



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

June 7, 2001

Mr. Steve Cline
Manager, Remediation/Transactions
GE Engine Services
640 Freedom Business Center
King of Prussia, PA 19406

SUBJECT: NRC INSPECTION REPORT 40-8907/01-01

Dear Mr. Cline:

An NRC inspection was completed on May 9, 2001, at your former Church Rock Uranium Mill site located in McKinley County, New Mexico. The enclosed report presents the scope and results of that inspection.

The inspection consisted of a routine review of site status, decommissioning and reclamation activities, radiation protection, construction, radioactive waste management, and environmental monitoring. The inspection findings were presented to you and other members of your staff at the conclusion of the onsite inspection. The enclosed report presents the results of that inspection.

Based on the results of this inspection, no violations or deviations were identified; therefore, no response to this letter is required.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available **electronically** for public inspection in the NRC Public Document Room **or** from the *Publicly Available Records (PARS) component of NRC's document system (ADAMS)*. *ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/NRC/ADAMS/index.html>* (the Public Electronic Reading Room).

Should you have any questions concerning this inspection, please contact Mr. Louis C. Carson II at (817) 860-8221 or the undersigned at (817) 860-8186.

Sincerely,

/RA/

Charles L. Cain, Chief
Nuclear Materials Licensing Branch

Docket No.: 40-8907
License No.: SUA-1475

Enclosure:
NRC Inspection Report
40-8907/97-01

cc w/enclosure:

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ENCLOSURE

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket No.: 40-8907

License No.: SUA-1475

Report No.: 40-8907/01-01

Licensee: United Nuclear Corporation

Facility: Former Church Rock Uranium Mill

Location: McKinley County, New Mexico

Date: May 9, 2001

Inspector: Louis C. Carson II, Health Physicist

Accompanied by: Terry L. Johnson, Surface Water Hydrogeologist
Uranium Recovery Section
Division of Fuel Cycle Safety & Safeguards
Office of Nuclear Material Safety and Safeguards

Approved By: Charles L. Cain, Chief
Nuclear Materials Licensing Branch

Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY
Former Church Rock Uranium Mill
NRC Inspection Report 40-8907/01-01

This inspection included a review of the decommissioning, site status, management organization and controls, radiation protection, construction, radioactive waste management, and environmental monitoring.

Management Organization and Controls Review

- No changes had been made to the organizational structure since the last inspection. The site staffing was appropriate for the amount of work in progress at the facility (Section 2).

Radiation Protection

- Site fences and gates were secure, in good condition, and posted with the appropriate radioactive material signs (Section 3).
- The licensee had implemented a radiation protection program that met requirements of 10 CFR Part 20 and the license (Section 3).
- Program areas deemed satisfactory included the training, equipment release, instrument calibrations, and radiation work permit programs (Section 3).

Radioactive Waste Management and Environmental Monitoring

- The NRC's geotechnical review will determine whether significant problems to the tailings impoundment construction or erosion controls have resulted in damage or deterioration that needs further repair (Section 4).
- The licensee's implementation of its radioactive waste management and environmental monitoring programs appeared effective and satisfied the applicable regulatory requirements and license conditions (Section 4).
- All reports related to the groundwater and environmental monitoring programs had been submitted to NRC as required. A review of the reports revealed that releases of radioactive materials to the environment were within regulatory limits during year 2000 (Section 4).

Report Details

1 Decommissioning Inspection Procedure for Uranium Mill Sites (87654), Operations Review (88020), and Site Status

United Nuclear Corporation's (UNC) Church Rock uranium mill operated between 1977 and 1982. Reclamation of the site began in 1984. The mill was decommissioned in 1992, and the NRC released the mill site and buildings in 1995 by License Amendment 21. At the time of the inspection, the site's restricted area was limited to the tailings area.

Site reclamation activities since the last NRC inspection included groundwater corrective action and evaporation pond operations. Two lined evaporation ponds encompassing approximately 17 acres were in use for groundwater remediation. Each pond has the capacity of 7.5 million gallons of water. The licensee operated an evaporation mist system at these ponds until August 2000. Licensed activities in progress during this inspection also included groundwater monitoring and well maintenance. Site structures consisted only of office buildings. Except for the evaporation ponds, the placement of the final radon barrier was complete over the tailings area (approximately 110 acres).

2 Management Organization and Controls (88005)

2.1 Inspection Scope

The organizational structure was reviewed to ensure that the licensee had established an organization with defined responsibilities and functions.

2.2 Observations and Findings

The UNC staff consisted of four full-time employees and one part-time employee. The general manager was the highest ranking official onsite. The site also had a radiation safety officer (RSO). No changes had been made to the organizational structure since the last inspection in July 1999. The site organizational structure met license requirements and was appropriate for the activities onsite.

2.3 Conclusions

Site staffing was deemed appropriate for the amount of work in progress at the facility.

3 Radiation Protection (83822)

3.1 Inspection Scope

This portion of the inspection determined if the licensee's radiation protection program was conducted in compliance with the license and 10 CFR Part 20 regulations. Areas inspected included equipment releases, radiation work, licensed material security, fence line postings, radiation work permits (RWPs), and radiation protection training records.

3.2 Observations and Findings

During the inspectors' tour, fences and gates were observed to be in good condition and were properly posted. The inspectors determined that licensed material was secure within the site property as required by 10 CFR 20.1801 and fences were posted with radioactive material signs as required by 10 CFR 20.1902. The inspectors performed a limited independent radiological survey using an NRC-issued microRoentgen meter (Serial Number 15544, calibration due date of November 29, 2001) that was calibrated to radium-226. Gamma exposure rate measurements obtained by the inspectors around the site ranged from 15 to 150 microRoentgen/hour at the evaporation ponds.

License Condition 11 requires that equipment or packages being released from restricted areas be surveyed for radioactive contamination. The inspector's review of records since the last inspection revealed that the licensee had not released equipment from the site during year 2000. The inspectors determined that the free release survey procedure in place was in accordance with the license and satisfied NRC's residual contamination guidelines.

License Condition 18 specifies that various documents relating to the radiation protection program must be maintained. The inspectors reviewed records relating to instrument calibrations, personnel training, employee exposures, and equipment releases. No oversights in documentation were noted. Calibration records for radiological survey instruments were current. Radiological survey instruments observed onsite had current instrument calibration stickers affixed.

The inspectors confirmed that the licensee had conducted training annually for all employees. The inspectors reviewed year 2000 training records for workers including copies of written examination results, and the topics discussed. The inspectors concluded that the training of UNC personnel was sufficient to cover current operations.

License Condition 21 requires the use of RWPs for work not covered by standard operating procedures in restricted areas or areas where the significant potential for exposure to radioactive materials exists. The inspectors determined that no RWPs were issued during this inspection interval, which was appropriate for the activities at the UNC site. The inspectors concluded that no significant potential for exposure to radioactivity existed onsite, presently.

3.3 Conclusions

The licensee had implemented a radiation protection program that satisfied the requirements established in 10 CFR Part 20 and the license. Site fences and gates were secure, in good condition, and had appropriate radioactive material postings. Program areas deemed satisfactory included the training, equipment release, instrument calibrations, and radiation work permit programs

4 Onsite Construction (88001), Radioactive Waste Management (88035) and Environmental Protection (88045)

4.1 Inspection Scope

The onsite construction, radioactive waste management, and environmental monitoring programs were reviewed to assess the effectiveness of the licensee's programs, and to evaluate the site's effects, if any, on the local environment.

4.2 Observations and Findings

a. Inspection of Onsite Construction and Site Features

In a report dated July 6, 2000, the licensee documented that damage had occurred to some of the site's contoured erosion control features during a 1999 flood. The purpose of this inspection was for NRC staff to followup on that report and determine if licensee actions were effective regarding repairs or reevaluation of the completed construction.

During the inspection, NRC inspectors made the following five observations regarding damage to the tailings impoundment and contoured features:

- Some sediment appeared to have been deposited in the on-pile channels and in the other diversion channels.
- The slopes of the diversion berm appeared to be in a deteriorated condition caused by erosion and sloughing.
- Some areas of the soil cover did not appear to have sufficient rock mixed in with the soil in the rock/soil matrix.
- Some rocks in the rock piles along Pipeline Arroyo had been moved by the flood.
- A gully had occurred on the side slope of the tailings pile at the southern end.

The NRC inspectors discussed the above site observations with the licensee. The inspectors indicated that no conclusions had been reached and that the NRC would review license reports of the construction and design of the areas noted above. The NRC's geotechnical review will determine whether significant problems to the tailings impoundment construction or erosion controls have resulted in damage or deterioration that needs further repair.

b. Radioactive Effluents and Environmental Monitoring

License Conditions 12 and 30 require that results of effluent and environmental monitoring be reported to NRC on a semi-annual basis. The semi-annual effluent reports for year 2000 were reviewed by the inspectors. The reports were dated February 22 and August 28, 2000, respectively. In addition to environmental monitoring results, the license provided for review copies of the routine tailings area and environmental inspection records. The licensee's environmental monitoring program consisted of ambient gamma exposure measurements, air particulate counting, environmental inspection reports, map locations, and groundwater sampling.

Groundwater remediation has been the primary activity at the Church Rock site since the last inspection. License Condition 30 requires that a groundwater compliance monitoring program and corrective action program be implemented. The groundwater compliance program consisted, in part, of sampling at compliance wells for a number of chemical and radiological constituents. A review of laboratory documentation revealed that the licensee had obtained the groundwater samples required by the license. The inspectors noted that the licensee had used a contract laboratory for the radiological and non-radiological sample analyses. According to UNC's semi-annual quality assurance report for groundwater monitoring, dated February 21, 2001, the contract laboratory was certified acceptable by the Environmental Protection Agency's quality assurance program.

The inspectors concluded that the licensee had effectively implemented the radioactive waste management and environmental monitoring programs in accordance with the license. The environmental monitoring data results and site activities indicated that potential doses to the nearest member of the public were maintained well below the 100 millirem/year dose limit.

License Condition 31 requires that the licensee submit an "Annual Land Use Survey Report," which describes any significant land use changes by private owners of property located within 5 miles of the site. The inspectors reviewed the licensee's years 1999 and 2000 land use reports that were submitted to the NRC on March 20, 2000, and March 22, 2001, respectively. The licensee's reports did not identify any significant changes that had occurred for uses of residential and non-residential properties, grazing lands, and water supplies. The inspectors determined that the licensee's reports satisfied the license requirement.

4.3 Conclusions

The NRC's geotechnical review will determine whether significant problems to the tailings impoundment construction or erosion controls have resulted in damage or deterioration that needs further repair. All reports related to the groundwater and environmental monitoring programs had been submitted to the NRC as required. A review of the reports revealed that releases of radioactive materials to the environment were within regulatory limits during the inspection period.

5 Exit Meeting Summary

An exit meeting was conducted at the conclusion of the inspection on May 9, 2001, and the inspectors reviewed the scope and findings of the inspection. Licensee representatives acknowledged the findings as presented. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspectors.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

Larry Bush, President & General Manager
Max Chischilly, Radiation Safety Officer

Department of Energy Grand Junction, Colorado Office

Mark Reed, Consultant
Art Rleinrath, Long-Term Surveillance Project Manager
Micheal Widdop, Consultant

INSPECTION PROCEDURES USED

IP 83822: Radiation Protection
IP 87654: Decommissioning Procedure for Uranium Mill Sites
IP 88005: Management Organization and Controls
IP 88020: Operations Review
IP 88035: Radioactive Waste Management
IP 88045: Environmental Protection
IP 88001: Onsite Construction

ITEMS OPENED, CLOSED AND DISCUSSED

Opened: None

Closed: None

Discussed: None

LIST OF ACRONYMS USED

RSO	Radiation Safety Officer
RWP	Radiation Work Permits
TLD	Thermoluminescent Dosimeter
UNC	United Nuclear Corporation