



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

July 21, 2000

Ms. Michelle Rehmann, Environmental Manager
International Uranium (IUSA) Corporation
Independence Plaza, Suite 950
1050 Seventeenth Street
Denver, Colorado 80265

SUBJECT: AMENDMENT 15 TO MATERIALS LICENSE SUA-1358 -- APPROVAL OF
REVISION TO RECLAMATION PLAN AT THE WHITE MESA URANIUM MILL

Dear Ms. Rehmann:

In IUSA's letter dated May 5, 2000, IUSA requested that the NRC approve a modification to the reclamation plan in order to allow for additional cell space. Subsequently, IUSA and NRC staff held several telephone conference calls to discuss the need for IUSA to submit additional detail. IUSA provided this detail by letter dated July 7, 2000. Based on IUSA's Tailings Capacity Study conducted in May 2000, IUSA identified a 200,000 cubic yards (CY) shortfall in existing storage capacity in the Tailings Management System, assuming that reclamation materials and processed materials were disposed in Cell 2 or Cell 3. IUSA has proposed to handle additional volume by the addition of space within the Cell 1-I impoundment area. This alternative would allow for the placement of approximately 280,000 CY of material from the mill site cleanup along the north slope of the Cell 2 dike, within a portion of the current Cell 1-I. Cell 1-I Tailings Area will be lined with a minimum of 12 inches and up to 18 inches of compacted clay. IUSA has determined that the placement of these materials in the Cell 1-I Tailings Area will effectively create an extension of the Cell 2 disposal area. There would be no greater radiological content, and thus the radon cap design would remain the same. With this revision to the reclamation plan, IUSA has estimated the surety amount at \$10,064,794, which is an increase from the current surety amount of \$9,682,467.

The staff has determined that your proposal is acceptable, and has amended your license accordingly. We have enclosed the amended license (enclosure 1) and our Technical Evaluation Report (enclosure 2) that provides our bases for granting the amendment. The staff evaluation used the "Standard Review Plan for the Reclamation for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act" (NUREG-1620, NRC June 2000) and requirements under 10 CFR Part 40 to review your proposal. Further, the staff determined that this expansion meets the requirements for a categorical exclusion under 10 CFR 51.22 (c)(11) and, therefore, no environmental assessment has been prepared. In addition, the staff has approved your proposed revision to the financial surety arrangement, increasing the current amount to \$10,064,794. Therefore, we have revised License Condition 9.11 as follows:

- 9.11: The final reclamation shall be in accordance with the May 1999, Reclamation Plan Revision 2.0, Attachment A submitted on June 22, 1999, and Revision 3.0 submitted on July 7, 2000, and July 17, 2000. Prior to the placement of alternate feed material, the licensee shall determine that adequate cell space is available for that additional material. This determination shall be made by a SERP approved procedure.

[Applicable Amendments 13, 15]

July 21, 2000

2

We have revised License Condition 9.5 as follows:

- 9.5 The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criteria 9 and 10, adequate to cover the estimated costs, if accomplished by a third party, for decommissioning and decontamination of the mill and mill site, for reclamation of any tailings or waste disposal areas, ground-water restoration as warranted and for the long-term surveillance fee. Within three months of NRC approval of a revised reclamation/decommissioning plan, the licensee shall submit, for NRC review and approval, a proposed revision to the financial surety arrangement if estimated costs in the newly approved plan exceed the amount covered in the existing financial surety. The revised surety shall then be in effect within 3 months of written NRC approval.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criteria 9 and 10, shall be submitted to the NRC at least 3 months prior to the anniversary date which is designated as June 4 of each year. If the NRC has not approved a proposed revision to the surety coverage 30 days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing surety arrangement for 1 year. Along with each proposed revision or annual update, the licensee shall submit supporting documentation showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15 percent contingency fee, changes in engineering plans, activities performed and any other conditions affecting estimated costs for site closure. The basis for the cost estimate is the NRC approved reclamation/decommissioning plan or NRC approved revisions to the plan. The previously provided guidance entitled "Recommended Outline for Site Specific Reclamation and Stabilization Cost Estimates" outlines the minimum considerations used by the NRC in the review of site closure estimates. Reclamation/decommissioning plans and annual updates should follow this outline.

The currently approved surety instrument, a Performance Bond issued by National Union Fire Insurance Company in favor of the NRC, and the associated Standby Trust Agreement, dated April 29, 1997, shall be continuously maintained in an amount not less than \$10,064,794 for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10, until a replacement is authorized by the NRC.

[Applicable Amendments: 2, 3, 5, 13, 15]

Therefore, this office must receive an updated surety in this amount within 90 days of this letter.

July 21, 2000

3

If you have any questions regarding this letter or the enclosures, please contact William von Till, the NRC Project Manager for the White Mesa mill, at (301) 415-6251. He can be reached by e-mail to RWV@nrc.gov.

Sincerely,



Philip Ting, Chief
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8681

SUA-1358, Amendment No. 15

Enclosure 1: Source Material License SUA-1358

Enclosure 2: Technical Evaluation Report

cc: W. Sinclair, UT

C.Crist, Ute Mountain Ute Tribe EPA

Terry Brown, US EPA Region VIII

If you have any questions regarding this letter or the enclosures, please contact William von Till, the NRC Project Manager for the White Mesa mill, at (301) 415-6251. He can be reached by e-mail to RWV@nrc.gov.

Sincerely,

Philip Ting, Chief
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8681
SUA-1358, Amendment No. 15
Enclosure 1: Source Material License SUA-1358
Enclosure 2: Technical Evaluation Report
cc: W. Sinclair, UT
C.Crist, Ute Mountain Ute Tribe EPA
Terry Brown, US EPA Region VIII

DISTRIBUTION (w/ Encl.): File Center NMSS r/f FCLB r/f Wvon Till
JHester BSpitzberg, RIV PMackin, CNWRA ACNW MSchwartz

ADAMS ACCESSION NUMBER [REDACTED]

This closes out TAC#L51956 *see previous conc.*

OFC	FCLB	OGC	FCLB	FCLB	FCLB
NAME	WvonTill	STreby	JHester	DGillen	PTing
DATE	7/13/00	7/18/00	7/18/00	7/20/00	7/21/00

OFFICIAL RECORD COPY

ACNW: YES ☒ NO ☐

Delete file after distribution: Yes ☐ No ☒

If you have any questions regarding this letter or the enclosures, please contact William von Till, the NRC Project Manager for the White Mesa mill, at (301) 415-6251. He can be reached by e-mail to RWV@nrc.gov.

Sincerely,

Philip Ting, Chief
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8681
SUA-1358, Amendment No. 15
Enclosure 1: Source Material License SUA-1358
Enclosure 2: Technical Evaluation Report
cc: W. Sinclair, UT
C.Crist, Ute Mountain Ute Tribe EPA
Terry Brown, US EPA Region VIII

DISTRIBUTION (w/ Encl.): File Center NMSS r/f FCLB r/f Wvon Till
JHester BSpitzberg, RIV PMackin, CNWRA ACNW MSchwartz

ADAMS ACCESSION NUMBER

This closes out TAC#L51956

see previous conc.

OFC	FCLB	OGC	FCLB	FCLB	FCLB
NAME	WvonTill	STreby	JHester	DGillen	PTing
DATE	7/13/00	7/18/00	7/18/00	7/20/00	7/21/00

OFFICIAL RECORD COPY

ACNW: YES X NO

Delete file after distribution: Yes No X

If you have any questions regarding this letter or the enclosures, please contact William von Till, the NRC Project Manager for the White Mesa mill, at (301) 415-6251 and he can be reached by e-mail to RWV@nrc.gov.

Sincerely,

Philip Ting, Chief
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8681
SUA-1358, Amendment No. 15
Enclosure 1: Source Material License SUA-1358
Enclosure 2: Technical Evaluation Report
cc: W. Sinclair, UT
C.Crist, Ute Mountain Ute Tribe EPA
Terry Brown, US EPA Region VIII

DISTRIBUTION (w/ Encl.): File Center NMSS r/f FCLB r/f Wvon Till
JHester BSpitzberg, RIV PMackin, CNWRA ACNW MSchwartz

ADAMS ACCESSION NUMBER: ML003727426

This closes out TAC#L51956

OFC	FCLB		OGC		FCLB		FCLB		FCLB	
NAME	WvonTill <i>W</i>		STreby <i>vis Encl</i>		JHester <i>SA</i>		DGillen		PTing	
DATE	7/13/00		7/18/00		7/18/00		/ /		/ /	

OFFICIAL RECORD COPY

ACNW: YES X NO

Delete file after distribution: Yes No X

From: Stuart Treby
To: Randolph VonTill
Date: Tue, Jul 18, 2000 3:52 PM
Subject: Re: White Mesa - Cell Space Proposal

Bill,
You have corrected the typo I noted in the second paragraph. Accordingly, I have no legal objection to the document.
Stuart Treby

>>> Randolph VonTill 07/17 8:41 AM >>>
Stu,

I have incorporated OGC's (Maria's) changes into the attached document. Please review this ASAP since this is paramount to IUC's operational status.

Thanks

Bill von Till

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		3. License Number	
1.	International Uranium (USA) Corporation [Applicable Amendments: 2]	SUA-1358, Amendment No. 15	
2.	6425 S. Highway 191 P.O. Box 809 Blanding, Utah 84511 [Applicable Amendments: 2]	4. Expiration Date	March 31, 2007
		5. Docket or Reference No.	40-8681
6. Byproduct, Source, and/or Special Nuclear Material		7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License
Natural Uranium		Any	Unlimited

SECTION 9: Administrative Conditions

- 9.1 The authorized place of use shall be the licensee's White Mesa uranium milling facility, located in San Juan County, Utah.
- 9.2 All written notices and reports to the NRC required under this license, with the exception of incident and event notifications under 10 CFR 20.2202 and 10 CFR 40.60 requiring telephone notification, shall be addressed to the Chief, Uranium Recovery and Low-Level Waste Branch, Division of Waste Management, Office of Nuclear Material Safety and Safeguards.
- Incident and event notifications that require telephone notification shall be made to the NRC Operations Center at (301) 816-5100.
- 9.3 The licensee shall conduct operations in accordance with statements, representations, and conditions contained in the license renewal application submitted by letter dated August 23, 1991, as revised by submittals dated January 13, and April 7, 1992, November 22, 1994, July 27, 1995, December 13, and December 31, 1996, and January 30, 1997, which are hereby incorporated by reference, and for the Standby Trust Agreement, dated April 29, 1997, except where superseded by license conditions below.
- Whenever the word "will" is used in the above referenced documents, it shall denote a requirement.
- [Applicable Amendment: 2]
- 9.4 A. The licensee may, without prior NRC approval, and subject to the conditions specified in Part B of this condition:

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

SUA-1358, Amendment No. 15

Docket or Reference Number

40-8681

- (1) Make changes in the facility or process, as presented in the application.
 - (2) Make changes in the procedures presented in the application.
 - (3) Conduct tests or experiments not presented in the application.
- B. The licensee shall file an application for an amendment to the license, unless the following conditions are satisfied.
- (1) The change, test, or experiment does not conflict with any requirement specifically stated in this license, or impair the licensee's ability to meet all applicable NRC regulations.
 - (2) There is no degradation in the essential safety or environmental commitments in the license application, or provided by the approved reclamation plan.
 - (3) The change, test, or experiment is consistent with the conclusions of actions analyzed and selected in the EA dated February 1997.
- C. The licensee's determinations concerning Part B of this condition, shall be made by a "Safety and Environmental Review Panel (SERP)." The SERP shall consist of a minimum of three individuals. One member of the SERP shall have expertise in management and shall be responsible for managerial and financial approval changes; one member shall have expertise in operations and/or construction and shall have responsibility for implementing any operational changes; and, one member shall be the corporate radiation safety officer (CRSO) or equivalent, with the responsibility of assuring changes conform to radiation safety and environmental requirements. Additional members may be included in the SERP as appropriate, to address technical aspects such as health physics, groundwater hydrology, surface-water hydrology, specific earth sciences, and other technical disciplines. Temporary members or permanent members, other than the three above-specified individuals, may be consultants.
- D. The licensee shall maintain records of any changes made pursuant to this condition until license termination. These records shall include written safety and environmental evaluations, made by the SERP, that provide the basis for determining changes are in compliance with the requirements referred to in Part B of this condition. The licensee shall furnish, in an annual report to NRC, a description of such changes, tests, or experiments, including a summary of the safety and environmental evaluation of each. In addition, the licensee shall annually submit to the NRC changed pages to the Operations Plan and Reclamation Plan of the approved license application to reflect changes made under this condition.

The licensee's SERP shall function in accordance with the standard operating procedures submitted by letter dated June 10, 1997.

[Applicable Amendments: 3]

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

SUA-1358, Amendment No. 15

Docket or Reference Number

40-8681

9.5

The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criteria 9 and 10, adequate to cover the estimated costs, if accomplished by a third party, for decommissioning and decontamination of the mill and mill site, for reclamation of any tailings or waste disposal areas, ground-water restoration as warranted and for the long-term surveillance fee. Within three months of NRC approval of a revised reclamation/decommissioning plan, the licensee shall submit, for NRC review and approval, a proposed revision to the financial surety arrangement if estimated costs in the newly approved plan exceed the amount covered in the existing financial surety. The revised surety shall then be in effect within 3 months of written NRC approval.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criteria 9 and 10, shall be submitted to the NRC at least 3 months prior to the anniversary date which is designated as June 4 of each year. If the NRC has not approved a proposed revision to the surety coverage 30 days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing surety arrangement for 1 year. Along with each proposed revision or annual update, the licensee shall submit supporting documentation showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15 percent contingency fee, changes in engineering plans, activities performed and any other conditions affecting estimated costs for site closure. The basis for the cost estimate is the NRC approved reclamation/decommissioning plan or NRC approved revisions to the plan. The previously provided guidance entitled "Recommended Outline for Site Specific Reclamation and Stabilization Cost Estimates" outlines the minimum considerations used by the NRC in the review of site closure estimates. Reclamation/decommissioning plans and annual updates should follow this outline.

The currently approved surety instrument, a Performance Bond issued by National Union Fire Insurance Company in favor of the NRC, and the associated Standby Trust Agreement, dated April 29, 1997, shall be continuously maintained in an amount not less than \$10,064,794 for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10, until a replacement is authorized by the NRC.

[Applicable Amendments: 2, 3, 5, 13, 15]

Therefore, this office must receive an updated surety in this amount within 90 days of this letter.

9.6

Standard operating procedures shall be established and followed for all operational process activities involving radioactive materials that are handled, processed, or stored. SOPs for operational activities shall enumerate pertinent radiation safety practices to be followed. Additionally, written procedures shall be established for non-operational activities to include in-plant and environmental monitoring, bioassay analyses, and instrument calibrations. An up-to-date copy of each written procedure shall be kept in the mill area to which it applies.

All written procedures for both operational and non-operational activities shall be reviewed and approved in writing by the radiation safety officer (RSO) before implementation and whenever a change in procedure is proposed to ensure that proper radiation protection principles are being applied. In addition, the RSO shall perform a documented review of all existing operating procedures at least annually.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

SUA-1358, Amendment No. 15

Docket or Reference Number

40-8681

9.7

Before engaging in any activity not previously assessed by the NRC, the licensee shall administer a cultural resource inventory. All disturbances associated with the proposed development will be completed in compliance with the National Historic Preservation Act (as amended) and its implementing regulations (36 CFR 800), and the Archaeological Resources Protection Act (as amended) and its implementing regulations (43 CFR 7).

In order to ensure that no unapproved disturbance of cultural resources occurs, any work resulting in the discovery of previously unknown cultural artifacts shall cease. The artifacts shall be inventoried and evaluated in accordance with 36 CFR Part 800, and no disturbance shall occur until the licensee has received authorization from the NRC to proceed.

The licensee shall avoid by project design, where feasible, the archeological sites designated "contributing" in the report submitted by letter dated July 28, 1988. When it is not feasible to avoid a site designated "contributing" in the report, the licensee shall institute a data recovery program for that site based on the research design submitted by letter from C. E. Baker of Energy Fuels Nuclear to Mr. Melvin T. Smith, Utah State Historic Preservation Officer (SHPO), dated April 13, 1981.

The licensee shall recover through archeological excavation all "contributing" sites listed in the report which are located in or within 100 feet of borrow areas, stockpile areas, construction areas, or the perimeter of the reclaimed tailings impoundment. Data recovery fieldwork at each site meeting these criteria shall be completed prior to the start of any project related disturbance within 100 feet of the site, but analysis and report preparation need not be complete.

Additionally, the licensee shall conduct such testing as is required to enable the Commission to determine if those sites designated as "Undetermined" in the report and located within 100 feet of present or known future construction areas are of such significance to warrant their redesignation as "contributing." In all cases, such testing shall be completed before any aspect of the undertaking affects a site.

Archeological contractors shall be approved in writing by the Commission. The Commission will approve an archeological contractor who meets the minimum standards for a principal investigator set forth in 36 CFR Part 66, Appendix C, and whose qualifications are found acceptable by the SHPO.

9.8

The licensee is hereby authorized to possess byproduct material in the form of uranium waste tailings and other uranium byproduct waste generated by the licensee's milling operations authorized by this license. Mill tailings shall not be transferred from the site without specific prior approval of the NRC in the form of a license amendment. The licensee shall maintain a permanent record of all transfers made under the provisions of this condition.

9.9

The licensee is hereby exempted from the requirements of Section 20.1902 (e) of 10 CFR Part 20 for areas within the mill, provided that all entrances to the mill are conspicuously posted in accordance with Section 20.1902 (e) and with the words, "Any area within this mill may contain radioactive material."

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

SUA-1358, Amendment No. 15

Docket or Reference Number

40-8681

- 9.10 Release of equipment or packages from the restricted area shall be in accordance with "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," dated May 1987, or suitable alternative procedures approved by the NRC prior to any such release.
- 9.11 The final reclamation shall be in accordance with the May 1999, Reclamation Plan Revision 2.0, Attachment A submitted on June 22, 1999, and Revision 3.0 submitted on July 7, 2000 and July 17, 2000. Prior to the placement of alternate feed material, the licensee shall determine that adequate cell space is available for that additional material. This determination shall be made by a SERP approved procedure.

[Applicable Amendments 13, 15]

SECTION 10: Operational Controls, Limits, and Restrictions

- 10.1 The mill production rate shall not exceed 4380 tons of yellowcake per year.
- 10.2 All liquid effluents from mill process buildings, with the exception of sanitary wastes, shall be returned to the mill circuit or discharged to the tailings impoundment.
- 10.3 Freeboard limits for Cells 1-I, 3, and 4A, and tonnage limits for Cell 3, shall be as stated in Section 3.0 to Appendix E of the approved license application.
- 10.4 Disposal of material and equipment generated at the mill site shall be conducted as described in the licensee's submittals dated December 12, 1994 and May 23, 1995, with the following addition:
- A. The maximum lift thickness for materials placed over tailings shall be less than 4-feet thick. Subsequent lifts shall be less than 2-feet thick. Each lift shall be compacted by tracking of heavy equipment, such as a Cat D-6, at least 4 times prior to placement of subsequent lifts.
- 10.5 In accordance with the licensee's submittal dated May 20, 1993, the licensee is hereby authorized to dispose of byproduct material generated at licensed in situ leach facilities, subject to the following conditions:
- A. Disposal of waste is limited to 5000 cubic yards from a single source.
- B. All contaminated equipment shall be dismantled, crushed, or sectioned to minimize void spaces. Barrels containing waste other than soil or sludges shall be emptied into the disposal area and the barrels crushed. Barrels containing soil or sludges shall be verified to be full prior to disposal. Barrels not completely full shall be filled with tailings or soil.
- C. All waste shall be buried in Cell No. 3 unless prior written approval is obtained from the NRC for alternate burial locations.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

SUA-1358, Amendment No. 15

Docket or Reference Number

40-8681

this condition. An annual summary of the amounts of waste disposed of from off-site generators shall be sent to the NRC.

- 10.6 The licensee is authorized to receive and process source materials from the Allied Signal Corporation's Metropolis, Illinois, facility in accordance with the amendment request dated June 15, 1993.
- 10.7 The licensee is authorized to receive and process source material from Allied Signal, Inc. of Metropolis, Illinois, in accordance with the amendment request dated September 20, 1996, and amended by letters dated October 30, and November 11, 1996.
- 10.8 The licensee is authorized to receive and process source material, in accordance with the amendment request dated March 5, 1997.
- [Applicable Amendments: 1]
- 10.9 The licensee is authorized to receive and process source material from Cabot Performance Materials' facility near Boyertown, Pennsylvania, in accordance with the amendment request dated April 3, 1997, as amended by submittals dated May 19, and August 6, 1997.
- [Applicable Amendments: 4]
- 10.10 The licensee is authorized to receive and process source material from the Ashland 2 Formerly Utilized Sites Remedial Action Program (FUSRAP) site, located near Tonawanda, New York, in accordance with the amendment request dated May 8, 1998, as amended by the submittals dated May 27, June 3, and June 11, 1998.
- [Applicable Amendment: 6]
- 10.11 The licensee is authorized to receive and process source material from Cameco Corporation's Blind River and Port Hope facilities, located in Ontario, Canada, in accordance with the amendment request dated June 4, 1998, and by the submittals dated September 14, September 16, September 25, October 7, and October 8, 1998.
- However, the licensee is not authorized to receive or process from these facilities, the crushed carbon anodes identified in these submittals, either as a separate material or mixed in with material already approved for receipt or processing.
- 10.12 The licensee is authorized to receive and process source material from the Ashland 1 and Seaway Area D Formerly Utilized Sites Remedial Action Program (FUSRAP) site, located near Tonawanda, New York, in accordance with statements, representations, and commitments contained in the amendment request dated October 15, 1998, as amended by letters dated November 23, 1998, November 24, 1998, December 23, 1998, January 11, 1999, January 27, 1999, and February 1, 1999.
- [Applicable Amendment: 10]
- 10.13 The licensee is authorized to receive and process source material from the St. Louis Formerly Utilized Sites Remedial Action Program (FUSRAP) site, in accordance with

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

SUA-1358, Amendment No. 15

Docket or Reference Number

40-8681

statements, representations, and commitments contained in the amendment request dated March 2, 1999, and as amended and supplemented by submittals dated June 21, 1999; June 29, 1999 (2); and July 8, 1999. Prior to the licensee receiving materials from the St. Louis FUSRAP site, the licensee must make a determination that adequate tailings space is available for the tailings produced from the processing of this material. This determination shall be made based on a SERP approved internal procedure.

[Applicable Amendments: 13, 14]

- 10.14 The licensee is authorized to receive and process source material from the Linde Formerly Utilized Sites Remedial Action Program (FUSRAP) site, in accordance with statements, representations, and commitments contained in the amendment request dated March 16, 2000, and as amended and supplemented by submittals dated April 26, 2000, May 15, 2000, June 16, 2000, June 19, 2000, June 23, 2000.

Prior to the licensee receiving materials from the Linde FUSRAP site, the licensee must make a determination that adequate tailings space is available for the tailings produced from the processing of this material. This determination shall be made based on a SERP approved internal procedure. Design changes to the cells or the reclamation plan require the licensee to submit an amendment request for NRC review and approval.

Prior to the licensee receiving materials from the Linde FUSRAP site, the licensee must require that the generator of the material certify that the material does not contain listed hazardous waste as defined under the Resource Conservation and Recovery Act (RCRA) per a Radioactive Material Profile Record.

[Applicable Amendment: 14]

SECTION 11: Monitoring, Recording, and Bookkeeping Requirements

- 11.1 The results of sampling, analyses, surveys and monitoring, the results of calibration of equipment, reports on audits and inspections, all meetings and training courses required by this license and any subsequent reviews, investigations, and corrective actions, shall be documented. Unless otherwise specified in the NRC regulations all such documentation shall be maintained for a period of at least five (5) years.
- 11.2 The licensee shall implement the effluent and environmental monitoring program specified in Section 5.5 of the renewal application, as amended by the submittal dated June 8, 1995, and as revised with the following modifications or additions:
- A. Stack sampling shall include a determination of flow rate.
 - B. Surface water samples shall also be analyzed semiannually for total and dissolved U-nat, Ra-226, and Th-230, with the exception of the Westwater Creek, which shall be sampled annually for water or sediments and analyzed as above. A sediment sample shall not be taken in place of a water sample unless a water sample was not available.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

SUA-1358, Amendment No. 15

Docket or Reference Number

40-8681

- C. Groundwater sampling shall be conducted in accordance with the requirements in License Condition 11.3.
- D. The licensee shall utilize lower limits of detection in accordance with Section 5 of Regulatory Guide 4.14 (Revision 1), for analysis of effluent and environmental samples.
- E. The inspections performed semiannually of the critical orifice assembly committed to in the submittal dated March 15, 1986, shall be documented. The critical orifice assembly shall be calibrated at least every 2 years against a positive displacement Roots meter to obtain the required calibration curve.

[Applicable Amendment: 5]

11.3

The licensee shall implement a groundwater detection monitoring program to ensure compliance to 10 CFR Part 40, Appendix A. The detection monitoring program shall be in accordance with the report entitled, "Points of Compliance, White Mesa Uranium Mill," submitted by letter dated October 5, 1994, and the following:

- A. The licensee shall sample monitoring wells WMMW-5, -11, -12, -14, -15, and -17, on a quarterly basis. Samples shall be analyzed for chloride, potassium, nickel, and uranium, and the results of such sampling shall be included with the environmental monitoring reports submitted in accordance with 10 CFR 40.65.

In addition, the licensee shall implement a monitoring program of the leak detection systems for the disposal cells as follows:

- B. The licensee shall measure and record the "depth to fluid" in each of the tailings disposal cell standpipes on a weekly basis. If sufficient fluid is present in the leak detection system (LDS) of any cell, the licensee shall pump fluid from the LDS, to the extent reasonably possible, and record the volume of fluid recovered. Any fluid pumped from an LDS shall be returned to a disposal cell.

If fluid is pumped from an LDS, the licensee shall calculate the flow rate by dividing the recorded volume of fluid recovered by the elapsed time since fluid was last pumped or increases in the LDS fluid levels were recorded, whichever is the more recent. The licensee shall document the results of this calculation.

- C. Upon the initial pumping of fluid from an LDS, the licensee shall collect a fluid sample and analyze the fluid for pH and the parameters listed in paragraph A of this license condition. The licensee shall determine whether the LDS fluid originated from the disposal cell by ascertaining if the collected fluid contains elevated levels of the constituents listed in paragraph A of this license condition or has a pH level less than 5.0. If either elevated constituent levels or a pH less than 5.0 is observed, the licensee shall assume that the disposal cell is the origin of the fluid.

If the LDS fluid is determined not to have originated from the disposal cell, the licensee shall continue with weekly measurements of "depth to fluid" in the LDS standpipes. The licensee shall confirm, on an annual basis, that fluid from the disposal cell has not entered the LDS

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

SUA-1358, Amendment No. 15

Docket or Reference Number

40-8681

by collecting (to the extent possible) and analyzing an LDS fluid sample for the above stated parameters.

D. Upon indication that the LDS fluids originated from the disposal cell, the licensee shall determine the flow rate through the liner by the calculation method in paragraph B of this license condition. If the flow rate is equal to or greater than one gallon per minute, the licensee shall:

1. Evaluate the cause of the liner distress and take appropriate and timely actions to mitigate the leak and any consequent potential impacts;
2. Continue to measure and record LDS "depth to fluid" measurements weekly; and
3. Notify NRC by telephone within 48 hours, in accordance with License Condition 9.2, and submit a written report within 30 days of notifying NRC by telephone, in accordance with License Condition 9.2. The written report shall include a description of the mitigative action(s) taken and a discussion of the mitigative action results.

If the calculated flow rate is less than one gallon per minute, the licensee shall continue with weekly measurements of "depth to fluid" in the LDS standpipes.

E. All sampling, analysis, and evaluation of LDS fluids shall be documented and retained onsite until license termination for NRC inspection.

[Applicable Amendment: 8]

11.4 Annually, the licensee shall collect, during mill operations, a set of air samples covering eight hours of sampling, at a high collection flow rate (i.e., greater than or equal to 40 liters per minute), in routinely or frequently occupied areas of the mill. These samples shall be analyzed for gross alpha. In addition, with each change in mill feed material or at least annually, the licensee shall analyze the mill feed or production product for U-nat, Th-230, Ra-226, and Pb-210 and use the analysis results to assess the fundamental constituent composition of air sample particulates.

[Applicable Amendment: 7]

11.5 Calibration of in-plant air and radiation monitoring equipment shall be performed as specified in the license renewal application, under Section 3.0 of the "Radiation Protection Procedures Manual," with the exception that in-plant air sampling equipment shall be calibrated at least quarterly and air sampling equipment checks shall be documented.

11.6 The licensee shall perform an annual ALARA audit of the radiation safety program in accordance with Regulatory Guide 8.31.

SECTION 12: Reporting Requirements

12.1 DELETED by Amendment 13.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

SUA-1358, Amendment No. 15

Docket or Reference Number

40-8681

[Applicable Amendment: 13]


12.2

The licensee shall submit a detailed decommissioning plan to the NRC at least twelve (12) months prior to planned final shutdown of mill operations that includes a detailed Quality Assurance Plan. The plan will be in accordance with Regulatory Guide 4.15, "Quality Assurance for Radiological Monitoring Programs," and NUREG-1575, "Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), or equivalent most current guidance.

[Applicable Amendment: 13]

FOR THE NUCLEAR REGULATORY COMMISSION

Date July 21, 2000


Philip Ting, Chief
Fuel Cycle Licensing Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
and Safeguards

**TECHNICAL EVALUATION REPORT
REQUEST TO RECEIVE AND PROCESS
HERITAGE MINERALS SITE MATERIAL**

DOCKET NO.: 040-8681

LICENSE NO.: SUA-1358

LICENSEE: International Uranium (IUSA) Corporation

FACILITY: White Mesa Uranium Mill

DATE: July 13, 2000

PROJECT MANAGER: William von Till

TECHNICAL REVIEWERS: Ted Johnson - Surface Water Hydrology and Erosion Protection
John Lusher - Health Physicist
Dan Rom - Geotechnical and Surety

SUMMARY AND CONCLUSIONS:

We have reviewed International Uranium Corporation's (IUSA's) Reclamation Plan Revision 3.0 (Cell expansion) dated May 5, 2000, with supplements dated July 7, 2000, and July 17, 2000. This revision was reviewed using the "Standard Review Plan for the Reclamation for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act" (NUREG-1620, NRC June 2000) and requirements under 10 CFR Part 40. We find the proposal to be acceptable and have amended the license to tie in these revisions to the Reclamation Plan. The surety amount increased with this revision and the licensee shall update the amount accordingly to cover these additional costs.

1. DESCRIPTION OF LICENSEE'S PROPOSAL

By its submittal dated May 5, 2000, IUSA requested that the NRC approve a modification to the reclamation plan in order to allow for additional cell space. Subsequently, IUSA and NRC staff held several telephone conference calls to discuss the issue in which IUSA agreed to submit additional detail. IUSA provided this detail by letter dated July 7, 2000, and July 17, 2000. Based on IUSA's Tailings Capacity Study conducted in May 2000, a shortfall in existing storage capacity was identified in the Tailings Management System of approximately 200,000 cubic yards (CY), assuming that reclamation materials and processed materials were disposed in Cell 2 or Cell 3. IUSA has proposed to handle additional volume by the addition of space within the Cell 1-I impoundment area. This alternative would allow for the placement of approximately 280,000 CY of material from the mill site cleanup along the north slope of the Cell 2 dike, within a portion of the current Cell 1-I. Cell 1-I Tailings Area will be lined with a minimum of 12 inches and up to 18 inches of compacted clay. IUSA has determined that the placement of these materials in the Cell 1-I Tailings Area will effectively create an extension of the Cell 2 disposal area with no greater radiological content with the radon cap design remaining the same.

2.0 BACKGROUND

IUSA, by letter dated March 16, 2000, requested that the NRC amend its license to allow it to receive and process up to 100,000 cubic yards of alternate feed/ore material from the Linde Formerly Utilized Sites Remedial Action Program (FUSRAP) site in Tonawanda, New York. As part of this review, the NRC staff held discussions with IUSA regarding potential cell storage space shortages. In IUSA's letter dated April 12, 2000, which requested that the NRC allow it to receive and process alternate feed/ore material from the W.R. Grace site in Chattanooga, Tennessee, IUSA stated that there was not adequate storage space available for these additional alternate feed materials (W.R. Grace and Linde) and the previously approved St. Louis Alternate Feed/ore material (140,000 CY).

In IUSA's letter dated May 5, 2000 (letter addressing NRC's comments), IUSA stated that a tailings cell space shortfall of 230,000 tons existed. To address this concern, IUSA proposed to expand Cell 2 into the area of Cell 1-I. Staff and IUSA held several phone calls and the NRC stated that additional detail was necessary to conduct a full review. IUSA then submitted a revision to the Reclamation Plan by letter dated July 7, 2000.

3.0 STAFF TECHNICAL EVALUATION

The submittal was reviewed using the "Standard Review Plan for the Reclamation for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act" (NUREG-1620, NRC June 2000) and requirements under 10 CFR Part 40.

Health Physics evaluation:

The licensee stated that the cell 2 design for the radon-222 barrier and frost cover will be extended into cell 1-I, and that the material placed in the tailings cell 2 extension into cell 1-I will consist of windblown tailings, cleanup material, and mill debris that contains low level activity. The staff concludes that the radon-222 barrier design is sufficient to accommodate disposal of these additional materials.

Surface Water Hydrology and Erosion Protection

Staff considers the design change proposed by IUC to be a minor revision to their existing reclamation plan. IUC intends to place a relatively small amount of additional tailings upstream of the existing tailings cells and to slope the cover away from the existing tailings. This design results in very short top slopes and side slopes, which is beneficial to stability. IUC intends to place rock of similar size and gradation on the new portion and to meet the same criteria that was already approved by the staff for much longer slope lengths.

Staff review of the proposal finds that the revision is acceptable. IUC's design provides a high level of conservatism because the sizes of erosion protection are identical to the original design which had much longer slope lengths. In addition, the change insignificantly reduces the storage area upstream of the existing tailings cells and will have little or no effect on flood calculations that staff previously approved.

Geotechnical Engineering/Construction:

Staff considers the design change proposed by IUC to be a minor revision to the existing reclamation plan. IUC intends to place a relatively small amount of additional tailings upstream of the existing tailings cells and to slope the cover away from the existing tailings. The revised design does not substantially affect sideslopes or thicknesses of material, thus design of the embankments is acceptable. IUC must build a clay liner; however, substantial clay borrow of satisfactory quality is available near the site. The surety has been revised to account for the modifications proposed.

Staff review of the proposal indicates that the revision is acceptable. IUC's design provides a satisfactory level of conservatism because the slopes are relatively flat and the embankments are low. As discussed on July 12, 2000, a minimum clay liner thickness of twelve inches should be satisfactory.

4.0 RECOMMENDED LICENSE CHANGE:

Pursuant to Title 10 of the Code of Federal Regulations, Part 40, Materials License SUA-1358 will be amended by the modification of License Condition No. 9.5 and License Condition No. 9.11 as follows:

- 9.5 The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criteria 9 and 10, adequate to cover the estimated costs, if accomplished by a third party, for decommissioning and decontamination of the mill and mill site, for reclamation of any tailings or waste disposal areas, ground-water restoration as warranted and for the long-term surveillance fee. Within three months of NRC approval of a revised reclamation/decommissioning plan, the licensee shall submit, for NRC review and approval, a proposed revision to the financial surety arrangement if estimated costs in the newly approved plan exceed the amount covered in the existing financial surety. The revised surety shall then be in effect within 3 months of written NRC approval.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criteria 9 and 10, shall be submitted to the NRC at least 3 months prior to the anniversary date which is designated as June 4 of each year. If the NRC has not approved a proposed revision to the surety coverage 30 days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing surety arrangement for 1 year. Along with each proposed revision or annual update, the licensee shall submit supporting documentation showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15 percent contingency fee, changes in engineering plans, activities performed and any other conditions affecting estimated costs for site closure. The basis for the cost estimate is the NRC approved reclamation/decommissioning plan or NRC approved revisions to the plan. The previously provided guidance entitled "Recommended Outline for Site Specific Reclamation and Stabilization Cost Estimates" outlines the minimum considerations used by the NRC in the review of site closure estimates. Reclamation/decommissioning plans and annual updates should follow this outline.

The currently approved surety instrument, a Performance Bond issued by National Union Fire Insurance Company in favor of the NRC, and the associated Standby Trust Agreement, dated April 29, 1997, shall be continuously maintained in an amount not less than \$10,064,794 for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10, until a replacement is authorized by the NRC.

[Applicable Amendments: 2, 3, 5, 13, 15]

- 9.11: The final reclamation shall be in accordance with the May 1999, Reclamation Plan Revision 2.0, Attachment A submitted on June 22, 1999, and Revision 3.0 submitted on July 7, 2000, and July 17, 2000. Prior to placement of alternate feed material, the licensee shall determine that adequate cell space is available for that additional material. This determination shall be made by a SERP approved procedure. 10.13

[Applicable Amendments: 13, 15]

6.0 ENVIRONMENTAL IMPACT EVALUATION

An environmental report covering the information identified in 10 CFR 51.45 was not required from the licensee. An Environmental Assessment (EA) was completed on February 10, 2000, for the approved Reclamation Plan. In this EA construction impacts were considered. Since the expansion will be within the original cell area "footprint" and no additional environmental impacts beyond those already evaluated in the February 10, 2000, EA, this action will 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 radiation exposure; (3) a significant construction impact; or (4) a significant increase in the potential for or consequences from radiological accidents. An environmental review was not performed since actions meeting these criteria are categorically excluded under 10 CFR 51.22(c)(11).

The licensee originally proposed to build a six cell impoundment system which was addressed in the Final Environmental Statement for the license application (NRC, 1979). The mill has only utilized four cells, one of which (Cell 4a), is not currently in use. IUSA's current proposal includes expansion into an existing cell "footprint".

REFERENCES:

U.S. Nuclear Regulatory Commission (NRC). "Standard Review Plan for the Reclamation for Mill Tailings Sites Under Title II of the Uranium Mill Tailings Radiation Control Act" (NUREG-1620, NRC June 2000).