



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

June 22, 2007

Mark Moxley, District Supervisor  
State of Wyoming  
Department of Environmental Quality  
Land Quality Division - District II  
510 Meadowview Drive  
Lander, WY 82520

SUBJECT: NRC INSPECTION REPORT 040-04492/07-001 AND NOTICE OF VIOLATION

Dear Mr. Moxley:

This refers to the inspection conducted on May 2-3, 2007, at the American Nuclear Corporation's (ANC) Gas Hills Project in Fremont County, Wyoming. The inspection was an examination of activities conducted under the October 8, 1996, Confirmatory Order (Order), as corrected by letter dated October 18, 1996, as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of the Order. The Order addresses the work being undertaken by the Wyoming Department of Environmental Quality at the former ANC-Gas Hills uranium mill site. Within these areas, the inspection consisted of selected examination of procedures and representative records, observations of activities, and interviews with personnel. Details of the inspection were presented to you at the exit briefing conducted telephonically on June 7, 2007.

Based on the results of this inspection, the NRC has determined that two Severity Level IV violations of NRC requirements occurred. The conditions of the Order are binding on the State, and relief from the Order requires prior NRC approval. The violations involve failures to implement the groundwater and the settlement monitoring programs in accordance with the requirements of the Order.

The violations were evaluated in accordance with the NRC Enforcement Policy included on the NRC's Web site at [www.nrc.gov/about-nrc/regulatory/enforcement.html](http://www.nrc.gov/about-nrc/regulatory/enforcement.html). The violations are cited in the enclosed Notice of Violation (Notice) and the circumstances surrounding them are described in detail in the subject inspection report. The violations are being cited in the Notice because they were identified by the NRC and because you did not correct or commit to correct the violations by the end of the inspection.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response. For your consideration and convenience, an excerpt from NRC Information Notice 96-28, "Suggested Guidance Relating to Development and Implementation of Corrective Action," is enclosed. The NRC will use your response, in part, to determine whether further enforcement action is necessary to ensure compliance with regulatory requirements.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter, its enclosure, and your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at [www.nrc.gov/reading-rm/adams.html](http://www.nrc.gov/reading-rm/adams.html). To the extent possible, your response should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the Public without redaction.

Should you have any questions concerning this inspection, please contact the undersigned at (817) 860-8191 or Mr. Robert J. Evans, Senior Health Physicist, at (817) 860-8234.

Sincerely,

*/RA/*

D. Blair Spitzberg, Ph.D., Chief  
Fuel Cycle and Decommissioning Branch

Docket No.: 040-04492  
License No.: SUA-667

Enclosures:

1. Notice of Violation
2. NRC Inspection Report 040-04492/07-001
3. NRC Information Notice 96-28

State of Wyoming

-3-

cc w/enclosures 1 & 2:  
Thomas C. Pauling, Team Leader  
U.S. Department of Energy  
Office of Legacy Management  
2597 B 3/4 Rd.  
Grand Junction, CO 81503

Scott W. Ramsay  
Wyoming Radiation Control Program Director  
Radiological Services Supervisor  
Wyoming Office of Homeland Security  
2421 E 7<sup>th</sup> Street  
Cheyenne, WY 82001

bcc w/enclosures 1&2 (via ADAMS e-mail distribution):

LDWert  
 DBSpitzberg  
 LMGersey  
 RJEvans  
 MHFliegel, FSME/DWMEP/DURLD  
 BVonTill, FSME/DWMEP/DURLD  
 RITS Coordinator  
 FCDB  
 RIV Nuclear Materials File - 5th Floor

SUNSI Review Completed: RJE ADAMS:  Yes  No Initials: RJE  
 Publicly Available  Non-Publicly Available  Sensitive  Non-Sensitive

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LMGersey	RJEvans	MHFliegel [via e-mail]	DBSpitzberg
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06/05/07	06/05/07	06/05/07	06/22/07

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E=E-mail

F=Fax

## ENCLOSURE 1

### NOTICE OF VIOLATION

State of Wyoming  
Cheyenne, Wyoming

Docket No. 040-04492  
License No. SUA-667

During an NRC inspection conducted on May 2-3, 2007, two violations of NRC requirements were identified. In accordance with the NRC Enforcement Policy, the violations are listed below:

- A. Section IV, Condition 3 of the Confirmatory Order (Order) issued October 8, 1996, as corrected on October 18, 1996, requires, in part, the State of Wyoming (State) to conduct settlement monitoring at monuments Nos. 1-16 in accordance with the submittal dated April 24, 1992. By letter dated January 23, 2001, the State committed to conduct quarterly surveys of monuments Nos. 1-4 only. The revised settlement monitoring program was approved by the NRC by letter dated May 29, 2001.

Contrary to the above, the State failed to conduct quarterly surveys of monuments Nos. 1-4 between 2003-2006 as required by the Order and as committed by letter dated January 23, 2001. Specifically, the State conducted settlement monitoring surveys only twice since 2003, once during March 2003 and once during May 2005.

This is a Severity Level IV violation (Supplement VI).

- B. Section IV, Condition 11 of the Order issued October 8, 1996, as corrected October 18, 1996, requires, in part, the State to conduct groundwater compliance monitoring. The compliance monitoring program includes sampling of selected wells on a quarterly frequency and submittal of an annual corrective action program report to the NRC.

Contrary to the above, since 2005, the State failed to sample all the wells listed in the Order on a quarterly basis, and the State failed to submit annual corrective action program reports. Specifically, the wells being sampled by the State since 2005 were not the same wells as listed in the Order; there was only one sampling event per year during 2005 and 2006; and the last corrective action program report was submitted to the NRC during 2004.

This is a Severity Level IV violation (Supplement VI).

Pursuant to the provisions of 10 CFR 2.201, the State of Wyoming is hereby required to submit a written statement or explanation to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with a copy to the Regional Administrator, Region IV, within 30 days of the date of the letter transmitting this Notice of Violation (Notice). This reply should be clearly marked as a "Reply to a Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation or severity level, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Your response may reference or include previous docketed correspondence, if the correspondence adequately addresses the required response. If an adequate reply is not received within the time specified in this Notice, an Order

or a Demand for Information may be issued as to why the license should not be modified, suspended, or revoked, or why such other action as may be proper should not be taken. Where good cause is shown, consideration will be given to extending the response time.

If you contest this enforcement action, you should also provide a copy of your response, with the basis for your denial, to the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001.

Because your response will be made available electronically for public inspection in the NRC Public Document Room or from the NRC's document system (ADAMS), accessible from the NRC Web site at [www.nrc.gov/reading-rm/adams.html](http://www.nrc.gov/reading-rm/adams.html), to the extent possible, it should not include any personal privacy, proprietary, or safeguards information so that it can be made available to the public without redaction. If personal privacy or proprietary information is necessary to provide an acceptable response, then please provide a bracketed copy of your response that identifies the information that should be protected and a redacted copy of your response that deletes such information. If you request withholding of such material, you must specifically identify the portions of your response that you seek to have withheld and provide in detail the bases for your claim of withholding (e.g., explain why the disclosure of information will create an unwarranted invasion of personal privacy or provide the information required by 10 CFR 2.390(b) to support a request for withholding confidential commercial or financial information).

In accordance with 10 CFR 19.11, you may be required to post this Notice within two working days.

Dated this 22<sup>nd</sup> day of June 2007

**ENCLOSURE 2**

U.S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 040-04492

License No.: SUA-667

Report No.: 040-04492/07-001

Licensee: American Nuclear Corporation

Facility: Gas Hills Project

Location: Fremont County, Wyoming

Date: May 2-3, 2007

Inspectors: Robert Evans, P.E., C.H.P., Senior Health Physicist  
Fuel Cycle & Decommissioning Branch

Linda M. Gersey, Health Physicist  
Nuclear Material Inspection Branch

Accompanied by: D. Blair Spitzberg, Ph.D., Chief  
Fuel Cycle & Decommissioning Branch

Approved by: D. Blair Spitzberg, Ph.D., Chief  
Fuel Cycle & Decommissioning Branch

Attachment: Supplemental Inspection Information

## **EXECUTIVE SUMMARY**

### American Nuclear Corporation's Gas Hills Project NRC Inspection Report 040-04492/07-001

This inspection included a review of site status, uranium mill site decommissioning, management organization and controls, radiation protection, environmental protection and radioactive waste management. In summary, two Violations were identified involving failures of the State of Wyoming (State) to implement all conditions of the Confirmatory Order.

#### **Uranium Mill Site Decommissioning/Management Organization and Controls/Radiation Protection**

- A site tour was conducted, and minor erosion was noted, but no exposed tailings material was identified (Section 1).
- One Violation was identified regarding the State's failure to implement the settlement monitoring program (Section 1).
- The review of construction records was previously identified as an Inspection Followup Item. The construction records will be reviewed at a later date when the State resumes reclamation work (Section 1).

#### **Environmental Protection/Radioactive Waste Management**

- The State was conducting groundwater cleanup on a seasonal basis (Section 2).
- A Violation was identified involving the failure of the State to implement the groundwater compliance monitoring program (Section 2).



## **Report Details**

### **Site Status**

American Nuclear Corporation's (ANC) Gas Hills Project encompasses about 550 acres of land, and consists of two former tailings impoundments. During May 1994, ANC announced that it intended to go out of business. The company forfeited its \$3.2 million reclamation bond during October 1994. The State of Wyoming (State) assumed responsibility for the site, and the NRC issued a Confirmatory Order (Order) to the State during 1996.

Onsite activities completed since 1994 include reclamation of the Bullrush heap leach pile and tailings pond No. 2. Order requirements in effect during the inspection include implementation of the groundwater corrective action program and sampling of wells and springs. Future activities include remediation of tailings pond No. 1 and turnover of the site to the U.S. Department of Energy for long-term oversight.

### **1 Uranium Mill Site Decommissioning Inspection/Management Organization and Controls/On-Site Construction (87654/88005/88001)**

#### **1.1 Inspection Scope**

The purpose of this portion of the inspection was to ensure that the State had established a program for implementing the conditions of the Order.

#### **1.2 Observations and Findings**

A site tour was conducted to observe activities in progress. The groundwater corrective action program was being placed into service on a seasonal basis. The State had just activated the groundwater sprays on top of tailings pond No. 1 in an effort to clean up the groundwater. During the site tour, minor erosion was identified on the slopes of tailings pond No. 2 that may require reshaping in the future.

Ambient gamma radiation exposure rates were measured by the inspectors using an NRC-issued Ludlum Model 19 microRoentgen meter calibrated to radium-226 (NRC No. 015546, calibration due date of 02/12/08). Maximum exposure rates readings were 250  $\mu$ R/hr at the gap between tailing ponds Nos. 1 and 2. A background reading of 35  $\mu$ R/hr was observed. No exposed tailings material was identified during the site tour.

The tailings settlement program requirements are outlined in Order Condition IV.3. By letter dated January 23, 2001, the State requested NRC approval to modify the tailings settlement monitoring program. The State requested permission to discontinue surveys of settlement monuments Nos. 5 through 16. The State committed to continue conducting quarterly surveys of monuments Nos. 1 through 4. The NRC agreed with the State's revised settlement monitoring program by letter dated May 29, 2001. The inspectors found that only 2 of 12 settlement monitoring surveys had been completed since 2003. Surveys were conducted on March 19, 2003, and May 19, 2005. The State's failure to conduct quarterly surveys of tailings settlements was a Violation of the Order (VIO 040-04492/0701-01). The State's failure to conduct settlement monitoring

was considered to be significant because the State cannot commence with final reclamation until it demonstrates that the tailings pond has sufficiently settled. Two data points, collected over a several year period, may not be sufficient to demonstrate that the pond has sufficiently consolidated.

Because there has been no reclamation work at the site, there have been no releases of equipment or uses of thermoluminescent dosimeters since the previous inspection.

During the previous inspection, conducted in July 2004 and documented in NRC Inspection Report 040-04492/04-001, an Inspection Followup Item (IFI) was identified involving the review of site construction records. The State plans to resume reclamation work in the near future. Therefore, the construction records will be reviewed concurrently with resumption of reclamation work.

### 1.3 Conclusions

A site tour was conducted, and minor erosion was noted, but no exposed tailings material was identified. One Violation was identified regarding the State's failure to implement the settlement monitoring program. The review of construction records was previously identified as an Inspection Followup Item. The construction records will be reviewed at a later date when the State resumes reclamation work.

## **2 Environmental Monitoring/Radioactive Waste Management (88045/88035)**

### 2.1 Inspection Scope

The environmental and groundwater monitoring programs were reviewed to assess the effectiveness of the State to monitor the impacts of site activities on the local environment.

### 2.2 Observations and Findings

#### a. Effluent and Environmental Monitoring

Order Condition IV.3 require the implementation of an effluent and environmental monitoring program. By letter dated November 26, 2000, ANC requested the deletion of License Condition 13 which requires implementation of the same effluent and environmental monitoring program. The NRC agreed to suspend the program until three months prior to resumption of reclamation activities. The NRC's decision was provided to ANC by letter dated December 29, 2000. During the inspection, the effluent and environmental monitoring program continued to remain in standby. No specific date had been established for resumption of the program, but the State's representative was aware of the 3-month restart requirement.

In its letter dated December 29, 2000, the NRC informed ANC that a monthly visual inspection of the site was required in lieu of implementation of License Condition 13. The visual inspection was necessary to ensure prompt detection of erosion which could uncover or allow dispersion of tailings material. During the inspection, the State stated that it was conducting the monthly site inspections on a seasonal basis. Few

inspections were conducted during winter months because of the remoteness of the site and because of the difficulty in accessing the site. The State's failure to conduct the monthly site inspections as required by NRC letter dated December 29, 2000, was considered to be a deviation of minor significance and is not subject to formal enforcement action. The failure to conduct monthly inspections during winter months was not safety significant because of the current state of site reclamation combined with the lack of activities in progress at the site during the winter.

b. Groundwater Compliance Monitoring

Order Condition IV.11 provide the compliance monitoring program requirements. The Order requires sampling three wells on a quarterly basis and sampling one local water spring on a semi-annual basis. The well water samples are to be analyzed for a number of chemical and radiological constituents including gross alpha, radium-226, radium-228, thorium-230 and uranium. Groundwater protection standards are provided in Order Condition IV.11.B. At the time of the inspection, there were 17 wells installed at the site.

The inspectors compared recent sample results to the compliance standards for point of compliance well No. R-4. The constituents that continue to exceed the protection standards include nickel, selenium, gross alpha, combined radium-226 and 228, thorium-230 and uranium. In response, the State continues to implement the corrective action program on a seasonal basis in an attempt to clean up the local groundwater.

The inspectors compared the Order requirements to the compliance monitoring program as implemented by the State. The inspectors identified a number of discrepancies that were reported to the State's representative:

- Two wells listed in the Order (TP2-2 and TP2-3) were not being sampled by the State.
- There was only one sampling event per year during 2005 and 2006, although the Order requires at least four sampling events per year.
- The last corrective action program report was submitted to the NRC during 2004, although these corrective action program reports are required to be submitted annually. At the time of the inspection, the NRC had not been informed of the sampling results for calendar years 2004-2006.

The State's failure to implement the groundwater compliance monitoring program is a Violation of the Order (VIO 040-04492/0701-02). This finding was considered safety significant because the State revised the compliance monitoring program without prior NRC review and approval. Consequently, the NRC had not determined the acceptability of the revised program.

2.3 Conclusions

The State was conducting groundwater cleanup on a seasonal basis. A Violation was identified involving the failure of the State to implement the groundwater compliance monitoring program.

**3 Exit Meeting Summary**

The inspectors presented the preliminary inspection results to the State's representative at the conclusion of the onsite inspection on May 3, 2007. The inspectors presented the final inspection results to the State's representative during a June 7, 2007, telephone call. During the inspection, the State did not identify any information reviewed by the inspectors as propriety.

**ATTACHMENT**

**PARTIAL LIST OF PERSONS CONTACTED**

State of Wyoming

M. Moxley, District Supervisor, Land Quality Division, Department of Environmental Quality

**ITEMS OPENED, CLOSED, AND DISCUSSED**

Open

040-04492/0701-01 VIO Failure to conduct quarterly settlement monitoring  
040-04492/0701-02 VIO Failure to implement groundwater compliance monitoring program

Closed

040-04492/0401-01 IFI NRC geotechnical review of site construction records

Discussed

None

**INSPECTION PROCEDURES USED**

IP 83822 Radiation Protection  
IP 87654 Uranium Mill Site Decommissioning Inspection  
IP 88005 Management Organization and Control  
IP 88035 Radioactive Waste Management  
IP 88045 Environmental Protection

**LIST OF ACRONYMS USED**

ANC American Nuclear Corporation  
CFR Code of Federal Regulations  
IFI Inspection Followup Item  
IP NRC Inspection Procedure  
µR/hr microRoentgens per hour  
VIO Violation