regulation of 11.e(2) material "(1) conforms with the applicable general standards promulgated by the [Environmental Protection Agency (EPA)] under section 275" of the Act and "(2) conforms to the general requirements established by the Commission, with the concurrence of [EPA], which are to the maximum extent practicable, at least comparable to requirements applicable to the possession, transfer, and disposal of similar hazardous material regulated by the Solid Waste Disposal Act." 42 U.S.C. § 2114(a). The AEA was also amended to explicitly exclude the requirement for the EPA (or an Agreement State) to permit 11e.(2) byproduct material under the Resource Conservation and Recovery Act of 1976 (RCRA), 42 U.S.C. 6901 et seq. *See* AEA § 275, 42 U.S.C. § 2022.

As noted in the Draft Guidance, the NRC amended 10 C.F.R. Part 40 to provide for regulation of uranium and thorium tailings and wastes and disposal of these materials under this subpart. 57 Fed. Reg. 20,525, 20,526. Although not subject to EPA (or State) regulation under RCRA, the 11.e(2) byproduct material must meet EPA Clean Air Act permit regulations, whether or not they are co-mingled with non-11.e(2) byproduct material waste. *Id.*

[authorizing license and exemptions], Section 82 [governing imports], and Section 84 [covering milling and mill tailings]. Therefore, NRC licensing requirements would apply to 11.e(2) byproduct material in the possession of an NRC licensee.[9]

Although expansive, the 11.e(2) phrase "produced by extraction or concentration of uranium or thorium from any ore processed primarily for its source material content" applied to the nuclear fuel cycle and excluded tailings containing uranium produced as a side stream of an operation primarily intended to extract a mineral other than uranium or thorium. *See Uranium Mill Tailings Radiation Control Act of 1978 Hearing on H.R. 11698, H.R. 11229, H.R. 12938, H.R. 12535, H.R. 13049 and 13650, Subcommittee on Energy and Power, House Comm. On Interstate and Foreign Commerce,* 95th Cong. 2d Sess. 343-344 (1978) (Licensee Exhibit 3) (*Subcommittee Hearings*); Draft Disposal Guidance, 57 Fed. Reg. 20525-20527. Nevertheless, the NRC suggested that the term be revised to apply to all nuclear fuel cycle

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[9]The new authority afforded NRC could not be applied retroactively unless the statute clearly, by express language or necessary implication, indicated the legislature intended such retroactive application. *See* 2 Sutherland, Statutory Construction § 41.04, at 349-351(5th Ed 1993); *Bowen v. Georgetown University Hospital,* 488 U.S. 204 (1988). Similarly, administrative agencies only have such powers which are conferred by Congress either expressly or by necessary implication. *See* 3 Sutherland, Statutory Construction, § 65.02, at 311-312 (5th Ed. 1992).

The effective date of the statute renders the Ashland 2 material (which technically meets the definition of 11.e(2) byproduct material since DOE and the Army Corps of Engineers have records which show the "waste or tailings" was "produced by the extraction or concentration of uranium or thorium for its source material content") not subject to NRC jurisdiction until it comes into the possession of an NRC licensee. *See* Letter from Richard Bangart to Paul Merges, dated September 15, 1998 (Licensee Exhibit 8). While the limits of the NRC's jurisdiction is not a bar with respect to the issuance of the Amendment authorizing receipt of the Ashland 2 material since DOE has the authority to classify the material, its status is no different than uranium ore, which is not subject to NRC regulation until it is arrives at an NRC-licensed uranium mill. *See* Final Generic Environmental Impact Statement on Uranium Milling, NUREG-0706, dated September 1980), vol. II at A-89 (Attachment A).

waste irrespective of the concentration of uranium contained in the ore to capture wastes from mills that used feedstock with less than 0.05% uranium since "[a]s high-grade ores become scarcer, there may be greater incentives in the future to turn to such low grade ores." *See id.* at 343 (Chairman Hendrie).

The role of the Department of Energy (DOE) is also important in determining the ultimate fate of mill tailings and wastes. UMTRCA further revised the AEA to require that either the United States (currently DOE) or the State in which the byproduct material has been disposed of (at the State's option), maintain long-term custody of, and surveillance over, the byproduct material and land used for its disposal. *See* AEA § 83, 42 U.S.C. § 2113. DOE is also responsible for determinations regarding residual radioactive material (e.g., radioactive wastes) at inactive processing sites and property in the vicinity of the site that has been contaminated with residual materials. 42 U.S.C. §§ 7911(1), (6), (7). Thus, the Federal Government has a prominent role with regard to the hazards of uranium mill tailings -- both radiological and non-radiological.

III. Issuance of the Amendment Was Consistent With the Alternate Feed Guidance

The Alternate Feed Guidance was published in the *Federal Register* on September 22, 1995. 60 Fed. Reg. 49,296. The guidance was to present an expanded interpretation of the term "ore" as used in Section 11.e(2) of the AEA, thus permitting feed material other than natural ore to be used by licensed mills to extract source material, avoiding possible dual regulation by the Environmental Protection Agency (EPA) and enabling transfer of other material to the Depart of Energy. *See* Uranium Mill Facilities, Request for Public Comments on Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11.e(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. 20,525, 20,530-31 (May 13, 1992) (Draft Disposal and Alternate Feed Guidance).[10] In the promulgation of both the draft and final guidance, the NRC emphasized that waste or tailings that resulted from the extraction or concentration of ore primarily for its source material content would be considered 11.e(2) material. *See* 57 Fed. Reg. 20,525; 60 Fed. Reg. 49,297.

The Alternate Feed guidance provides that requests to process alternate feed material can be approved if the Staff concludes, *inter alia*, that the application shows that the material proposed for processing is "ore," that it does not contain a listed hazardous waste, and that it is being processed primarily for its source material content. 60 Fed. Reg. 49,296-49,297; Holonich Affidavit at 4-7. The Staff concluded that the criteria in the guidance were met in the (1) the feed material qualified as "ore," (2) DOE remedial investigations did not identify any hazardous waste on the Ashland 2 property and confirmatory measures would be taken to guard against the presence of listed hazardous waste prior to shipment to, and upon receipt at, the White Mesa mill, and (3) the Licensee had provided an adequate certification that the uraniium-bearing material is being processed primarily for recovery of uranium. TER at 4-6.[11]

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[10]The Draft Guidance notes that both the Congressional intent in passing UMTRCA, as well as the views of a Federal court, warranted a broad interpretation of the term "ore" in the definition of 11.e(2) byproduct material so a wide range of feed materials could be processed in a mill with the resulting wastes being deemed 11.e(2) byproduct material. *See* 57 Fed. Reg. 20,525, 20,532, *citing, Kerr-McGee Corp. v. NRC,* 903 F.2d 1 (D.C. Cir. 1990).

[11]In addition, the Staff noted that, because DOE had determined that the Ashland 2 material was 11.e(2) byproduct material under the AEA, the material could be disposed of directly in the White Mesa tailings impoundments. TER at 6; Holonich Affidavit at 6-8.

(continued...)

The State claims that IUSA failed to satisfy either the license certification and justification test -- a sworn statement (with supporting documentation) that the alternate feed material is to be processed primarily for recovery of uranium and for no other primary purpose which may be justified "based on financial considerations, the high uranium content of the feed material, or *other grounds.*" See State Brief at 2. The State claims that the processing cannot be justified on financial grounds because the value of the disposal fee far surpasses the value of the uranium that can be extracted and, thus, IUSA is engaging in a "sham disposal." *See* State Brief at 3-12; Affidavit of Robert F. Herbert, dated December 7, 1998 (Herbert Affidavit).[12]

As noted in the previous section, the definition of 11.e(2) byproduct material was (1) intended to permit NRC regulation of only tailings or wastes associated with the nuclear fuel cycle, capturing low grade feed stock with less than .05% uranium or thorium content necessary to be subject to NRC regulation, and (2) in recognition that some mills were using

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[11](...continued)
Unfortunately, the Staff confused the issue somewhat in reaching this by referring to the "co-disposal test" since there would be no co-mingling of 11.e(2) and non-11e.(2) byproduct materials since the Staff had accepted DOE's characterization that the alternate feed was 11.e(2). Consequently, the co-disposal test for non-11.e(2) material -- was inapplicable to IUSA's request. *Id.* Thus, it is of no import that various elements of the guidance for co-disposal test for non-11.e(2) material (*e.g.*, the Regional Low-Level Waste Compact approval) in the Disposal Guidance were not satisfied. *See* State Brief at 13-14. The Staff's finding was consistent with the expectation that the 11.e(2) byproduct material would be transferred to DOE as required by Section 84 of the AEA, 42 U.S.C. § 2113(a)(2), (b)(2).

[12]Mr. Herbert estimates that based on a yellowcake price of $8.75 per pound, the value of uranium in the material may gross $68,000 to $617,000 (depending on whether the uranium concentration of the material is 0.008% or 0.058%), while the handling and disposal fee could be $4,050,000. See Herbert Affidavit at 5-9.

feedstock with less than that amount and that high grade ores might become scarcer. *See Subcommittee Hearings* (IUSA Exhibit 4) at 343-44; *Kerr-McGee v. NRC*, 903 F.2d at 6-7.

Although the receipt of a fee led the Staff to question wether the material would be processed primarily for its uranium content,[13] the Staff did not rely on financial considerations as the sole basis for the finding that IUSA's certification and justification were adequate.[14] *See* Holonich Affidavit at 6-8. Rather, the Staff noted that IUSA would process the Ashland 2 material either alone or commingled with conventionally-mined uranium ores and (1) reduce the costs of stockpiling ore, (2) enable IUSA to respond quickly to market price fluctuations by reducing the time from the mining, producing and selling the product, (3) run the mill for longer periods of time, (4) retain trained mill workers, and (5) reduce the overall costs of running the mill. *See* TER at 5-6. The Staff concluded that the certification was justified on *other grounds* in that 11e.(2) byproduct material (with no listed hazardous waste) would be run through the mill even though the material, with the appropriate NRC approval, could be placed directly into White Mesa's mill tailings impoundment. Thus, the Staff found that the material was being processed primarily for its source material content. *See* Holonich Affidavit at 6-8.[15]

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[13]*See UMETCO Minerals Corp.*, LBP-93-7, 37 NRC 267, 281-82 (1993) (the licensee's justification satisfied the Draft Guidance, but the presiding officer opined that payment of a fee for processing a feed material raised a question as to whether as to the validity of the certification).

[14]As the presiding officer in *UMETCO* noted, a detailed financial review of an alternate feed processing request is not mandated by the health and safety mission of the AEA or required by the Commission's regulations. LBP-93-7, 37 NRC at 282.

[15]The rationale for this decision was not inconsistent with the rationale underlying the Alternate Feed Guidance that radioactive or mixed waste not be processed at a uranium mill (continued...)

This case-specific determination was permissible under the Alternate Feed Guidance. Moreover, since no specific uranium concentration (and thus no specific economic value) is specified in the definition of 11.e(2) byproduct material as approved by Congress, the Staff's promulgation of guidance that would allow processing of alternate feed materials with varying uranium content is consistent with UMTRCA's expanded definition of "ore."[16]

In claiming that acceptance of a recycling or disposal fee wholly contradicts IUSA's certification and justification, made under oath and affirmation, *see* State Brief at 3-14, the State ignores that *other grounds* is an alternative and broad category which could include the justifications that foster one purpose of UMTRCA -- to reduce health hazards associated with the wastes and tailings of the nuclear fuel cycle -- as being acceptable.[17] The term "other grounds" in effect give an applicant considerable latitude in demonstrating that the feed material or "ore" *is being processed primarily for its source material content.*

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[15](...continued)
primarily to convert it to 11.e(2) byproduct material. *See* 60 Fed. Reg. 49,296, 49,297. The concentration of uranium was not important in reaching this finding, and the expected percentage was similar to that in ores processed at other facilities. *See* Holonich Affidavit at 4-7.

[16]In rejecting the NRC's assertion that a determination of whether material was 11.e(2) byproduct material hinged upon whether extraction of uranium was the chief or principal reason for processing the ore, the Court noted that the word "primarily" could also mean substantially and opined that Staff's definition would frustrate the purposes of UMTRCA,which was intended to protect public health by sealing the regulatory gap. 903 F.2d at 7-8.

[17]The State conveniently ignores the fact that "other grounds" besides financial considerations or the high uranium content of the feed material may show that the material is being processed primarily for its source material content. *See* Alternate Feed Guidance, 60 Fed Reg. 49,297. Thus, licensee would have the flexibility to provide reasons that are not tied to flunctuations in the uranium or thorium markets.

The State's argument that IUSA did not meet the co-disposal test, *see* State Brief at 13-14, is correct. The point is moot, however, because this "alternate" test was inapplicable to the Amendment since the Ashland 2 material is classified as 11.e(2) byproduct material in that it is the tailings or waste from the extraction or concentration of any ore for its source material content. *See* note 11, *supra*.

IV The Amendment Was Based On An Adequate Record and Did Not Violate Applicable Laws

The State asserts that the Ashland 2 material may be low-level waste subject to State regulation and that its disposal at White Mesa was approved without the requisite environmental review, proper notice of the Application, and an adequate administrative record. *See* State Brief at 18-22; Herbert Affidavit at 9-10; Affidavit of William Sinclair, dated December 7, 1998, at 3-7.

As stated earlier, in an effort to reduce the potential for dual regulation, 11.e(2) byproduct material, which is specifically excluded from the definition of low-level

waste,[18] is subject only to EPA air quality standards and is not required to obtain a SWDA discharge permit. *See* note 9, *supra*. The Alternate Feed Guidance further states that

> Feed material exhibiting only a characteristic of hazardous waste (ignitable, corrosive, reactive, toxic) would not be regulated as hazardous waste and could therefore be approved for recycling and extraction of source material. However, this does not apply to residues from water treatment, so acceptance of such residues as feed material will depend on their not containing any hazardous or characteristic hazardous waste.

60 Fed. Reg. 49296, 49297. While the State expresses concerns about the design of the impoundments, the impact on groundwater, it provides no credible evidence to support its claims of harm as there is no evidence that the impoundments have leaked in over 18 years of operation. *See* IUSA Brief at 16-18, 21-22. Further, since White Mesa is not subject to State regulation, and the State has not provided a basis for exercising its jurisdiction, the Presiding Officer need not make any findings on the design and regulatory issues raised by the State. Moreover, the NRC's compliance with applicable EPA regulations for uranium milling has been upheld. *See* note 19, *infra*.

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[18] 10 C.F.R. § 62.2 defines low-level waste as radioactive material that "(1)[i]s not high-level radioactive waste, spent nuclear fuel, or byproduct material (as defined in section 11e.(2) of the AEA, 42 U.S.C. § 2014(e)(2)); and (2) the NRC, consistent with existing law . . . classifies as low level waste. Based on the 11.e(2) classification of DOE (the successor agency to the generator of the material with information about the processing history of the material) and agency determinations that the material contains no listed hazardous wastes or water treatment residues, *see* TER at 4-5, the Ashland 2 material is not subject to regulation by the State. The Staff further determined that the sampling program being conducted both prior to and after transport of the material to White Mesa provided further assurance that the material would contain no listed hazardous wastes. *See* Holonich at 9-11. The validity of the Staff's conclusion (which relied on the determinations of two Federal agencies) was not disturbed by the detailed testing information requested by the State. *See id.* at 11; State Brief at 19-21.

The State also asserts that there has been no analysis of the effect of the Amendment on the uppermost aquifer. *See* State Brief at 21-22. The State, however, provides no information that raises a serious doubt that the Staff correctly concluded that the amendment satisfied the standards for a categorical exclusion pursuant to 10 C.F.R § 51.22(c)(11). The Staff specifically concluded that processing of the material will not result in (1) a significant change or increase the types or amounts of effluents that may be released offsite, (2) a significant increase in individual or cumulative occupational exposures, (3) a significant construction impact, or (4) a significant increase in the potential for or consequences from radiological accidents. TER at 6. The bases for these conclusions include that (a) the annual yellowcake production limit would not be exceeded, (b) tailings from the processed material would be disposed onsite in an existing impoundment (Cell 3), (c) disposal of the tailings would increase the total amount of tailings in the cell by only one percent, and (d) the Ashland 2 material is similar in composition to mill tailing currently in the Cell 3 impoundment. TER at 6-7. As a result, the Staff found that the Amendment satisfied the criteria for a categorical exclusion pursuant to 10 C.F.R. § 51.22(c)(11) as an amendment of a fuel cycle facility that did not require the preparation of an environmental assessment.[19] The

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[19]The State contends that the Staff failed to address the environmental impacts of the Amendment and claims that the NRC failed to determine whether NRC regulations provide sufficient protection to State resources. *See* State Brief at 3, at 21-22. As previously stated, the NRC regulations conform to the standard promulgated by the EPA as required by Section 84 of the AEA, 42 U.S.C. § 2114, and the regulations have been upheld in Federal court on two occasions. *See American Mining Congress v. NRC,* 772 F.2d 640 (10th Cir. 1985); *American Mining Congress v. NRC*, 902 F.2d 781 (10th Cir. 1990). Moreover, the Staff's analysis properly found that the action met the standards for a categorical exclusion and thus no environmental assessment was necessary. *See* TER at 6-8.

State's arguments and complaints about regulation of mill tailings do not refute these findings.

Similarly, the State has not provided an analysis that disputes environmental findings made with respect to continued operation of White Mesa, which is not a matter litigable in this proceeding. Seepage from White Mesa would have to travel through approximately 1200 feet of low permeability rock before reaching the Navajo Aquifer and likely would not impact the water quality of that aquifer. *See IUSA* Brief at 65-71. In addition, the State has not demonstrated that any necessary information was missing from the administrative record proceeding the issuance of the Amendment.

The State's arguments have more to do with challenging the adequacy of the regulatory scheme for the overall operation of White Mesa than contesting the adequacy of the Amendment authorizing the processing of alternate feed material. Such arguments border on an impermissible attack on the adequacy of the Commission's regulations for uranium milling and should be rejected. *See Philadelphia Electric Co.* (Peach Bottom Atomic Power Station, Units 2 and 3), ALAB-216, 8 AEC 13, 20-21 (1974).

The State also asserts that the amendment is defective because no prior notice of the amendment was provided. *See* State Brief at 19. The Commission has determined that the AEA does not require that any notice be given of materials licensing actions and that notices for all licenses would not be a judicious use of limited agency resources. *See* Informal Hearing Procedures for Materials Licensing Adjudications, 54 Fed. Reg. 8269, 8271 (February 28, 1989). The Staff's practice has been to provide prior notice, as a matter of discretion, of only significant materials licensing actions. *See id.*; Holonich Affidavit at 10-11. Given that no

prior notice was required, the States "due process" grounds for challenging the Amendment should be rejected.

In short, the Presiding Officer should find that the State's concerns are without merit, deny the relief requested and uphold issuance of the Amendment.

CONCLUSION

For the reasons set forth above, the State has not shown that the amendment should be conditioned, modified or revoked. Therefore, the relief requested should be denied and issuance of the Amendment upheld.

Respectfully submitted,

Mitzi A. Young
Counsel for NRC Staff

Dated at Rockville, Maryland
this 29th day of January 1999

NUREG-0706
Vol. II

Final Generic Environmental Impact Statement

on uranium milling

Project M-25

Appendices A-F

September 1980

Office of Nuclear Material
Safety and Safeguards
U.S. Nuclear Regulatory Commission

Response: NRC will conform its regulations to those of EPA, as required by the Mill Tailings Act. If EPA establishes the distinction suggested, the NRC would follow suit. It should be pointed out, however, that nothing in the Mill Tailings Act specifically calls for exemption of certain levels of radionuclide content. To the contrary, the Act mandates that radioactive and nonradioactive hazards be regulated.

> Comment: In addition to the relevant pre-existing authorities contained in the cited Federal statutes (i.e., the Atomic Energy Act, the Resource Conservation and Recovery Act, the Clean Air Act, and the Federal Water Quality Act), mention also should be made of the applicability of authority contained in the Safe Drinking Water Act and the Toxic Substances Control Act." (41)

Response: Section 13.5.2 of the GEIS has been changed to incorporate this suggestion.

> Comment: The proposed regulations should not address ore pads because no uranium milling or ore processing to create source material takes place until ore enters the mill and is processed in the first step of ore grinding. Further, uranium ore on the pad could in no way be considered byproduct material, since it has not been processed. (55)

Response: Section 205.(a) of the UMTRCA amends the Atomic Energy Act of 1954 by adding a new Section 84 which states in part that "the Commission shall insure that the management of any byproduct material, as defined in section 11e.(2), is carried out in such manner as... the Commission deems appropriate to protect the public health and safety and the environment from radiological and nonradiological hazards associated with the processing and with the possession and transfer of such material..." [emphasis added]. The storage of ore on an ore pad prior to milling clearly constitutes an activity associated with processing. Under the language of new Section 84, therefore, it is within NRC's authority to regulate ore pad activities.

> Comment: What is the basis for the determination, appearing in the definition of Section 11e.(2) byproduct material, that underground ore bodies depleted by solution extraction techniques do not constitute the tailings or wastes described in Section 11e.(2)? (92, 99)

Response: Although the Mill Tailings Act was primarily directed at the hazards associated with mill tailings from conventional uranium extraction processes, the congressional floor debate on the legislation indicated that there was some concern that in situ operations, though covered by the new Act, should not fall within its requirement that mill tailings and their disposal site be ultimately owned by the Federal or State governments. On the bases of this legislative history and language in the Mill Tailings Act suggesting that the terms "tailings or wastes" are terms of art in the industry referring to discrete materials capable of controlled disposal, the Commission concluded that the Act does not require regulation of the underground ore bodies depleted by solution extraction processes. It has been NRC practice in licensing in situ facilities to require that such sites be returned to baseline conditions; therefore, potential long-term hazards at these sites are eliminated. Surface wastes from in situ operations, however, are sufficiently like those tailings and wastes from conventional milling operations to merit regulation under the Mill Tailings Act. The underlying analysis for this conclusion appears in a memorandum to the U.S. Nuclear Regulatory Commission from Howard K. Shapar, Executive Legal Director, entitled Staff Response to the Commission Request for Further Information Regarding SECY-79-88 "Timing of Certain Requirements of the Uranium Mill Tailings Radiation Control Act of 1978" (May 7, 1979). This document is available in the NRC's Public Document Room.

> Comment: NRC should have licensing authority over all DOE owned mill tailings, and NRC should not at any time release its jurisdiction over disposal sites for radioactive wastes. (69, 79)

Response: Under the UMTRCA, the NRC will retain regulatory authority over inactive mill tailings and their disposal sites. Section 83b.(1) of the Atomic Energy Act of 1954, as amended by the UMTRCA, provides that even if the Commission determines that government ownership of a tailings disposal site is not required, "such property and materials shall be maintained pursuant to a license issued by the Commission...." Similarly, Section 84b.(5) provides that the Commission may, pursuant to a license, rule, or order, require the Federal or State agency with custody of tailings and their disposal site to undertake monitoring, maintenance, and emergency measures as may be necessary. Section 84 provides similar authority to the Commission. Thus, it is clear that the UMTRCA requires that the NRC assume and retain regulatory authority over mill tailings that have been disposed of. Criterion 11 of Appendix A to 10 CFR 40 does, in fact, require this.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE PRESIDING OFFICER

In the Matter of	)	
	)	
INTERNATIONAL URANIUM	)	Docket No. 40-8681 MLA-4
(USA) CORPORATION	)	
(Receipt of Material from	)	
Tonawanda, New York)	)	

AFFIDAVIT OF JOSEPH J. HOLONICH

I, Joseph J. Holonich, being duly sworn, state as follows:

1. I am employed by the U.S. Nuclear Regulatory Commission (NRC), Office of Nuclear Material Safety and Safeguards as the Deputy Director in the Division of Waste Management. Previously, I was the Branch Chief of the Uranium Recovery Branch, and served in that capacity from October 1993 through November 1998. As Branch Chief, I was the manager responsible for overseeing the preparation of the "Uranium Mill Facilities, Notice of Two Guidance Documents; Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments; Final Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores," 60 Fed. Reg. 49296 (September 22, 1995) (Disposal and Alternate Feed Guidance) (Hearing File Document 10). Specifically, I reviewed the Staff's Technical Evaluation Report (TER) (Enclosure to Hearing File Document 12: Letter from J. Holonich, NRC, to M. Rehmann, IUSA, forwarding Amendment 6 to Source Material License SUA-1358, dated July 23, 1998) to determine if there was an acceptable basis for taking the final agency action and signed the

amended license authorizing the processing of the alternate feed material by IUSA. A statement of my professional qualifications is attached hereto as Attachment 1.

2. In preparation of this affidavit, I read the following documents:

A. State of Utah's Brief in Opposition to International Uranium (USA) Corporation's Source Materials License Amendment, dated December 7, 1999 (State Brief).

B. Staff's TER (Enclosure to Hearing File Document 12), issued with the Amendment 6 to Source Material License SUA-1358 (License Amendment), which authorized the processing of the Ashland 2 material.

3. I am also familiar with the following documents in connection with this licensing action:

A. The Commission's regulations in 10 C.F.R. Part 40, Domestic Licensing of Source Material, and 10 C.F.R. Part 40, Appendix A, "Criteria Relation to the Operation of Uranium Mills and the Disposition of Tailings or Wastes Produced by the Extraction or Concentration of Source Material from Ores Processed Primarily for Their Source Material Content." These regulations, in part, establish procedures and criteria for the issuance of licenses to possess, etc., source and byproduct material and address disposal of byproduct material, including reclamation of uranium mill tailings and protection of ground water.

B. 10 C.F.R. Part 51 containing the provisions applicable to any environmental analyses that must be done in conjunction with NRC materials licensing actions.

C. The Disposal and Alternate Feed Guidance documents (Hearing File Document 10) concerning the processing of alternate feed material and the disposal of material other than 11e.(2) byproduct material in tailings impoundments.

4. I managed and actively participated in the issuance of the contested license amendment authorizing the processing of the Ashland 2 material. This effort included deciding how the Staff would implement the final guidance for this amendment, and determining whether IUSA provided sufficient information to enable the Staff to conclude that the proposed amendment was acceptable.

THE DISPOSAL AND ALTERNATE FEED GUIDANCE

5. The Disposal Guidance identifies ten criteria that staff will use to determine if material other than 11 e.(2) material can be disposed of in tailings impoundments. These ten criteria identify prohibited material, necessary approvals, and other conditions that should be met. The Disposal Guidance can be used by itself to assess if an application for disposal of material other than 11e.(2) byproduct material in mill tailings impoundment is acceptable, or as discussed below, it can be used in conjunction with the Alternate Feed Guidance as a means to justifying processing of alternate feed material.

6. The Alternate Feed Guidance has three criteria, and is used to determine if a proposal to process alternate feed material is acceptable. In the first criterion, the guidance relies upon an expanded interpretation of the term "ore" as used in the Section 11e.(2) of the Atomic Energy Act of 1954, as amended (AEA), to permit feed material other than natural ore to be used by licensed mills to extract source material. Second, the guidance avoids possible dual regulation of the site by the U.S. Environmental Protection Agency (EPA) or EPA primacy state, such as the State of Utah, by prohibiting the processing of any material containing hazardous waste. Finally, the guidance ensures that transfer of the site to the U.S. Department of Energy (DOE) by ensuring the residuals from the processing of alternate feed will meet the definition of 11 e.(2) byproduct materials. This is done by having the licensee demonstrate that the material is being processed primarily for its source material content. The determination of primarily is a statutory requirement under the AEA. *See* "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," 57 Fed. Reg. 20525, 20530-31 (May 13, 1992) (Draft Guidance).

FINDINGS IN RESPECT TO THE GUIDANCE

7. In its written presentation, the State asserts that the Staff erred in approving the amendment because (1) it "violated the Commissions Alternate Feed Guidance and the processing of the Ashland 2 material is a "sham disposal", (2) the amendment was issued based on an inadequate administrative record and an inadequate Staff review, and (3) the application failed to address the impact that receipt, processing, and disposal of the Ashland 2 materials would have on the local environment. *See* State Brief at 2-3, 3-14, 19-22. These assertions are incorrect as outlined in the following paragraphs.

8. In evaluating the acceptability of the IUSA application, the Staff used the Alternate Feed Guidance and determined in the TER that the three criteria were met. *See* TER at 3-6. With respect to the first criterion– the Staff determined that the Ashland 2 feed material met the definition of ore set forth in the guidance. The guidance states that "[o]re 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." 60 Fed. Reg. 49296. The application showed that the Ashland 2 material on average contained 0.05% uranium and was a "matter from which source material is extracted in a licensed uranium mill." *See* TER at 4. The conclusion was reasonable since White Mesa is a licensed mill and the amount of uranium was consistent with the definition of source material set forth in 10 C.F.R. § 40.4 ("(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") and similar to the average uranium content expected to be milled at other mill sites. For example, the Final Environmental Statement (FES) for the Sweetwater Uranium Project, dated December 1978 [Docket Number 40-8584], stated that the expected average grade for milling at Sweetwater was 0.048% uranium. *See* Sweetwater FES at 1-1 (Attachment 2). The FES for the Split Rock Uranium Mill, dated February 1980 [Docket Number 40-1162], stated that the ore grade from past operations ranged from 0.15% to 0.30% uranium and was *expected* (emphasis added) to range from 0.05% to 0.15% for future operations. *See* Split Rock FES at 3-1(Attachment 3).

9. With respect to the second criterion – whether the material contained hazardous waste listed under subpart D §§ 261.30-33 of 40 C.F.R., the Staff relied on the analysis of the material conducted by DOE, the successor agency to the Manhattan Engineering District, and the U.S. Army Corps of Engineers (USACE). Because those analyses showed no listed hazardous waste in the Ashland 2 material the staff concluded that the second criterion of the guidance was fulfilled. *See* TER at 4-5; Letter from M. Conrad, USACE, to NRC, dated June 16, 1998, at 2 (Hearing File Document 9); Facsimile from L. Edward, Shaw, Pittman, to J. Park, NRC, dated June 12, 1998, at A-3 (Hearing File Document 8); Facsimile from F. Nelson, Shaw, Pittman, to P. Bloch, Presiding Officer, dated October 26, 1998, at 1 (Attachment 4). In addition, information from USACE confirmed that USACE would have its contractor also test the material for listed hazardous waste prior to leaving the site. *See* Hearing File Document 9 at 2; TER at 4. Finally, the licensee committed to have the material tested when it arrived on the site to confirm no hazardous material was present in the alternate feed. *See* TER at 4, Letter from M. Rehmann, IUSA, to J. Holonich, NRC providing supplemental information, dated June 11, 1998, at 1

(Hearing File Document 6). The Staff found the work done by two other federal agencies, the DOE and USACE, as well as the continued testing prior to shipment and upon receipt of the material on site, as a sufficient basis to ensure that the Ashland 2 material was not a hazardous waste of contained a listed hazardous waste. TER at 4; Letter from M. Rehmann, IUSA, dated June 3, 1998, forwarding Response to Request for Additional Information, date June 1, 1998, at 5-6 (Hearing File Document 5). The DOE analyses are documented in the Remedial Investigations (summary found in the USACE's Field Sampling Plan, which is part of the USACE's Sampling and Analysis Plan). *See* Letter from M. Rehmann, IUSA, dated June 3, 1998, Response to Request for Additional Information, dated June 1, 1998, [June 3, 1998 RAI Response] (Hearing File Document 5) at fourth Enclosure: Sample and Analysis Plan (SAP), dated May 29, 1998, Part 1, at 2-5.

10. With respect to criterion 3 – whether the feed material is being processed primarily for its source material content, the Alternate Feed Guidance states that this criterion can be fulfilled by either of the following tests: (a) a showing that the alternate feed material that is not 11 e.(2) byproduct material can be placed directly in the tailings impoundment, (a co-disposal test) or (b) a licensee certification under oath that the feed material is to be processed primarily for the recovery of uranium and for no other primary purpose. For (b), the licensee can justify, that the certification is based on financial considerations, the high uranium content of the feed material or "other grounds" *See* Draft Alternate Feed Guidance, 57 Fed. Reg. 20525, 20533; Alternate Feed Guidance 60 Fed. Reg. 49296, 49297. These tests were established to ensure that licensees did not process low-level waste to simply change its legal definition to 11e.(2) byproduct material, thus avoiding low-level waste disposal regulations. Such processing has

been characterized as "sham disposal" by the State. IUSA completed the second test and as discussed below, the Staff felt that IUSA's justifications were acceptable. *See* TER at 5-6.

11. The State is incorrect that the record and the Staff's review were not sufficient to support the amendment. *See* State Brief at 2. In particular, the State asserts that the Staff failed to follow the final guidance because the financial considerations of processing the Ashland 2 material is not present, and the application fails the co-disposal test in the final guidance. *See* State's Brief at 5-14. During its review, the Staff was aware that IUSA would be receiving a payment for the material. This payment caused the Staff to continue to question whether the material was primarily being processed for its uranium content. However, rather than relying on the financial considerations to justify the certifications, the staff relied on a June 16, 1998, USACE letter which confirmed the DOE classification of the material as 11e.(2) byproduct material. *See* Hearing File Document 9 at 2. With this classification, the Staff was able to conclude that the material could be placed directly in the mill tailings impoundments (*i.e.*, direct disposal). Hence, the concerns about "sham disposal" were not an issue in the Staff's review, since it did not appear that the material was being processed to change its legal definition, and as such was truly being processed for its uranium content.

12. Similarly, the application of the co-disposal test is not appropriate to the Ashland 2 material for the same reasons. Criterion 3(a) of the Alternate Feed Guidance identified that a licensee can demonstrate alternate feed material that is not 11e.(2) byproduct material is being processed primarily for its uranium content if the material meets the ten criteria in the Disposal Guidance. The term co-disposal applies to low-level waste or other AEA-regulated material that does not meet the definition of 11e.(2) byproduct material being co-disposed of with 11e.(2)

byproduct material in a mill tailings impoundment. Thus, the Disposal Guidance is applicable to material other than 11e.(2) byproduct material. This is clearly demonstrated by several criteria in the Disposal Guidance which address 11e.(1) byproduct material, special nuclear material, or hazardous waste material. In addition, disposal of low-level waste in a 11e.(2) impoundment requires agreement from the originating and receiving low-level waste compact. It also requires, an exemption to low-level waste requirements in 10 C.F.R. Part 61 or in an Agreement State regulations before the Staff could find disposal of low-level waste acceptable. The use of the co-disposal test in the Staff's TER was a misnomer. In reality, because of its classification, the Ashland 2 material could be placed directly in the White Mesa tailings impoundment. Thus a better characterization in the TER would have been direct disposal. This direct disposal test clearly satisfies the "other grounds" test given in criterion 3(b) of the alternate feed guidance. In addition, the direct disposal test used by the staff is consistent with the rationale underlying the co-disposal test in the Alternate Feed Guidance that, if material could be placed in the tailings impoundment for disposal without processing, the licensee is processing the material primarily to extract the source material, and not to change the legal definition of the material. *See* Draft Guidance 57 Fed. Reg 20533; Alternate Feed Guidance, 60 Fed. Reg. 49296, 49297

FINDINGS IN RESPECT TO ENVIRONMENTAL REGULATION

13. Finally, in response to the State's accusation of an inadequate review due to the omission of environmental impacts relating to the processing and storing of the material, the Staff did not perform a written assessment of environmental impacts because it did not have to do so. State Brief at 3. Under the provisions of 10 C.F.R. § 51.22(c)(11), this action is categorically excluded from the need for an environmental assessment since it met the criteria established for such exclusions.

On page 6 of the TER, the Staff laid out why it believed the four criteria in 10 CFR 51.22(c)(11) were met.

FINDINGS IN RESPECT TO LOW-LEVEL WASTE AND HAZARDOUS WASTE

14. The State asserts that the material may be low-level waste and subject to State of Utah regulation. *See* State Brief at 14-16. However, the material has been classified by two federal agencies, the DOE and USACE, as 11e.(2) byproduct material. Because of this, the material is not low-level waste, and is unregulated by the State of Utah. Low-level waste means radioactive material that (1) is not high-level radioactive waste, spent nuclear fuel, or byproduct material (as defined in section 11e.(2) of the Atomic Energy Act of 1954, 42 U.S.C. § 2014 (e) (2)); and (2) the NRC classifies as low-level radioactive waste. 10 C.F.R. § 62.2. Thus, the Ashland 2 material is not low-level waste based on the classification of the generator. In fact, if the material were shipped to the Envirocare site for disposal, based on the classification, it would be placed in the NRC-licensed disposal cell, and not be subject to regulation by the State of Utah. *See* Letter from L.Callan, NRC, to Congressman Cook, dated 9/8/98, at 2 (Attachment 5).

15. The State also argues that the amendment undermines the final guidance, and harms the State of Utah since the hazardous waste industry regulations implemented by the State of Utah are more stringent. *See* State Brief at 16-19. I disagree with the State's argument, particularly the claim that hazardous waste regulations are more stringent. The disposal requirements for uranium mill tailings found in 10 C.F.R. Part 40, Appendix A, offer the same level of protection as that found under the Solid Waste Disposal Act (SWDA), 42 U.S.C. 6901. In Section 275 of the Atomic Energy Act, 42 U.S.C. § 2022, Congress directed the U.S. Environmental Protection Agency (EPA) to establish standards for the regulation of non-radiological components of 11e.(2) byproduct material

to provide the same level of protection as the standards applicable to hazardous waste sites regulated under the SWDA. Congress further directed that the EPA Administrator would not issue any permit under the SWDA in order to ensure there was a single regulator at the mill sites. Consistent with the Congressional direction in Section 275, EPA established standards for uranium mill tailings covering surface reclamation and ground-water protection. In addition, NRC fulfilled its Congressional mandate by conforming its regulations to the standards established by EPA under Section 275. Therefore, the requirements found in 10 C.F.R. Part 40, Appendix A, conform to the EPA standards that provide the same level of protection as the standards applicable to hazardous waste sites. The State of Utah may have more stringent standards than those established by EPA for mill tailings sites; however, from a federal prospective, the NRC requirements are consistent with EPA requires under the SWDA. The NRC informed EPA by letter dated April 1, 1997, that NRC was documenting the agreement NRC and EPA had reached that "no additional work on the comparability of NRC mill tailing regulations to the SWDA will be pursued." *See* Letter from C. Paperiello, NRC to E. Cotsworth, EPA, dated April, 1997, at 1 (Attachment 6).

FINDINGS IN RESPECT TO MATERIAL DEFICIENCY AND OMISSIONS

16. The State of Utah incorrectly claims that there are material deficiencies and omissions in the application in that (1) the application should have been notice, (2) the Staff relied on summary documents and its review was "too brief," and (3) the Staff did not determine if its regulations "adequately protect State of Utah ground water sources." *See* State's Brief at 19-22. First, the Staff is not required to notice any amendment application for a uranium mill. However, in February 1994, the Staff committed to the State of Utah that NRC would notice significant license amendment applications. *See* Letter to W. Sinclair, State of Utah, from R. Bernero, NRC, dated Febuary 25,

1994, at 1 (Attachment 7). Because the alternate feed material covered by this amendment was categorically excluded from an environmental assessment, and the alternate feed material was the same as the mill tailings currently found onsite, the Staff concluded that this application did not meet the definition of significant actions in the February 1994 letter. However, given the amount of controversy over the Ashland 2 alternate feed application, the Staff has chosen to notice the Ashland 1 alternate feed application.

17. Secondly, the Staff relied on all the information it believed was necessary to support its acceptability determination for this application. Given that two sister federal agencies had found there was no hazardous material in the Ashland 2 alternate feed material, and the additional testing committed to prior to shipment and upon receipt, the Staff concluded that there was sufficient information to support issuing the amendment. *See* TER at 4. The strength of the Staff's conclusion was ultimately demonstrated when additional testing by IUSA and approved by the State of Utah showed no hazardous material in the alternate feed. *See* Attachment 4 at 1.

18. In addition, in the interest of efficient use of agency resources and prompt, but well-reasoned, agency decision making, the Staff endeavors to complete material license amendment application reviews in a few months and examines licensee submittals in evaluating applications for licenses and license amendments. Thus, the review period for the Ashland 2 amendment was not unusual and depended upon the adequacy of the information submitted by IUSA.

19. Finally, as previously stated in paragraph 15, above, the Commission's regulations are sufficient to protect State of Utah ground water. These regulations are in conformance with EPA standards for the disposal of hazardous waste and the NRC has previously informed the State of Utah

that NRC regulations provide adequate ground water protection. *See* Letter from S. Jackson, NRC, to D. Nielson, State of Utah, dated December 13, 1996 at 1-2 (Attachment 8).

20. In summary, the State of Utah assertions that the Staff failed to follow its own guidance as part of conducting the evaluation of the Ashland 2 alternate feed amendment is incorrect. On the contrary, the Staff did use the guidance, and ensured that all three criteria specified had been met. In addition, the Staff's amendment complied with the applicable Commission regulations for conducting any needed environmental reviews. Finally, the Commission's regulations covering uranium mill tailings, including those covering ground water, clearly provide the same level of protection as SWDA regulations given the conformance of Part 40 to the EPA standards that were based on ensuring an equivalent level of protection as that provided under the SWDA.

21. The foregoing and attached qualification sheet are true and correct to the best of my knowledge and belief.

Joseph J. Holonich

Sworn and subscribed to before me
this 29th day of January 1999

Notary Public
My Commission Expires:_____

CARRIE BROWN
NOTARY PUBLIC STATE OF MARYLAND
My Commission Expires March 15, 1999

JOSEPH J. HOLONICH

DIVISION OF WASTE MANAGEMENT

U.S. NUCLEAR REGULATORY COMMISSION

EDUCATIONAL AND PROFESSIONAL QUALIFICATIONS

I am employed as the Deputy Director of the Division of Waste Management. My duties involve assisting the Director with the day-to-day operation of the U.S. Nuclear Regulatory Commission (NRC) regulation of radioactive waste disposal. This includes the disposal of high- and low-level waste, decommissioning of fuel cycle and reactor facilities, and licensing, operational oversight, and reclamation of uranium recovery facilities. From October 1993 through November 1993, I served as the Branch Chief of the Uranium Recovery Branch where I managed the NRC's uranium recovery program. In that job, I was responsible for managing: 1) the development of the regulatory framework; 2) completion of all staff licensing actions; 3) at a policy level, the inspection program; and 4) enforcement action delegated to me by the Director of the Office of Enforcement. Prior to that, I worked in the NRC's high-level waste program first as a Project Manager, then as a Section Chief and Project Director.

My work assignments in the Office of Nuclear Reactor Regulation included the review responsibility of reactor core thermal-hydraulic designs submitted in support of reactor construction permits and operating licenses. I also served as a Project Manager for nuclear power plants under construction and operating, and I licensed the Calloway, Unit 1 Plant in Fulton, Missouri. My other reactor experience included working in the Office of Analysis and Evaluation of Operational Data for a short time as an inspector.

For approximately a year from February 1995 through March 1996, I was employed as a consultant. In that capacity, I prepared testimony for public utility commission prudency hearings, supported international activities such as other regulatory agencies, and provided technical support to nuclear utilities.

In May 1980, I graduated from the Pennsylvania State University with a Bachelor of Science degree in Nuclear Engineering. I have a Masters of Mechanical Engineering degree from the Catholic University of America. With the exception of March 1985 through February 1986, I have been continuously employed by the NRC.

Attachment 2
NUREG-0505

FINAL ENVIRONMENTAL STATEMENT

related to the

Minerals Exploration Company

SWEETWATER URANIUM PROJECT

(SWEETWATER COUNTY, WYOMING)

prepared by the

U. S. Nuclear Regulatory Commission

Washington, D. C. 20555

December 1978

1. INTRODUCTION

1.1 THE APPLICANT'S PROPOSAL

Pursuant to Title 10, Code of Federal Regulations (CFR) Part 40 and Part 51, an application was filed with NRC by Minerals Exploration Company (hereinafter referred to as the applicant, or MEC) on November 18, 1976, to conduct certain milling operations involving processing uranium ore deposits mined in Sweetwater County, Wyoming; these proposed operations are collectively referred to as the Sweetwater Uranium Project. The project consists of mining uranium from ore bodies [located from a few feet to more than 400 feet (120 m) underground] in an area about 20,000 feet (6100 m) long and 3000 feet (900 m) wide over a period of 15 years (estimated) and construction and operation of a mill with a nominal capacity of 3000 tons (2.7×10^6 kg) per day. It is estimated by the applicant that the deposits consist of about 16 million tons ($14,500 \times 10^6$ kg) of uranium ore containing approximately 15.3 million pounds (7×10^6 kg) of uranium oxide. The ore has an average grade of 0.048% uranium oxide.

As part of this project, the applicant proposes also to construct a heap leaching and resin ion-exchange facility to extract uranium from ores of a quality too low for economic recovery in the mill.

Production in the mill is expected to be about 900,000 pounds (400,000 kg) of uranium oxide per year. Secondary operations of heap leaching and recovering uranium from the mine discharge water is expected to increase annual production to about one million pounds (450,000 kg) of uranium oxide.

Waste material (tailings) from the mill will be produced at a rate of about 3000 tons (2.7×10^6 kg) per day and will be stored onsite in specially excavated pits.

1.2 BACKGROUND INFORMATION

The proposed Sweetwater Uranium Project lies within the Red Desert portion of Wyoming's Great Divide Basin and is located in Township 24 North, Range 93 West in northeastern Sweetwater County about 40 air miles (65 km) northwest of Rawlins, Wyoming, and about 30 air miles (45 km) south of Jeffrey City, Wyoming, at latitude 42°03'22" N and longitude 107°53'45" W (Fig. 1.1).

MEC has obtained the mining rights on approximately 61,200 acres (24,800 hectares), consisting of 2900 unpatented lode mining claims on public domain land and leases on five sections from the State of Wyoming. The U. S. Bureau of Land Management owns the surface rights to approximately 58,000 acres (23,500 hectares) of this land, and the State of Wyoming owns the surface rights to the remaining 3200 acres (1300 hectares). Only a portion of the mining rights will be utilized for the Sweetwater Project.

1.3 FEDERAL AND STATE AUTHORITIES AND RESPONSIBILITIES

Under 10 CFR Part 40, an NRC license is required in order to "receive title to, receive, possess, use, transfer, deliver ... import ... or export ... source material...." (i.e., uranium, and/or thorium in any form, or ores containing 0.05% or more of uranium, thorium, or combination thereof). 10 CFR Part 51 provides for the preparation of a detailed environmental statement pursuant to the National Environmental Policy Act of 1969 (NEPA) prior to the issuance of an NRC license to authorize uranium milling.

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*Minerals Exploration Company, "Sweetwater Uranium Project Environmental Report" (prepared by Woodward-Clyde Consultants) with supplements, Docket No. 40-8584, November 1976. [Hereinafter this will be cited as the ER, with specific section number, page number, etc.]

FINAL ENVIRONMENTAL STATEMENT

related to the

Western Nuclear, Inc.

SPLIT ROCK URANIUM MILL

(FREMONT COUNTY, WYOMING)

prepared by the

U.S. Nuclear Regulatory Commission

Washington, D. C. 20555

February 1980

3. OPERATIONS

3.1 MINING OPERATIONS

The uranium ore presently being processed at the Split Rock mill is mined by both open-pit and deep-mining methods from surface and underground mines about 16 to 22 km (10-15 miles) south-southwest of the mill. The host rocks for the uranium-ore deposits are reddish-brown altered arkosic sandstones within the Battle Springs Formation (Eocene age). Although poorly defined, the ore bodies are of the tabular, stratiform, and roll-type deposits. The ore grade has ranged from 0.15 to 0.30% U_3O_8.[1] The ore bodies being mined are located at or below the local water table, thereby requiring dewatering. Dewatered mine drainage from the Golden Goose I, Reserve, Congo, Incline, and Seismic mines is diverted to the Green Mountain ion-exchange plant for processing,[2] as described in Section 3.2.2.

This Environmental Statement does not address the impacts of mining, but does address uranium recovery operations that have been conducted at the Western Nuclear mine sites (see Sec. 3.2.3). These operations are the removal of uranium from mine drainage waters by ion-exchange, and the open-air leaching of huge piles of low-grade ore at the mine sites.

3.2 MILLING, ION EXCHANGE, AND HEAP LEACH OPERATIONS

3.2.1 The Mill

The Split Rock mill processes about 1540 MT (1700 tons) of ore per day. The U_3O_8 content of the ore has ranged from 0.15% to 0.30% during past operations, and is expected to range from 0.05% to 0.15% for future operations.[1]

The milling process consists of a number of unit processes involving physical and chemical transformations (detailed in Sec. 3.2.1.2) that take place in the following general sequence. The ore is ground and the resulting particles are leached with sulfuric acid to extract the uranium. The leach liquor (pulp) passes through ion-exchange resins, which extract the uranium. The uranium is eluted from the resins and sent to a concentrating stage where the uranium is extracted into an organic solvent and re-extracted into water. The purified and concentrated product is then precipitated with ammonia, dewatered, calcined, and packaged for shipping.

3.2.1.1 External Appearance of the Mill

An aerial photograph and diagrammatic layout of the Split Rock mill are shown in Figures 3.1 and 3.2. The principal features are the mill building, tailings pond, storage yards, sulfuric acid plant, ore storage pad, and various process-related facilities. The locations of these structures in relation to the location of the tailings pond are shown in Figure 3.3.

3.2.1.2 The Mill Circuit

A schematic diagram of the Split Rock mill circuit is shown in Figure 3.4. The ore is transported from WNI mines in 59-MT (65-ton) trucks, weighed, and dumped on the ore pad in approximately 900-MT (1000-ton) lots. A maximum of six lots is to be on the pad at any one time. The ore is wet on receipt, minimizing dusting problems. From these stockpiles, the ore is transferred by a front-end loader to a coarse-ore hopper that controls the feed rate to the mill.

Chunks of wet ore up to 24-inches in size are first wet-ground to -28 mesh in an 18-foot-diameter semiautogenous grinding mill, to expose the metal. Water is added, and the material is stored in air-agitated tanks. This diluted ground material is fed to a series of 11 wooden leach tanks. Sulfuric acid (H_2SO_4) is added in the first tank to adjust the acidity of the slurry to pH 1; sodium chlorate ($NaClO_3$) is added in the third tank for oxidation of the dissolved uranium. Passage of the pulp through the series of tanks, by gravity, takes about 16 hours, and about 95% of the uranium is extracted. The uranium-bearing liquid and slimes are then separated from the waste ore solids (barren sands) in a series of four classifiers and 18 hydrocyclones which separate out and wash the sands. The barren sands are then discharged as a slurry to the tailings ponds.[3]

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Attachment 4

October 26, 1998

VIA FACSIMILE

Peter B. Bloch, Esq.
Presiding Officer
Atomic Safety and Licensing Board
Mail Stop T-3 F23
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Re: In re International Uranium (USA) Corporation, Amendment to NRC Source Material License SUA-1358

Dear Judge Bloch:

International Uranium (USA) Corporation ("IUSA") and the State of Utah (the "State") (jointly, the "Parties") wish to inform you that the Parties have resolved the State's concern regarding the possibility that the Ashland 2 materials may contain listed hazardous waste. Based on the analyses and data reviewed to date, the State is satisfied that the Ashland 2 material does not contain listed hazardous waste. Thus, the State of Utah withdraws its objection to IUSA's license amendment on that issue and that concern no longer is an issue for resolution by the Presiding Officer. IUSA agrees to provide the State with analytical results generated to confirm the absence of listed hazardous wastes derived from all future sampling of the Ashland 2 materials.

The Parties have agreed that the primary issue remaining to be heard by the Presiding Officer is whether IUSA is processing the Ashland 2 materials primarily for their source material content. The Parties and NRC Staff are in agreement that the pre-hearing conference, currently scheduled for October 27, 1998, is unnecessary and may be cancelled.

Sincerely,

Fred Nelson
Denise Chancellor
OFFICE OF THE ATTORNEY GENERAL
State of Utah
(801)366-0285

Frederick S. Phillips
Anthony J. Thompson
SHAW, PITTMAN, POTTS &
TROWBRIDGE
Counsel to IUSA
(202) 663-8000

cc:

Mr. William Sinclair
Mitzi Young, Esq.
Mr. Earl Hoellen
David Freydenlund, Esq.
Ms. Michelle Rehmann

Attachment 5

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

September 8, 1998

The Honorable Merrill Cook
United States House of
Representatives
Washington, DC 20575-4401

Dear Congressman Cook:

I am responding to your letter of July 23, 1998, to Mr. Joseph Holonich of my staff, concerning a recent amendment issued by the U.S. Nuclear Regulatory Commission (NRC) to International Uranium Corporation's (IUC's) NRC license for the White Mesa uranium mill. That amendment authorized IUC to accept and process uranium-bearing material from a site near Tonawanda, New York. Your letter raises the concern that NRC's approval of IUC's request would enable the White Mesa mill site to become an unlicensed radioactive waste disposal site without having IUC first meet the applicable State of Utah requirements for low-level waste facilities, and without full review and participation from the State and members of the public.

To address your concerns, I would begin by stating that operation of the White Mesa uranium mill is authorized by an NRC source material license issued under 10 CFR Part 40. This license allows IUC to process natural uranium ore and certain materials other than that for their uranium content, and to possess the waste generated from such milling operations. NRC originally issued IUC's license in 1979, and renewed this license in 1985 and again in 1997. The staff completed environmental reviews and radiological safety evaluations for each of these licensing actions. These reviews were done under the same regulatory requirements and process as the evaluation conducted by NRC in its licensing of the Envirocare facility.

For this particular case, IUC requested an amendment to its NRC license to receive and process the material from the Tonawanda site for its uranium content. The staff reviewed IUC's request as it would any request from a uranium mill licensee to receive and process material other than natural ore – against its guidance entitled "Final Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores," which was published in the *Federal Register* in September 1995 (60 FR 49296), and the requirements in 10 CFR Parts 40 and 51. A copy of the staff's guidance is enclosed for your convenience.

Based on its review, the staff determined that the safety aspects and environmental impacts associated with the receipt and processing of the Tonawanda material at the White Mesa mill were acceptable, and on June 23, 1998, the NRC staff amended the White Mesa license. In late July, the mill began receipt of the material, and processing is expected to start in mid September. The State of Utah and Envirocare have requested a hearing on the staff's

amendment. That matter is currently before an Administrative Law Judge (ALJ), who will decide if a hearing is justified. Although the State of Utah requested a stay to stop shipment of the material, the filing was untimely and denied by the ALJ on August 13, 1998

As stated in the staff's guidance, besides reviewing an application to determine compliance with the requirements in Part 40, the staff must also conclude that the material proposed for processing is ore, that it does not contain mixed or hazardous waste, and that it is being processed primarily for its source material content. These three criteria were established to help NRC ensure that uranium mills did not become de facto disposal sites as a result of simply processing material. To satisfy the first and second criteria in this guidance, the staff reviewed the information generated by the U.S. Department of Energy's (DOE's) remedial investigation of the Tonawanda site, which included a characterization and classification of the material. In addition, DOE's investigations did not find listed hazardous wastes in the material. The U.S. Army Corps of Engineers (USACE), which currently is remediating the site, concurred in DOE's classification of the Tonawanda material.

Based on DOE's classification, USACE could have opted to remediate the site by disposing of the material in question directly into a mill tailings impoundment authorized to take material other than that generated as part of milling operations, or at the Envirocare cell licensed by NRC. However, USACE opted to send the material to the White Mesa mill where it could be processed for its uranium content before disposal in the White Mesa mill tailings impoundment. With respect to the third criterion of the guidance, IUC provided a signed affirmation that it would be processing the Tonawanda material primarily for its uranium content and for no other primary purpose. This affirmation was supported by data from IUC that showed that the uranium content of the material was high enough to warrant processing, and by discussion of the financial benefits IUC will gain from the processing of the material.

It is important to point out that responsibility for the disposition of IUC's amendment request rests solely with NRC. Although the State of Utah is an Agreement State under section 274 of the Atomic Energy Act of 1954, the State relinquished its authority over the material being processed at the White Mesa mill site. Accordingly, it was appropriate for IUC to file its amendment request with NRC and, in response to your concern, this was not an effort to avoid State of Utah requirements. As I mentioned earlier, if the USACE had decided to send the material to the Envirocare site, based on the classification made by DOE, the material would have been placed in the Envirocare cell licensed by NRC. Therefore, even if the material were disposed of at Envirocare, the State of Utah would not be the licensing authority. To guard against any hazardous or mixed waste being sent inadvertently with the material, the USACE contractor charged with excavating and preparing the material for shipment will conduct confirmatory tests of the excavated materials to ensure that hazardous wastes will not be included in shipments to White Mesa.

In closing, I want to assure you that, in reviewing a licensee's request to process uranium-bearing materials, NRC is committed to ensuring that the licensee is processing the material for its uranium content, and not to avoid situations in which licensees are processing materials to sidestep State regulations. A year ago, NRC staff took the initiative to hold a public meeting at the White Mesa Mill site to discuss issues relevant to facility operations, including the

processing of alternate feedstock. Unfortunately, only three people attended that meeting. However, because of public concerns recently raised, we plan to hold an additional meeting in Blanding, Utah. At this public meeting, the NRC staff does not plan to discuss the completed licensing action. Rather, the main purpose of the meeting will be to answer any questions the public may have regarding NRC's regulatory oversight of the White Mesa Mill. Our focus will be primarily on the approach that will be used to evaluate future applications to process alternate feedstock. This meeting will be noticed in the *Federal Register* and in appropriate newspapers.

In addition, for any uranium mill licensing action, NRC welcomes public review through an informal hearing process. It is through this process that interested members of the public or individual States may raise a concern with the staff's review or request a stay of any staff licensing actions. In fact, the State of Utah and Envirocare have availed themselves of this process.

I trust this letter responds to your concerns.

Sincerely,

L. Joseph Callan
Executive Director
for Operations

Enclosure: As stated

Uranium Mill Facilities, Notice of Two Guidance Documents: Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments; Final Position and Guidance on the Use of Uranium Mill Feed Materials Other Than Natural Ores

AGENCY: Nuclear Regulatory Commission.

ACTION: Notice of final guidance.

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

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

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

SUPPLEMENTARY INFORMATION:

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

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

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

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

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

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

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

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

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

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

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

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

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

1. Determination of Whether the Feed Material is Ore

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

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

2. Determination of Whether the Feed Material Contains Hazardous Waste

If the proposed feed material contains hazardous waste, listed under subpart D §§ 261.30-33 of 40 CFR (or comparable RCRA authorized State regulations), it would be subject to EPA (or State) regulation under RCRA. To avoid the

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

Enclosure

complexities of NRC/EPA dual regulation, such feed material will not be approved for processing at a licensee's mill. If the licensee can show that the proposed feed material does not contain a listed hazardous waste, this issue is resolved.

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

3. Determination of Whether the Ore is Being Processed Primarily for its Source-Material Content

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

a. *Co-disposal test:* Determine if the feed material would be approved for disposal in the tailings impoundment under the "Final Revised Guidance on Disposal of Non-Atomic Energy Act of 1954, Section 11e.(2) Byproduct Material in Tailings Impoundments," or revisions or replacements to that guidance. If the material would be approved for disposal, it can be concluded that if a mill operator proposes to process it, the processing is primarily for the source-material content. The material would have to be physically and chemically similar to 11e.(2) byproduct material and not be subject to RCRA or other EPA hazardous-waste regulations, as discussed in the guidance.

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

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

Dated at Rockville, Maryland, this 13th day of September 1995.

For the Nuclear Regulatory Commission.

Joseph J. Holonich,

Chief, High-Level Waste and Uranium Recovery Projects Branch, Division of Waste Management, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 95-23531 Filed 9-21-95; 8:45 am]

BILLING CODE 7590-01-P

SECURITIES AND EXCHANGE COMMISSION

[Rel. No. IC-21382; No. 812-8902]

Golden American Life Insurance Company, et al.

September 15, 1995.

AGENCY: Securities and Exchange Commission ("SEC" or "Commission").

ACTION: Notice of Application for an Order under the Investment Company Act of 1940 ("1940 Act").

APPLICANTS: Golden American Life Insurance Company ("Golden American"), Separate Account B ("Account B") and Separate Account D ("Account D"—together with Account B, "Separate Accounts"), and Directed Services, Inc. ("DSI").

RELEVANT 1940 ACT SECTION: Order requested under Section 6(c) of the 1940 Act granting exemptions from Sections 12(b), 26(a)(2) and 27(c)(2) thereof and Rule 12b-1 thereunder.

SUMMARY OF APPLICATION: Applicants seek an order permitting the deduction of mortality and expense risk charges, including an asset-based enhanced death benefit charge, from the assets of the Separate Accounts in connection with the offering of certain variable annuity contracts ("Contracts") and certain other variable annuity contracts ("Future Contracts") issued in the future by Golden American that are materially similar to the Contracts. Applicants also request that the order permit the deduction of a mortality and expense risk charge from the assets of any other separate accounts ("Future Accounts") established in the future by Golden American in connection with the offering of the Future Contracts.

FILING DATE: The application was filed on May 11, 1995, and amended on August 29, 1995.

HEARING OR NOTIFICATION OF HEARING: An order granting the application will be issued unless the Commission orders a hearing. Interested persons may request a hearing by writing to the Secretary of the Commission and serving Applicants with a copy of the request, personally or by mail. Hearing requests should be received by the Commission by 5:30 p.m. on October 10, 1995, and should be accompanied by proof of service on Applicants in the form of an affidavit or, for lawyers, a certificate of service. Hearing requests should state the nature of the requestor's interest, the reason for the request, and the issues contested. Persons may request notification of a hearing by writing to the Secretary of the Commission.

ADDRESSES: Secretary, Securities and Exchange Commission, 450 5th Street, NW., Washington, DC 20549. Applicants, c/o Mitchell M. Cox, Esq., Vice President, Assistant Secretary and Associate General Counsel, Golden American Life Insurance Company, 1001 Jefferson Avenue, 4th Floor, Wilmington, Delaware 19801.

FOR FURTHER INFORMATION CONTACT: Yvonne M. Hunold, Assistant Special Counsel, or Patrice M. Pitts, Special Counsel, Office of Insurance Products (Division of Investment Management), at (202) 942-0670.

SUPPLEMENTARY INFORMATION: The following is a summary of the application; the complete application is available for a fee from the Public Reference Branch of the Commission.

Applicants' Representation

1. Golden American is a stock life insurance company authorized to do business in all jurisdictions, except New York. Golden American is a wholly-owned subsidiary of ST Variable, Inc. and a wholly-owned indirect subsidiary of Bankers Trust Company.

2. The Separate Accounts were established by Golden American as segregated asset accounts to fund variable annuity contracts. Account B is registered under the 1940 Act as a unit investment trust. Account D is registered under the 1940 Act as a non-diversified open-end management company. Registration statements on Form N-4 and Form N-3, registering the Contracts as securities under the

Attachment 6

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

April 1, 1997

Ms. Elizabeth Cotsworth, Acting Director
Office of Solid Waste
U.S. Environmental Protection Agency
401 M Street, SW
Washington, D.C. 20460

SUBJECT: COMPARABILITY OF REGULATIONS FOR URANIUM MILL TAILINGS

Dear Ms. Cotsworth:

Section 84a(3) of the Atomic Energy Act (AEA) of 1954, as amended, requires that the U.S. Nuclear Regulatory Commission's regulations for uranium mill tailings be comparable to the U.S. Environmental Protection Agency's (EPA's) requirements that are applicable to possession, transfer, and disposal of similar wastes under the Solid Waste Disposal Act (SWDA). Section 84a(3) also requires that EPA concur in NRC's determination of comparability. In 1989, NRC completed its evaluation of the comparability of the relevant EPA and NRC regulatory programs and concluded that, with a few exceptions, overall there was comparability. NRC transmitted its report to EPA on August 8, 1989, and October 11, 1989. Since that time, we have not heard from EPA as to whether it agrees that NRC has made its regulations comparable with EPA's requirements.

Over the past seven years we have discussed this issue with EPA management and staff from the Office of Radiation Programs. On December 20, 1996, we met with representatives from the Office of Radiation and Indoor Air (ORIA) and the Office of Solid Waste in Crystal City to discuss the comparability issue. At the meeting, both agencies concluded that the effort required to address the comparability issue would not be justified by the benefits to be derived and it would not be a productive use of resources to pursue action on comparability at this time.

We see no need to revise NRC regulations at this time for purposes of comparability in accordance with Section 84a(3). Since NRC's 1989 evaluation, the regulation of uranium mill tailings has continued with no significant health, safety, or environmental problems identified as attributable to the NRC regulatory framework. NRC's regulation of mill tailings reclamation has been closely coordinated with representatives of ORIA. In addition, a limited review of the existing regulations has not identified any gaps in what is needed to protect public health and safety. Therefore, the purpose of this letter is to document the agreement reached by NRC and EPA that no additional work on the comparability of NRC mill tailings regulations to the SWDA will be pursued.

If you have any questions please call me at (301) 415-7800 or Joseph J. Holonich, Chief, Uranium Recovery Branch, at (301) 415-7238.

Sincerely,

(Original signed by)

Carl J. Paperiello, Director
Office of Nuclear Material Safety
and Safeguards

cc: R. Travoto, EPA
G. Bonnano, EPA
L. Weinstock, EPA
V. Housman, EPA
J. Rosenberg, EPA

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OFC	URB*		URB*		DWM*		NMSS		
NAME	MFliegel		JHolonich		JGreeves		CPaperiello		
DATE	03/26/97		03/26/97		03/28/97		/ / /97		

OFFICIAL RECORD COPY

If you have any questions please call me at (301) 415-7800 or Joseph J. Holonich, Chief, Uranium Recovery Branch, at (301) 415-7238.

Sincerely,

Carl J. Paperiello, Director
Office of Nuclear Material Safety
and Safeguards

cc: R. Travoto, EPA
G. Bonnano, EPA
L. Weinstock, EPA
V. Housman, EPA
J. Rosenberg, EPA

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OFC	URB	URB	DWM	NMSS	NMSS
NAME	MFliegel	JHolonich	JGreeves	MKnapp	CPaperiello
DATE	03/16/97	03/ /97	03/18/97	03/ /97	03/ /97

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Attachment 7

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

FEB 25 1994

Mr. William J. Sinclair, Director
Division of Radiation Control
Department of Environmental Quality
State of Utah
168 North 1950 West
P.O. Box 144850
Salt Lake City, Utah 84114-4850

Dear Mr. Sinclair:

I am responding to your letter of January 27, 1994, concerning the U.S. Nuclear Regulatory Commission's public participation process in radioactive materials licensing. In that letter, you indicated that the State of Utah did not believe that the NRC process for public participation was sufficient. You also included several recommendations that the State of Utah believed would improve the NRC public participation process.

As noted in the attachment to your letter, NRC approved three license amendments for the UMETCO White Mesa Uranium Mill in Blanding, Utah that allows the licensee to receive uranium or thorium mill waste for disposal or reprocessing through the mill. Consistent with federal requirements, these amendments did not need to be noticed for public comment. In reviewing your comments on the experiences in Utah, I can understand your view that more public involvement would be appropriate.

In reviewing federal requirements regarding public notification of licensing actions, we find that our past actions are consistent with our regulations and requirements under the National Environmental Policy Act. However, in order to foster better communication with the State, we will notify you directly and NRC will issue Federal Register Notices (FRNs) for mills in Utah upon both the receipt and the final resolution of a license amendment for a significant action, such as disposal of in situ waste material or significant changes to an approved reclamation plan. The FRN issued upon receipt of a significant license amendment will serve notice, under 10 CFR 2.1205(c)(1), that interested parties have 30 days to file a petition for hearing. The FRN issued at the final resolution of the license amendment will be for information purposes. In addition, where the license amendment raises significant or controversial issues, NRC would be willing to attend public meetings, as appropriate. The recent meeting you attended in Moab, Utah is an example of such activities.

I believe that these steps coupled with the frequent interactions the staff has been undertaking with the State of Utah in the NRC's review of uranium recovery activities in Utah, will ensure a sound and effective working relationship. I trust that this reply clarifies NRC's position in this matter and responds to your concern.

Sincerely,

Original signed by
Robert M. Bernero

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

Attachment 8

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CHAIRMAN

December 13, 1996

Dr. Dianne R. Nielson, Executive Director
Department of Environmental Quality
State of Utah
168 North 1950 West
Post Office Box 144810
Salt Lake City, Utah 84114-4810

Dear Dr. Nielson:

I am responding to your September 16, 1996 letter describing recent discussions with the Nuclear Regulatory Commission staff regarding the elimination of dual regulation at uranium mill sites in Utah. The Commission appreciates your interest in simplifying the regulatory oversight of uranium mill and tailings facilities in Utah and in reconciling regulatory differences between the NRC and applicable Utah ground and surface water quality regulations. In retrospect, there seems to have been considerable misunderstanding on the part of both the NRC staff and the State of Utah. I have enclosed specific responses to the six areas of concern that you identified in your letter (Enclosure 1). Nevertheless, I believe it is important to clarify why NRC was not able to undertake all the actions the State of Utah believed were necessary for eliminating dual regulation and to suggest alternative approaches in addressing the concerns you have raised.

As you are aware, the standards contained in NRC regulations conform to standards promulgated by the Environmental Protection Agency (EPA). Judicial reviews by a Federal Court found that the EPA standards met the Federal legislative mandate for protection of groundwater [American Mining Congress v. Thomas, 772 F.2nd 640 (10th Cir. 1985); American Mining Congress v. NRC, 902 F.2nd 781 (10th Cir. 1990)]. Because NRC's requirements conform to the EPA standards, the NRC requirements also meet the Federal legislative mandate and, therefore, provide adequate protection of public health and safety within the meaning of the Atomic Energy Act.

During the past year of interactions, it became apparent that the State of Utah wanted the NRC to impose State of Utah requirements on NRC licensees. As the NRC staff noted in the meetings between the State of Utah and the NRC, there are many aspects of the State of Utah requirements, such as surface water standards, where the NRC does not have statutory responsibility. In addition, there are many other areas of groundwater protection where the NRC may not need to implement requirements as restrictive as those imposed by the State of Utah to provide adequate protection of public health and safety. Although the NRC was willing to consider implementing some of the State of

Utah requests, it could do so only if it believed that taking the action was necessary to protect the public health and safety, and it could provide a sound technical and regulatory basis for such action.

One example of the difficulties encountered in trying to resolve the problems is the different approach that NRC and the State of Utah take to contaminated groundwater. In implementing its regulatory program, NRC takes into account the ultimate use of contaminated groundwater. In some cases, groundwater may not be drinking-water quality, and as such, NRC may exercise regulatory discretion regarding what cleanup actions licensees need to take to meet the regulations. The State of Utah, on the other hand, views all groundwater as potential drinking-water, and occasionally may require regulatory actions that go beyond NRC regulations. This different view of the ultimate use of groundwater is one of the major differences between NRC and State of Utah programs. The agreement being advocated by the State of Utah would have NRC implement all the State of Utah requirements. This approach would require NRC to revise its groundwater program, including changes to the NRC regulations. Because the present NRC program provides adequate protection of public health and safety, the staff informed the State of Utah that NRC did not plan to undertake any regulatory actions beyond those currently in the Federal program. NRC encouraged the State of Utah to review the requirements being implemented as part of the Federal program to see if the State could accept this program.

Nevertheless, there are alternative ways that we can work together to eliminate dual regulation. For example, the State of Utah could consider becoming an Agreement State for uranium recovery facilities. This would allow the State of Utah to implement the NRC program as well as any additional State authorized requirements it believed were necessary to regulate groundwater quality. We also have signed Memoranda of Understanding (MOUs) with several States to facilitate interactions. Enclosure 2, for your consideration, is an MOU between NRC and the Utah Department of Environmental Quality (DEQ) that we have drafted that would eliminate dual regulation in Utah. If you would like to pursue this approach, the NRC would be pleased to work with you to implement such an MOU. Another approach to help reduce dual regulation would have Utah licensees voluntarily commit to report on actions or standards satisfying Utah. The NRC could include those voluntary commitments to report in the license. The response to item 6 of your letter (see enclosure 1) discusses some of the considerations NRC uses to determine the appropriateness of including a commitment in the license. In order to include voluntary commitments, the license condition would have to be worded carefully to ensure that NRC would not enforce commitments that go beyond NRC regulatory authority. There also may be an additional issue relating to State reimbursement for NRC implementation of Utah requirements depending on the extent of our involvement relating to the reporting requirements and need for any direct NRC licensing review assistance. Under current Commission policy relating to fees and technical assistance to Agreement States, direct licensing review assistance would be subject to State reimbursement. The NRC staff could work with your staff if you want to pursue this approach.

In closing, I want to assure you that the NRC is committed to working with the State of Utah to resolve these issues. I hope I have clarified NRC's position on these matters and that you will consider one or more of the alternatives that I have proposed. If you have further questions, please contact me.

Sincerely,

Shirley Ann Jackson

Enclosures:
1. Response to State of Utah, dated 9/16/96
2. Memorandum of Understanding

cc: Don Ostler, UDWQ
Larry Mize, UDWQ
Bill Sinclair, UDRC
Peter Heaney, Grand County Council

U.S. NUCLEAR REGULATORY COMMISSION RESPONSE TO
STATE OF UTAH CONCERNS IN SEPTEMBER 16, 1996,
LETTER TO CHAIRMAN SHIRLEY JACKSON

Item 1: Narrow Definition of "Hazardous Constituent": Contaminant Detectability

There are actually two issues identified under this item.

1.a) NRC Criterion 5B(2) unduly restricts the definition of a "hazardous constituent."

Response:

The definition comes directly from U.S. Environmental Protection Agency (EPA) standards in 40 CFR Part 192.

1.b) The determination of whether a constituent meets the definition of "hazardous constituent" is made only once, early in a facility's life. Consequently, slow moving constituents, that may contaminate groundwater after the initial determination of "hazardous constituents," are not monitored and could, therefore, be unregulated.

Response:

All uranium mills with contaminated groundwater are currently under a corrective action program (CAP). These CAPs require that licensees monitor the groundwater for constituents that were identified as "hazardous constituents" when the programs were developed in the late 1980s and early 1990s. Requiring routine monitoring of constituents that were not identified as "hazardous constituents" when the CAPs were accepted is not necessary because the CAPs that are currently in place work to reduce groundwater contamination for all constituents that are present, not just those being monitored. Moreover, before terminating the license for a uranium mill site, the NRC staff will require licensees to demonstrate that all constituents found in the tailings are within standards in the groundwater.

Item 2: Missing Non-radiologic Contaminants in Criterion 13

NRC Criterion 13 does not include several non-radiological contaminants, including ammonia, copper, fluoride, manganese, nitrate, pH, total dissolved solids (TDS), vanadium, and zinc, which are regulated by the Utah Ground Water Quality Protection Regulations.

Response:

The NRC has the ability to regulate other constituents beyond those listed in Criterion 13. At the time NRC reviewed the groundwater CAPs, the staff concluded that there was no need to go beyond the list of constituents found in Criterion 13 and in the tailings liquid for most sites. To date, NRC does not have any reason to revisit those earlier decisions. However, as changes

are made to CAPs, or final monitoring is done at the time of license termination, the staff will consider, based on a sound technical and regulatory basis, what, if any, additional constituents should be included.

It should be noted that the State of Utah equates the elimination of dual regulation with its proposal to have NRC assume all responsibility for groundwater protection at uranium mills. During the June 1996 meeting, the staff tried to explain that concurrent jurisdiction is an area where both NRC and the State of Utah share regulation of the same nonradiological constituents. For those constituents regulated solely by the State of Utah, and not in NRC regulations or license conditions, there are no concurrent jurisdictional issues. The State of Utah is the sole regulatory authority. This is the case for constituents that are in the State of Utah standards, but are not in NRC regulations. The State of Utah proposal would do more than eliminate dual regulation. It also would shift the regulation of State of Utah groundwater standards to NRC, and remove the State of Utah from any review or enforcement of its own standards.

Item 3: Inclusion of Mill Site Facilities in Groundwater Monitoring, Characterization, and Corrective Action

The NRC does not have any standards for cleanup of groundwater contamination from sources other than the tailings.

Response:

The Commission has established standards for the cleanup of groundwater contamination from byproduct material in the tailings impoundment. However, these standards are not applicable to the cleanup of groundwater contamination solely from other activities within the mill site, such as ore storage or yellowcake storage. Groundwater contamination resulting from sources other than the tailings impoundment can be addressed through 10 CFR Part 40, Appendix A, Criterion 5F. Under Criterion 5F, uranium mill licensees would be required to address seepage of contaminants into the groundwater from sources other than byproduct material. Further, Criterion 5F specifies that the cleanup standards for this contamination would be determined on a site-specific basis. The staff informed the State of Utah that it would use the standards in Criterion 5B to help ensure that all groundwater would be cleaned up to comparable standards. The staff has not identified any mill site where there is groundwater contamination that cannot be attributed to the tailings impoundment. Therefore, the staff currently is applying the standards in Criterion 5B to all groundwater cleanup.

Item 4: NRC Lack of Surface Water Quality Standards for Mill Tailings

The NRC does not have standards for the regulation of surface water.

Response:

Although the NRC does not have standards for the regulation of surface water potentially contaminated by leakage from the facility, NRC groundwater standards provide protection of surface water. Each constituent must meet one of three standards at the point of compliance in the groundwater: 1) background concentration; 2) the maximum concentration level established by EPA and identified in Criterion 5C; or 3) an alternate concentration limit

8. Notice of Site Inspections. Each agency will make a good faith effort to coordinate routine site inspections of groundwater restoration activities at sites covered under this agreement by providing two weeks advance notice (when possible) to the other agency.

9. Dissemination of Information to Other Agencies. As necessary to implement oversight of operations, remediation, and decommissioning of sites covered under this agreement effectively, the agencies will coordinate pertinent and appropriate dissemination of information to other Federal, State and local government agencies.

10. Exchange of Information Between Agencies.

A. The agencies will exchange information concerning groundwater restoration of uranium recovery mills and 11e.(2) byproduct disposal sites as follows:

i. Upon request, NRC will make available to UDEQ for review and copying any documents disclosable to the public under the Freedom of Information Act, 5 U.S.C. § 552, NRC regulations in 10 CFR Part 9, Public Records, and in 10 CFR Part 2.790, public inspections, exemptions, requests for withholding, and any other applicable Federal statute, regulation, or policy.

ii. Upon request, UDEQ will make available to the NRC for review and copying any documents disclosable to the public under the [insert appropriate state policy] UDEQ's public information policy, and any other applicable Utah statute, regulation, or policy.

B. All documents exchanged by the agencies will be addressed to the designated coordinator for the each site.

C. Nothing in this MOU shall be construed as compelling either agency to produce information or documents which the agency deems confidential or privileged.

11. Disclosure of Information to the Public. The right of access by the public to information under Federal and State law, regulation, or policy is not affected by this MOU.

12. Designation of Single Regulator for Groundwater Restoration.

A. It is agreed that the lead agency for developing a regulatory program for groundwater restoration at uranium mills shall be the NRC. The regulations and standards that NRC will use in its regulatory program will be those contained in 10 CFR Part 40, Appendix A.

B. The NRC will be the lead agency for setting standards other than those contained in 10 CFR Part 40, Appendix A. This could include standards for constituents not covered currently in 10 CFR Part 40, Appendix A, as well as background limits or alternate concentration limits for any constituent regulated by NRC under this agreement. It is agreed that the final determination of any limits for groundwater clean up rests with NRC. If the State of Utah does not agree with the NRC's final determination, it can choose to implement its own regulatory program. However, if the State of Utah does not notify NRC in writing within 60 days of the final NRC position, then the

State of Utah agrees that it will not require any additional clean up by the United States Department of Energy (DOE), if DOE is the long-term care custodian for the site.

C. The evaluation of any groundwater clean up program, or any modification to an already accepted program, will be the responsibility of the NRC. The NRC will be the lead agency for determining the acceptability of any program, or modification. If the State of Utah does not agree with the NRC's final determination, it can choose to implement its own regulatory program, and require additional groundwater corrective actions. However, if the State of Utah does not notify NRC in writing within 60 days of the final NRC position, that Utah plans to undertake its own regulatory program, then the NRC position will be accepted as final by both agencies.

D. On occasion, and when the NRC determines there is a sound technical and regulatory basis to do so, NRC will implement the flexibility provided in 10 CFR Part 40, Appendix A, and will expand the list of constituents contained in 10 CFR Part 40, Appendix A, Criterion 13.

E. The State of Utah agrees that it will not petition to intervene or participate in any hearing on licensing matters before the NRC that are covered by paragraphs 12.B. and C. unless notice was given within 60 days of the NRC final position.

13. Modifications. Any modifications or changes to this MOU shall be effective only if agreed to by the parties and set forth in writing as an amendment of this MOU.

14. Reservation of Rights. Nothing in this MOU shall affect the rights, duties and authority of either agency under the law. The agencies reserve their respective authority and rights to take any enforcement action which they deem necessary to fulfill their duties and responsibilities under the law.

15. Non-binding Memorandum. This memorandum is not intended to and does not create any contractual rights or obligations with respect to the NRC, UDEQ, or any other parties.

Carl J. Paperiello, Director Office of Nuclear Material Safety and Safeguards U.S. Nuclear Regulatory Commission Washington, D.C.	Date
Diane R. Nielson, Executive Director Department of Environmental Quality State of Utah Salt Lake City, Utah	Date

problems; therefore, commitments that are needed for compliance with State of Utah standards would be the responsibility of the State to enforce. However, the staff is prepared to work with Utah in this area within the regulatory framework discussed above.

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE PRESIDING OFFICER

In the Matter of	)	
	)	
INTERNATIONAL URANIUM (USA) CORPORATION	)	Docket No. 40-8681-MLA-4
	)	
	)	
(Receipt of Material from Tonawanda, New York)	)	
	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of "NRC STAFF RESPONSE TO WRITTEN PRESENTATIONS BY STATE OF UTAH AND INTERNATIONAL URANIUM (USA) CORPORATION" and "AFFIDAVIT OF JOSEPH J. HOLONICH" in the above-captioned proceeding have been served on the following by first class United States Mail; and through deposit in the Nuclear Regulatory Commission's internal mail system as indicated by an asterisk, this 29th day of January 1998:

Administrative Judge
Peter B. Bloch, Esq.*
Presiding Officer
Atomic Safety and Licensing Board
Mail Stop: T-3 F23
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Fred Nelson, Esq.
Denise Chancellor, Esq.
Utah Attorney General's Office
160 East 300 South, 5th Floor
Salt Lake City, Utah 84114-0873

Anthony J. Thompson, Esq.
Frederick B. Phillips, Esq.
Shaw, Pittman, Potts & Trowbridge
2300 N Street, N. W.
Washington, D.C. 20037-1128

Administrative Judge
Richard F. Cole*
Special Assistant
Atomic Safety and Licensing Board
Mail Stop: T-3 F26
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

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Adjudications Staff
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Washington, D. C. 20555

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U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

Atomic Safety and Licensing Board
Panel*
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U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Mitzi A. Young
Counsel for NRC Staff