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

40-8681

September 25, 1998

Mr. Earl E. Hoellen, President
International Uranium (USA) Corporation
Independence Plaza, Suite 950
1050 Seventeenth Street
Denver, Colorado 80265

SUBJECT: AMENDMENT 8 TO SOURCE MATERIAL LICENSE SUA-1358, WHITE MESA URANIUM MILL - MODIFICATIONS TO TAILINGS IMPOUNDMENT LEAK DETECTION MONITORING PROGRAM

Dear Mr. Hoellen:

The U.S. Nuclear Regulatory Commission (NRC) staff has completed its review of an amendment request submitted by International Uranium (USA) Corporation (IUC) for the White Mesa uranium mill. By letter dated January 9, 1998, IUC requested approval of a change in its tailings impoundment leak detection monitoring program, as currently required under License Condition No. 11.3 of NRC Source Material License SUA-1358. IUC amended its application by letters dated February 26 and September 14, 1998, in response to comments from, and discussion with, the staff. Based on its review, the NRC staff finds this request acceptable with slight modifications. These modifications were agreed to by IUC by telephone on July 16 and September 2, 1998.

The details of IUC's amendment request are discussed in the staff's Technical Evaluation Report (TER). The TER documents the basis for the staff's approval of this request and is provided as Enclosure 1.

Therefore, pursuant to Title 10 of the Code of Federal Regulations, Part 40, NRC Source Material License SUA-1358 is hereby amended by revising License Condition No. 11.3. All other conditions of this license shall remain the same. The license is being reissued to incorporate the above modification (Enclosure 2). An environmental review was not performed since this action is categorically excluded under 10 CFR 51.22(c)(11).

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if you have any questions regarding this letter or the enclosures, please contact Mr. James Park, the NRC Project Manager for the White Mesa site, at (301) 415-6699.

Sincerely,

[Signed by]

Joseph J. Holonich, Chief
Uranium Recovery Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

Docket No. 40-8681
SUA-1358, Amendment No. 8
Case Closed: L51010

Enclosures: As stated (2)

cc: W.Sinclair, UT
M.Rehmann, IUC
C.Crist, Ute Mountain Ute Tribe EPA

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If you have any questions regarding this letter or the enclosures, please contact Mr. James Park, the NRC Project Manager for the White Mesa site, at (301) 415-6699.

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Joseph J. Holonich, Chief
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Division of Waste Management
Office of Nuclear Material Safety
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Docket No. 40-8681
SUA-1358, Amendment No. 8

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cc: W.Sinclair, UT
M.Rehmann, IUC
C.Crist, Ute Mountain Ute Tribe EPA

TECHNICAL EVALUATION REPORT

DOCKET NO. 40-8681 LICENSE NO. SUA-1358

LICENSEE: International Uranium (USA) Corporation

FACILITY: White Mesa Uranium Mill

PROJECT MANAGER: James Park

TECHNICAL REVIEWERS: Michael Layton

SUMMARY AND CONCLUSIONS:

As part of the corrective actions taken in response to a Notice of Violation issued by NRC on August 12, 1997, International Uranium (USA) Corporation (IUC) requested an amendment to Source Material License No. SUA-1358 for the White Mesa uranium mill. By letter dated January 9, 1998, IUC requested approval of a change in its tailings impoundment leak detection monitoring program, as currently required under License Condition No. 11.3 of SUA-1358. IUC amended its application by letters dated February 26 and September 14, 1998, in response to comments from, and discussion with, the staff.

The staff has reviewed IUC's proposal and finds it acceptable with slight modifications. These modifications were discussed with IUC and agreed to in telephone calls on July 16 and September 2, 1998.

DESCRIPTION OF LICENSEE'S AMENDMENT REQUEST:

By letter dated January 9, 1998, IUC requested an amendment to SUA-1358 to modify the tailings impoundment leak detection monitoring program as currently required under License Condition No. 11.3.

By this submittal, IUC proposed the following monitoring program:

1. Weekly measurements of the depth to fluid in the leak detection standpipes would be taken for each disposal cell. If sufficient fluid is present to pump, then IUC would pump the fluid out, record the volume of fluid recovered, and return the fluid to the same or another disposal cell.

2. The estimated flow rate through the disposal liner would be calculated by dividing the volume of fluid recovered by the elapsed time since the standpipe was pumped last. An estimated flow rate of one gallon or more per minute would be an indication of potential liner distress.

3. If potential liner distress is identified, then IUC would evaluate and report contributing causes and, if appropriate, increase the sampling frequency of the point-of-compliance

(POC) wells on the down-gradient edge of the disposal area in a manner and duration as warranted by the report.

Following discussions with the NRC staff by telephone, IUC modified its proposal, by letters dated February 26 and September 14, 1998, in response to the staff's comments. IUC proposed that, following pumping from the standpipe, the fluid would be analyzed for the POC parameters (chloride, potassium, nickel, and uranium) and pH, if this was the first time that fluid ever had been recovered from the standpipe.

If these analyses indicated that the likely source of the fluid was the disposal cell, either by elevated levels of the POC constituents or by a pH level below 5.0, then IUC would calculate the estimated flow rate and analyze for potential liner distress as described in Item 2 above. If the analyses did not point to the cell as the likely source, then IUC proposed to analyze any recovered fluid from that cell on an annual basis for the POC parameters and pH, as positive confirmation that the fluid was not originating from that cell.

TECHNICAL EVALUATION:

In general, the staff finds IUC's proposed approach acceptable. The staff recognizes that monitoring of the liner leak detection system serves as an early warning of potential liner failure and does not constitute a monitoring program for initiating ground-water corrective action. The staff also agrees that the primary method of confirming liner distress or failure should be the determination of a flow rate through the liner after the origin of the fluid in the leak detection system is determined. The licensee's proposed monitoring program was evaluated by constructing a decision flow chart (Figure 1), based on information supplied by the licensee.

The licensee's approach appears to address current site conditions and potential future events. However, the staff recommended minor modifications to the licensee's proposal to address reporting requirements of 10 CFR 40.60(b), and additional measures to mitigate the potential impact from a confirmed liner failure. These included: (1) specifying the time frames for reporting leaks from an impoundment to NRC (the initial telephone report within 48 hours and a written report within 7 days); and (2) retaining the analysis results and flow-rate calculations on-site for NRC inspection. Figure 1 includes these recommended changes.

IUC agreed to these modifications by telephone on July 16 and September 2, 1998.

IUC's proposed modifications to its leak detection system monitoring program for its tailings impoundments will not impact the approved ground-water detection monitoring program for the site. IUC will continue to be required to sample the POC wells on a quarterly basis and to analyze those samples for the indicator parameters identified above. IUC has indicated that it may increase the sampling frequency of the POC wells as part of its response to an identified leak from a disposal cell. The staff will address any modification to the ground-water detection monitoring program at that time.

RECOMMENDED LICENSE CHANGE:

Pursuant to Title 10 of the Code of Federal Regulations, Part 40, Source Material License SUA-1358 will be amended by modifying License Condition No. 11.3 as follows:

11.3 The licensee shall implement a ground-water 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 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]

ENVIRONMENTAL IMPACT EVALUATION:

The change in IUC's tailings impoundment leak detection program 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).

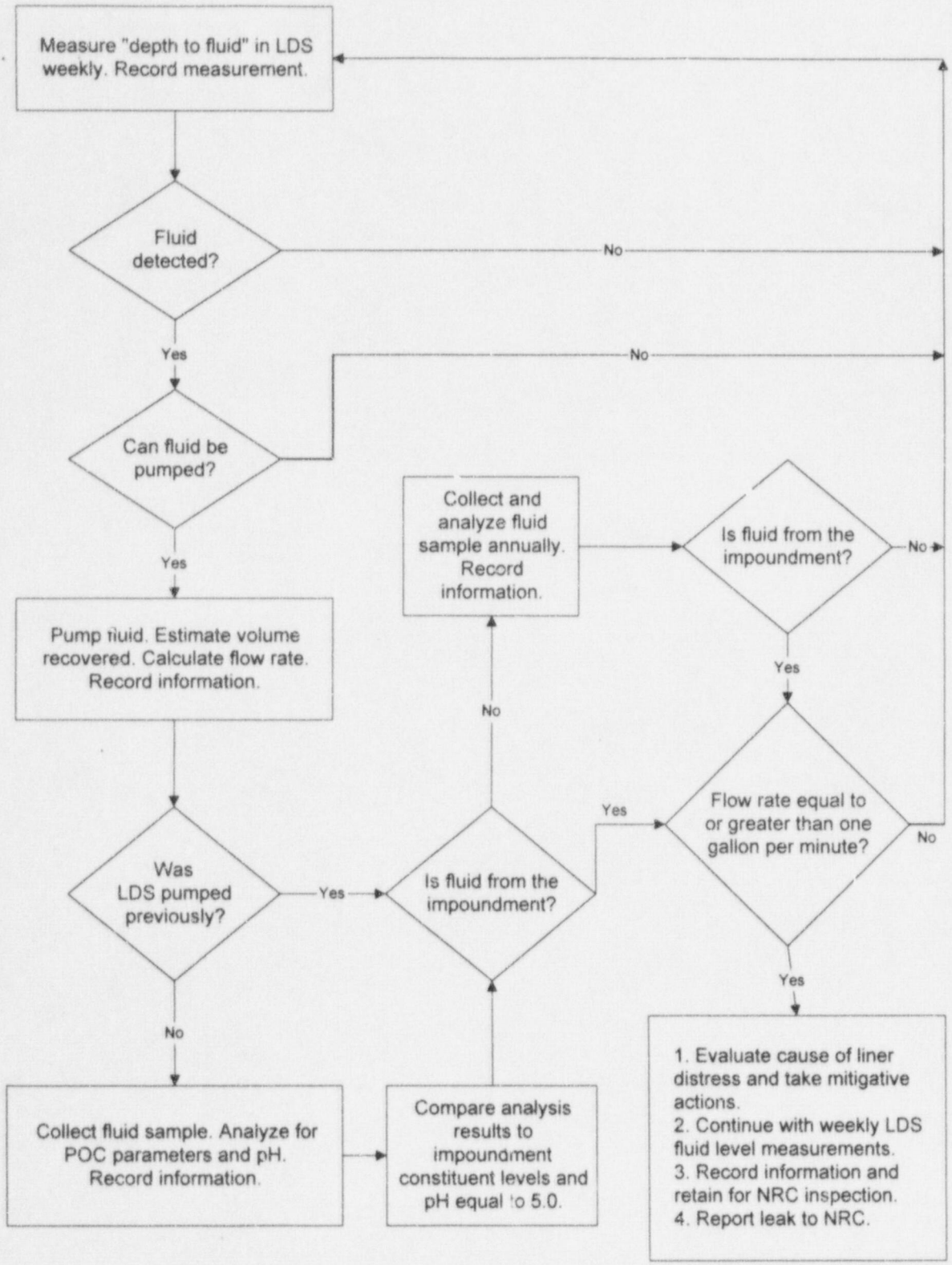

Figure 1. Flowchart of Final Revised Tailings Impoundment Leak Detection Monitoring Program