

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	Docket No. 40-4492
	)	
State of Wyoming	)	
Department of Environmental Quality	)	
Herschler Building	)	
122 West 25th Street	)	
Cheyenne, Wyoming 82002	)	
	)	
Reclamation of American Nuclear	)	
Corporation's Gas Hills,	)	
Site	)	

CONFIRMATORY ORDER FOR RECLAMATION OF AMERICAN NUCLEAR CORPORATION'S  
GAS HILLS, WYOMING, SITE

I

The Wyoming Department of Environmental Quality (WDEQ) has undertaken to complete the reclamation of the American Nuclear Corporation's (ANC's) Gas Hills, Wyoming, site which is presently licensed under NRC Source Materials License No. SUA-667 (License), originally issued to Federal American Partners in 1971 pursuant to 10 CFR Part 40. The site is located in the Gas Hills mining district in central Wyoming about 85 miles west of Casper. The licensed site encompasses approximately 550 acres of land, of which approximately 140 acres consist of the decommissioned mill site and two tailings ponds that are undergoing reclamation. The remainder of the site is semi-arid land that has minimal value for livestock grazing. Reclamation of the mill site was commenced in 1988.

## II

The current licensee and site owner is ANC, which announced on May 9, 1994, that it was discontinuing operations and going out of business. WDEQ informed the NRC on July 21, 1994, that it was prepared to complete reclamation of the site and had initiated bond forfeiture. The Wyoming Environmental Quality Council forfeited ANC's reclamation bond to WDEQ by Order dated October 5, 1994. It is understood that the State of Wyoming, through WDEQ, is reclaiming the site with proceeds from the reclamation bond forfeiture on October 5, 1994, and that the state has been spending its funds thereafter on reclamation at the site. WDEQ has hired a consultant to design final reclamation plans for ANC's Gas Hills site.

## III

By letter dated July 21, 1994, WDEQ has agreed that it will remediate the site. The remediation will be pursuant to W. S. 35-11-403(a)(iii) and in accordance with the following documents which comprise the approved reclamation plan for the ANC Gas Hills site, as modified by WDEQ, and in accordance with certain specific additional requirements identified in Part IV, paragraphs 1 through 11 of this order:

(1) Interim Stabilization, Operational, Decommissioning and Reclamation of the Federal-American Partners' Mill and Tailings Facilities, Gas Hills, Wyoming, Federal-American Partners, May 18, 1982; (2) the Development of Hydraulic Designs to Reroute Willow Springs Draw near Federal-American Partners Uranium Mining Facilities at West Gas Hills, Wyoming, Dames and Moore, July 30, 1982; (3) Figure 1 of Appendix 3 of Exhibit II and Figure 5 of Exhibit II titled "Report on Supplementary Hydrologic Studies for Campsite Draw, Willow Springs

Draw, and A New Diversion Ditch at West Gas Hills Uranium Mining Facilities of American Nuclear Corporation, Riverton, Wyoming," submitted December 3, 1984; and (4) modifications to the above submitted by ANC letters dated May 2, 1984, and December 16, 1986 (except that grouted riprap need not be installed). Any modifications to the NRC-approved reclamation plan which are proposed by WDEQ shall not be implemented without prior NRC review and acceptance.

The commitments as set forth in the approved reclamation plan, and the additional requirements specified in Part IV, paragraphs 1 through 11 of this order, will provide adequate protection of the public health and safety and reasonable assurance of compliance with the Commission's regulations. In view of the foregoing, I have determined that the public health, safety, and interest require that the commitments agreed to by WDEQ as set forth in Part IV below be confirmed by this Order. WDEQ has consented to the issuance of this Order and has voluntarily agreed to complete the reclamation according to the requirements in Part IV below, without admitting any fact, responsibility, fault or liability in connection with the site other than stated in this Order.

#### IV

Accordingly, pursuant to Sections 62, 81, 83, 84, 161b, 161i, and 161o of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR 2.202 and 10 CFR Part 40, it is hereby ordered, that WDEQ shall:

1. Perform reclamation of the site in accordance with the approved reclamation plan identified and described in Section III of this Order, and modifications thereto submitted by WDEQ and approved by the NRC.

2. In performing reclamation, place materials as follows: Overburden materials used as fill shall be placed in loose lifts not exceeding 18 inches and compacted by at least one pass of construction equipment, with the exception that the thickness of the initial lift may be up to a maximum of 4 feet thick. The final radon barrier cover, defined as the uppermost 6 feet of soils on the pile top, shall be placed in loose lifts not exceeding 12 inches and compacted to at least 95 percent of the maximum density as determined by ASTM D-698 and at a moisture content between minus 1 and plus 2 percent of optimum. A field and laboratory quality control program shall be implemented to assure that the required density and moisture specifications for the radon barrier cover are achieved. Frequencies for testing shall be in accordance with Section 3.2.3 of the NRC document entitled "Staff Technical Position on Testing and Inspection Plans during Construction of DOE's Remedial Action at Inactive Uranium Mill Tailings Sites," dated March 1987. A detailed report of reclamation construction activities shall be submitted for NRC review within 3 months of completion of the construction of the radon cover. The report shall include the results of all quality control testing as well as "as-built" drawings.
3. Beginning October 1, 1996, conduct an effluent and environmental monitoring program as set forth below, and conduct a settlement monitoring program in accordance with ANC's submittal dated April 24, 1992. The restricted area perimeter monitoring locations are: Corrals #2 (779,750N, 797,300E; background), Necora #5 (780,400N,

801,500E; northeast corner), and Well 13 #4 (779,300N, 801,900E; downwind).

- a. Continuous air particulate samples shall be taken at the restricted area perimeter monitoring locations. The samples shall be composited quarterly and analyzed for natural uranium, thorium-230, radium-226, and lead-210.
- b. Continuous sampling of radon gas shall be performed at the restricted area perimeter monitoring locations, utilizing Track Etch cup dosimeters. The samples shall be analyzed quarterly for radon-222.
- c. Direct radiation shall be continuously monitored at the restricted area perimeter monitoring locations using TLDs, which shall be read quarterly.
- d. Soil samples shall be taken annually at the restricted area perimeter monitoring locations. The samples shall be analyzed for natural uranium, radium-226, and lead-210.
- e. Vegetation samples shall be taken twice each year during the grazing season. The sampling locations are: #1 downwind 781,050N, 801,700E; #2 downwind 778,800N, 801,950E; #3 upwind 776,600N, 801,550E. The samples shall be analyzed for radium-226 and lead-210.

- f. All effluent and environmental monitoring shall utilize the lower limits of detection in accordance with Section 5 of Regulatory Guide 4.14.
  - g. The results of all effluent and environmental monitoring shall be reported in accordance with 10 CFR, Section 40.65, with copies of the report sent directly to the NRC. Monitoring data shall be reported in the format shown in "Sample Format for Reporting Monitoring Data" which is an attachment to the License.
- 4. Utilize the methodology for soil sample collection and radiological analysis for a post decommissioning verification survey in accordance with ANC's submittal dated July 14, 1988.
- 5. Provide a Radiation Safety Officer (RSO) for the site who shall possess qualifications in accordance with Section 2.4.1 of Regulatory Guide 8.31. The RSO need not remain onsite, but shall be available for all required activities.
- 6. Implement an interim stabilization program for all tailings areas. This program shall include written operating procedures and shall prevent or minimize dispersal of blowing tailings to the extent reasonably achievable in accordance with Criterion 8 of 10 CFR 40, Appendix A. The effectiveness of the control methods used shall be evaluated on a monthly

basis. Corrective actions taken shall be documented in response to inspection findings.

7. Bioassay testing shall be conducted as specified in Standard Operating Procedures or Radiation Work Permits. Action levels shall be as follows:

- a. Anytime an action level of 15 ug/l uranium for urinalysis or 9 nCi of natural uranium for in-vivo measurement is reached or exceeded, the licensee shall provide documentation to the NRC, indicating what corrective actions have been performed to satisfy the requirements of Regulatory Guide 8.22. This documentation shall be submitted with the semiannual 10 CFR 40.65 report.
- b. Anytime an action level of 30 ug/l for four consecutive specimens or 130 ug/l uranium for one specimen for urinalysis or 16 nCi uranium for an in-vivo measurement is reached or exceeded, the licensee shall provide documentation within one (1) month to the NRC indicating what corrective actions have been performed to satisfy the requirements of Regulatory Guide 8.22.

8. Release of equipment or packages from the restricted area shall be in accordance with the attachment to the License

entitled, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct or Source Materials" dated September, 1984.

9. Occupational exposure calculations shall be performed and documented as specified in 10 CFR 20.1204. Non-routine samples shall be analyzed and the results reviewed by the RSO within two working days after sample collection.
10. Conduct an annual survey of land use (private residences, grazing areas, private and public potable water and agricultural wells, and non-residential structures and uses) in the area within five (5) miles of any portion of the restricted area boundary and submit a report of this survey to the NRC. This report shall indicate any differences in land use from that described in the last report.
11. Complete compliance monitoring and remediation of groundwater contamination at the ANC Gas Hills site in accordance with the following conditions: (a) Sample wells TP2-2, TP2-3 and R-4 on a quarterly frequency for chloride, nitrate, sulfate, pH, TDS and water level, and on a semiannual frequency for beryllium, cadmium, cyanide, gross alpha, nickel, combined radium-226 and 228, selenium, thorium-230, vanadium and uranium. Sample Willow Springs on a semiannual frequency for chloride, nitrate, sulfate, pH and TDS.



(b) Comply with the following ground-water protection standards at point of compliance well No. R-4 with background being recognized as the mean of wells TP2-3, TP2-2, and Willow Springs: beryllium = 0.05 mg/l, cadmium = 0.01 mg/l, cyanide = 0.005 mg/l, nickel = 0.09 mg/l, selenium = 0.002 mg/l, vanadium = 0.10 mg/l, gross alpha = 10.4 pCi/l, combined radium-226 and 228 = 9.4 pCi/l, thorium-230 = 1.8 pCi/l and uranium = 1.2 mg/l. (c) Implement a corrective action program due to exceedance of ground-water protection standards with the objective of returning the concentrations of beryllium, cadmium, cyanide, nickel, selenium, vanadium, gross alpha, combined radium-226 and 228, thorium-230 and uranium to the concentration limits specified in Subsection (b). (d) A report discussing the results of the corrective action program, consisting of pumping well RW-4 from May 1 to October 31 of each year, at a minimal rate of 1.5 gpm with all collected waters discharged to a nonponding evaporative system located on the surface of Tailings Pond No. 1, shall be submitted to the NRC by March 1 of each year.

12. Inform the Director, Office of Nuclear Material Safety and Safeguards, NRC, Washington, DC 20555-0001, and the Regional Administrator, NRC Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, TX 76011-8064, at least 30 days prior to the estimated completion of the work described in Section IV 1., of the date on which the site will be available for a completion inspection.

13. Cooperate with the NRC (or its contractor) in NRC's site inspections.
14. Perform such additional reclamation and groundwater corrective action as is necessary as agreed between NRC and WDEQ, to comply with paragraphs 1 through 11 above.
15. Cooperate with the U. S. Department of Energy (DOE) and U. S. Army Corps of Engineers in matters relating to the transfer of the site to the DOE, including preparation by DOE of the site Long-Term Surveillance Plan required by 10 CFR 40.28.
16. When the site is ready for transfer to the DOE for permanent custody after reclamation, the State will pay over to the U. S. Government an agreed upon amount as required by Criterion 10 of Appendix A to 10 CFR Part 40 to satisfy the long-term surveillance and control fund requirement.
17. The requirements identified in paragraphs numbered 1 through 16 may be modified, in writing only, by agreement between WDEQ and NRC.

Upon completion of the final NRC inspection and a determination that the inspection demonstrates that the site has been reclaimed in conformance with all requirements in paragraphs 1 through 17 above, that the site is absent any degradation in the final as-constructed condition, and that the reclaimed

tailings ponds will be transferred to the United States in accordance with the Uranium Mill Tailings Radiation Control Act and the Commission's regulations, both License SUA-667 and this order will be terminated. The transfer of the disposal site to the governmental custodian will constitute the final action of the Commission with respect to both the ANC License and this order.

Notwithstanding any of the foregoing requirements, the NRC shall not require the WDEQ to perform or pay for any reclamation, remediation, monitoring, or surveillance, the cost of which would exceed the amount of money available to the WDEQ from ANC's forfeited reclamation performance bond and any subsequent reimbursements from the Department of Energy pursuant to Title X of the Energy Policy Act unless agreed to by WDEQ. The WDEQ shall use reasonable efforts to secure all Title X reimbursements to which it is legally entitled. When notified in writing that all bond money and Title X money has been exhausted, the NRC will terminate this order.

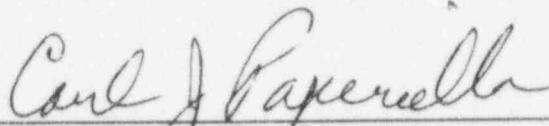
#### V

Any person adversely affected by the Confirmatory Order, other than WDEQ, may request a hearing within 20 days of its issuance. Where good cause is shown, consideration will be given to extending the time to request a hearing. A request for extension of time must be made to the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001, and include a statement of good cause for the extension. Any request for a hearing shall be submitted to the Secretary, U. S. Nuclear Regulatory Commission, ATTN: Chief, Docketing and Service Section, Washington, D. C. 20555-0001. Copies also shall be sent to the Director, Office of Nuclear Material Safety and Safeguards, U. S. Nuclear Regulatory

Commission, Washington, D. C. 20555-0001; to the Assistant General Counsel for Hearings and Enforcement at the same address; to the Regional Administrator, NRC Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011-8064; and to the Land Quality Division Administrator, WDEQ, Herschler Building, 122 West 25th Street, Cheyenne, Wyoming 82002. If such a person requests a hearing, that person shall set forth with particularity the manner in which his interest is adversely affected by this Order and shall address the criteria set forth in 10 CFR 2.714(d).

If a hearing is requested by a person whose interest is adversely affected, the Commission will issue an Order designating the time and place of any hearing. If a hearing is held, the issue to be considered at such hearing shall be whether this Confirmatory Order should be sustained. In the absence of any request for hearing, the requirements specified in Section IV above shall be final 20 days from the date of this Order without further order or proceedings.

FOR THE NUCLEAR REGULATORY COMMISSION



Carl J. Paperiello, Director  
Office of Nuclear Material Safety  
and Safeguards

Dated at Rockville, Maryland  
this 8 day of October 1996.

ACCEPTED: Date: \_\_\_\_\_

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Dennis Hemmer, Director  
Wyoming Department of  
Environmental Quality