APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION

URANIUM RECOVERY FIELD OFFICE

REGION IV

Inspection Report: 40-8902/94-01

Operating License: SUA-1470

Licensee: Atlantic Richfield Company
P.O. Box 638
Grants, New Mexico 87020

Facility Name: Bluewater Mill

Inspection At: Cibola County, New Mexico

Inspection Conducted: March 29, 1994

Inspector: Raymond O. Gonzales, Senior Project Manager

Accompanying Personnel: Terry L. Johnson, NRC Headquarters
Louis C. Carson, NRC Region V

Approved: _____ 4/6/94
Edward F. Hawkins, Deputy Director Date
Uranium Recovery Field Office

Inspection Summary

Areas Inspected: Routine, announced inspection regarding uranium mill tailings reclamation and site decommissioning at the ARCO Bluewater Mill.

Results:

A tour of the site and inspection of the construction control program indicate that site reclamation is proceeding on schedule. The licensee continues to maintain an exceptional quality assurance and quality control program to assure that the site is being reclaimed according to the approved plans and specifications.

Summary of Inspection Findings:

No violations or deviations were identified by the inspector for the areas reviewed.

Attachments:

Attachment - Persons Contacted and Exit Meeting

DETAILS

1 SITE STATUS

The licensee is in the process of reclaiming three tailings disposal areas at the Bluewater Mill site. These include the Main Tailings Pile, Acid Tailings Area, and Carbonate Tailings Area. Since the previous inspection, major work activities which have been completed include (1) reshaping the outslopes of the Main Tailings Pile embankment to a 5H:1V configuration except on the north side, where the design has been revised due to the proposed relocation of a buried natural gas pipeline, and (2) placement of the radon attenuation barrier on the sand portion of the Main Tailings Pile and on the Carbonate Tailings Area.

At the time of the inspection, the licensee was in the process of plugging up holes on the surface of the Main Tailings Pile that contain wicks which were installed to accelerate settlement of the tailings. In addition, rock to be used for erosion protection was being crushed at a quarry near the Homestake Uranium Mill.

1. MANAGEMENT ORGANIZATION AND CONTROLS (88005)

The Project Manager is the highest ranking ARCO official onsite. The Project Engineer and the Radiation Safety Officer (RSO) report to the Project Manager. The RSO is assisted by a Health Physics Supervisor and several technicians. Similarly, the Project Engineer receives support from a contractor.

The reclamation work at the site is being performed by contractors under direct ARCO supervision. In addition, an independent contractor performs the required quality control testing to assure that the site is being reclaimed according to the approved plans and specifications.

The inspector concluded that the licensee's program in this area was being conducted in accordance with license requirements.

2. RADIOACTIVE WASTE MANAGEMENT (88035)

The inspector and accompanying NRC personnel toured the tailings area. It was observed that a berm has been constructed at the downgradient (north side) of the Main Tailings Pile to assure that rainfall runoff is contained within the tailings pile. This berm is necessary as the licensee has decided to relocate a gas pipeline that runs through the site. Once the pipeline is relocated, the embankment outslopes on the north side of the Main Tailings Pile will be reshaped to a 5H:1V configuration and the berm will be removed. The contaminated soils within the pipeline right of way will be picked up and disposed of in the Acid Tailings Area.

Also observed was the contractor activity of plugging the holes containing the wicks that were installed to accelerate settlement of the tailings. This was being accomplished by pushing the wicks into the holes using a hydraulic steel mandrel driver and filling the holes with soil cement grout. Rock crushing

operations at the quarry located near the Homestake Mill were observed. Based on a visual evaluation of the stockpiled rock it appears that the rock will meet NRC durability criteria.

Of the seven lined evaporation ponds that were utilized during operation, six have been dried out and the liners and underlying contaminated soils have been removed and buried in the Main Tailings Pile. The remaining pond is being kept open for storage of liquids such as runoff and wash water. When the pond is no longer needed, the liner and contaminated subsoils will be removed and disposed in the Acid Tailings Area.

The construction quality control program was inspected by selecting examining records and procedures. The following records were reviewed.

- Daily Construction Reports - These reports document volumes of material placed and the number of field soil tests performed.

- Monthly Reports - These reports summarize daily field reports, laboratory reports, compaction testing data, soil classification data, and soil density test results (the licensee has opted to use the sandcone apparatus exclusively for field density testing). All tests are certified as being correct by a registered professional engineer.

The approved reclamation plan specifications require that in-place density and moisture tests for radon barrier materials be performed at a frequency of at least one test per 1000 cubic yards placed. These test are performed to ensure that the radon barrier is compacted to at least 95 percent of maximum dry density at a moisture content within plus of minus 3 percent of optimum moisture. In addition, Proctor compaction and soil classification testing must be performed a frequency of at least one test per 7500 cubic yards placed. The inspector did not review all of the records due to their voluminous nature. However, a random selection of representative records indicated that the specified testing requirements are being met or exceeded.

No deficiencies were noted during the inspector's review of quality control and assurance records.

The design of the proposed rock erosion protection for the tailings pile was discussed. The licensee is proposing a revision to the approved design to better utilize the material being produced at the quarry. It was concluded that the proposed design may be acceptable provided that additional QA/QC procedures are performed to assure that the appropriate rock thickness is placed. These could include maintaining accurate rock volume records, performing additional thickness checks than what is presently required, developing a test plot area prior to rock placement to confirm that the methods to be used for rock placement will result in an acceptable final product, providing photographs to document rock placement, performing elevation surveys on the radon cover surface prior to and after rock placement. ARCO will also work with the rock quarry operator to try to eliminate the fine materials in the rock mixture.

ATTACHMENT

1 PERSONS CONTACTED

1.1 Licensee Personnel

*R. Ziegler, Project Manager
*C. Sanchez, Project Engineer
*N. Patel, Radiation Safety Officer

1.2 Contractor Personnel

*S. Anderson, Anderson Engineering
K. Baker, Health Physics Consultant

1.3 NRC Personnel

*Terry L. Johnson, Headquarters
*Louis C. Carson, Region V

* Denotes personnel that attended the exit meeting

2 EXIT MEETING

An exit meeting was conducted on March 29, 1994. During this meeting, the inspectors reviewed the scope and findings of the inspection. The licensee did not identify as proprietary any information provided to or reviewed by the inspector.

NRC FORM xxx (9-91) U.S. NUCLEAR REGULATORY COMMISSION

IFS Data Entry Form

Reviewed By: _____

Date: 4/6/94

SPECIFY CATEGORY (Check One) Page 1 of 1

____ Reactor/Vendor Inspection (IFS Option 1)
Items Opened (Y/N): ____

X Material Inspection (IFS Option 2)
SRI (Y/N): N
Letter (Y/N): Y
Clear (Y/N): Y

____ Docket Related/P21 Items (IFS Option 4)
Enter Log Number: ____

____ LER Items (IFS Option 5)
Enter LER Number: ____

____ Non-Docket Related Items (IFS Option 6)

Site/Name: ARCO-Bluewater Mill

Report Transmittal Date: 4,6,94

Lead Inspector: [ ] Responsible Org. Code: 4302 Report End Date: __/__/__ Region: 4

	Report NBR	Docket NBR	Materials Only License NBR	*Docket Name
A	94-01	40-8902	SUA-1470	
B				
C				

Update? (Y/N): ____ Opened IR/LER/P21 LOG/IFS Number: _____

***Sequence NBR: 01 Item Type: _____ **Severity: _____ **Supplement: _____, _____

	Status	*UPD I/R	*Proj. Closeout	*Actual Closeout	Materials Only 10 CFR	License Cond.	Tie Down
A			__/__/__	__/__/__			
B			__/__/__	__/__/__			
C			__/__/__	__/__/__			

Title: _____ (55 character width)

*Closeout Org: _____ *Closeout EMP: _____ *Contact EMP: _____ *Procedure: _____ *Functl Area: _____, _____

*Cause CD: ___, ___ **EA Number: _____ **NOV/NNC Issue Date: __/__/__

Text: _____

Update? (Y/N): _____ Opened IR/LER/P21 LOG/IFS Number: _____

***Sequence NBR: 02 Item Type: _____ **Severity: _____ **Supplement: _____, _____

	Status	*UPD I/R	*Proj. Closeout	*Actual Closeout	Materials Only 10 CFR	License Cond.	Tie Down
A			__/__/__	__/__/__			
B			__/__/__	__/__/__			
C			__/__/__	__/__/__			

Title: _____ (55 character width)

*Closeout Org: _____ *Closeout EMP: _____ *Contact EMP: _____ *Procedure: _____ *Functl Area: _____, _____

*Cause CD: ___, ___ **EA Number: _____ **NOV/NNC Issue Date: __/__/__

Text: _____

* Optional Fields.

** Severity, Supplement, and NOV/NCC only applicable for Violations; EA Number only applicable for Apparent Violations.

*** Sequence NBR is not applicable for docket related/P21, LER, or non-docket related items.

ITEMS CONTINUED? (Y/N): N