

RAS 2489

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10-11-00

NUCLEAR REGULATORY COMMISSION
ATOMIC SAFETY AND LICENSING BOARD PANEL

'00 DEC 11 AM 11:56

Before Administrative Judges:
Ann Marshall Young, Presiding Officer
Dr. Charles N. Kelber, Special Assistant

AD

In the Matter of:)

INTERNATIONAL URANIUM (USA))
CORPORATION)

(Source Material License Amendment,)
License No. SUA-1548))

Docket No. 40-8681-MLA-8

ASLBP No. 00-782-08-MLA

December 5, 2000

**PETITIONER'S REQUEST THAT THE PRESIDING OFFICER
RECONSIDER NOVEMBER 24, 2000, ORDER (DENYING
PETITIONER'S REQUESTS TO FILE ADDITIONAL MATERIALS)**

The Presiding Officer's November 24, 2000, Order (Denying Petitioner's Requests to File Additional Materials) contains two rulings: 1) a ruling denying my October 10, 2000, Motion for Leave to File Out-of-Time and 2) a ruling denying my November 17, 2000, Request to Respond to International Uranium (USA) Corporation's November 13 Submittal.

I respectfully request that the Presiding Officer reconsider both of these rulings for the reasons stated below.

Denial of Petitioner's October 10, 2000, Motion for Leave to File Out-of-Time

1. On October 10, 2000, I requested that I be allowed to file out-of-time. The filing that I requested to be filed out-of-time was my First Supplement to Petitioner's

Template = SECY-041

SECY-02

August 9, 2000, Request for Hearing ("Supplement"), which I submitted on October 18, 2000. The October 18 Supplement was based on pertinent new information that was not available to me at the time I filed my initial request for hearing of August 7, 2000. I supplemented my initial request for hearing based on pertinent new information directly related to the question of my standing in the present proceeding. The late filing of my October 18 Supplement is excusable and will not result in any undue prejudice to the International Uranium (USA) Corporation ("IUSA").

2. While I was recovering from a cold, flu, and fever, and had still not returned to work, I contacted Counsel for IUSA. I requested their approval of an extension for the filing of my hearing supplement because of my illness. I was rebuffed.

On October 5, 2000, I told Mr. Lee Dewy, Counsel to the ASLBP, that I had been sick. This was the reason that I had not been able to file my hearing supplement on September 28.

Other personal reasons for the delay of filing of my hearing supplement include the fact that I am totally dependent on a publicly available, shared word processor that is available only at certain times and not at my convenience. Additionally, my regular employment did not include being able to address any of these matters.

3. Indeed, after IUSA's rebuff, I was confused as to how to proceed when it became clear, because of my illness and in spite of my best efforts, I was not going to be able to submit the hearing supplement on-time.

4. The Presiding Officer's November 24 Order (at 12.) mentions the fact that I have been involved in at least one other Nuclear Regulatory Commission ("NRC")

proceeding. I do not understand how this is relevant to the present proceeding. However, a review of Docket No. 40-3452-MLA 4/5 would not reveal any particular procedural expertise on my part. This is evidenced by the fact that a year and a half after the granting of standing in my initial request for hearing in a relatively uncomplicated matter, I still have not had a hearing nor have I ever been served the required hearing file. The proceeding is currently in an inexplicable, unjustified state of limbo.

Additionally, I have absolutely no legal training, and I do not have access to a law library.

5. Prior to September 28, I did seek further information regarding IUSA's July 5, 2000, request to amend Source Material License SUA-1358 ("Amendment Request"). On August 17 the NRC Public Document Room ("PDR") sent me a Bibliographic Retrieval System ("BRS") printout of NRC Docket No. 40-8980 for Heritage Minerals, Inc. ("HMI"), Lakehurst, New Jersey, pursuant my request. See Exhibit A. On September 6, I requested thirty-seven HMI records. I received these records the next week, a day or two before the September 14 telephone conference. See Exhibit B.

It took time for me to review the new information contained in these records. It took time for me to ascertain which NRC records that should have been indexed to Docket No. 40-8980 were missing. Several records were missing, most importantly, the original inspection report, which led to the licensing of the HMI site, and the original licensing package. Therefore, I began to compose a Freedom of Information Act request. On September 28 I did a more extensive BRS search on a shared, publicly available computer. I located the original licensing package and some other HMI records that were

missing from the Docket No. 40-8980 index. I immediately ordered these documents. (The original inspection report is still missing from the public record.)

The new batch of documents yielded further new information that I needed to review. I incorporated some of this new information in my October 18 Supplement. The Presiding Officer's October 26 Order (Requesting Information and Permitting Response to Petitioner's October 18, 2000, Filing) refers to some of this new information, specifically, a September 27, 1990, letter from Anthony J. Thompson to the NRC. My October 10 Motion for Leave to File Out-of-Time refers to my need to review this new information.

6. My October 10 request that I be allowed to file my October 18 Supplement out-of-time was a reasonably justifiable request given 1) the fact of my illness, 2) the extensive amount of material that I needed to review, 3) my continued diligence in pursuing, of necessity, other very pertinent information regarding IUSA's July 5 Amend Request, 4) my diligence in composing my October 18 Supplement, and 5) the acknowledged relevance, by the Presiding Officer, of the information contained in my October 18 Supplement.

7. Whether or not I was remiss in not addressing the late filing of my October 18 Supplement in a more timely manner and whether or not I did not have good cause to file the October 18 Supplement out-of-time no longer appears to be relevant to this proceeding.

The Presiding Officer reviewed my October 18 filing and, based on that review, sought additional information from International Uranium (USA) Corporation ("IUSA")

by way of an October 26, 2000, Order (Requesting Information and Permitting Response to Petitioner's October 18, 2000, Filing). The Presiding Officer issued the October 26 Order based on the fact that, in my October 18 filing I "raised the issue of the concentration and radiological activity of the thorium contained in the Heritage Minerals Site in such a manner, with such supporting documentation, that at least a minimal degree of further inquiry on this issue is found to be appropriate." See Order (Requesting Information and Permitting Response to Petitioner's October 18, 2000, Filing), October 26, 2000, pages 1-2.

In other words, the Presiding Officer considered the new information I presented in my October 18 Supplement and, based on that new information, issued the October 26 Order requesting additional information from IUSA. In doing so, the Presiding Officer accepted my October 18 filing as a supplement to my August 7 request for hearing.

The Presiding Officer's October 26 Order requesting additional information demonstrates that the Presiding Officer felt that the significance of the information I submitted on October 18 outweighed any timeliness considerations.

On November 24, 2000, Order, the Presiding Officer denied my October 10 request that I be able to present my October 18 Supplement out-of-time. By doing so, the Presiding Officer is stating that she will not consider the new information I presented in my October 18 Supplement for the purposes of determining my standing because the October 18 Supplement was filed-out-of time.

I do not thing think that it is proper or fair for the Presiding Officer to accept my October 18 filing for one purpose, that is, the basis for her October 26 Order requesting

additional information, and not accept it for another purpose, that is, as a supplement to my August 7 hearing request and a basis for determining my standing in the present proceeding

The Presiding Officer must accept and consider my October 18 filing for all purposes for which the filing was submitted, not just the ones the Presiding Officer chooses.

8. I do not see how the Presiding Officer can consider the information provided by IUSA in the November 13, 2000, International Uranium (USA) Corporation's Response to the Presiding Officer's October 26, 2000 Request for Information ("Response") without also considering the information I provided in my October 18 Supplement.

There is a contradiction between the information provided by IUSA on November 13, the information provided by IUSA on July 5, and the information I provided on October 18 regarding the total thorium content (thorium-232 plus thorium-228) of the Heritage Minerals, Inc., monazite sand. This contradiction is not resolved by Attachment A (Uranium and Thorium Activities in Licensed Ores and Products) of IUSA's November 13 Response. See Exhibit C.

IUSA, in Attachment A of its November 13 Response, states for the first time that the material that IUSA proposes to transport, receive, and process contains 1,109 picocuries of total thorium per gram. If the total thorium content of the HMI monazite sand pile is 1,190 picocuries per gram, then the monazite pile must contain approximately 595 picocuries per gram of thorium-232.

The Radioactive Material Profile Record, Exhibit 5 of IUSA's July 5 Amendment Request, states that the HMI monazite sand contains 1,109 picocuries of thorium-232. This represents a total thorium content of 2,380 picocuries per gram.

Note that the January 9, 1992, NRC staff memorandum indicates that the total thorium content (thorium-232 plus thorium-228) of the HMI monazite sand is calculated by doubling the amount to thorium-232. See NRC staff memorandum from Mr. John D. Kinneman, Chief, Research, Development, and Decommissioning Section, Nuclear Materials Safety Branch, DRSS, Region I, to Mr. John Be. Glenn, Chief, Medical, Academic, and Commercial Use Safety Branch, January 9, 1992 (Exhibit D).

Attachment A contradicts the information I provided in my October 18 Supplement that indicated that the monazite pile contains approximately 2,000 picocuries of thorium-232 per gram and approximately 4,000 picocuries of total thorium (thorium-232 plus thorium-228) per gram. See Exhibit D.

These contradictions in IUSA's statements regarding the thorium content of the HMI thoriated monazite material must be considered in the light of the information contained in the 1992 NRC staff memorandum that submitted with my October 18 Supplement.

9. The Presiding Officer's November 24, 2000, Order (at 18.), in support of the ruling that I be denied my November 17, 2000, request that I be permitted to respond to IUSA's November 13 submittal, states that I have provided "a significant amount of information and argument to support [my] challenge of IUSA's license amendment application."

The Presiding Officer next denies my October 10 request to file out-of-time that "significant amount of information and argument." This leaves me in the position of not having provided "a significant amount of information and argument."

I think there is a contradiction here.

10. I respectfully request that the Presiding Officer reconsider the November 24, 2000, Order denying my October 10 request to file my October 18 Supplement out-of-time, based on the reasons outlined above. I respectfully request that the Presiding Officer accept my October 18 filing as a supplement to my August 7 request for hearing.

Denial of Petitioner's November 17, 2000, Request to Reply

1. On November 17, 2000, I filed Petitioner's Request to Respond to International Uranium (USA) Corporation's November 13, 2000, Submittal. IUSA's submittal is entitled International Uranium (USA) Corporation's Response to the Presiding Officer's October 26, 2000 Request for Information ("Response").

The Presiding Officer's November 24, 2000, Order denied my November 17 request.

2. I should be allowed to reply to IUSA's November 13 Response because IUSA's Response contains significant new information previously unavailable to myself. This new information bears upon the question of my standing in the present proceeding.

The November 13 Response in Attachment A, entitled Uranium and Thorium Activities in Licensed Ores and Products, presents new information pertaining to the total thorium content of the material IUSA proposes to transport through Moab, Utah, to the

White Mesa Mill. Attachment A states that the total thorium content of the HMI material is 1,190 picocuries per gram. This is the first time IUSA has presented information regarding the total thorium content of the HMI monazite sand. If HMI monazite sand contains 1,190 picocuries of total thorium, then the material contains approximately 595 picocuries of thorium-232.

Note that the January 9, 1992, NRC staff memorandum indicates that the total thorium content (thorium-232 plus thorium-228) of the HMI monazite sand is calculated by doubling the amount to thorium-232. See Exhibit D.

The new information in Attachment A contradicts the information provided in the Radioactive Material Profile Record ("RMPR") attached as Exhibit 5 to IUSA's July 5 Amendment Request. The RMPR states that the HMI material contains 1,190 picocuries of thorium-232 per gram. This would indicate a total thorium content (thorium-232 plus thorium-228) of 2,380 picocuries per gram.

This new information (and the old information) provided by IUSA clearly contradicts (by a significant percentage) the information regarding the thorium content of the HMI monazite material contained in the January 9, 1992 NRC staff memorandum. The 1992 NRC staff memorandum, provided to the parties to this proceeding with my October 18 Supplement) states that the monazite pile contains approximately 2,000 picocuries of thorium-232 per gram and approximately 4,000 picocuries of total thorium (thorium-232 plus thorium-228) per gram. See Exhibit D.

The contradictions regarding the total thorium content of the HMI thoriated monazite material must be resolved.

The amount of thorium-232 and thorium-228 contained in the HMI material bears directly on the question of my standing in the present proceeding. This is so because the radiological hazards presented by thorium-232 (the parent isotope) and its progeny (thorium-228, radium-228, etc.) are very different from the radiological hazards presented by uranium-228 and uranium-235 (parent isotopes) and their progeny (thorium-234, thorium-230, thorium-231, thorium-227, radium-226, etc).

2. Attachment A, at Note (5), contains very significant new information that calls into the question IUSA's July 5 Amendment Request and the July 17, 2000, Federal Register Notice ("FRN") noticing that request (65 Fed. Reg. 44078). Both IUSA's Amendment Request and the July 17 FRN state that the material that IUSA proposes to process is a monazite sand pile belonging to HMI and located at Lakehurst, New Jersey.

Note (5) of Attachment A to IUSA's November 13 Response states:

Thorium estimate provided by S. Fields of 4,000 pCi/g is for only a portion of the material being sent to IUC. The value quoted is the estimated average value for all the material [proposed to be] sent to IUC.

The January 9, 1992, NRC staff memorandum states that the monazite pile contains "approximately 4,000 picocuries of thorium per gram of monazite sand." See Exhibit D.

Note (5) brings forward several very important questions:

- If 4,000 picocuries of total thorium per gram is for only a portion of the material to be sent to IUSA, what exactly does the other portion consists of?

- If the value of 1,190 picocuries of total thorium per gram is the estimated average value for all the material proposed to be sent to IUSA, what exactly is being averaged in addition to the monazite pile?
- What exactly does all the HMI material consist of beyond the monazite sand pile?

The fact that IUSA apparently intends to receive and process other material besides the HMI monazite sand pile is significant new information that I should be permitted to address. Whether or not IUSA is planning to transport and process other HMI materials in addition to the thoriated monazite sand pile would, obviously, bear directly on my standing in the present proceeding.

3. On its face IUSA's November 13 Response was not responsive to the Presiding Officer's October 26 request for information. The October 26 Order requested that IUSA provide specific information regarding the specific radiological content and picocuries per-gram amounts and levels of materials authorized under License No SUA-1358 and transported through Moab, Utah, to the White Mesa Mill. The information was requested by the Presiding Officer in order to make a comparison between the radiological content of the HMI materials and other materials transported through Moab to the White Mesa Mill.

IUSA's November 13 Response, in Attachment A, does not provide a comparison of the specific radiological constituents of the HMI material and other materials, as requested by the Presiding Officer. Attachment A does not differentiate between thorium-232 and thorium-228 (respectively, the parent isotope and progeny) and the other

thorium isotopes that are the progeny of uranium-238 and uranium-235: thorium-234, thorium-230, thorium-231, and thorium-227. IUSA should have provided a breakdown based upon the various thorium isotopes involved. Without such a breakdown of the specific thorium isotopes, it is impossible to compare the specific radiological content of the HMI material with that of any other material.

It is quite reasonable to expect that the uranium bearing ores and uranium bearing alternate feed materials would contain varying amounts of thorium. However the thorium contained in uranium bearing materials appears as the result of the decay of uranium-238 and uranium-235. The parent isotope thorium-232 and its progeny, thorium-228, do not occur automatically in uranium bearing ores or uranium bearing feed materials.

As I attempted to make clear in my October 18 Submittal, the presence of thorium-232 and thorium-228 in uranium feed material is unusual and presents new and unique radiotoxic health and safety, environmental, and regulatory considerations. IUSA, in Attachment A, provides absolutely no information indicating that any other ores or feed materials transported through Moab to the White Mesa Mill contain any amounts of thorium-232 or thorium-228.

4. A review of the Appendices to IUSA's November 13 Response shows that:
 - Numerous samples of the materials from the Linde Site, Tonawanda, New York, (Appendix B) contain between 0.6 and 5.0 picocuries of thorium-232 per gram, with a mean of 1.4 picocuries per gram (pCi/g).

- Numerous samples of the materials from the Ashland I Site, Tonawanda, New York, (Appendix C) contain between 0.5 and 7.1 picocuries of thorium-232 per gram, with an average of 1.4 pCi/g.
- Samples of the Cameco-Calcline material (Appendix K) indicate that three out of eleven samples contained 18, 40, and 9.2 Bg/g of thorium-232 and 2.6, 2.5, and 2.7 Bg/g thorium 228, respectively.

Attachment A provides no information regarding how Bg/g compares to pCi/g.

Most of the information provided in the other Appendices refers specifically to the amount of thorium-230, the progeny of uranium-235. The other information contained in the Appendices does not mention any specific thorium isotope content.

Attachment A does not list any of the many other radiological constituents of the HMI material. Attachment A does not compare any of the other HMI radiological constituents with the other radiological constituents of the other materials transported through Moab to the White Mesa Mill. Most importantly, Attachment A gives no comparison of the radium-228 (progeny of thorium-228) and radium-226 (progeny of uranium-238). A comparison of the specific radiological activity of these two radium isotopes for all the materials listed in Appendix A would make it perfectly clear that the radiological content of the HMI monazite sand was very different from the various other materials.

Additionally, Attachment A only gives a by-weight percentage comparison for the combined uranium constituents, it does not give a by-weight percentage comparison for the general thorium constituent.

4. November 17, the day I received the Attachments and Appendices to IUSA's November 13 Response I did not have the opportunity to fully review and respond to IUSA's Response because I was finishing tasks in preparation of a previously planned trip out of state on November 18. However, it was blatantly obvious that IUSA's November 13 Response was not a complete and accurate response to the Presiding Officer's October 26 Order and raised further questions regarding the accuracy and completeness of IUSA's July 5 Amendment Request.

If I'd had the time, I would have written my response to the November 13 submittal and included it with my request to reply. I did not understand the extent to which I needed to justify my November 17 request to respond to a filing that was so obviously unresponsive to the Presiding Officer's October 26 Order.

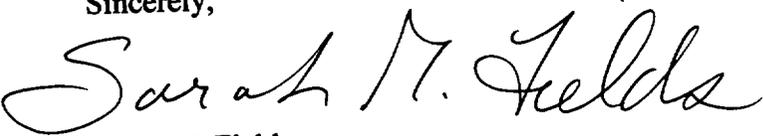
It was my intent to specifically explain, in a detailed manner, how and why IUSA's November 13 Response was not complete and accurate and how it contradicted IUSA's July 5 Amendment Request in my actual reply to IUSA's November 13 Response. I started writing that response while I was out of state and planned to submit it before the deadline that I had requested.

5. The Presiding Officer's November 24 Order rules (at 18.) that I should be denied the opportunity to reply to IUSA's November 13 Response, in part, because I have provided "a significant amount of information and argument to support [my] challenge of IUSA's license amendment application." The Presiding Officer next rules that my October 10 request to submit that "significant amount of information and argument" out-time-be denied. The two rulings are contradictory.

6. Given the above, I respectfully request that the Presiding Officer reconsider the November 24 denial of my November 17 request that I be permitted to file a reply to IUSA's November 13 Response.

I respectfully request that the Presiding Officer accept my December 5, 2000, Second Supplement to Petitioner's August 9, 2000, Request for Hearing that is based on the new information contained in IUSA's November 13 Response.

Sincerely,

A handwritten signature in cursive script that reads "Sarah M. Fields". The signature is written in black ink and is positioned above the printed name.

Sarah M. Fields

Dated at Moab, Utah,
This 5th day of December 2000

EEEEEE	GG	A	TTTTT	111	RRRR	EEEE	H	H
EEEE	G	A	1	1	R	E	H	H
EEEE	G	A	1	1	R	D	H	H
EEEE	GG	AAAA	1	1	R	EEEE	HHHH	H
EEEE	G	A	1	1	R	E	H	H
EEEE	G	A	1	1	R	E	H	H
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EX 4.6.1 A
1 of 2

Printout from the NRC Public Document Room on 9:44 AM THU., 17 AUG., 2000

45 HITS

PIPAGE

9929/2037#44

ACN: 9910270229
 DATE: 991006
 DTG: CL/*CORRESPONDENCE-LETTERS, OUT/*OUTGOING CORRESPONDENCE
 EST_PAGES: 1
 L1: ACK RECEIPT OF 990924 LTR WRITTEN ON BEHALF OF HERITAGE
 L2: MINERALS INC IN WHICH AJ THOMPSON REQUESTED EXTENSION OF
 L3: TIME TO DUE DATE (INVOICE FLO478-99). INFORMS THAT INTEREST-
 L4: FEE WAIVER PERIOD EXTENDED TO 991108.
 FICHE: A9667:216-A9667:217
 PFL: ADOCK-4008980-C-991006
 DKT: 4008980/#HERITAGE MINERALS, INC., LAKEHURST, NJ,
 RN#1: THOMPSON A J
 AN#1: DANDOIS D B
 RA#1: ELGSPT/@SHAW, PITTMAN, POTTS & TROWBRIDGE
 AA#1: NECCNTF/@LICENSE FEE & DEBT COLLECTION BRANCH (POST 890827)
 PACKAGE: 991006-9910270229*
 OTHER: 9910270229
 CIT_UPDATE: 991109, 991124

9929/2121#45

ACN: 9910280053
 DATE: 991019
 DTG: CL/*CORRESPONDENCE-LETTERS, OUT/*OUTGOING CORRESPONDENCE
 EST_PAGES: 2
 L1: FORWARDS COPIES OF ENVIRON ASSESSMENT & FINDING OF NO
 L2: SIGNIFICANT IMPACT PREPARED TO SUPPORT RENEWAL & AMEND OF
 L3: LICENSE SMB-1541 ISSUED FOR HMI LAKEHURST NEW JERSEY SITE EA
 L4: & FONSI PUBLISHED ON 990901. NO HEARING REQUEST RECEIVED.
 FICHE: A9666:228-A9666:242
 PFL: ADOCK-4008980-C-991019
 DKT: 4008980/#HERITAGE MINERALS, INC., LAKEHURST, NJ,
 RN#1: THOMPSON A J
 AN#1: GORDON C Z
 RA#1: ELGSPT/@SHAW, PITTMAN, POTTS & TROWBRIDGE
 AA#1: NE R1/@REGION 1 (POST 820201)
 PACKAGE: 991019-9910280053*
 OTHER: 9910280053
 CIT_UPDATE: 991109, 991124

0595
(Dmc)

From: "SARAH FIELDS" <sarahmulock@hotmail.com>
To: <pdr@nrc.gov>
Date: Wed, Sep 6, 2000 2:12 PM
Subject: Request for NRC Records

Hello!

Please send me the following NRC records:
(I am listing the records by Accession Number, with date of document in parentheses.)

- | | |
|-------------------------|-------------------------|
| 1. 9006270344 (900530) | 22. 9609040158 (960827) |
| 2. 9104010069 (900928) | 23. 9610220043 (961009) |
| 3. 9306220344 (901130) | 24. 9611150283 (961108) |
| 4. 9012060079 (901130) | 25. 9702200337 (970206) |
| 5. 9306220364 (910228) | 26. 9704010572 (970321) |
| 6. 9104010063 (910313) | 27. 9703280072 (970321) |
| 7. 9104010130 (910322) | 28. 9704240027 (970418) |
| 8. 9106070026 (910522) | 29. 9803120051 (980227) |
| 9. 9306220362 (910903) | 30. 9807130305 (980630) |
| 10. 9306220357 (910912) | 31. 9809090120 (980827) |
| 11. 9306220366 (920109) | 32. 9902050121 |
| 12. 9203040203 (920228) | 33. 9902050112 (990201) |
| 13. 9205130058 (920410) | 34. 9904080005 (990316) |
| 14. 9306220352 (920429) | 35. 9910280075 (990820) |
| 15. 9307300049 (930624) | 36. 9909020096 (990824) |
| 16. 9407290108 (940721) | 37. 9910280053 (991019) |
| 17. 9411230292 (941027) | |
| 18. 9503240338 (941107) | |
| 19. 9512110410 (951120) | |
| 20. 9601290253 (960124) | |
| 21. 9609040272 (960819) | |

Should be 9-7-00
Please copy items on list to refer 9/7/00

These documents are for Docket No. 40-8980. Date of document for #32. is

191 pages 9-7-00
Don IRMA Sosa
4:10 PM

EXHIBIT D LOT 2

990126.

Thank you,

Sarah Fields
P.O. Box 143
Moab, Utah 84532-0143

Get Your Private, Free E-mail from MSN Hotmail at <http://www.hotmail.com>.

Share information about yourself, create your own public profile at
<http://profiles.msn.com>.

ATTACHMENT A

11/10/00

Uranium and Thorium Activities in Licensed Ores and Products

Exhibit C

Mill Feed & Production	Description	Tons	Uranium Isotopes Average (Wt% U)	Uranium Isotopes Activity Average (pCi/g)	Total Uranium Inventory (Ci)	Thorium Isotopes Activity Average* (pCi/g)	Thorium Inventory* (Ci)	Estimated Total Activity of U and Th (pCi/g)	Estimated Total Inventory of U and Th (Ci)
Linde (2)	Soil	140,400	0.07%	469	59.8	40	5	509	65
Ashland 1 (3)	Soil	108,810	0.06%	402	39.7	238	24	640	63
Heritage (4)(5)	Monazite Sands	2,910	0.05%	335	0.89	1,190	3.1	1,525	4
Cabot (6)	Tantalum residues	16,828	0.343%	2,298	35.1	473.0	7.23	2,771	42
Natural Ores (7)(8)(9)(10)	Mill Inception to Date	3,846,667	0.310%	2,077	7,254	1,024	3,576	3,101	10,830
Ashland 2 (11)	Soil	43,981	0.01%	67	2.7	6,950	278	7,017	280
Cameco (12)	KF product	1,966	4.6%	30,800	55.0	3,170	5.7	33,970	61
Allied Signal (13)(14)	Calcium Fluoride	2,343	3.0%	20,100	43	14,448	30.74	34,548	74
Cameco (15)	Phosph. regen. product	557	8.0%	53,600	27.1	-	-	53,600	27
Cameco (16)	Calcined product	2,197	6.53%	43,751	87.3	16,472	32.86	60,223	120
Allied Signal (17)	KOH solution recovery	1,526	26.8%	179,560	249	-	-	179,560	249
Rhone-Poulenc (18)(19)	Uranyl nitrate hexahydrate	17	50%	335,000	5.0	0.10	0.00	335,000	5
Cameco (20)	UF4 with filter ash	10	65%	435,500	3.9	0.10	0.00	435,500	4
Uranium Product (21)	Yellowcake	14,153	72%	482,400	6,199	-	-	482,400	6,199
Nev. Test Site (22)	Cotter Concentrate	363	16.00%	107,200	35.3	628,026	207	735,226	242
CURRENT ESTIMATED FEED TOTAL		4,182,728			14,097		4,169		18,266
CURRENT ESTIMATED WEIGHTED AVERAGE				3,712		1,098		4,809	

* Total thorium activity is stated to the degree the information is available.

Notes:

- (1) Appendix A includes general calculations for conversion of units.
- (2) Based on Linde Amendment Application, IT pre-excavation field data 7/00, and RMPR (See Appendix B)
- (3) Tonnage based on current estimates from the Ashland site, other information based on License Amendment Application, IT pre-excavation field data and RMPR (See Appendix C).
- (4) Based on Heritage License Amendment Application and RMPR (See Appendix D)
- (5) Thorium estimate provided by S. Fields of 4,000 pCi/g is for only a portion of the material being sent to IUC. The value quoted is the estimated average value for all the material sent to IUC.
- (6) Cabot information included in Appendix E.
- (7) Tons and wt% based on Mill production logs (See Appendix F)
- (8) Thorium values estimated by the Mill's Radiation Safety Officer (See Appendix F)
- (9) Mill head grades typically range from 0.11% to 0.86% uranium or 1,100 to 8,603 pCi/g.
- (10) Only a portion of the natural ores were transported through Moab, Utah.
- (11) Production based on Mill production report, uranium and thorium information contained in Appendix G.
- (12) KF data is included in Appendix H.
- (13) Data from Mill production logs only for production in 1996 and 1999, data for previous runs is not available (See Appendix I).
- (14) Thorium content based on discussions with generator (See Appendix I)
- (15) Tonnage based on Mill receipts. Uranium based on License Amendment information (See Appendix J)
- (16) Tonnage based on Mill production and receipts. Head grade based on actual production estimates. (See Appendix K)
- (17) Tonnage and assays based on Mill production. Thorium content based on information from generator. (See Appendix L).
- (18) Based on USNRC Technical Evaluation Report for Energy Fuels Nuclear License Amendment #41 and Rhone Poulenc Data (12/21/94). See Appendix M.
- (19) This material was not trucked through Moab, Utah.
- (20) No material has been received at the Mill to date. The information is based on the License Amendment information (See Appendix J).
- (21) Tonnage based on actual Mill production logs and average grade based on Mill data (See Appendix F). A majority of the yellowcake is shipped through the Moab area.
- (22) Values calculated by K. Schiager in letter of 7/10/97 and tonnage based on actual Mill receipts. (See Appendix N.)

JAN 09 1992

Docket No. 040-08980

License No. SMB-141

MEMORANDUM FOR: John B. Glenn, Chief
Medical, Academic, and Commercial Use Safety Branch

FROM: John D. Kinneman, Chief
Research, Development, and Decommissioning Section
Nuclear Materials Safety Branch, DRSS, RI

SUBJECT: CORRECTED INFORMATION FOR THE HERITAGE
MINERALS, INCORPORATED DISPOSAL PLAN FOR
MONAZITE (TECHNICAL ASSISTANCE REQUEST DATED
SEPTEMBER 3, 1991)

Our memorandum dated September 3, 1991 requesting technical assistance in the review of a proposed plan for disposal of monazite sand at the Heritage Minerals, Inc. property contained an incorrect value of 112 picocuries per gram for the average concentration of thorium-232 in sands located in areas known as the salvage storage area, recycled tailings area, and the original new feed area (the blue and gray areas). The value should be 11 picocuries of thorium-232 per gram of sand from those areas. This number is based on ten consecutive samples that were collected on October 11, 1990 from these areas, and analyzed in the Region 1 laboratory using an intrinsic germanium detector and a multi-channel analyzer. The results are listed in our letter to Heritage Minerals dated March 22, 1991. The samples were analyzed for actinium-228 because the radioactive material in the sands is known to be thorium, assumed to be in equilibrium with its daughters. The average concentration of the ten samples is 11 picocuries of actinium-228 per gram of sand, which represents approximately 11 picocuries of thorium-232 per gram. This implies a concentration of approximately 22 picocuries of total thorium (thorium-228 and thorium-232) per gram of sand in these areas. The total volume of sand in these areas is approximately 102,500 cubic yards according to the letter from Heritage Minerals dated February 28, 1991. Using the density of 1.5 grams per cubic centimeter determined from the ten samples collected on October 11, 1991, the total mass of sand is calculated to be 1.2 Billion grams. The total quantity of thorium is calculated to be 2.6 Billion picocuries.

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The total volume of monazite sand is estimated by Heritage Minerals in their February 28, 1991 letter to be 695 cubic yards. The density is 2.7 grams per cubic centimeter as determined by a sample collected during a site visit on April 17, 1990. The total mass is calculated to be 1.4 E9 grams. The monazite sand contains approximately 2000 picocuries of actinium-228 per gram of monazite sand, based on a sample collected on April 17, 1990 and analyzed in the Region I laboratory using an intrinsic germanium detector and a multi-channel analyzer. This represents approximately 4000 picocuries of thorium per gram of monazite sand. The total quantity of thorium in the monazite is 5.7 E12 picocuries.

If the 695 cubic yards of monazite sand is mixed with the 102,500 cubic yards of other sand, the total mass of sand would be 1.214 E11 grams and the total activity would be 8.3 E12 picocuries of thorium. Therefore, if the two piles were mixed, the resulting total concentration of thorium would be 68 picocuries per gram of sand. Using a specific activity of 2.2 E-7 curies per gram for natural thorium, (Table of Radioactive Isotopes, C. Brown and R. B. Firestone, 1986) the weight/weight concentration is 3.1 E-4 grams thorium per gram sand, or 0.03%. This would not be considered source material.

Please note that the licensee supplied a flow chart in the February 28, 1991 letter which shows their plan to mix 1500 tons of monazite sand containing 5850 parts per million (ppm) source material with 150,000 tons of other sand containing 104 ppm source material to produce a mixture having a concentration of 120 ppm source material. If we assume that all the source material is thorium, the resulting mixture would be 0.016% thorium by weight, approximately half our calculated value. The difference with the calculated 0.03% is due to their estimate of 5850 ppm source material in the monazite, which is approximately 1300 picocuries of thorium per gram of mixed sand. No description of the method of their analysis was included.

RI:DRSS
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FMC
 RI:DRSS
 Kinneman

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NUCLEAR REGULATORY COMMISSION

ATOMIC SAFETY AND LICENSING BOARD PANEL

Before Administrative Judges:
Ann Marshall Young, Presiding Officer
Dr. Charles N. Kelber, Special Assistant

Docket No. 40-8681-MLA-8 ASLBP No. 00-782-08-MLA

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing PETITIONER'S REQUEST THAT THE PRESIDING OFFICER RECONSIDER NOVEMBER 24, 2000, ORDER (DENYING PETITIONER'S REQUESTS TO FILE ADDITIONAL MATERIALS) have been served upon the following persons by U.S. mail, first class, this 5th day of December 2000.

Administrative Judge
Ann Marshall Young
Atomic Safety and Licensing Board Panel
Mail Stop T-3 F23
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555-0001

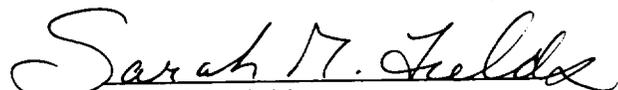
Office of the Secretary
Attn: Rulemaking and
Adjudications Staff
U.S. Nuclear Regulatory
Commission
Washington, D.C. 20555-0001

Administrative Judge
Dr. Charles N. Kelber
Atomic Safety and Licensing Board Panel
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Sarah M. Fields

Dated At Moab, Utah
This 5th day of December 2000