



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-4005**

October 4, 2004

Mr. William C. Salisbury
American Nuclear Corporation
P.O. Box 2713
Casper, Wyoming 82602

SUBJECT: NRC INSPECTION REPORT 040-04492/04-001

Dear Mr. Salisbury:

On July 19, 2004, the NRC completed an inspection at the site of your former Gas Hills uranium milling facility. The enclosed report presents the results of that inspection.

The inspection was an examination of activities conducted under the license as they relate to radiation safety and to compliance with the Commission's rules and regulations and the conditions of the license. In addition, the inspection was an examination of the reclamation related activities being conducted under your license. The inspection findings were discussed with the State of Wyoming, Department of Environmental Quality (WDEQ) representative at the conclusion of the onsite inspection. A telephonic exit was conducted on September 20, 2004, with the WDEQ representative after final review of additional information submitted to the NRC on September 1, 2004, by the WDEQ. The enclosed report presents the results of that inspection.

No violations were identified during the inspection; therefore, no response to this letter is required.

In accordance with 10 CFR 2.390 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/reading-rm/adams.html> (the Public Electronic Reading Room).

American Nuclear Corporation

-2-

Should you have any questions concerning this inspection, please contact Ms. Judith Walker at 817-860-8299 or myself at 817-860-8197.

Sincerely,

/RA/

Jack E. Whitten, Chief
Nuclear Materials Licensing Branch

Docket No.: 040-04492

License No.: SUA-667

Enclosure:

NRC Inspection Report 040-04492/04-001

cc w/enclosure:

Mr. Ray Burbaker, State Director
Bureau of Land Management
P.O. Box 1828
Cheyenne, Wyoming 82003

Mr. David Finley
Solid and Hazardous Waste Division
Wyoming Department of Environmental Quality
122 West 25th Street
Cheyenne, Wyoming 82002

Mr. Mark Moxley
District II Supervisor
Wyoming Department of Environmental Quality
Land Quality Division
250 Lincoln Street
Lander, Wyoming 82520-2848

Mr. Jerome Gonzalez
U. S. Department of Energy
Grand Junction Project Office
P. O. Box 2567
2597 B $\frac{3}{4}$ Road
Grand Junction, Colorado 81503

American Nuclear Corporation

-3-

Mr. Pat Mackin, Assistant Director
Systems Engineering & Integration
Center for Nuclear Waste Regulatory Analyses
6220 Culebra Road
San Antonio, Texas 78238-5166

Wyoming Radiation Control Program Director

bcc w/enclosure (via ADAMS distrib.)

BSMallett

MASatorius

JHLusher, NMSS/FCSS/FCFB

GSJanosko, NMSS/FCSS/FCFB

CLCain

JEWhitten

JLWalker

KEGardin

NMLB

MIS System

RIV Nuclear Materials File - 5th Floor

DOCUMENT NAME: S:\DNMS!\nmlb\jlw3\40449201.wpd Final r: \dnms\

To receive copy of document, indicate in box: "C" = Copy without enclosures "E" = Copy with enclosures "N" = No copy

RIV:DNMS:NMLB	C:FCDB	
JLWalker	JEWhitten	
/RA/	/RA/	
10/02/04	10/04/04	

ENCLOSURE

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket No.: 40-04492
License No.: SUA-667
Report No.: 040-04492/04-001
Licensee: American Nuclear Corporation
Facility: Former Gas Hills Project
Location: Gas Hills area, Fremont County, Wyoming
Inspection Date: July 19, 2004
Inspector: Judith L. Walker, Health Physicist
Nuclear Materials Licensing Branch
Approved By: Jack E. Whitten, Chief
Nuclear Materials Licensing Branch
Attachment: Supplemental Inspection Information

EXECUTIVE SUMMARY

American Nuclear Corporation's Gas Hills Project NRC Inspection Report 40-04492/04-001

This inspection included a review of site status and remediation; management organization and controls; site radiation protection; environmental protection; and waste management programs.

Site Status and Decommissioning for Uranium Mill Sites

- The licensee's site activities and decommissioning programs were being conducted in accordance with the remediation plan, the license, and applicable regulations for uranium mill sites (Section 1).

Management Organization and Controls

- The licensee's organization and management controls were found to be in accordance with requirements of the license. The licensee had maintained adequate oversight of reclamation activities (Section 2).

Radiation Protection

- The licensee had implemented a radiation protection program that was found to be in accordance with requirements established in 10 CFR Part 20 and the license (Section 3).
- C Site fences were determined to be in good condition. Site security and perimeter postings were appropriate (Section 3).

Environmental Protection and Radioactive Waste Management

- A review of the licensee's environmental monitoring, groundwater, and land use survey programs indicated that the licensee was in compliance with requirements of the license (Section 4).
- C Review of the licensee's documentation maintained in support of 10 CFR 40.65 semi-annual effluent reports for materials released to any unrestricted area revealed that the facility had not released any radioactive material into the environment that exceeded the limits established in 10 CFR Part 20 (Section 4).

Followup

- C When reclamation activities resume, an NRC geotechnical engineer will inspect American Nuclear Corporation's Former Gas Hill Project (ANC's) site/construction records regarding the frequency of moisture/density field tests on cover materials (Section 5).

Report Details

1 Site Status and Decommissioning Inspection Procedure for Uranium Mill Sites (87654)

1.1 Inspection Scope

The site status and decommissioning program were reviewed by the inspector to determine if the licensee's activities were being conducted in accordance with the ANC reclamation plan, the license, and applicable NRC regulations for uranium mill sites.

1.2 Observations and Findings

a. Site Status

Oversight for reclamation activities for the facility had been transferred to the State of Wyoming, Department of Environmental Quality (WDEQ). This transfer of oversight occurred because ANC had become financially insolvent in May 1994 and site reclamation activities were incomplete at that time. A Confirmatory Order between the NRC and the WDEQ describing the requirements for the remaining reclamation activities had been agreed upon by both parties and was issued by the NRC in October 1996.

The ANC licensed site encompasses approximately 550 acres of land of which approximately 80 acres consist of Tailings Pond 2 and 40 acres of Tailings Pond 1. Tailings Pond 2 reclamation activities are complete and Tailings Pond 1 activities are currently on hold. Additional onsite operations include an active groundwater recovery and corrective action program.

Future reclamation activities for Tailings Pond 1 depends on the consolidation of the tailings, resolution of groundwater issues, and the development of final reclamation designs for NRC approval. Since the last inspection in June of 2000, no site reclamation activities had been performed on Tailings Pond 1. After NRC approval of the reclamation plan for Tailings Pond 1, activities will include; (1) windblown clean-up activities; (2) capping with clay;(3) radon testing and (4) placement of rip-rap rock.

1.3 Conclusion

The inspector concluded that the site was being maintained in accordance with the ANC reclamation plan, the license, and applicable NRC regulations for uranium mill sites.

2 Management Organization and Controls (88005)

2.1 Inspection Scope

The inspector reviewed the organizational structure to ensure that the licensee had maintained an effective organization with specifically defined responsibilities and functions. The licensee's management controls in place at the time of this inspection were also assessed to evaluate the effectiveness of such controls on managing site activities.

2.2 Observations and Findings

a. Management Organization

The inspector determined that the organization structure had not changed since the previous inspection. One employee, the president of ANC, had provided limited oversight of the facility. A representative from the WDEQ had maintained compliance with the license conditions. Onsite activities performed by the WDEQ representative included maintenance of the sample stations, groundwater sampling, and oversight of the enhanced evaporation system. As of December 31, 2000, NRC had authorized the ANC site to suspend the requirements of License Condition 13, its effluent and environmental monitoring program. This suspension of monitoring activities would remain in place until three months prior to resumption of construction activities at the site. However, the NRC specified that during the suspension of License Condition 13, the WDEQ would conduct a monthly visual inspection of the site. The records confirmed that WDEQ representative inspected the site on a monthly basis.

b. Management Controls

License Condition 15 of the ANC license requires the licensee to document the results of personnel monitoring, surveys, calibrations, sampling, and audits. At the time of this inspection, the licensee was no longer required to perform personnel monitoring, surveys and instrument calibrations. Records provided for the groundwater monitoring program were reviewed. The inspector determined that the licensee's program met the intent of the license.

2.3 Conclusions

The inspector's review of the licensee's organization and management controls indicated that they had met or exceeded the requirements of the license. No change had been made to the organizational structure since the last inspection. The licensee continued to maintain adequate oversight of reclamation activities.

3 Radiation Protection (83822)

3.1 Scope

The inspector reviewed the licensee's radiation protection program to determine compliance with the license application and 10 CFR Part 20.

3.2 Observations and Findings

At the time of the inspection, no radiation work was ongoing. Personnel monitoring activities were no longer required at the site. The licensee had suspended reclamation activities of Tailings Pond 1 pending final reclamation plan review and approval by NRC staff.

License Condition 11 of the ANC license exempts the licensee from the radiological posting requirements set forth in 10 CFR 20.1902(e) that requires that the licensee to conspicuously post all entrances to the mill with the words: "Any area within the mill may contain radioactive material." The inspector observed during this inspection that the waste disposal area, mill tailings area, and the demolished mill site within the restricted area boundary were adequately posted as required by the license and 10 CFR Part 20. During the site tour, the inspector noted that security was maintained by keeping the site access gate closed to prevent unauthorized access to the property. The inspector concluded that licensed material was secure within the site property as required by 10 CFR 20.1801.

License Condition 21 of the ANC license requires that the licensee not release contaminated material above the limits specified in the "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct or Source Materials." The inspector noted that the licensee had not released any material since the last inspection.

3.3 Conclusion

The inspector concluded that the licensee had implemented a radiation protection program that was in compliance with the license and applicable portions of 10 CFR Part 20. Site fences were observed to be in good condition and perimeter postings were appropriate.

4 Environmental Monitoring (88045) Radioactive Waste Management (88035)

4.1 Scope

The inspector reviewed the licensee's environmental monitoring and radioactive waste management programs to determine compliance with applicable requirements specified in the license.

4.2 Observations and Findings

a. Site Tour

A site tour was performed by the inspector to verify that site activities were being conducted in accordance with applicable regulations and the conditions of the license. The site tour concluded that site control activities put in place by ANC were adequate to protect the health and safety of the public. The inspector toured and observed site conditions at both tailings pond areas and the decommissioned heap-leach area. The WDEQ representative explained that 90 percent of the primary tailings consolidation in Tailings Pond 1 had occurred. The inspector noted that de-watering activities for Tailings Pond 1 by the enhanced evaporation system was in operation at the time of this inspection. No problem areas were identified with these activities, and no health or safety hazard was identified during the site tour.

During the site tour, the inspector performed radiological surveys using an NRC-issued microRoentgen meter calibrated to radium-226. Exposure rate readings were 25-30 microRoentgen per hour ($\mu\text{R/hr}$) on Tailings Pond 2, 50-55 $\mu\text{R/hr}$ on Tailings Pond 1 and a background reading of 25 $\mu\text{R/hr}$ was observed.

b. Environmental Monitoring Program

License Condition 13 of the ANC license outlines the environmental monitoring program requirements. ANC's environmental monitoring program consisted of groundwater sampling, ambient air particulate sampling, and the measurement of ambient gamma exposure rates at the three sample stations. The semi-annual effluent report for calendar year (CY) 2000 was reviewed by the inspector since the NRC no longer required the licensee to submit semi-annual effluent reports after December 31, 2000. The CY 2000 semi-annual report was submitted in a timely manner and provided relevant data for the facility.

Airborne particulate samples were obtained by WDEQ at three sample stations around the ANC site. The samples were analyzed quarterly for natural uranium, radium-226, lead-210, and thorium-230 concentrations. In CY 2000, the highest sample measured was for lead-210 at the Necor Station northeast corner of the restricted area boundary.

The lead-210 concentration measured 2.0 percent of the effluent concentration limits established in 10 CFR Part 20, Appendix B, Table II. All other air particulate sample results were less than 2.0 percent of the limits observed during CY 2000. No significant trends were identified by the WDEQ.

Ambient gamma exposure rate measurements were obtained using environmental TLDs at three locations: (1) Corral Station #2 upwind of the restricted area boundary, (2) Well #13 downwind of the restricted area boundary and (3) NECORA Station northeast corner of the restricted area boundary. Background for the ANC site measured 240 millirems for the CY 2000. The WDEQ considered the Corral Station #2 to be the background station. The other stations measured 184 millirems and 135 millirems during 2000. The inspector noted that the background radiation levels and the net annual exposures from the site were well below the total effective dose equivalent limit (100 millirems per year) established in 10 CFR 20.1301 for individual members of the public.

c. Groundwater Monitoring Program

License Condition 29 of the ANC license requires, in part, that the licensee implement a groundwater compliance monitoring program. The groundwater monitoring program requires the pumping of well RW-4 from May 1 to October 31 of each year, and the licensee to report to the NRC results of pumping activities. License Condition 29 also, in part, requires the licensee to pump well RW-4 at a minimal rate of 1.5 gallons per minute (gpm) with all collected waters discharged to a non-ponding evaporative system located on the surface of Tailings Pond 1. The report for CY 2000 was submitted by letter dated December 27, 2000. The report discussed the results of the corrective action program. The licensee reported recovery rates ranging between 3.25 and 1.6 gpm respectively, from the beginning to the end of the CY 2000 season. For CYs 2001, 2002, and 2003 the licensee continued to pumping well RW-4 as required by License Condition 29.

The CY 2000 Annual Report dated April 22, 2001, indicated that the licensee had obtained groundwater samples and analyzed the samples at the required frequency. The licensee's CY 2003 Annual Report included groundwater data for CYs 2001 and 2002. The inspector, when reviewing the annual reports, noted lapses in the data in periods of time where samples were not taken due to mechanical problems. However, no significant trends were identified by the inspector. The inspector's review of the annual reports concluded that radiochemical and chemical constituents in monitoring wells were still above limits specified in License Condition 29, specifically for uranium, radium, thorium, gross alpha, selenium, beryllium, sulfate, chloride, nickel, cadmium and total dissolved solids. The inspector's review of the annual reports concluded that effluent and environmental monitoring data for CY 2000 supported the licensee's assessment that the dose to the nearest resident did not exceed the 100 millirems per year dose limit for member of the public.

d. Annual Land Use Survey

License Condition 27 of the ANC license, requires, in part, that an annual land use survey be conducted. The most recent annual land use survey was submitted to the NRC on April 22, 2001. The CY 2001 annual land use survey discussed the private residences, nonresidential structures, grazing areas, recreation uses, and potable and agricultural wells within 5 miles of the site. According to the licensee, due to the limited reclamation activities there were no significant changes or impacts to land use since the previous survey.

4.3 Conclusions

A review of the licensee's environmental monitoring, groundwater and land use survey programs indicated that the licensee was in compliance with the license requirements.

5 Followup (92701)

5.1 Moisture/Density Field Test

The specifications indicated in the reclamation plan for moisture/density field test frequency on cover materials is one test for every 5,000 cubic yards of material placed. This test frequency specification in the reclamation plan specifications differ from those provided in Section 3.2.3 of NRC's "Staff Technical Position on Testing and Inspection Plans during Construction of DOE's Remedial Action at Inactive Uranium Mill Tailings Sites," dated March 1987. The test frequency specified in the above staff technical position requires one test per 500 cubic yards of material placed. The WDEQ is not committed to the requirement in the reclamation plan, but is required to conform to the test requirements provided in the staff technical position.

According to the NRC's current project manager for the ANC site, no inspection of the ANC site/construction records by a geotechnical engineer had been performed since February 13, 1998. This lapse of inspection was primarily due to the fact that there had been no reclamation work performed at the site since completion of Tailings Pond 2. Geotechnical engineering activities will be reviewed during a future NRC inspection.

6 Exit Meeting Summary

The inspector presented the inspection results to licensee representatives at the conclusion of the inspection on July 19, 2004, and during a telephonic exit conducted on September 20, 2004. The licensee representatives acknowledged the findings as presented. The licensee did not identify anything reviewed by the inspector as being proprietary.

ATTACHMENT

PARTIAL LIST OF PERSONS CONTACTED

Licensee

W. Salisbury, President, American Nuclear Corporation
M. Moxley, Land Quality Division, District II Supervisor, WDEQ

INSPECTION PROCEDURES USED

IP	83822	Radiation Protection
IP	87654	Decommissioning Inspection Procedure for Uranium Mill Sites
IP	88005	Management Organization and Control
IP	88035	Radioactive Waste Management
IP	88045	Environmental Monitoring

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

40-4492/001-01	IFI	NRC geotechnical review of site/construction records when reclamation activities resume
----------------	-----	---

Closed

None

Discussed

None

LIST OF ACRONYMS

ANC	American Nuclear Corporation
CFR	Code of Federal Regulations
CY	calender year
NRC	Nuclear Regulatory Commission
RSO	radiation safety officer
WDEQ	State of Wyoming, Department of Environmental Quality