November 11, 1999

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

SUBJECT: CONSULTATION REQUEST ON THE ENVIRONMENTAL ASSESSMENT FOR THE WHITE MESA URANIUM MILL RECLAMATION PLAN

Dear Mr. Sinclair:

The U.S. Nuclear Regulatory Commission (NRC) staff is conducting a review of International Uranium Corporation's (IUCs) reclamation plan for the White Mesa uranium mill site. On February 28, 1997, IUC submitted a site reclamation plan (RP) for the White Mesa Uranium Mill. On August 19, 1997, and on December 5, 1997, NRC issued comments to IUC on the proposed RP. On December 16, 1997, IUC issued responses to NRC's comments. By letter dated May 26, 1999, IUC submitted Revision 2.0 to the Reclamation Plan. Some open issues still remained after the staff reviewed Revision 2.0 and by letter dated June 22, 1999, IUC addressed the remaining issues in Attachment A to Revision 2.0 of the RP.

In accordance with 10 CFR 51.21, the NRC staff determined that an environmental assessment (EA) was required to document its review of IUC's request. The NRC is submitting the enclosed draft NRC EA as part of the consultation process of the National Environmental Policy Act. Please review this document and provide any comments within 30 days of receipt of this letter. If we have not heard from your office in that time period, the NRC will assume that the Utah Department of Environmental Quality has no comments, and the NRC will finalize the EA. If you have any questions concerning this letter, please contact the NRC Project Manager for the White Mesa site, William von Till, at (301) 415-6251.

Sincerely,

Original Signed By

John J. Surmeier, Chief
Uranium Recovery and
Low-Level Waste Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

cc: Harold Roberts, International Uranium Corporation
Enclosures: Draft EA
Docket No: 40-8681
License No: SUA-1358

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

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cc: Harold Roberts, International Uranium Corporation
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ENVIRONMENTAL ASSESSMENT
FOR
INTERNATIONAL URANIUM CORPORATION'S URANIUM MILL SITE
WHITE MESA, SAN JUAN COUNTY, UTAH

IN CONSIDERATION OF AN AMENDMENT TO SOURCE MATERIAL LICENSE SUA-1358 FOR THE APPROVAL OF THE PROPOSED RECLAMATION PLAN

PREPARED BY

THE U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF WASTE MANAGEMENT
OFFICE OF NUCLEAR MATERIAL SAFETY AND SAFEGUARDS

ENVIRONMENTAL ASSESSMENT
FOR THE PROPOSED RECLAMATION PLAN
INTERNATIONAL URANIUM CORPORATION'S URANIUM MILL SITE
WHITE MESA, SAN JUAN COUNTY

1.0 INTRODUCTION

1.1 Background

This action is to evaluate the environmental impacts of the proposed reclamation plan at the International Uranium Corporation's (IUC) uranium mill site is located in San Juan County, Utah approximately 8 kilometers (km) (5 miles) south of Blanding, Utah (Figure 1). The proposed action is to reclaim the site at sometime in the future since the mill is presently operational.

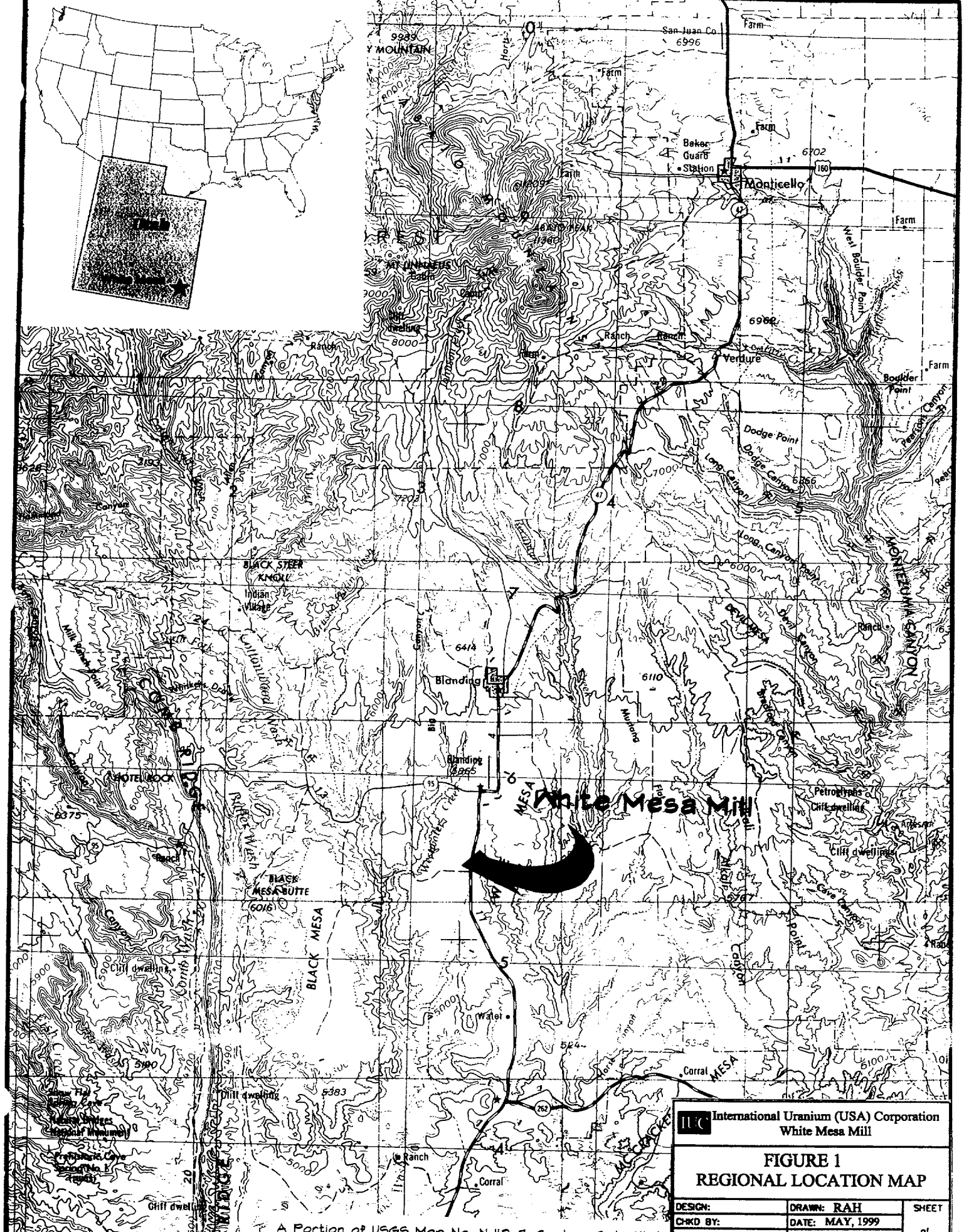
The IUC site is licensed by the U.S. Nuclear Regulatory Commission (NRC) under Materials License SUA-1358 to possess byproduct material in the form of uranium waste tailings and other uranium byproduct waste generated by the licensee's milling operations, as well as other source material from multiple locations. Some of these locations include material from Formerly Utilized Sites Remedial Action Program (FUSRAP) sites managed by the U.S. Army Corps of Engineers (USACE). These materials have similar chemical, physical, and radiological composition to conventional mill tailings.

On February 28, 1997, IUC submitted a site reclamation plan (RP) for the White Mesa Uranium Mill. On August 19 and on December 5, 1997, NRC issued responses to IUC's RP which identified some omissions or deficiencies. On December 16, 1997, IUC issued responses to NRC's comments. Finally, on July 17, 1998, NRC submitted a Request for Additional Information on the RP. A Rock Sampling Plan was provided by IUC to NRC on September 11, 1998, and on October 23, 1998, IUC advised NRC that alternate rock source sites were under investigation. On March 24, 1999, Daniel Rom (NRC) met with IUC at the White Mesa Mill in Blanding, Utah, at which time discussion was held regarding appropriate responses to remaining RP open issues. On May 26, 1999, IUC submitted Revision 2.0 to the RP, and addressed remaining construction and engineering open issues. Some open issues still remained after staff reviewed revision 2.0 and by letter dated June 22, 1999, IUC addressed the remaining issues in Attachment A to Revision 2.0 of the RP.

A Final Environmental Statement (FES) was prepared for the license application in May 1979, an Environmental Assessment (EA) was prepared by NRC in September 1985 for license renewal, and an EA was prepared by NRC in February 1997 for license renewal.

1.2 Proposed Action

The proposed action is needed to minimize exposure of contaminated materials, once the mill operations have ceased, by reclaiming contaminated areas and stabilizing wastes. The goal of the reclamation plan is to permanently isolate and stabilize the tailings and associated contamination by minimizing disturbances by natural forces, and to do so without ongoing maintenance. The design objective is to be effective for up to one thousand years, to the extent reasonable, and, in any case for at least 200 years; to provide reasonable assurance that releases of radon-222 from the residual radioactive material will be minimized, and to provide reasonable assurances to protect groundwater resources.



International Uranium (USA) Corporation
White Mesa Mill

FIGURE 1
REGIONAL LOCATION MAP

DESIGN:	DRAWN: RAH	SHEET
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The facilities to be reclaimed include the following:

- Cell 1 (evaporative), Cells 2 and 3 (tailings), and Cell 4A (not currently used).
- Mill buildings and equipment.
- On-site contaminated areas.
- Off-site contaminated areas (i.e., potential areas affected by windblown tailings).

The reclamation of the above facilities will include the following:

- Placement of materials and debris from the mill decommissioning in tailings Cells 2 and 3.
- Placement of contaminated soils, crystals, and synthetic liner material from Cell 1 in tailings Cells 2 and 3.
- Placement of contaminated soils, crystals, and synthetic liner material from Cell 4A in tailings Cells 2 and 3.
- Placement of an engineered multi-layer cover on Cells 2 and 3.
- Construction of runoff control and diversion channels as necessary.
- Reconditioning of mill and ancillary areas.
- Reclamation of borrow sources.

1.3 Review Scope

In accordance with 10 CFR Part 51, this EA serves to: (1) present information and analysis for determining whether to issue a Finding of No Significant Impact (FONSI) or to prepare an Environmental Impact Statement (EIS); (2) fulfill the NRC's compliance with the National Environmental Policy Act when no EIS is necessary; and (3) facilitate preparation of an EIS when one is necessary. Should the NRC issue a finding of no significant impact, no EIS would be prepared and the technical evaluation of the license amendment would be completed.

2.0 SITE CHARACTERISTICS

The area surrounding the facility is in an arid climate with an annual precipitation of 30 centimeters (cm) (12 inches) and a mean temperature of 9 degrees centigrade (50 degrees Fahrenheit). Runoff in the project area is directed by the general surface topography either westward into Westward Creek, eastward into Corral Creek, or to the south into an unnamed branch of Cottonwood Wash. The San Juan River, a major tributary to the Colorado River, is located approximately 29 km (18 miles) south of the site.

The population density of San Juan County is approximately 0.6 persons per square kilometer

(1.6 persons per square mile). The town of Blanding is the largest population center near the facility with a population of 3162. Approximately 5.6 km (3.5 miles) southeast of the site is the White Mesa Reservation, a community of approximately 320 Ute Mountain Indians. The nearest resident to the mill is located approximately 5 km (3 miles) to the northeast of the mill, which is in the prevailing wind direction.

Approximately 60% of San Juan County is federally-owned land administered by the U.S. Bureau of Land Management (BLM), the U.S. National Park Service (NPS), and the U.S. Forest Service. Primary land uses include livestock grazing, wildlife range, recreation, and exploration for minerals, oil, and gas. A quarter of the county is Indian land owned by either the Navajo Nation or the Ute Tribe. The land within 8 km (5 miles) of the site is predominantly owned by residents of Blanding. The White Mesa mill site encompasses approximately 202 hectares (ha) (500 acres).

Groundwater beneath the site mainly occurs in three strata: the Dakota Sandstone, the Burro Canyon formation, and the Entrada/Navajo Sandstone. The Burro Canyon formation hosts perched groundwater over the Brushy Basin Member of the Morrison formation. The Entrada/Navajo Sandstones form one of the most permeable aquifers in the region. The aquifer is separated from the Burro Canyon formation by the Morrison formation and Summerville formation. Water in this aquifer is under artesian pressure and is used at the mill for industrial needs and showering. Recharge to the aquifers occurs by infiltration along the flanks of the Abajo, Henry, and La Sal Mountains, and along the flanks of the structural folds. Groundwater in the perched aquifer (Burro Canyon Formation) is monitored by the mill in the groundwater detection monitoring program. Water in this zone flows south to southwest. Seventy-six groundwater applications, within a 8 kilometer (5 mile) radius of the site, are on file with the Utah State Engineer's office. The majority of applications are by private individuals and for wells drawing small, intermittent quantities of water, less than eight gallons per minute (gpm) (0.02 cubic feet per second), from the Burro Canyon formation. For the most part, these wells are located upgradient (north) of the facility. Stockwatering and irrigation are listed as the primary uses. No wells are completed within the perched groundwater of the Burro Canyon formation within five miles downgradient of the site. Two water wells are completed in the Entrada/Navajo sandstone located 4.5 miles (7.25 km) southeast of the site on the Ute Mountain Ute Reservation. These wells are used as domestic water supply wells and are completed approximately 365 meters (1200 foot) below the ground surface.

3.0 OPERATIONS

The White Mesa uranium mill was developed in the late 1970's by Energy Fuels Nuclear, Inc. (EFN) as an outlet for the many small mines that are located in the Colorado Plateau. After about two and one-half years, the mill ceased ore processing and entered a total shutdown phase. In 1984, a majority ownership interest was acquired by Union Carbide Corporation's (UCC) Metals Division, which later became Umetco Minerals Corporation (Umetco), a wholly-owned subsidiary of UCC. In May of 1997, IUC purchased the assets of EFN and is the current owner and operator of the facility. The mill has gone through operation and shut down periods throughout the 1980's and 1990's. The current license specifies a maximum production rate of 4380 tons of yellowcake per year. The facility is currently in operation and since early 1997, the mill has processed 58,403 tons of ore from several additional alternate feed stocks. From inception through April of 1999, the mill has processed a total of 3,815,577 tons of ore.

Alternate feed material refers to material that is processed in the mill for uranium removal that is different from natural uranium ores (e.g. FUSRAP materials).

The tailings facilities currently consist of four lined cells with leak detection systems (LDS) and a groundwater detection monitoring program consisting of six monitoring wells. These wells are sampled quarterly for chloride, potassium, nickel, and uranium. These constituents are good indicator parameters to detect potential groundwater impact. Currently, there is no indication of groundwater impact from the tailing cells based on the groundwater sampling. Environmental monitoring consists of groundwater and surface water sampling, gamma radiation measurements, soil, and vegetation sampling.

4.0 ENVIRONMENTAL EFFECTS

Environmental monitoring will continue during the time period in which reclamation and decommissioning is conducted. This includes monitoring of surface and groundwater, airborne particulates, radon, soils, and vegetation, according to the existing License Conditions. No changes to the existing programs are expected and reclamation activities are not expected to increase exposure potential beyond the current levels.

A historical review of the site was conducted as part of the initial license application, and six historical sites were identified, none of which is in an area affected by the mill operations. The license contains a condition that 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 (NHPA) and its implementing regulations (36 CFR 800), and the Archaeological Resources Act and its implementing regulations (43 CFR 7). NRC sent a letter to the State of Utah Historic Preservation Officer on September 3, 1999, to comment on the proposed action. NRC sent a letter to the White Mesa Ute Tribal Historic Preservation Officer on September 9, 1999, to comment on the proposed action.

Based on the groundwater detection monitoring program, no groundwater contamination from the tailings cells has occurred. Therefore, no groundwater corrective action measures are considered in the reclamation plan. If groundwater contamination occurs at some time in the future from site activities, it will be addressed by the NRC under 10 CFR Part 40 Appendix A. Groundwater beneath the site is not expected to be adversely impacted by reclamation. Further, reclamation would protect the groundwater resources due to the decrease in infiltration into the tailings cell by the addition of a cover.

In the vicinity of the site, the presence of six animal species and one plant species classified as either endangered or threatened could occur. These include: (1) the bald eagle (*haliaeetus leucocephalus*); (2) the American peregrine falcon (*Falco peregrinis anatum*); (3) the black-footed ferret (*Mustela nigripes);* (4) the Southwestern willow flycatcher (*Empidonax traillii extimus*); (5) California Condor (*Gymnogyps californianus*); (6) the Mexican Spotted Owl (*Strix occidentalis lucida*), and (7) the Navajo Sedge (*Carex specuicola*)(plant species). While the ranges of the bald eagle, peregrine falcon, and willow flycatcher encompass the project area, their likelihood of utilizing the site is extremely low. The black-footed ferret has not been seen in Utah since 1952 and is not expected to occur any longer in the area. The California Condor, Mexican Spotted Owl, and Navajo Sedge have been added to the list since the 1997 EA. NRC

staff contacted wildlife biologists from the Bureau of Land Management and the Utah Wildlife Service to gather local information on the occurrences of these additional species surrounding the mill. The California Condor has only rarely been spotted in the area of Moab, Utah, (70 miles north) and around Lake Powell (approximately 50 miles south). The Mexican Spotted Owl is only found in the mountains in Utah and is not expected to be on the Mesa. The Navajo Sedge has not been observed in the area surrounding Blanding and is typically found in areas of moisture.

No populations of fish are present on the project site, nor are any known to exist in the immediate area of the site. Four species of fish designated as endangered or threatened occur in the San Juan River 29 km (18 miles) south of the site. There are no discharges of mill effluents to surface waters; therefore, no impacts are expected for the San Juan River due to operations at the mill.

Construction materials for reclamation will be obtained from on-site locations. Fill material will be available from stockpiles that were generated from excavation of the cells for the tailings facility. If required, additional materials are available to the west of the site. A clay material source, identified at the southern end of the site, will be used to construct the one-foot compacted clay layer. Rip rap material will be produced from off-site sources located to the north of Blanding. Three potential sources of rock were identified; Cow Canyon pit located approximately 15 mi (24 km) from the site north of Bluff, Utah, Brown Canyon pit located on the west side of Recapture Canyon approximately 4 mi (6 km) northeast of the site, and North Pit located one mile northeast of Blanding. IUC stated that the North Pit would be the most reasonable choice and it is located on land administered by the Bureau of Land Management (BLM). The BLM would have to evaluate potential environmental impacts of rock removed from this area.

The single largest off-site activity related to reclamation of the White Mesa Mill is the acquisition of rip rap rock for the tailings cells. The estimate for the total amount of material needed off-site is 146,00 cubic yards (111,544 cubic meters) from a borrow site 7 miles (11.2 km) north of the mill along State Highway 191. Approximately 6,636 truck loads would be required over a 6.5 month period. Assuming a five-day work week, this would result in an average of 48 truckloads (peak of 65 truckloads) per day during the 6.5 month period. The 1979 FES projected, from an operational standpoint, that 68 truckloads of ore would be delivered daily to the mill with 8-10 additional truckloads of reagents. For comparison purposes, the Utah Department of Transportation conducted a truck census in 1998 (most current) along State Highway 191, and counted an average of 373 trucks per day passing a point six miles south of the mill entrance. The same census also counted 473 trucks per day through the city of Monticello, Utah and 886 per day through Moab, Utah. Therefore, the reclamation activities for the White Mesa mill site are not expected to adversely effect the current truck traffic along State Highway 191.

The RP is considered to be a beneficial action which will take measures to protect human health and the environment from the tailings and contaminated material from the mill operations.

5.0 ALTERNATIVES

The action that the NRC is considering is approval of an amendment request to a source material license issued pursuant to 10 CFR Part 40. The alternatives available to the NRC are:

1. Approve the license amendment request as submitted; or

2. Amend the license with such additional conditions as are considered necessary or appropriate to protect public health and safety and the environment; or

3. Deny the request.

The NRC staff has concluded that there are no significant environmental impacts associated with the proposed action. Therefore, alternatives with equal or greater impacts need not be evaluated. The staff considers that Alternative 1 is the appropriate alternative for selection. A technical evaluation report will be completed with respect to the criteria for reclamation, specified in 10 CFR Part 40, Appendix A.

6.0 SUMMARY AND CONCLUSIONS

Based on an evaluation of the environmental impacts of the IUC amendment request, the NRC has determined that the proper action is to issue a FONSI in the Federal Register. The following statements support the FONSI and summarize the conclusions resulting from the EA.

1. An acceptable environmental and effluent monitoring program is in place to monitor effluent releases and to detect whether applicable regulatory limits are exceeded. Radiological effluents from site operations have been and are expected to continue to remain below the regulatory limits.

2. Present and potential risks were assessed. Given the remote location, limited activities requested, the small area of impact, the commitments by the licensee, and the past activities on the site, the staff has determined that the risk factors for health and environmental hazards are insignificant.

Because the staff has determined that there will be no significant impacts associated with the RP, there can be no disproportionally high and adverse effects and impacts on minority and low-income populations. Consequently, further evaluation of Environmental Justice concerns, as outlined in Executive Order 12898 and NRC's Office of Nuclear Material Safely and Safeguards Policy and Procedures Letter 1-50, Revision 1, is not warranted.

7.0 CONSULTATION WITH OTHER AGENCIES

Extensive consultation was involved with representatives of the Utah Department of Environmental Quality (UDEQ) Divisions of Water Quality and Radiation Control, as part of the license renewal and EA in 1997 (NRC, 1997). Most of these discussions were related to groundwater monitoring and leak detection issues. To address concerns voiced by UDEQ regarding groundwater, IUC submitted a Groundwater Information Report on May 28, 1999 (IUC, 1999). This report is similar to a Groundwater Discharge Permit (GWDP) Application as

outlined in Part 6 of the UDEQ's Ground Water Quality Protection requirements (UDEQ Regulation R317-6-6).

NRC requested comments from the State and Tribal Historic Preservation Officers by letters dated September 3, 1999, and September 9, 1999, respectively. A letter dated October 5, 1999, from the Ute Mountain Ute Tribe was received by NRC which stated that the language in the license was satisfactory to protect the Cultural and Historical Resources associated with the mill relating to activities including reclamation. A letter dated September 17, 1999, from the Division of State History, Utah State Historical Society, was received by NRC which concurred with the conditions outlined to proceed with reclamation.

The U.S. Fish and Wildlife, BLM, and Utah Division of Wildlife Services were contacted by phone regarding occurrences of endangered species in the area surrounding the mill.

8.0 REFERENCES:

International Uranium Corporation's (IUC), "Reclamation Plan, White Mesa Mill, Blanding, Utah, Revision 2.0", May 1999.

IUC, "Groundwater Information Report White Mesa Mill, Blanding, Utah", submitted to Utah Department of Environmental Quality (UDEQ) Divisions of Water Quality (copy to NRC), May 28, 1999.

U.S. Nuclear Regulatory Commission (NRC), "Final Environmental Statement related to operation of White Mesa Uranium Project, Energy Fuels Nuclear, Inc., " NU-REG-0556, May 1979.

NRC, "Environmental Assessment for the Renewal of Source Material License No. SUA-1358, Energy Fuels Nuclear, Inc., White Mesa Uranium Mill, San Juan County, Utah", February 27, 1997.

NRC, "Environmental Assessment Prepared by the Uranium Recovery Field Office in Consideration of the Renewal of Source Material License No. SUA-1358, for the Umetco Minerals Corporation, White Mesa Uranium Mill,", September 26, 1985.

NRC, Phone conversation with William von Till of NRC and Tammy Fletcher of BLM, Regarding the occurrence of endangered species in the Blanding, Utah, area, August 5, 1999.

NRC, Phone conversation with William von Till of NRC and Guy Wallace of the Utah Wildlife Service, Regarding the occurrence of endangered species in the Blanding, Utah, area, August 5, 1999.

Utah State Historical Society, Response to NRC Request for Comments on Cultural and Historical Resources for the Proposed Reclamation Plan, September 17, 1999

Ute Mountain Ute Tribe, Response to NRC Request for Comments on Cultural and Historical Resources for the Proposed Reclamation Plan, October 5, 1999