



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511

March 25, 2019

Mr. Kyle Wendtland  
Land Quality Administrator  
Land Quality Division  
Wyoming Department  
of Environmental Quality  
200 West 17<sup>th</sup> Street  
Cheyenne, WY 82001

SUBJECT: AMERICAN NUCLEAR CORPORATION- GAS HILLS PROJECT  
NRC INSPECTION REPORT 040-04492/2019-001

Dear Mr. Wendtland:

This letter refers to the U.S. Nuclear Regulatory Commission (NRC) inspection conducted on January 23-24, 2019, with continued in-office review through February 28, 2019, of the American Nuclear Corporation Gas Hills Project site in Fremont County, Wyoming. This inspection examined activities conducted at the site under the Confirmatory Order issued to the State of Wyoming Department of Environmental Quality (WYDEQ) in 1996 [Agencywide Documents Access and Management System (ADAMS) Accession No. ML071520354] and the subsequent modifications to the Confirmatory Order, as they relate to public health and safety, and to confirm compliance with the Commission's rules and regulations and with the conditions of the Confirmatory Order. Within these areas, the inspection consisted of selected examination of procedures and representative records, and interviews with personnel.

A preliminary exit was conducted with Mr. Ryan Schierman, Manager, Uranium Recovery Program, Land Quality Division, Wyoming Department of Environmental Quality, of your staff at the conclusion of the onsite portion of the inspection on January 24, 2019. A final exit was conducted telephonically with Mr. Schierman and members of his staff on March 1, 2019. No violations were identified and a response to this letter is not required.

In accordance with 10 CFR 2.390 of the NRC's "Agency Rules of Practice and Procedure" 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 Agencywide Documents Access and Management System (ADAMS), accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html>. To the extent possible, your response, if you choose to provide one, should not include any personal privacy or proprietary, information so that it can be made available to the Public without redaction.

K. Wendtland

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Should you have any questions concerning this inspection, please contact Ms. Martha Poston-Brown, Health Physicist at 817-200-1181 or the undersigned at 817-200-1151

Sincerely,

*/RA/*

Janine F. Katanic, PhD, CHP, Chief  
Fuel Cycle and Decommissioning Branch  
Division of Nuclear Materials Safety

Docket No.: 040-04492

License No.: SUA-667

Enclosure:

NRC Inspection Report 040-04492/2019-001

**U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV**

Docket No.: 040-04492  
License No.: SUA-667  
Report No. : 040-04492/2019-001  
Licensee: American Nuclear Corporation  
Facility: Gas Hills Project Site  
Organization  
Overseeing  
Remediation: State of Wyoming  
Department of Environmental Quality  
Land Quality Division  
Location: Fremont County, Wyoming  
Onsite Dates: January 23-24, 2019  
Inspector: Marti Poston-Brown, Health Physicist  
Fuel Cycle and Decommissioning Branch  
Approved: Janine F. Katanic, PhD, CHP, Chief  
Fuel Cycle and Decommissioning Branch

Enclosure

## EXECUTIVE SUMMARY

### American Nuclear Corporation Gas Hills Project Site NRC Inspection Report 040-04492/2019-001

This inspection was a routine, announced inspection of decommissioning activities being conducted at the American Nuclear Corporation Gas Hills Project site in Fremont County, Wyoming. The licensee declared bankruptcy in 1994 and the State of Wyoming assumed responsibility for completion of the remediation in 1996. The responsibilities of the State were outlined in a Confirmatory Order (Order) issued by the NRC in 1996. The Order has been modified multiple times since its original issue. Under the current version of the Order, modified in 2017, only two of the original conditions were still in effect at the time of the inspection.

The remaining conditions of the Order required the State to use the funds remaining to perform specific NRC-approved tasks. These NRC-approved tasks included: (1) conducting activities to stabilize the tailings ponds and provide surface diversions; (2) continued sampling of existing wells and surface water stations; and (3) cooperate with NRC's inspection activities. The site is currently in standby mode due to funding. Based on the results of this inspection, no violations were identified.

#### Management Organization and Controls

The State and its contractor had established a program for implementing the conditions of the Order. The contractor performed the engineering and reclamation evaluations and performed maintenance and surveillance at the site. The State provided appropriate oversight of the contractor. A site tour was not conducted because of weather conditions, and will be performed at a later date. (Section 1.2)

#### Radiation Protection

The State and its contractor implemented a radiation protection program in accordance with regulatory requirements and the requirement of the Order. All workers received appropriate training regarding the hazards associated with the work conducted. All workers were monitored for radiation exposure and/or surveyed for contamination, as appropriate for the work conducted. (Section 2.2)

#### Effluent Control and Environmental Protection

The State and its contractor conducted groundwater sampling and monitoring in accordance with the conditions of the Order as modified after the May 2007 inspection until suspended by subsequent modifications of the Order. (Section 3.2)

## REPORT DETAILS

### Site Status

The American Nuclear Corporation (ANC) Gas Hills Project site suspended uranium milling operations in 1981 because of poor market conditions and began decommissioning activities. On May 4, 1994, ANC notified the NRC that it was ceasing decommissioning activities and going out of business (ADAMS Accession No. ML071580050). The American Nuclear Corporation forfeited its \$3.2 million surety reclamation performance bond to the Wyoming Department of Environmental Quality (WYDEQ). In July 1994, WYDEQ agreed to remediate the site and the NRC issued a Confirmatory Order (Order) to WYDEQ outlining the requirements for decommissioning the site.

Since its initial issue, the Order has been formally revised four times: (1) May 29, 2012 (ADAMS Accession No. ML120670346); (2) June 12, 2014 (ADAMS Accession No. ML14106A328); (3) September 28, 2016 (ADAMS Accession No. ML16160A074); and (4) January 24, 2017 (ADAMS Accession No. ML16354B554). Other requirements of the Order have been temporarily suspended or had the frequency changed via correspondence without a formal modification of the Order: (1) December 29, 2000, suspension of effluent and groundwater monitoring until 3 months prior to resumption of construction activities (ADAMS Accession No. ML083510823); and, (2) August 11, 2009, modification of monument monitoring from quarterly to annual (ADAMS Accession No. ML091330303).

Under the current version of the Order, only two of the original conditions were still in effect at the time of the inspection. The remaining conditions required the State to use the funds remaining to perform specific NRC-approved tasks. These NRC approved tasks included: (1) conducting activities to stabilize the tailings ponds and provide surface diversions; (2) continued sampling of existing wells and surface water stations; and, (3) cooperate with NRC's inspection activities.

The NRC last performed an inspection at the site on May 2-3, 2007 (ADAMS Accession No. ML071730503), and identified two violations for failure to conduct quarterly tailings settlement monitoring and groundwater monitoring, as required by the Order. The State had discontinued quarterly tailings settlement monitoring and groundwater sampling, as required by the Order, because of financial costs and the stability of the data collected. The State had not discussed the discontinuation of sampling or requested changes to the Order with the NRC. The State requested modifications of the Order as a result of these violations and its funding concerns on January 2, 2008 (ADAMS Accession No. ML080240371) and August 27, 2008 (ADAMS Accession No. ML082470215). After discussion between the State and the NRC, related to funding and priorities for most effective use of the funding, requirements of the Order were modified via correspondence dated August 11, 2009 (ADAMS Accession No. ML 091330303), and the Order was formally modified on May 29, 2012 (ADAMS Accession No. ML 120670346).

Prior to the May 2007 inspection, onsite activities included reclamation of the Bullrush heap leach pile and tailings pond 2 (TP-2). After the 2007 inspection, when financial concerns resulted in necessary changes to the Order, the NRC and the State defined specific projects, referred as Task Orders (TO): (1) TO 1 – Evaluation of the extent of groundwater plume downgradient of the N/NW boundary (Completed March 2, 2016); (2) TO 2 – Perform an engineering/cost analysis and prioritization of reclamation activities (Completed August 17,

2016); (3) TO 3 – Evaluation of suitability of onsite materials in reclamation and design/stabilization for tailings pond 1 (TP-1) (Completed November 16, 2017); and, (4) TO 4 --Plan for stabilization of TP-1. Task Order 4 consisted of the placement of an interim cover on TP-1, construction of two surface diversions, and revegetation of TP-1.

The NRC conducted a site visit to observe the work related to the stabilization of TP-1, part of TO 4, on May 15, 2018. The results of this site visit are documented in a Trip Report dated June 14, 2018 (ADAMS Accession No. ML18165A430).

At the time of the current inspection, the interim cover was in place on TP-1, the surface diversions had been constructed, but the revegetation had not occurred, and is scheduled for a later date. The State's contractor is currently maintaining the site in standby mode. It is unclear what the disposition of the site will be once the WYDEQ has depleted the funds for reclamation. The State estimates the funds will be depleted by the end of calendar year 2019.

## **1 Management Organization and Controls (Inspection Procedure (IP) 88005)**

### **1.1 Inspection Scope**

Ensure the State has established an organization to administer the technical and safety policies, programs, and procedures necessary to satisfy the NRC's regulatory requirements and the requirements as detailed in the Order.

### **1.2 Observations and Findings**

#### **a. Organizational Structure**

The State uses a contractor to provide maintenance and surveillance for the Gas Hills Project site. Staff were added as needed for specific task orders. The contractor is managed by a WYDEQ project manager. Monthly phone calls between the contractor, WYDEQ and the NRC project manager are conducted to discuss the current site conditions, and planned work. The inspector reviewed staffing levels for the TOs and determined that staffing levels appeared to be adequate for the tasks reviewed.

#### **b. Management and Administrative Practices for Safety**

The contractor developed and used a site safety and health plan, as part of TO 1, issued on December 12, 2014. The health and safety plan covers chemical, radiological and construction hazards. The inspector identified no issues or concerns associated with the health and safety plan developed and in use for activities at the site. The State has been actively involved in supporting work at the site. For the most recent soil work to construct a soil cover for TSP-1, part of TO 4, the State provided health physics support and performed surveys of personnel and heavy equipment at the Project site, as needed. The survey records were reviewed and no issues were identified. The survey instruments used to perform the surveys were observed by the inspector and found to be in calibration during the TO 4 work and during the current inspection.

#### **c. Site Tour**

A records review was conducted in the WYDEQ Cheyenne office on January 23, 2019. The inspector was also able to discuss the program and site activities with the Gas Hills

program manager, the Uranium Recovery program manager, and one health physicist actively involved in supporting activities at the site. The inspector had planned to travel to Lander with the Uranium Recovery program manager to perform a physical walk down of the site on January 24, 2019. The inspector and WYDEQ manager were able to make it to Muddy Gap, Wyoming, despite the highway closures and weather conditions, but the roads from Muddy Gap to the site were determined to be hazardous and this portion of the inspection was not conducted. Site conditions will be reviewed during a future inspection.

### 1.3 Conclusions

The State and its contractor had established a program for implementing the conditions of the Order. The contractor performed the engineering and reclamation evaluations and performed maintenance and surveillance at the site. The State provided appropriate oversight of the contractor. A site tour was not conducted because of weather conditions, and will be performed at a later date.

## **2 Radiation Protection (IP 83822)**

### 2.1 Inspection Scope

Determine whether the licensee's radiation protection program was conducted in compliance with the NRC requirements and the requirements as detailed in the Order. Specifically, verify the performance of the radiation protection program commensurate with the risk involved with conducted activities and the Safety and Health Plan developed by the State and the State's contractor for the TOs.

### 2.2 Observations and Findings

The inspector reviewed the records associated with the work performed for TO 4 – Stabilization for TP-1. The records indicated that the work was conducted in accordance with the health and safety plan developed under TO 1 and revised under TO 4. The Hazard Analysis for job tasks were conducted and personnel were trained on the hazards associated with the job tasks. The State provided health physics support and radiation survey equipment for the monitoring of personnel and the heavy (earth moving) equipment and materials brought onsite by the contractor. The earth moving equipment was surveyed by the State personnel using calibrated instruments and swipes for contamination were collected and counted by the State. Personnel monitoring needs (dosimetry, air sampling, bioassay, etc.) were evaluated under each TO and documented in each applicable TO hazard analysis. For TO 4, dosimetry and bioassay were determined not to be needed.

For the days where contact with the tailings was possible, but unlikely, the State surveyed the heavy equipment, materials, and personnel at the end of shift. Once the State determined that the cover was thick enough to make personnel contamination unlikely, they discontinued surveys. The equipment and materials remained onsite until the job was complete, at which point the State personnel returned to the site and conducted a free release survey, including the collection of swipe samples for removable contamination. A review of these survey records did not identify any concerns or issues.

## 2.3 Conclusions

The State and its contractor implemented a radiation protection program in accordance with regulatory requirements and the requirements of the Order. All workers received appropriate training regarding the hazards associated with the work conducted. All workers were monitored for radiation exposure and/or surveyed for contamination as appropriate for the work conducted.

## 3 **Effluent Controls and Environmental Protection (IP88045)**

### 3.1 Inspection Scope

The environmental program and groundwater monitoring programs were reviewed to assess the State's compliance with the current requirements of the Order.

### 3.2 Observations and Findings

#### a. Environmental Monitoring

During the previous NRC inspection in May of 2007 (ADAMS Accession No. ML071730503), the inspectors identified two Severity Level IV violations associated with environmental monitoring and sampling in accordance with the Order. Section IV, Condition 3, of the Order required the WYDEQ to conduct quarterly settlement monitoring at monument Nos. 1-4 on TSP-1. Monument settlement monitoring was only performed twice since 2003, once in March of that year and again in March of 2005. Section IV, Condition 11, of the Order required WYDEQ to conduct quarterly groundwater sampling and submit an annual report to the NRC. The WYDEQ did not conduct quarterly groundwater sampling nor submit an annual corrective action report to the NRC for Calendar Year (CY) 2005 and CY2006.

In CY2004, as a cost saving measure, the State had discontinued quarterly settlement monitoring at the specified monuments and quarterly groundwater sampling to support the groundwater compliance monitoring program, as required under the Order. The State did not discuss these changes or request modifications to the Order with the NRC prior to making these changes. The State requested modifications of the Order as a result of these violations and its funding concerns on January 2, 2008 (ADAMS Accession No. ML080240371) and August 27, 2008 (ADAMS Accession No. ML082470215).

After discussion between the agencies, the NRC modified requirements specific to monument settlement monitoring via correspondence dated August 11, 2009 (ADAMS Accession No. ML091330303). This same letter also modified the groundwater sampling frequency to semi-annually rather than quarterly and suspended the requirements for WYDEQ to measure compliance with specific groundwater protection standards and implement a corrective action program. The NRC formally modified the Order to incorporate these changes to the Order on May 29, 2012 (ADAMS Accession No. ML120670346). Based on the modification to the Order, the following violations VIO-040-04492/2007-001-01, for failure to conduct quarterly settlement monitoring, and VIO-040-04492/2007-001-02, for failure to implement the groundwater compliance monitoring program are closed.



Since the previous NRC inspection in May of 2007, and the subsequent modifications of the Order to allow for annual sampling versus the quarterly sampling originally required, the WYDEQ has submitted annual site status reports that include well sampling results for calendar years 2008, and 2010 through 2016. An annual report for CY2009 could not be located and annual reports for CY2010 and 2011 were submitted together. Submission of environmental sampling results as part of this annual report stopped after 2016, when the requirement for well sampling was discontinued in the Order. These annual site status reports, available in ADAMS, [ADAMS Accession No. ML091130126 (CY2008), ML12005A252 (CY2010/2011) ML13141A652 (CY2012), ML14071A343 (CY2013), ML15062A248 (CY2014), ML16034A210 (CY2015) and ML17052A808 (CY2016)] included environmental sampling results and were reviewed by NRC Headquarters. The annual report for CY2009 could not be located at the time of this inspection report issuance.

### 3.3 Conclusions

The State and its contractor conducted groundwater sampling and monitoring in accordance with the conditions of the Order as modified after the May 2007 inspection until suspended by subsequent modifications of the Order.

## 4 **Exit Meeting Summary**

The inspector presented the inspection results to State representatives via telephone on March 1, 2019. During the inspection, the State did not identify any information received by the inspector as proprietary.

## ATTACHMENT

### PARTIAL LIST OF PERSON CONTACTED

State of Wyoming, Bureau of Land Management, Department of Environmental Quality

R. Schierman, Uranium Recovery Program Manager  
M. Kuchanur, PhD, Project Manager – Gas Hills Project  
D. Adams, Health Physicist

### ITEMS OPENED, CLOSED OR DISCUSSED

#### Open

None.

#### Closed

040-04492/2007-001-01	VIO	Failure to conduct quarterly settlement monitoring
040-04492/2007-001-02	VIO	Failure to implement groundwater compliance monitoring program.

#### Discussed

None.

### INSPECTION PROCEDURES USED

IP88005	Management Organization and Controls
IP83822	Radiation Protection
IP88045	Effluent Control and Environmental Protection

### LIST OF ACRONYMS USED

ANC	American Nuclear Corporation
CFR	Code of Federal Regulations
CY	Calendar Year
IP	Inspection Procedure
NMSS	Nuclear Material Safety and Safeguards
NRC	Nuclear Regulatory Commission
TO	Task Order
TP-1	Tailings Pond 1
TP-2	Tailings Pond 2
VIO	Violation
WYDEQ	Wyoming Department of Environmental Quality

AMERICAN NUCLEAR CORPORATION- GAS HILLS PROJECT NRC INSPECTION  
 REPORT 040-04492/2019-001 DATED – MARCH 25, 2019

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