Request to Amend
Source Material License SUA-1358
White Mesa Mill
Docket No. 40-8681

May 8, 1998

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## CERTIFICATION

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INTRODUCTION

International Uranium (USA) Corporation ("IUSA") operates an NRC-licensed uranium mill located approximately six miles south of Blanding, Utah. The mill processes natural (native, raw) uranium ores and feed materials other than natural ores. These alternate feed materials are generally processing products from other extraction procedures, which IUSA processes at IUSA's licensed uranium mill, primarily for the source material content. All waste associated with this processing is, therefore, 11e.(2) byproduct material; or, as stated in the alternate feed analysis noticed in Federal Register Volume 57, No. 93:

"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".

This application to amend NRC Source Material License SUA-1358 requests an amendment to allow IUSA to process a specific alternate feed, and to dispose of the associated 11e.(2) byproduct material in accordance with the Mill operating procedures.

Yellowcake produced from the processing of this material will not cause the currently-approved yellowcake production limit of 4,380 tons per year to be exceeded. In addition, and as a result, radiological doses to members of the public in the vicinity of the mill will not be elevated above levels previously assessed and approved.

1.0 MATERIAL COMPOSITION AND VOLUME

IUSA is requesting an amendment to Source Material License SUA-1358 to authorize receipt and processing of certain uranium-containing byproducts resulting from the processing of natural ore for the extraction of uranium. For ease of reference, this byproduct material is referred to herein as the "Uranium Material". The Uranium Material is located at a site being managed under the Formerly Utilized Sites Remedial Action ("FUSRAP") Program in Tonawanda, New York, known as Ashland 2. The Uranium Material is not a residue from a water treatment process.

The Uranium Material will be transported by ICF Kaiser, under contract to the U.S. Army Corps of Engineers ("USACE", or the "Corps"), as part of the FUSRAP Program, from Ashland 2 to the White Mesa Mill.

Ashland 2 is one of three sites located on the Linde Property near one another in Tonawanda, New York: Ashland 1, Ashland 2, and Seaway. The regional setting of Linde, Ashland 1, Ashland 2, and Seaway is shown in Figure 1-2 of Attachment 1. Figure 1-3 shows the locations of Linde, Ashland 1, Ashland 2, and Seaway.
From 1942 to 1946, portions of the Linde Property in Tonawanda, New York were used to separate uranium from imported pitchblende and domestic ore, under contract with the Manhattan Engineering District ("MED").

Figure 1-8 shows the process used for domestic ores; the process was modified somewhat for African ores, as is footnoted on Figure 1-8.

Residues from uranium ore processing at the Linde facility were disposed of (in trenches) and/or stored at the Ashland 2 property. Uranium ores processed at Linde included domestic ores and African ores, containing uranium in equilibrium with all of the daughter products in the decay chain.

In addition to these maps, Attachment 1 includes the following items describing Ashland 2 materials, process history, flow diagrams, and analytical data:

1. A complete history of uranium processing at the Linde property is provided on page 2 of the Proposed Plan for the Ashland 1 Ashland 2 Sites-Tonawanda, New York (U.S. Army Corps of Engineers, November 1997).


3. A portion of the Preliminary Assessment Site Investigation and HRS Scoring for Ashland 2 Tonawanda, NY (U.S. DOE, June 1987), which describes the content of the residues, including 8,000 tons of residues containing approximately 0.54% uranium, that were deposited on the Linde property between 1944-1946.


Over the years, leaching has spread contamination from the Uranium Material to adjacent soils, increasing the volume to be removed. The Corps estimates that the volume of the Uranium Material is approximately 24,000 to 25,000 tons (dry basis). Physically, the Uranium Material is a moist material consisting of byproducts from uranium processing operations (i.e., "tailings"), mixed with site soils.

1.1 Radiochemical Data

Process history demonstrates that the Uranium Material results from the processing of natural, mined uranium-bearing ores. It is currently being managed, and would be disposed of (if not reprocessed) as l.e.(2) byproduct material.
Average uranium content is difficult to estimate, although site history and available data suggest that recoverable uranium is present. Analytical data provided to IUSA indicate uranium content ranging from nondetectable to approximately 1.0 percent, or greater. IUSA analysis of three surface samples indicated concentrations ranging from <0.001 to 0.06 percent.

### 1.2 Hazardous Constituent Data

NRC guidance suggests that if a proposed feed material consists of hazardous waste, listed under subpart D Section 261.30-33 of 40 CFR (or comparable RCRA authorized State regulations), it would be subject to EPA (or State) regulation under RCRA. To avoid the complexities of NRC/EPA dual regulation, such feed material may not be approved for processing at a licensed mill. If the licensee can show that the proposed feed material does not consist of a listed hazardous waste, this issue is resolved. NRC 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. The NRC Alternate Feed Guidance also states that NRC staff may consult with EPA (or the State) before making a determination on whether the feed material contains hazardous waste.

The Corps, based on its analysis of the Uranium Material and process knowledge, believes that the Uranium Material contains no RCRA listed wastes. Process history and analytical data are described in Attachment 1.

ICF Kaiser, the contractor for the Corps, has indicated that to date, no listed hazardous wastes have been discovered at Ashland 2. Upon excavation, additional chemical testing will be accomplished to verify existing data, prior to any shipment. Any material that such testing would indicate contains listed hazardous waste constituents will not be included in the Uranium Material. ICF Kaiser has prepared a draft Sampling and Analysis Plan ("SAP") for this confirmatory sampling program. The SAP is currently under review by the Corps. ICF Kaiser will at NRC's request provide NRC with a copy of the final SAP.

The Uranium Material contains metals and other parameters which already are present in the mill tailings disposed of in the Cell 3 impoundments. Generally, the composition of the Uranium Material is very similar to the composition of the materials currently present in the White Mesa Mill's tailings impoundments, because the Uranium Material resulted from the processing of uranium-bearing ores for the extraction of uranium, and should not have an adverse impact on the overall Cell 3 tailings composition. Furthermore, the amount of tailings (a maximum of approximately 25,000 tons) produced by processing the material is not significant in comparison to the total amount of tailings currently in the cell (approximately 1.4 million tons). Additionally IUSA is required to conduct regular monitoring of the impoundment leak detection systems and of the groundwater in the vicinity of the impoundments to detect leakage if it should occur.
1.3 Regulatory Considerations

Uranium Material Qualifies as “Ore”

According to NRC guidance, for the tailings and wastes from the proposed processing to qualify as 11e.(2) byproduct material, the feed material must qualify as “ore.” NRC has established the following definition of ore:

"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."

The Uranium Material is a matter from which source material will be extracted in a licensed uranium mill, and therefore qualifies as “ore” under this definition.

Uranium Material Not Subject to RCRA

As described under 1.2 above, the Uranium Material is not subject to regulation as a listed hazardous waste as defined in the Resource Conservation and Recovery Act, as amended, 42 U.S.C. Section 6901-6991 and its implementing regulations, or comparable State laws or regulations governing the regulation of listed hazardous wastes. In fact, the Department of Energy, as predecessor to the Corps in managing the FUSRAP sites, has consistently classified the FUSRAP materials, including the Uranium Material at Ashland 2, as 11e.(2) byproduct material. If Ashland 2 material were to be shipped to a waste disposal facility, IUSA understands that it would be accepted and disposed of as 11e.(2) byproduct material.

Justification of Certification Under Certification Test

In the Licensee Certification and justification test set out in the NRC’s Final Position and Guidance on the Use of Uranium Mill Feed Material Other Than Natural Ores, 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. IUSA makes this certification below.

Under this Guidance, 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.

Uranium Content

As stated above, average uranium content is difficult to estimate, although site history and available data suggest that recoverable uranium is present. For example, analytical data provided to IUSA indicate uranium content ranging from nondetectable to approximately 1.0 percent, or greater. IUSA analysis of three surface samples indicated concentrations ranging from <0.001 to
0.06 percent. Historic reports indicate that residues were both spread over and buried at the property. One report containing core data listed eighteen core samples that contained uranium above 0.05 percent.

The site history indicates that 8,000 tons of process residues containing on average approximately 0.54 percent U₃O₈ from processing at the Ashland 1 property, were spread out over roughly two thirds of that property. Some of these residues contained as much as 5.57 percent vanadium (V₂O₅). The majority of the residues, and associated contaminated soils, were transferred to Ashland 2 and Seaway. It is not clear how much of these residues remain on the Ashland 2 property; however all that do remain will be included in the Uranium Materials. Additional radioactive residues were removed from Ashland 1 and were also deposited in an area of the Ashland 2 Property.

Based on the information available, IUSA estimates that the average grade of U₃O₈ contained in the Uranium Material could be approximately 0.05 percent, but that this number could be increased or decreased depending on the extent to which pockets of higher grade materials exist on the site. However, IUSA believes that, based on the history of the site, there is significant potential that the average grade of the materials could be substantially greater than 0.05 percent U₃O₈. For example, if one half of the Ashland 1 residues described above remain on the Ashland 2 site, the average grade of the total Uranium Materials could be in the range of 0.10 to 0.12 percent U₃O₈.

These grades of 0.05 percent to 0.12 percent U₃O₈ are on the low end of the scale to justify hardrock mining and conventional milling today, although these grades of ore have been mined under conventional methods in the past and are currently being mined by in situ methods today. However, there are no mining or transportation costs payable by IUSA in connection with these ores, and therefore, these grades can justify conventional milling on their own merits in certain circumstances. When the additional Financial Considerations referred to below are taken into account, IUSA has concluded that milling the Uranium Material for its source material content provides a net benefit to IUSA, without taking into consideration the recycling fee referred to below under Other Considerations.

Financial Considerations

For a number of reasons, IUSA believes that the ability to process the Uranium Materials in the same fashion as conventional uranium ores either alone or commingled with such ores during the same mill run provides a number of production and production scheduling benefits to IUSA that have the effect of significantly reducing the incremental cost to IUSA of processing the Uranium Materials.

The White Mesa Mill has a nominal capacity of 2,000 dry tons of conventional ore per day. The mill cannot operate at less than its nominal capacity, without making certain capital modifications to the mill. This equates to approximately 680,000 tons per operating year, or 57,000 tons per month. This far exceeds the mine production from IUSA's currently operating mines, which is approximately 10,000 tons per month, and significantly exceeds the historic
daily production available for processing at the mill from all sources. As a result, the mill has almost always been run in campaigns, where sufficient ores are stockpiled to justify a minimum length mill run (which should generally be at least eight months of continuous operations), the mill is run until the stockpile together with ores that have been delivered to the mill during the mill run have been milled; and then the mill is put on standby until a sufficient amount of ores are again stockpiled to justify the next mill run, and so on.

There are several economic costs associated with this type of operation. First, several millions of dollars of valuable ore can be stockpiled for months, before offsetting revenues are realized. This has the effect of increasing the real cost of mining, as the cost to mine this ore must be financed during the period. Secondly, the longer the period of time that ore is sitting on the pad waiting to be milled, the higher is the risk that commodity prices will decrease during that time period, with the result that the yellowcake or vanadium will have to be sold at a lower price than expected. This risk can be partially offset to the extent that the resulting commodities are sold forward at or prior to the time that the ore is mined. However, IUSA, like most producers, does not sell all of its production forward in this manner. Thirdly, it is difficult to maintain a trained workforce at the mill during the downtime. As a result, there is a cost, both direct, in the form of training, and indirect, in the form of decreased operating efficiencies and recovery percentages over the initial months of each mill run, associated with training new operators for each mill run. This is one reason why it is important that each mill run be at least eight months or so, to minimize this type of start up inefficiency during each mill run. And of course, the longer the continuous mill run the better.

By making certain capital modifications to the mill, IUSA has the ability to decrease the nominal capacity of the mill, to allow for a lower throughput per day. This has the benefit of reducing the amount of time necessary to stockpile ore, as the number of tons required to be stockpiled between each mill run would be less. However, reducing the nominal throughput of the mill has the unfortunate effect of increasing the milling cost per ton, as certain cost components such as labor and utilities cannot be reduced proportionately. Therefore there are economic limits inherent in reducing the nominal capacity of the mill. As a result, the more ore that can be fed to the mill the better. A greater, faster, supply of ore will result in longer mill runs at higher nominal capacities and lower milling costs.

The ability to process the Uranium Materials along with conventional ores, or separately, in the same mill run, will provide IUSA with the ability to commence its mill run earlier in 1998 than otherwise would be the case. IUSA currently expects that, depending on various circumstances, the mill run could commence approximately two and one half months earlier as a result of processing the Uranium Material. IUSA views the Uranium Material the same as if it were low-grade conventional ore. The resulting ability to thereby increase IUSA's stockpile of ore by the addition of the Uranium Material and the ability to process such ores during the same mill run and in the same manner as conventional ores, is expected to provide the following benefits to IUSA:

(a) the financial cost of stockpiling ore (i.e., the interest cost of the ore on the pad) is expected to be reduced by approximately two and one-half months;
(b) IUSA would expect to be able to produce more U₃O₈ and V₂O₅ in 1998, which can be applied to reduce advance royalties payable in 1998, which advance royalties cannot be recouped from production in subsequent years;

(c) By reducing the time between the mining of ore and the production and sale of U₃O₈ and V₂O₅, IUSA is able to reduce the risk that the prices at which the commodities are sold will have fallen, thereby reducing the risk of the possibility of production at a loss. Only a portion of IUSA's U₃O₈ is sold forward; the remainder must be sold on the spot market. At this time most of IUSA's V₂O₅ must be sold on the spot market;

(d) An earlier conventional ore mill run should make it easier for IUSA to attract purchased conventional ore from independent third party miners, because the interest cost to such miners of having mined the ore without having received full payment for the ore should be less, and hence the cost of mining would be less. IUSA's purchased ore program is an important part of its business;

(e) The price of V₂O₅ is currently close to a seven-year high, and the ability to produce vanadium earlier reduces the risk that IUSA will miss this high in the market;

(f) Having the ability to commingle Uranium Materials with, or to process the Uranium Material during the same mill run as, conventional ores should provide some ability to use Uranium Materials to smooth out variability in the production and delivery of conventional ores to the mill; and

(g) The ability to start a conventional mill run earlier this year may reduce the risk of losing trained mill operators due to the possibilities of downtime between IUSA's current alternate feed run and its next conventional ore run. Or, alternatively, an earlier mill run may reduce the cost of retaining qualified personnel on staff during downtime, due to the possible shortening of the downtime period.

Finally, if circumstances at the Mill change such that ore supplies from IUSA's mines and other sources increases over the amounts currently expected, and the conventional mill run can therefore be started earlier than currently expected, then the ability to process the Uranium Material during the same mill run will either allow the Mill to be run at a higher nominal throughput than otherwise would be the case, resulting in lower costs of processing each ton of ore during the mill run and a more accelerated output of yellowcake and vanadium, or allowing for a longer mill run than would otherwise be the case, thereby allowing for lower average operating costs per ton due to the spreading out of startup and shutdown costs over a larger number of tons of ore milled during the mill run.

For these reasons, IUSA has determined that the ability to process the Uranium Material for uranium in the same manner and during the same mill run as our conventional ores has significant financial and commercial benefits to our uranium milling business, even at low grades
of uranium contained in the Uranium Materials. And of course, these benefits have the effect of reducing the incremental cost of processing the Uranium Material. To the extent that the Uranium Material contains higher grades of uranium, this added uranium recovery will add to the financial benefits to IUSA of processing the Uranium Material.

In addition to the foregoing, the Uranium Materials may contain some vanadium. If the Uranium Material is processed in separate batches during the mill run, it may be possible to recover this vanadium if it can be isolated in batches of 1.0 percent or higher. Historic data suggest that vanadium-bearing residues of over 5.0 percent may still be included in the Uranium Material. If these pockets of vanadium can be identified, then they can be run through the mill on a batch basis geared toward maximizing the co-product recovery of vanadium along with the uranium. If, however, these vanadium grades are commingled within the Uranium Material, they may still add to the recovery of vanadium at the mill if commingled with other vanadium-bearing ores. It is difficult to quantify what if any recovery of vanadium is possible, but there is definitely the potential for the recovery of some valuable vanadium at little incremental processing cost.

Other Considerations

In addition to the fact that IUSA will retain all uranium and vanadium produced from the Uranium Materials, and will realize the financial and commercial benefits described above, IUSA will receive a recycling fee for recycling the Uranium Materials to remove uranium and thereby reduce the radioactive component of the materials. However, recycling of the Uranium Materials for uranium and the disposal of the resulting tailings in the mill's tailings impoundments as 11e.(2) byproduct material is not the primary purpose of processing the Uranium Materials. The primary purpose of processing the Uranium Materials is for the recovery of source material in a manner that is economic to the operation of the mill in its processing of ores for their uranium content. By processing the Uranium Materials for uranium in the same fashion and during the same mill run as other conventional ores, the mill is able to enjoy significant financial economies and commercial benefits. The ability to also collect a recycling fee is merely good business practice, in light of market and commercial considerations.

2.0 TRANSPORTATION CONSIDERATIONS

The Uranium Material will be shipped by train and exclusive-use trucks from the Ashland 2 site to the White Mesa Mill in intermodal containers. The sealed containers will be loaded on railcars and transported cross-country to the final rail destination (expected to be either near Grand Junction, Colorado; Cisco, Utah; or Green River, Utah), where they will be transferred to trucks for the final leg of the journey to the White Mesa Mill. It is expected that four containers will be shipped per rail car, for a total of approximately 290 to 300 cars. ICF Kaiser expects that 60 truck loads per week will be used to transport from the rail transfer site to White Mesa Mill.

The Uranium Material will be shipped as LSA (low specific activity) Radioactive Hazard Class 7 Hazardous Material as defined by DOT regulations. ICF Kaiser will arrange with a materials handling contractor for the proper labeling, placarding, manifesting and transport of each
shipment of the Uranium Material. Each shipment will be “exclusive use” (i.e., the only material in each container will be the Uranium Material).

For the following reasons, it is not expected that transportation impacts associated with the movement of the Uranium Material by train and truck from New York to the White Mesa Mill will be significant:

- The material will be shipped as “low specific activity” material in exclusive-use containers (i.e., no other material will be in the containers with the Uranium Material). The containers will be appropriately labeled, placarded, and manifested, and shipments will be tracked by the shipping company from the Ashland 2 site until they reach the White Mesa Mill.

- On average during 1996, 370 trucks per day traveled the stretch of State Road 191 between Monticello, UT and Blanding, UT (1997 NRC personal communication with the State of Utah Department of Transportation). An additional 60 trucks per week traveling this route to the mill represents an increased traffic load of only 2 percent. Shipments are expected to take place over the course of a limited time period (three to four months).

- The containers and trucks involved in transporting the material to the mill site will be surveyed and decontaminated, as necessary, prior to leaving the Ashland 2 site for the White Mesa Mill and again prior to leaving the mill site for the return trip.

3.0 PROCESS

The Uranium Material will be added to the mill circuit in a manner similar to that used for the normal processing of conventional ore either alone, or commingled with conventional ores. The Uranium Material will be dumped into the ore receiving hopper and fed to the SAG mill before being pumped to Pulp Storage. The leaching process will begin in Pulp Storage with the addition of sulfuric acid.

The solution will be advanced through the remainder of the mill circuitry with no anticipated modifications to either the circuit or recovery process. Since no physical changes to the mill circuit of any significance will be necessary to process this Material, no construction impacts of any significance beyond those previously assessed will be involved.

Tailings produced by the processing of this material will be disposed of on-site in an existing lined tailings impoundment (Cell 3). The addition of these tailings (a maximum of approximately 25,000 dry tons) to Cell 3 will increase the total amount of tailings in the cell by approximately one to two percent, raising Cell 3 to a total of approximately 69 percent of cell capacity; therefore, no new impoundments are necessary. The design of the existing impoundments previously has been approved by the NRC, and IUSA is required by its NRC license to conduct regular monitoring of the impoundment liners and of the groundwater around the impoundments to detect leakage if it should occur.
4.0 SAFETY MEASURES

Mill employees involved in handling the material will be provided with personal protective equipment, including respiratory protection, as required. Airborne particulate and breathing zone sampling results will be used to establish health and safety guidelines to be implemented throughout the processing operations.

The Uranium Material will be delivered to the mill in closed containers via truck. The Uranium Material will be introduced into the mill circuit in the same manner as conventional ore. The material will proceed through the leach circuit, CCD circuit, and into the solvent extraction circuit in normal process fashion as detailed in Section 3.0 above. Since there are no major process changes to the mill circuit, and since the extraction process sequence is very similar to processing conventional uranium solutions, it is anticipated that no extraordinary safety hazards will be encountered.

Employee exposure potential during initial material handling operations is expected to be no more significant than what is normally encountered during conventional milling operations. Employees will be provided with personal protective equipment including full-face respirators, if required. Airborne particulate samples will be collected and analyzed for gross alpha concentrations. If uranium airborne concentrations exceed 25 percent of the DAC, full-face respiratory protection will be implemented during the entire sequence of material dumping operations. Spills and splashed material that may be encountered during this initial material processing shall be wetted and collected during routine work activity. Sample material of the Uranium Material indicates it is a neutral material. Therefore, it is anticipated that no unusual PPE apparel will be required other than coveralls and rubber gloves during material handling activities. Respiratory protection will be implemented as determined.

4.1 Control of Airborne Contamination

IUSA does not anticipate unusual or extraordinary airborne contamination dispersion when processing the Uranium Material. The contamination potential is expected to be less than what is normally encountered when processing conventional uranium ore. The successive extraction process circuitry from grinding, leaching, and CCD through solvent extraction and into precipitation are all liquid processes, and the potential for airborne contamination dispersion is minimal. Uranium extraction proceeds through the mill circuit as if the Uranium Material were uranium ore. The material is a moist solid or in a slurry form once it has been introduced into the SAG mill. Normal dust control measures will be utilized prior to the SAG mill.

The efficiency of airborne contamination control measures during the material handling operations will be assessed while the ore is in stockpile. Airborne particulate samples and breathing zone samples will be collected in those areas during initial material processing activities and analyzed for gross alpha. The results will establish health and safety guidelines which will be implemented throughout the material processing operations.
Personal protective equipment, including respiratory protection as required, will be provided to those individuals engaged in material processing. Additional environmental air samples will be taken at nearby locations in the vicinity of material processing activities to ensure adequate contamination control measures are effective and that the spread of uranium airborne particulates have been prevented.

4.2 Radiation Safety

The radiation safety program which exists at the White Mesa Mill, pursuant to the conditions and provisions of NRC License Number SUA-1358, and applicable Regulations of the Code of Federal Regulations, Title 10, is adequate to ensure the maximum protection of the worker and environment, and is consistent with the principle of maintaining exposures of radiation to individual workers and to the general public to levels As Low As Reasonably Achievable (ALARA).

4.3 Vehicle Scan

After the cargo has been offloaded at the mill site, a radiation survey of the vehicle and intermodal bin will be performed consistent with standard mill procedures (Attachment 2). In general, radiation levels are in accordance with applicable values contained in the NRC Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material, U.S. NRC, May, 1987. If radiation levels indicate values in excess of the above limits, appropriate decontamination procedures would be implemented. However, these limits are appropriate for materials and equipment released for unrestricted use only, and do not apply to restricted exclusive use shipments. As stated in Section 2.0 above, the shipments of uranium material to and from the White Mesa Mill will be dedicated, exclusive loads; therefore, radiation surveys and radiation levels consistent with DOT requirements will be applied to returning vehicles and cargo.

5.0 OTHER INFORMATION

5.1 Added Advantage of Recycling

The Value Engineering Study Team of the U.S. Army Corps of Engineers has proposed that the Corps use recycling and mineral recovery technologies at a uranium mill to reduce radioactive material disposal costs (See Attachment 3). The Corps notes that the White Mesa Mill has the technology necessary to recycle materials for extraction of uranium, vanadium, rare earth minerals, and other metals, and to provide for disposal of treated waste in the Mill’s fully lined and NRC-compliant existing tailings impoundments.
The Corps has found that recycling will add value to the FUSRAP program, and lists the following advantages of recycling, over disposal:

1. Conforms to Congressional and regulatory mandates which encourage use of recycling.
2. Reduces radioactivity of the material to be disposed of.
3. Recycles uranium and other minerals.
4. Reduces cost of disposal of byproduct from recycling operation.
5. Treatment and disposal are performed at one location, and by-product from recycling is disposed of in an NRC-compliant disposal system, meeting 10 CFR 40 design criteria.
6. 11e.2 by-product is disposed of in existing tailings impoundment which is consistent with 10 CFR 40 Appendix B intent for nonproliferation of small sites.
7. Actual cost savings for treatment and disposal versus cost of direct disposal only could be greater than projected, depending upon quantities of recoverable uranium or other minerals.
8. This technology has been demonstrated on multiple waste streams, and has potential applicability to other FUSRAP sites.

5.2 Reprocessing of 11e.2 Byproduct Materials Under UMTRCA

From a legal point of view, there is no reason why IUSA should not be able to accept and process the Uranium Materials as alternate feeds since UMTRCA itself allows such remilling of 11e.2 byproduct material:

"[T]he Secretary [of Energy] shall request expressions of interest from private parties regarding the remilling of the residual radioactive materials at the [inactive] site and upon receipt of any expression of interest, the Secretary shall evaluate among other things the mineral concentration of the residual radioactive materials at each designated site to determine whether...recovery of such minerals is practicable. The Secretary, with the concurrence of the Commission, may permit the recovery of such minerals..."

While this provision applies only to inactive (Title I) sites, 11e.2 byproduct material present at active (Title II) sites may be reprocessed under section 83 of the Atomic Energy Act. That section regulates transfer of custody of mill tailings and lands necessary for their disposal to DOE or states upon termination of licenses and provides in part:

"If the Commission determines by order that use of the surface or subsurface estates, or both, of the land transferred to the United States or to a State under subparagraph (A) would not endanger the public health, safety, welfare, or environment, the Commission...shall permit the use of the surface or subsurface estates..."
Certification of International Uranium (USA) Corporation
(the "Licensee")

I, David C. Frydenlund, the undersigned, for and on behalf of the Licensee, do hereby certify as follows:

1. The Licensee intends to enter into a contract with ICF Kaiser Engineers, Inc., 9300 Lee Highway, Fairfax, VA 22031-1207, on behalf of the United States Corps. Of Engineers (the "Material Supplier") under which the Licensee will process certain alternate feed material (the "Material") at the White Mesa Uranium Mill for the recovery of uranium. As demonstrated in the foregoing amendment application, based on the uranium content and financial considerations surrounding the Material and the processing transaction, the Licensee hereby certifies and affirms that the Material is being processed primarily for the recovery of uranium and for no other primary purpose.

2. The Licensee further certifies and affirms that the Material, as alternate feed to a licensed uranium mill, is not subject to regulation as a listed hazardous waste as defined in the Resource Conservation and Recovery Act, as amended, 42 U.S.C. Section 6901-6991 and its implementing regulations, or comparable State laws or regulations governing the regulation of listed hazardous wastes. The Licensee is obtaining the Material as an alternate feed, consistent with NRC guidance, for the uranium recovery process being conducted at the White Mesa Mill.

Signature

May 9, 1998

Date

David C. Frydenlund
Vice President and General Counsel
International Uranium (USA) Corporation
ATTACHMENT 1

Ashland 2 Material Description, Process History, Flow Diagram, and Analytical Data
Figure 1-2
Regional Setting of Linde, Ashland 1, Ashland 2, and Seaway
Figure 1-3
Locations of Linde, Ashland 1, Ashland 2, and Seaway
1. For the African ore, filter cake was taken to Lake Ontario Ordnance Works.

2. Initially, vanadium was removed by adding lead nitrate, and the soda salt precipitation was performed using an acid-caustic method that involved the addition of H₂SO₄ before the caustic was added. Later, the direct caustic method was used. For the African ore, a lead circuit was used instead of a vanadium-phosphorus circuit.