APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION URANIUM RECOVERY FIELD OFFICE REGION IV

Inspection Report: 40-8907/93-01

License: SUA-1475

Licensee: UNC Mining and Milling Division of United Nuclear Corporation P.O. Box 3077 Gallup, New Mexico 87305-3077

Facility Name: Church Rock Mill

Inspection At: McKinley County, New Mexico

Inspection Conducted: May 6, 1993

Inspector: Gary R. Konwinski, Project Manager

Approved:

Eduard te

Edward F. Hawkins, Deputy Director Uranium Recovery Field Office Region IV

5/17/93

Inspection Summary

<u>Areas Inspected</u>: Routine, announced inspection of uranium mill decommissioning operations and radiation safety program including: Management Organization and Controls/Operations Review; Operator Training/Retraining; Radiation Protection; Radioactive Waste Management; Transportation of Radioactive Materials; Emergency Preparedness; and Environmental Protection.

Results:

The inspector noted that UNC Mining and Milling had an adequate radiation protection program for the level of activity at the facility. Decommissioning of the mill structures was completed as specified in the mill decommissioning report.

Attachments:

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Attachment - Personnel Contacted and Exit Meeting

DETAILS

1 PLANT STATUS

During this inspection period, UNC Mining and Milling (UNC) had completed mill decommissioning. In response to this, UNC had submitted a comprehensive decommissioning report to the NRC. This report was reviewed prior to the inspection. Final mill site soil decontamination had taken place, with the contaminated soils being transported to Borrow Pit 2 for long-term disposal. The inspector noted that the ground-water corrective action program, consisting of seepage recovery wells and the spray evaporation system, was functioning during the site tour.

2 MANAGEMENT ORGANIZATION AND CONTROLS/OPERATIONS REVIEW (88005, 88020)

The licensee had not made any changes to the organizational structure since the last inspection. The operations and controls at the site continued to function in much the same manner as they have in the past. The General Manager (GM) was the highest ranking corporate official onsite. The GM also served as the site Radiation Safety Officer (RSO) and reports directly to the President. There was one Radiation Safety Technician (RST) onsite who reports directly to the GM/RSO. The licensee has a total of 10 employees onsite and used contractor personnel for large tasks such as decommissioning and reclamation work. No contractors had been onsite during 1993; however, an earth moving contractor is expected to begin work in July.

Decommissioning activities performed since the last inspection involved removal of contaminated soils that were adjacent to the mill area fence as well as similar soils that were in the road ditch. The mill site had been completely cleared of all process related buildings. Remaining buildings on the 20-acre site include the office building as well as buildings which house the laboratory, shop, and change area. In addition to these buildings, the domestic water and fire water supplies remain at the site as do the power lines and a waste oil tank.

The mill site tour indicated that final grading of the area had been completed. The inspector conducted a gamma survey of the area and found all readings to be in the 15 to 25 μ R/hr range. Soil samples taken by UNC indicate that the site has achieved appropriate decontamination levels; however, UNC plans to conduct a final survey during late summer. During this process, NRC will split soil samples to verify the Ra-226 levels at the former mill site.

Written procedures maintained by the licensee were reviewed by the inspector. The content of the procedures was appropriate for the status of the facility. The GM/RSO had reviewed each procedure annually as required by License Condition No. 20. The procedures were made available to all workers on an as-need basis. Most decommissioning tasks were completed under radiation work permits. The content of the permits appeared to be sufficient to perform the work. Radiation monitoring conducted prior to, during, and after the job was noted to be appropriate. The GM/RSO issued all radiation work permits.

The inspector noted that the fence marking the restricted area was properly posted. The licensee had recently dismantled the old restricted area fence to allow removal of tailings that were under or adjacent to it. Following this, UNC constructed a new restricted area fence which was observed to be properly posted. The inspector also noted that the appropriate postings as required by 10 CFR 19 were on the bulletin board in the main office complex.

3 OPERATOR TRAINING AND RETRAINING (88010)

No radiation safety training had been completed since the previous inspection. UNC is planning to conduct this training in June of 1993, when earthmoving contractors will be at the site.

During the previous inspection, it was noted that a contract office worker had not received radiation protection training. This situation occurred because she remained in the office at all times. The licensee indicated that this person would participate in the June 1993 training.

4 RADIATION PROTECTION (83822)

The radiation protection program at the mill was less intensive than during previous inspections. This was primarily due to the removal of all contaminated process facilities and the covering of the byproduct disposal areas with an interim cover. These activities have isolated potential sources of radiation from the sites' workers. Interviews with staff and a review of the records indicated that appropriate radiation safety requirements were being achieved.

4.1 Internal Exposure Determination

The inspector reviewed records of the internal exposure determination program. Samples were collected continuously from six locations using Eberline RAS-II pumps calibrated to draw from 55 to 60 liters per minute (lpm). The samples were counted using an alpha scintillation counter, and the collection system was calibrated annually by the manufacturer.

Personal air samplers were used for jobs where the licensee wanted to determine the exposure for one person or small groups of people doing the same job. Calibrations were done prior to each sampler's use, and the flow meter was calibrated annually. All filters were counted for gross alpha using an alpha scintillation counter. The licensee, in determining a conservative concentration, adds both the RAS-II and the personal air sample results together.

Radon daughter samples were collected quarterly at seven locations. The samples were collected and analyzed using an instant working level meter. The working level meter was calibrated prior to each use.

A review of the data indicated that uranium levels were small percentages of the maximum permissible concentration (MPC). The highest quarterly exposure calculated at less than 1 MPC-hour. This value was assigned to a worker that has maintenance responsibilities in the tailings area. Radon daughter concentrations were noted to be low, with the highest concentration reported at 0.02 working levels.

4.2 Bioassay and Respiratory Protection

The inspector reviewed the bioassay program in effect at the facility during the post decommissioning period. Standard operating procedure included testing workers for urinary uranium at least monthly, which included entrance and exit samples for all contract personnel. Samples were analyzed by a vendor laboratory which used a lower limit of detection of 5 μ g/l. All sample shipments included a blank and a spiked sample for quality assurance. The licensee used an action level of 15 μ g/l. A review of the bioassay data indicated that all results since the last inspection were less than 15 μ g/l.

The inspector reviewed the respiratory protection program at the facility. The licensee maintains a program but had not issued a respirator since the last inspection. A review of the existing records indicated that issuance forms, fit tests, training, and medical certification were properly conducted.

4.3 External Exposure Control

All licensee and contractor employees working within the restricted area were provided thermoluminescent dosimeters which were exchanged quarterly. Dosimeters were also collected from contract personnel at the end of their work onsite. A review of the data indicated that exposures were very low, often less than the lower limit of detection.

4.4 Contamination Control

Control of personnel contamination was achieved by requiring all workers to either shower or monitor themselves prior to leaving the restricted area. Monthly spot checks of personnel leaving the site were performed by the radiation safety department. A review of the documentation indicated no areas of concern. The highest reading observed was 118 dpm/100 cm² on a bench located with the Security Building change room.

The licensee performed monthly contamination surveys of the change room and eating room used by workers within the restricted area. The surveys were performed using survey meters to determine the level of removable and fixed contamination. The action level specified in the license is 1000 dpm/100 cm². A review of the data indicated no areas of concern.

5 RADIOACTIVE WASTE MANAGEMENT (88035)

The licensee had their spray evaporation system in operation during the site tour. The system appeared to be functioning adequately, and the GM felt that they were making good progress. The inspector did note that standing water was evident on the south tailings area. The GM stated that UNC was considering approaching the NRC with a proposal to recontour this area to allow better drainage of rain water.

The GM/RSO conducted weekly inspections of the tailings area to evaluate the effectiveness of control measures for blowing tailings. With the cleanup of the catch basins and the ore storage pad in 1992, no areas of exposed tailings remained, although future reclamation activities may expose some covered areas.

6 TRANSPORTATION OF RADIOACTIVE MATERIALS (86740)

The licensee had not transported any radioactive materials since the last inspection, with the exception of routine haulage of byproduct contaminated soils across the public road for burial in Borrow Pit No. 2. Records of this work indicated that it was performed in accordance with license conditions.

7 EMERGENCY PREPAREDNESS (88050)

Since the mill structure has been decommissioned, the licensee no longer maintains a formal emergency procedure. The inspector did note a revised set of telephone numbers to contact in case of fire or injury was maintained on the employee bulletin board.

The licensee does not have an ambulance onsite for the transportation of injured personnel. They rely on facilities at Fort Wingate, 11 road miles to the east, or Gallup, 17 road miles to the southwest. First aid kits were maintained onsite by the licensee. All employees were trained in first aid response.

8 ENVIRONMENTAL PROTECTION (88045)

The licensee maintained four environmental monitoring stations. Continuous air particulate monitors, radon samplers, and environmental thermoluminescent dosimeters were located at each monitoring site. Radon sampling was done by using an alpha track system with cup exchanges quarterly. Environmental thermoluminescent dosimeters were exchanged twice annually. Vegetation and soil samples were collected annually. The licensee also monitored numerous ground-water wells within the vicinity of the tailings impoundment. One environmental station was visited during the site tour and observed to be operational.

Environmental monitoring data were submitted to the NRC in accordance with 10 CFR 40.65 and the license. A review of the data for air particulates, radon daughters, and direct gamma indicated that the values obtained from each monitoring station were small fractions of the allowable maximum permissible concentration. Soil and vegetation sample results were also reviewed, and no concerns were noted.

ATTACHMENT

1 PERSONS CONTACTED

1.1 Licensee Personnel

E. Morales, general Manager/Radiation Safety Officer M. Chischilly, Radiation Technician

1.2 NRC Personnel

G. Konwinski, Project Manager

The personnel listed above attended the exit meeting.

2 EXIT MEETING

An exit meeting was conducted on May 6, 1993. During this meeting, the inspector reviewed the scope and findings of the inspection. The licensee did not identify as proprietary any information provided to or reviewed by the inspector. The licensee did state that several license conditions discuss mill-related aspects of the site. Because the mill and all process components are decommissioned, the licensee is considering requests for revisions to their license to delete requirements no longer applicable.

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