



**UNITED STATES  
NUCLEAR REGULATORY COMMISSION**

**REGION IV  
1600 EAST LAMAR BOULEVARD  
ARLINGTON, TEXAS 76011-4511**

August 6, 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 040-04492/2019-002**

Dear Mr. Wendtland:

This letter refers to the inspection conducted on July 9, 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, and 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 Order. Within these areas, the inspection consisted of selected examination of procedures and representative records, and interviews with personnel.

An exit meeting was conducted with Mr. David Adams, Health Physicist, 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 July 9, 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, if you choose to provide one, 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 817-200-1156.

Sincerely,

*/RA/*

Heather J. Gepford, PhD, CHP, Chief  
Materials Licensing and Decommissioning  
Branch  
Division of Nuclear Materials Safety

Docket No.: 040-04492

License No.: SUA-667

Enclosure:

Inspection Report No. 040-04492/2019-002

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

Docket No.: 040-04492  
License No.: SUA-667  
Report No.: 040-04492/2019-002  
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: July 9, 2019  
Inspector: Marti Poston-Brown, Health Physicist  
Materials Licensing and Decommissioning Branch  
Division of Nuclear Materials Safety  
Approved: Heather J. Gepford, PhD, CHP, Chief  
Materials Licensing and Decommissioning Branch  
Division of Nuclear Materials Safety

Enclosure

## EXECUTIVE SUMMARY

### American Nuclear Corporation Gas Hills Project Site NRC Inspection Report 040-04492/2019-002

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 October 8, 1996 (ADAMS Accession No. ML071520354). The Order has been modified since its original issue. At the time of the inspection, only two of the original conditions were still in effect under the current revision of the Order (ADAMS Accession No. ML16354B554), issued in 2017. 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) sampling of existing wells and surface water stations, and (3) cooperating with the NRC's inspection activities. The site is in standby mode due to funding. Based on the results of this inspection, no violations were identified.

#### In-Situ Leach (ISL) Facilities

During the previous inspection conducted January 23, 2019, the inspector was unable to complete the facility walk-down to determine if the facility conformed to the description in the license application and the use and storage areas were secure. The inspector confirmed that the facility meets the description in the license application and other associated documents. Both disposal cells tailings pond 1 (TP-1) and tailings pond 2 (TP-2) are secure. (Section 1.2).

#### Radiation Protection

During the January 2019 inspection, the NRC concluded that the State and its contractor implemented a radiation protection program in accordance with regulatory requirements and the conditions of the Order. As part of this inspection, the inspector determined that access to the TP-1 and TP-2 cells was controlled using fences and locked gates, precluding unauthorized access to the radioactive materials by individuals not authorized to do so. The gates were appropriately posted to identify the radiological hazards. (Section 2.2).

## REPORT DETAILS

### Site Status

The American Nuclear Corporation (ANC) Gas Hills Project site suspended uranium milling operations in 1981 due to 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). ANC 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 initially issued, 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 were 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).

Prior to 2007, onsite activities included reclamation of the Bullrush heap leach pile and tailings pond 2 (TP-2). In 2007, when financial concerns resulted in necessary changes to the Order, the NRC and the State defined specific projects, referred as Task Orders (TO). Three of the four task orders have been completed:

- TO 1 – Evaluation of the extent of Groundwater Plume downgradient of the N/NW boundary (Completed March 2, 2016)
- TO 2 – Perform an Engineering/Cost Analysis and Prioritization of Reclamation Activities (Completed August 17, 2016)
- TO 3 – Evaluation of suitability of onsite materials in reclamation and design/stabilization for tailings pond 1 (TP-1) (Completed November 16, 2017)

Task Order 4 defined a plan for stabilization of TP-1. This consisted of the placement of an interim cover on TP-1, construction of two surface diversions, and revegetation of TP-1. During a site visit in May 2018, an NRC inspector observed that the interim cover was in place, the surface diversions had been constructed, but the revegetation had not occurred. The State's contractor maintains the site in standby mode. The State estimates the funds for restoration will be depleted by the end of the calendar year.

At the time of the January and July 2019 inspections, only two of the original conditions remained in effect under the current revision of the Order. 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) sampling of existing wells and surface water stations, and 3) cooperating with in NRC's inspection activities. The site was in standby mode due to funding.

A records review was conducted in the WYDEQ Cheyenne office on January 23, 2019 and documented in NRC Inspection Report 040-04492/2019-001 issued March 25, 2019 (ADAMS

Accession No. ML19085A375). During the January 2019 inspection, weather conditions precluded a site tour. The purpose of the July 2019 inspection was to perform the site tour.

## **1 In-Situ Leach Facilities (Inspection Procedure 89001)**

### **1.1 Inspection Scope**

Perform a walk-down of the licensed facility to make general observations on the condition of the facility and licensed activities being performed. Verify that the facilities confirm to the descriptions in the license application.

### **1.2 Observations and Findings**

A representative from the U.S. Department of Energy, Office of Legacy Management (DOE-LM) participated in the tour of the site. During the tour, the NRC inspector and DOE-LM representative viewed the cells for TP-1 and TP-2 from the top of the spoils pile. Both TP-1 and TP-2 were stabilized. TP-2 was completed; TP-1 needed a final cover. Seeding for vegetative cover for TP-1 was completed in the spring, and both sites showed signs of strong growth during the inspection. A walkdown of TP-1 was conducted to look for signs of erosion and verify the integrity of the dam. The trenching system around the perimeter was in good condition and appeared to be effectively clearing rainwater from around the cell. All signs of erosion were found in the trench rather than the cell. The dam was also found in good condition with the only signs of erosion in the trenching system. Washdown from the spoils pile was identified along one side of the TP-1 area just inside the fence line, but the cell was not impacted. Some portions of the TP-2 cell were not accessible due to recent rainstorms and the associated mud along the access road but areas that were accessible were found in good condition.

### **1.3 Conclusions**

Due to weather constraints, the inspector was unable to conduct the onsite portion of the inspection in January. The purpose of this inspection, was to conduct a site tour to assess the extent of condition and completion of agreed upon activities. No issues or concerns associated with either disposal cells were identified.

## **2 Radiation Protection (Inspection Procedure 83822)**

### **2.1 Inspection Scope**

Inspect representative areas to verify compliance with posting and labelling requirements. Assess the controls in place onsite to protect occupational workers and the public and to preclude access to radioactive materials by individuals not authorized to do so.

## 2.2 Observations and Findings

The inspector, accompanied by representatives from WYDEQ and DOE-LM, toured the site on July 9, 2019. The fences surrounding the TP-1 and TP-2 cells were intact, well maintained and appropriately posted as “*Caution, Radioactive Materials.*” The signs were in good condition and showed no signs of fading or other weather-related damage. Gates were secured using chain and padlocks. The keys to the padlocks are controlled by the contractor and the State. The fences were constructed of wooden or metal posts and four strands of wire, the three upper tiers being barbwire, the lowest was “animal friendly” without barbs to allow for the local antelopes to go under the fence, which is their preferred mode. The representative from WYDEQ indicated prior to the installation of the lower tier, antelope would try to jump the fence and would frequently become entangled in the wire.

The inspector conducted surveys during the walkdown of the TP-1 cell using a Ludlum Model 19 survey meter (NRC serial no. 15530, calibrated July 12, 2018). Dose rates measured ranged between 20 and 30 microrentgen/hr above background.

## 2.3 Conclusions

During the January 2019 inspection, the NRC concluded that the State and its contractor implemented a radiation protection program in accordance with regulatory requirements and the conditions of the Order. As part of this inspection, the inspector determined that access to the TP-1 and TP-2 cells was controlled using fences and locked gates, precluding unauthorized access to the radioactive materials by individuals not authorized to do so. The gates were appropriately posted to identify the radiological hazards.

## 3 **Exit Meeting Summary**

The inspector presented the inspection results to State representatives during the onsite portion of the inspection on July 9, 2019. During the inspection, the State did not identify any information received by the inspector as proprietary.

## **PARTIAL LIST OF PERSONS CONTACTED**

### Licensee

D. Adams, Health Physicist, Wyoming Department of Environmental Quality  
B. Tsosie, Program Manager, U.S. Department of Energy, Office of Legacy Management  
S. Hall, DOE contractor, Navarro Research and Engineering, Inc.  
J. Price, DOE contractor, Navarro Research and Engineering, Inc.

## **ITEMS OPENED, CLOSED OR DISCUSSED**

### Open

None

### Closed

None

### Discussed

None

## **INSPECTION PROCEDURES USED**

IP 89001	In-Situ Leach (ISL) Facilities
IP 83822	Radiation Protection

## **LIST OF ACRONYMS USED**

ANC	American Nuclear Corporation
CFR	Code of Federal Regulations
DOE-LM	U.S. Department of Energy, Office of Legacy Management
TO	Task Order
TP-1	Tailings Pond 1
TP-2	Tailings Pond 2
WYDEQ	Wyoming Department of Environmental Quality

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 REPORT 040-04492/2019-002 – DATED AUGUST 6, 2019

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