

## MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee

1. Gas Hills Project  
American Nuclear Corporation

2. 314 W. Midwest Ave.  
Casper, Wyoming 82601

3. License number

SUA-667, Amendment No. 22

4. Expiration date

January 31, 1976

5. Docket or  
Reference No.

40-4492

6. Byproduct, source, and/or  
special nuclear material

Natural Uranium

7. Chemical and/or physical  
form

Any

8. Maximum amount that licensee  
may possess at any one time  
under this license

Unlimited

9. Authorized Place of Use: The licensee's facility located in Gas Hills, Wyoming.
10. The licensee is hereby exempt from the requirements of Section 20.203(e)(2) of 10 CFR 20 for areas within the mill provided all entrances to the mill are conspicuously posted in accordance with Section 20.203(e)(2) and with the words, "Any area within this mill may contain radioactive material."
11. The licensee shall conduct and document at least one inspection of the tailings embankments per day and shall immediately notify the Uranium Recovery Field Office, USNRC, P.O. Box 25325, Denver, CO 80225, by telephone and telegraph of any failure in the dam retention system or tailings discharge system which results in a release of radioactive material. This requirement is in addition to the requirements of 10 CFR 20.
12. Changes in the mill circuit and equipment shall be approved in writing by the Project Manager. Maintenance activities shall be approved in writing by the Milling Superintendent.
13. During changes in the mill circuit or equipment and during maintenance activities, radiation safety surveys shall be conducted. These surveys shall be approved by the Project Manager insofar as changes in the mill circuit or equipment are concerned and by the Milling Superintendent insofar as maintenance activities are concerned.

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14. As a minimum, routine radiation safety surveys shall be conducted as described in the licensee's application dated December 10, 1969, and as supplemented January 4, 1971.
15. For the purpose of complying with Section 20.103(b), 10 CFR 20, the limits given in Appendix B, Table I, of this Part may be deemed to apply to exposures to the concentrations for 160 hours in any period of 28 consecutive days. In any period where the number of hours of exposure is less than 160 hours, the limits specified in the Table may be increased proportionately. In any such period where the number of hours of exposure is greater than 160 hours, the limits specified in the Table shall be decreased proportionately.
16. The licensee shall monitor piezometers and settlement monuments semiannually.
17. The licensee shall maintain a 3.05 m (10 ft.) minimum freeboard in pond No. 1 as recommended in the document "Design Flood Supplement for the Federal-American Partners Gas Hills Project," by F. M. Fox and Associates, Inc., dated July 26, 1978. Also, after pumping down pond No. 1 but no later than March 31, 1979, the licensee shall maintain the solution depth in pond No. 1 at no greater than 0.61 m (24 inches) as stated in licensee's letter to the NRC dated August 28, 1978.
18. During the temporary period of suspension of processing operations, the effluent and environmental monitoring program shall be conducted as specified in the attached Table A. Prior to the start-up of operations, the licensee shall have an updated operational environmental monitoring program approved and established by amendment of this license.

The result of all effluent and environmental monitoring required by this license shall be reported in accordance with 10 CFR 40, Section 40.65 with copies of the report sent directly to the USNRC, Uranium Recovery Field Office, P.O. Box 25325, Denver, CO 80225.

19. a. The licensee shall perform reclamation of Tailings Ponds 1 and 2 at the Gas Hills site in accordance with the following documents:
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.

Further, the reclamation plan specified in the above documents shall be modified in accordance with the licensee's submittal dated May 2, 1984, with the exception that grouted riprap need not be installed.

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In addition, within six (6) months of final cessation of operations or a determination that one or both tailings ponds will not be used for future tailings disposal, the licensee shall provide for USNRC review and approval a schedule for reclamation activities, including a program for interim stabilization and for monitoring the degree of consolidation of slimes areas of the tailings pond(s) to determine (1) when initial reclamation activities may proceed and (2) when settlement due to the initial reclamation activities is sufficiently complete to allow final reclamation cover placement and recontouring.

- b. The licensee shall place no additional tailings or other wastes in either tailings pond until the licensee receives approval in the form of a license amendment from the NRC.

20. The licensee shall decommission the mill buildings in accordance with the program described on page 9-3 of "Environmental Report for Federal American Partners," received by NRC March 29, 1978. In addition, release of equipment, materials, or packages from a restricted area shall be in accordance with Attachment No. 1 to SUA-667, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct or Source Materials," September, 1984.
21. The licensee shall maintain a bond with the Wyoming Department of Environmental Quality to assure that tailings stabilization and reclamation and mill decommissioning are accomplished as stated in "Supplemental Information for Environmental Report," received by NRC July 5, 1978; page 9-3 of "Environmental Report for Federal-American Partners," received by NRC March 29, 1978; and licensee's letter to NRC dated September 1, 1978.

In addition, the licensee shall submit to the U.S. Nuclear Regulatory Commission, Uranium Recovery Field Office, P.O. Box 25325, Denver, CO 80225, a copy of the reclamation bond or surety arrangement and a copy of the reclamation plan as submitted to and agreed to by the Wyoming Department of Environmental Quality by October 15, 1984 and annually thereafter.

22. With the start up of the SAG mill, the following changes to the in-plant air sampling program shall be required:
- a. Upon termination of all use of the dry crushing circuit, and following a washing down and proper securing of the dry crushing facilities, weekly sampling at the following locations shall no longer be necessary:

Station No. 1:	Operator's Station 3rd Floor Crusher Building
Station No. 2:	Bucket Samplers 3rd Floor Crusher Building
Station No. 3:	Near Jaw Crusher 2nd Floor Crushing Building
Station No. 4:	Final Ore Sampler
Station No. 5:	Sample Preparation Room (Dry Crushing Circuit)

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Station No. 6: Moisture Determination Room  
Station No. 7: Ore Drying Building  
Station No. 8: Above Fine Ore Bins  
Station No. 9: Below Fine Ore Bins  
Station No. 20: Conveyor Tunnel (Dry Crushing Circuit)  
Station No. 21: Ore Pad (Dry Crushing Circuit)

- b. Upon start-up of operation of the new SAG mill, the following locations shall be added to the weekly air sampling program.

Station No. 1: Ore Pad (SAG circuit)  
Station No. 2: Sample Preparation Room (SAG circuit)  
Station No. 3: Conveyor Tunnel (SAG circuit)  
Station No. 4: Control Room  
Station No. 5: Cat Walk Above Slurry Storage Tanks  
Station No. 6: Ground Floor Pump Pads

- c. Airborne concentrations of radioactivity in areas that are not routinely occupied by employees performing daily work requirements or areas that require special or unscheduled maintenance shall be monitored by use of lapel air samplers.
- d. Sampling for Radon 222 daughters at all air sampling stations specified in (b) above, shall be performed monthly.

23. The licensee shall maintain the piezometric level in the tailings underlying the solids retention dikes in the east and south parts of pond No. 2 below elevation 6495 (MSL). Piezometers in the No. 2 embankment shall be monitored at least monthly.
24. The licensee shall have in operation, at all times during which tailings are being discharged to the tailings impoundment, a flow rate sensor probe which shall be located at the discharge of the tailings line. Flow rates indicating a possible rupture of the tailings line shall result in the activation of alarm indicator lights located on the work deck of the leach section and the shift foreman's office. The probe shall be tested daily to insure proper operations.
25. The licensee shall implement the bioassay program described in Regulatory Guide 8.22.

In addition, the licensee shall make a formal documented evaluation if bioassay measurements exceed any of the following criteria:

- (1) The urinary uranium concentration exceeds 30 ug/l for any four consecutive sampling periods.



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- (2) The urinary uranium concentration for any measurement exceeds 130 ug/l.
- (3) Any in vivo thorax measurement exceeds 16 nCi.
26. The licensee shall follow the lower limits of detection (LLD) contained in Attachment No. 2 to SUA-667, "Lower Limits of Detection (LLD) for Sample Analysis" for the analysis of samples collected pursuant to the Environmental Monitoring Program of License Condition Nos. 22 and 26.
27. During the temporary period of suspension of processing operations beginning on or about November 15, 1981, the licensee shall:
- Be allowed to cease emission surveys performed on all stacks.
  - Be allowed to cease routine radiation safety surveys in areas of the mill that have been cleaned and restricted from any and all access.
  - Be required to issue a Radiation Work Permit (RWP) for inspection, repair work, or other access to areas that have been restricted from access. The RWP shall at least describe the following:
    - The scope of the work to be performed.
    - Any precautions necessary to reduce exposure to uranium and its daughters.
    - The supplemental radiological monitoring and sampling necessary prior to, during and following the access. Work generating airborne radioactivity shall require the use of continuous breathing zone monitoring.
- The Radiation Safety Officer (RSO) shall indicate by signature the review and approval of each RWP prior to the initiation of work. The work shall be carried out in strict adherence to the conditions of the RWP. When the RSO is not available, a supervisory member of the facility staff who has received specialized radiation protection training may review, approve and sign RWPs.
- Control fugitive dust from all ore pads and dry tailings beaches showing instability to wind action by spraying with a chemical stabilizer.
  - Be allowed to modify the tailings impoundment inspection program from daily detailed inspection to weekly inspections of the tailings pond embankments and immediately after any precipitation event greater than 0.5 inches of water.
28. The licensee shall implement a groundwater detection monitoring program to ensure compliance to 40 CFR 192.32(a)(2) which includes the following elements:

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- a. The licensee shall monitor at the point of compliance and background wells for the following indicator parameters: Arsenic, Selenium, and pH. The licensee shall utilize analytical techniques capable of providing lower limits of detection of 0.005 mg/l and 0.001 mg/l for arsenic and analytical techniques capable of providing lower limits of detection of 0.005 mg/l and 0.001 mg/l for arsenic and selenium, respectively. Measurements of pH shall be reported to the nearest 1/10 standard unit.
- b. The determination of compliance shall be based upon sampling Well R-6 for Tailings Pond No. 1 and Well TP2-2 for Tailings Pond No. 2.
- c. The determination of background levels for the parameters specified in subsection (a) shall be defined by sampling Well TP2-3.
- d. The licensee shall sample for those parameters specified in subsection (a) at those wells designated in subsections (b) and (c) on a monthly basis for a period of one (1) year and at least twice annually thereafter. The first monthly sample shall be taken within 30 days of the date of this Order. All semiannual samples shall be taken at least four months apart.
- e. The licensee shall, within 60 days of collection of the last of the 12 monthly samples, propose for USNRC review and approval in the form of a license amendment background levels for indicator parameters and a statistical procedure for identifying significant changes (95% confidence level) between data from the wells specified in subsections (b) and (c).
- f. The licensee shall report the data required by subsection (d) above semiannually along with those data required by License Condition No. 18 in accordance to the reporting format, Attachment No. 3 to SUA-667, "Sample Format for Reporting Detection Monitoring Data." These monitoring requirements are in addition to the requirements specified in License Condition No. 18.
- g. The licensee shall report at least annually in accordance to reporting requirements specified in subsection (f) the rate and direction of ground water flow under the tailings impoundments.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date JUL 19 1985

BY

/s/  
R. Dale Smith, Director  
Uranium Recovery Field Office  
Region IV, Denver, CO

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