

NOV 22 1991

URFO:CDMC
Docket No. 40-8857
SUA-1511, Amendment No. 36
04008857520E
04008857530E
04008857570E

Power Resources, Inc.
Highland Uranium Project
ATTN: Paul R. Hildenbrand, Manager of
Environmental and Regulatory Affairs
P.O. Box 1210
Glenrock, Wyoming 82637

Dear Mr. Hildenbrand:

By letter dated March 20, 1991, Power Resources, Inc. (PRI) submitted a request to amend Source Material License SUA-1511. Approval of this amendment, referred to as the West Highland Amendment (WHA), authorizes PRI to expand in situ leach uranium mining at the Highland Uranium Project (HUP). The NRC received no comments in response to the draft Finding of No Significant Impact prepared for the WHA and published October 3, 1991; the staff concludes that the revised Environmental Assessment (EA) of the proposed expansion of operations at HUP addressed all appropriate environmental concerns. A final Finding of No Significant Impact has been published in the Federal Register.

Concurrent with the EA for the WHA, the HUP Safety Evaluation Report (SER) has been appropriately revised and issued. In addition, the NRC has reviewed and approved PRI's updated reclamation cost estimate of \$4,820,900. This surety meets the requirements of Criterion 9 of Appendix A to 10 CFR 40 and adequately covers all concerns related to expansion of mining operations at the HUP.

In conjunction with approval of the WHA, the NRC is approving PRI's request to amend SUA-1511 to authorize mining in the area referred to as the E-Field, comprising parts of Sections 15, 2, 23, T36N, and R73W. Authorization to begin mining is based on review and approval of baseline water quality data and upper control limits for the proposed E-Field submitted by PRI under cover letters dated September 5 and September 13, 1991.

Therefore, based on the actions referenced above and pursuant to Title 10, Code of Federal Regulations, Part 40, and in accordance with your submittal dated March 20, 1991, Source Material License SUA-1511 is being revised by amending License Condition Nos. 10, 11, 15, 20, 21, 22, 24, 26, 27, 32, 33, 34, 35, 36, 38, 40, 41, 44, 46, 47, 48, 51, 52, 54, and 55, and by incorporating new License Condition Nos. 56, 57, and 58 to read as follows:

PM:URFO *CMC*
CMiller-Corbett/lv
11/22/91

PM
PM:URFO
PWMichaud
11/22/91

DD
DD:URFO
EHawkins
11/22/91

DD
D:URFO:RIV
REHall
11/22/91

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NOV 22 1991

10. For use in accordance with statements, representations, and conditions contained in Volume 6, Sections 3 and 4, of the licensee's revised application dated March 20, 1991, and the licensee's submittals dated June 12, 1987, and March 22, 1988, unless superseded by the following license conditions.
[Applicable Amendments: 2, 7, 17, 18, 36]
11. The licensee is hereby exempted from the requirements of Section 20.203(e)(2) of 10 CFR 20 for areas within the facility, provided that all entrances to the facility are conspicuously posted in accordance with Section 20.203(e)(2) and with the words, "Any area within this facility may contain radioactive material." The licensee shall also maintain the well-field area as a restricted area and implement postings notifying people of the hazard onsite.
[Applicable Amendments: 36]
15. The licensee shall maintain effluent control systems as specified in Section 9.1.4 of the licensee's revised application dated March 20, 1991, with the following additions:
 - A. Operations shall be immediately suspended in the dry/pack area of the facility if any of the emission control equipment for the yellowcake drying or packaging areas is not operating within specifications for design performance.
 - B. The licensee shall, during all periods of yellowcake drying operations, assure that the scrubber is operating within the manufacturer's recommended ranges for water flow and air pressure differential necessary to achieve design performance. This shall be accomplished by either (1) performing and documenting checks of water flow and air pressure differential approximately every 4 hours during operation, or (2) installing instrumentation which will signal an audible alarm if either water flow or air pressure differential fall below the manufacturer's recommended levels. If an audible alarm is used, its operation shall be checked and documented daily.
 - C. Air pressure differential gauges for other emission control equipment shall be read and the readings documented once per shift during operations.
[Applicable Amendments: 36]
20. In addition to the inspection and audit program described in Section 9.15 of the revised application dated March 20, 1991, the Site RSO or the designee shall document a daily walkthrough of the facility to determine if radiation control practices are being implemented. [Applicable Amendments: 36]

21. The licensee shall submit to the NRC, Uranium Recovery Field Office, a copy of the ALARA report as specified in Section 9.15 of the revised application dated March 20, 1991, within 2 months of the end of the reporting period. The report shall also include a summary of the daily walkthrough inspections. [Applicable Amendments: 36]
22. The licensee shall implement the in-plant air monitoring program, surface contamination and employee exposure programs as specified in Section 9 of the March 20, 1991, revised application Operations Plan, with the additional requirement that continuous air sampling representative of the workers' breathing zone shall be conducted within the inner barrelling enclosure during drying operations. The results of this sampling shall be used in determining the internal exposure of workers involved in yellowcake barrelling activities. Any changes in radon daughter monitoring frequency shall require NRC review and approval in the form of a license amendment. [Applicable Amendments: 5, 36]
24. In addition to the bioassay program discussed in Section 9.5 of the application, the licensee shall comply with the following:
 - 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 document the corrective actions which have been performed in accordance with Revision 1 of Regulatory Guide 8.22, dated January 1987. This documentation shall be submitted to the NRC, Uranium Recovery Field Office, as part of the semiannual report required by 10 CFR 40.65.
 - B. Anytime an action level of 35 ug/l for two 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 document the corrective actions which have been performed in accordance with Revision 1 of Regulatory Guide 8.22. This documentation shall be submitted to the NRC, Uranium Recovery Field Office, within thirty (30) days of exceeding the action level.
 - C. All in vivo measurements shall be performed in accordance with the recommendations contained in Revision 1 of Regulatory Guide 8.22.[Applicable Amendments: 36]
26. DELETED BY Amendment No. 36.
27. Any changes in the organization or staff responsibilities as described in the licensee's June 23, 1989, and February 6, 1991, submittals shall require prior approval by the NRC in the form of a

- license amendment. Additionally, any change in staff members reporting to and including the Corporate RSO shall require prior approval by the NRC. [Applicable Amendments: 18, 26, 28, 29, 36]
32. The total satellite facilities' throughput shall not exceed a flow rate of 7500 gallons per minute. [Applicable Amendments: 17, 36]
33. Any significant changes in the process circuit as illustrated and described in Figure 2 of the Operations Plan of the revised license application dated March 20, 1991, shall require approval by the NRC in the form of a license amendment. [Applicable Amendments: 36]
34. The licensee shall sample and analyze the irrigation fluid water quality at the irrigation sprinkler discharge on at least a monthly basis during times of irrigation. The sample shall consist of daily samples composited over the month. The following parameters shall be determined: pH, conductivity, TDS, Na, Ca, Mg, K, Cl, SO_4 , HCO_3 , As, B, Cr, Cu, Ni, Se, Zn, U_3O_8 , and Radium-226. The irrigation fluid shall be sampled and analyzed on a monthly basis for Ra-226 at the East Radium Pond Discharge. The results of these analyses shall be included with the semiannual environmental monitoring report. [Applicable Amendments: 36]
35. DELETED by Amendment No. 36.
36. Two months prior to conducting any mining activities for a new mining unit, the licensee shall submit hydrologic test results depicting hydrologic properties controlling ground-water flow, baseline water quality data, and proposed upper control limits (UCLs) for that unit to the NRC for review and approval. Approval shall be in the form of a license amendment to allow lixiviant injection and other mining processes to begin. [Applicable Amendments: 30, 36]
38. A. Baseline water quality sampling shall conform with the program described in the submittal dated October 7, 1987, such that baseline water quality for all new mining units shall be submitted 2 months prior to lixiviant injection. The data shall, at a minimum, consist of:
- ° One sample analyzed for the State of Wyoming, Department of Environmental Quality, Guideline 8, Appendix A, parameters per individual well.
 - ° Two separate samples analyzed for bicarbonate, chloride, electrical conductivity, radium, selenium, total dissolved solids, uranium, iron, pH, arsenic and fluoride, per individual well.

B. DELETED by Amendment No. 24.

[Applicable Amendments: 2, 4, 6, 9, 12, 14, 16, 17, 22, 24, 36]

41. The licensee shall utilize a carbon dioxide solution with an oxygen or hydrogen peroxide. Any variation from this combination shall require a license amendment. [Applicable Amendments: 12, 36]
44. DELETED by Amendment No. 36.
46. The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criterion 9, adequate to cover the estimated costs, if accomplished by a third party, for completion of the NRC-approved site closure plan including; above ground decommissioning and decontamination, the cost of offsite disposal of radioactive solid process or evaporation pond residues, and ground-water restoration as warranted. Within three (3) months of NRC approval of a revised closure plan and cost estimate, the licensee shall submit, for NRC review and approval, a proposed revision to the financial surety arrangement if estimated costs in the newly approved site closure plan exceed the amount covered in the existing financial surety. The revised surety shall then be in effect within 3 months of written NRC approval.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criterion 9, shall be provided to the NRC at least 3 months prior to the anniversary date which is designated as August 31 of each year. If the NRC has not approved a proposed revision 30 days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing arrangement, prior to expiration, for 1 year. Along with each proposed revision or annual update, the licensee shall submit supporting documentation showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15 percent contingency, changes in engineering plans, activities performed and any other conditions affecting estimated costs for site closure. The licensee shall also provide the NRC with copies of surety related correspondence with the State, a copy of the State's surety review and the final approved surety arrangement. The licensee must also ensure that the surety, where authorized to be held by the State, expressly identifies the NRC related portion of the surety and covers the above ground decommissioning and decontamination, the cost of offsite disposal, soil and water sample analyses and ground-water restoration associated with the site. The basis for the cost estimate is the NRC approved site closure plan or the NRC approved revisions to the plan. Reclamation/decommissioning plan, cost estimates and annual updates should follow the outline in the attachment to SUA-1511 entitled, "Recommended Outline for Site Specific Reclamation and Stabilization Cost Estimates."

Power Resources' currently approved surety, Irrevocable Letter of Credit No. SF0870IM issued by National Westminster Bank PLC in favor of the State of Wyoming, shall be continuously maintained in an amount no less than \$4,820,900 for the purpose of complying with 10 CFR 40, Appendix A, Criterion 9, until a replacement is authorized by both the State and the NRC.

[Applicable Amendments: 18, 25, 27, 36]

47. DELETED by Amendment No. 36.

48. The licensee shall implement the effluent and environmental monitoring program specified in Sections 9.7 and 9.8 of the March 20, 1991, revised license application, the submittal dated March 16, 1989, Section 2 of the July 1986, Wastewater Land Disposal Application, and Section No. 7 of the April 1986, Wyoming Groundwater Pollution Control Permit for Subsurface Injection of Mineral Processing Waste. Additionally, the licensee shall implement an air particulate monitoring program external to the main processing facility in accordance with 10 CFR Part 20.

In addition to the effluent and environmental monitoring submittal in accordance with 10 CFR Section 40.65, the semiannual report shall include the following:

- ° Results of the ground-water monitoring program described in Section 8.2 of the revised license application dated March 20, 1991.
- ° Injection rates, recovery rates, and injection manifold pressures.
- ° Notwithstanding the stack sampling specified above, the licensee shall include the semiannual monitor data for the drying and packaging stacks.
- ° Results of monthly irrigation fluid water quality sample analyses for pH, conductivity, TDS, Na, Ca, Mg, K, Cl, SO₄, HCO₃⁻, As, B, Cr, Cu, Ni, Se, Zn, U₃O₈, and Ra-226.
- ° Monitoring data shall be reported in the format shown in the attachment to this license entitled, "Sample Format for Reporting Monitoring Data."

[Applicable Amendments: 36]

51. Any significant changes in the Highland Uranium Project schedule as described in Section 1.4 of the revised license application dated March 20, 1991, shall require approval by the NRC, Uranium Recovery Field Office. [Applicable Amendments: 17, 36]

52. The licensee is authorized to operate a satellite facility in their Section 14 area in accordance with submittals dated November 23, 1988; December 9, 1988; January 27, 1989; February 17, 1989; and March 7, 1989.

Additionally, the pipeline that transports waste water from the Section 14 area satellite facility to the Section 21 area satellite and treatment facilities will be monitored as follows:

- (1) Standpipes will be utilized at 1,000-foot intervals along the pipeline route to the buried interface for leak detection.
- (2) Standpipes will be monitored for leak detection and integrity on a monthly basis, and all observations and maintenance checks will be logged and recorded.
- (3) Pump rates, volumes and records will be logged on a daily frequency and recorded.

[Applicable Amendments: 17, 36]

54. The Radiation Safety Program staff including the Site RSO and RST shall have training and experience equivalent to the recommendations contained in NRC Regulatory Guide 8.31, with Site RSO training to include a biennial refresher course. Any person newly hired as an RST shall have all work reviewed and approved by the Site RSO as part of a comprehensive training program until appropriate course training is completed, but for at least six months from the date of appointment. [Applicable Amendments: 28, 35, 36]
55. DELETED by Amendment No. 36.
56. Before engaging in any activity not previously approved by the NRC, the licensee shall prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not previously assessed or that is greater than that previously assessed, the licensee shall provide a written evaluation of such activities and obtain approval of the NRC in the form of a license amendment prior to initiation of said activity. [Applicable Amendments: 36]
57. Three months prior to construction of Satellite No. 3 and ancillary facilities, the licensee shall submit a request for a revision to operations for NRC approval in the form of a license amendment. The submittal shall include a diagram and description for all major facility process components. The submittal shall also include a facility radiological monitoring program. [Applicable Amendments: 36]

58. In the event that previously unknown cultural resources are discovered during construction, ground disturbing activities in that vicinity shall be halted and the U.S. Bureau of Land Management, Platte River Resource Area Manager (BLM-PRRA) notified immediately. Construction work may not resume until the cultural resource has been fully evaluated by a qualified archaeologist and any necessary mitigative measures carried out. In some cases, it may be necessary for a qualified archaeologist to monitor ground disturbing activities for some proposed actions.

Surface disturbance shall not occur within those Federally-administered surface areas which have not been examined at the Class III survey level until a Class III cultural resource inventory has been made and approved by the BLM-PRRA.

It is recommended that the privately owned areas within the proposed mine permit application area be resurveyed for cultural resources prior to implementing ground disturbing activities if the pertinent cultural resource inventory was conducted before 1980. Federal surface within the permit area that falls into this category shall be inventoried prior to disturbance.

All actions associated with the proposed development will be completed in compliance with the National Historic Preservation Act (as amended) and its implementing regulations (36CFR800), the Archaeological Resources Protection Act (as amended) and its implementing regulations (43CFR7). Further, guidelines such as the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation, and the Bureau of Land Management 8100 manual series will be followed where appropriate.

[Applicable Amendments: 36]

All other conditions of the license shall remain the same. The license is being reissued to incorporate the above modifications and additions. The effect of this amendment is to authorize PRI to expand in situ leach uranium mining operations at the HUP and begin mining operations in the E-Field. Please call Cynthia Miller-Corbett of my staff should you have any questions concerning this matter.

Sincerely,

Original Signed By:

R. E. HALL

Ramon E. Hall
Director

Enclosure:
Source Material License SUA-1511

cc:

W. Kearney, PRI
S. Morzenti, PRI
J. Hough, RCPD, WY
WDEQ (2)

bcc:

LFMB
PDR/DCS
URFO r/f
LJCallan, RIV
LLUR Branch, LLWM
OB: IMNS:NMSS
CMiller-Corbett
8857/520,530,570/CMC/91/11/14/M

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. Power Resources Inc.
[Applicable Amendments: 18, 19]

2. P.O. Box 1210
Glenrock, Wyoming 82637

3. License number

SUA-1511, Amendment No. 36

4. Expiration date July 1, 1993

5. Docket or
Reference No. 40-8857

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

Uranium

7. Chemical and/or physical
form

Unspecified

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

Unlimited

9. The authorized place of use shall be the licensee's Highland project facilities in Converse County, Wyoming.

10. For use in accordance with statements, representations, and conditions contained in Volume 6, Sections 3 and 4, of the licensee's revised application dated March 20, 1991, and the licensee's submittals dated June 12, 1987, and March 22, 1988, unless superseded by the following license conditions.
[Applicable Amendments: 2, 7, 17, 18, 36]

11. The licensee is hereby exempted from the requirements of Section 20.203(e)(2) of 10 CFR 20 for areas within the facility, provided that all entrances to the facility are conspicuously posted in accordance with Section 20.203(e)(2) and with the words, "Any area within this facility may contain radioactive material." The licensee shall also maintain the well-field area as a restricted area and implement postings notifying people of the hazard onsite.
[Applicable Amendments: 36]

12. Standard operating procedures (SOPs) shall be established for all operational process activities involving radioactive materials that are handled, processed, or stored. Standard operating procedures for operational activities shall enumerate pertinent radiation safety practices to be followed. Additionally, written procedures shall be established for nonoperational activities to include in-plant and environmental monitoring, bioassay analyses, and instrument calibrations. An up-to-date copy of each written procedure shall be kept in the process area to which it applies.

13. All written procedures for both operational and nonoperational activities shall be reviewed and approved in writing by the Site RSO and the Corporate RSO before implementation and whenever a change in a procedure is proposed to ensure that

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**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

proper radiation protection principles are being applied. In addition, the Corporate RSO shall perform a documented review of all existing operating procedures at least annually.

14. The licensee shall be required to use a Radiation Work Permit (RWP) for all work or nonroutine maintenance jobs where the potential for significant exposure to radioactive material exists and for which no standard written operating procedure exists. All RWPs shall be accompanied by a breathing zone air sample or an applicable area air sample. The RWP shall be issued by the Site RSO or his designate, qualified by way of specialized radiation protection training, and shall at least describe the following:
- A. The scope of the work to be performed,
 - B. Any precautions necessary to reduce exposure to uranium and its daughters,
 - C. The supplemental radiological monitoring and sampling necessary prior to, during, and following completion of the work, and
 - D. In addition, the Site RSO's review of all nonroutine activities shall be documented.
15. The licensee shall maintain efficient control systems as specified in Section 9.1.4 of the licensee's revised application dated March 20, 1991, with the following additions:
- A. Operations shall be immediately suspended in the dry pack area of the facility if any of the emission control equipment for the yellowcake drying or packaging areas is not operating within specifications for design performance.
 - B. The licensee shall, during all periods of yellowcake drying operations, assure that the scrubber is operating within the manufacturer's recommended ranges for water flow and air pressure differential necessary to achieve design performance. This shall be accomplished by either (1) performing and documenting checks of water flow and air pressure differential approximately every 4 hours during operation, or (2) installing instrumentation which will signal an audible alarm if either water flow or air pressure differential fall below the manufacturer's recommended levels. If an audible alarm is used, its operation shall be checked and documented daily.
 - C. Air pressure differential gauges for other emission control equipment shall be read and the readings documented once per shift during operations.

[Applicable Amendments: 36]

16. Occupational exposure calculations shall be performed and documented within 1 week of the end of each regulatory compliance period as specified in 10 CFR 20.103(a)(2) and 10 CFR 20.103(b)(2). Routine radon daughter and

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

particulate samples shall be analyzed in a timely manner to allow exposure calculations to be performed in accordance with this condition. Nonroutine samples shall be analyzed and the results reviewed by the Site RSO within 2 working days after sample collection.

17. The licensee shall submit a detailed decommissioning plan to the NRC at least 12 months prior to planned final shutdown of mining operations.
18. The licensee shall perform and document a daily visual inspection of the waste solution disposal system. Should the inspection indicate that a discharge has taken place, the NRC, Uranium Recovery Field Office, shall be notified by telephone within 48 hours.

A written report shall be filed with the NRC, Uranium Recovery Field Office, within 30 days of first notifying the NRC that a discharge occurred. This report shall include analytical data and describe the mitigative actions and the results of that action.

19. The licensee shall maintain an area within the restricted area boundary for storage of contaminated materials prior to their disposal. Additionally, an area shall be maintained at each satellite ion exchange facility for temporary storage of contaminated materials. All contaminated wastes and evaporation pond residues shall be disposed at a licensed radioactive waste disposal site.
[Applicable Amendments: 36]

20. In addition to the inspection and audit program described in Section 9.15 of the revised application dated March 20, 1991, the Site RSO or the designee shall document a daily walkthrough of the facility to determine if radiation control practices are being implemented. [Applicable Amendments: 36]

21. The licensee shall submit to the NRC, Uranium Recovery Field Office, a copy of the ALARA report as specified in Section 9.15 of the revised application dated March 20, 1991, within 2 months of the end of the reporting period. The report shall also include a summary of the daily walkthrough inspections.
[Applicable Amendments: 36]

22. The licensee shall implement the in-plant air monitoring program, surface contamination and employee exposure programs as specified in Section 9 of the March 20, 1991, revised application Operations Plan, with the additional requirement that continuous air sampling representative of the workers' breathing zone shall be conducted within the inner barrelling enclosure during drying operations. The results of this sampling shall be used in determining the internal exposure of workers involved in yellowcake barrelling activities. Any changes in radon daughter monitoring frequency shall require NRC review and approval in the form of a license amendment. [Applicable Amendments: 5, 36]

23. If any worker's exposure reaches or exceeds 25 percent of the maximum permissible exposure limits as specified in 10 CFR Part 20, based upon a calculated Time Weighted Exposure (TWE) for the week or the calendar quarter, dependent on the

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

solubility of the material, the Site RSO shall initiate an investigation of the employee's work record and exposure history to identify the source of the exposure.

Necessary corrective measures shall be taken to ensure that future exposures are as low as is reasonably achievable. Records shall be maintained of these investigations and results furnished to the NRC, Uranium Recovery Field Office, in the semiannual 10 CFR 40.65 report.

24. In addition to the bioassay program discussed in Section 9.5 of the application, the licensee shall comply with the following:

- 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 document the corrective actions which have been performed in accordance with Revision 1 of Regulatory Guide 8.22, dated January 1987. This documentation shall be submitted to the NRC, Uranium Recovery Field Office, as part of the semiannual report required by 10 CFR 40.65.
- B. Anytime an action level of 35 ug/l for two 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 document the corrective actions which have been performed in accordance with Revision 1 of Regulatory Guide 8.22. This documentation shall be submitted to the NRC, Uranium Recovery Field Office, within thirty (30) days of exceeding the action level.
- C. All in vivo measurements shall be performed in accordance with the recommendations contained in Revision 1 of Regulatory Guide 8.22.

[Applicable Amendments: 36]

25. If employees do not shower prior to leaving the main process facility, they shall monitor themselves with an alpha survey instrument prior to exiting. Should the results of monitoring exceed an action level of 1000 dpm/100 cm², employees shall decontaminate themselves to less than the action level. If decontamination cannot be accomplished, the employee shall report the incident to the Site RSO for investigation. Additionally, the Site RSO shall perform and document unannounced quarterly spot checks of employees leaving the process area.
26. DELETED BY Amendment No. 36.
27. Any changes in the organization or staff responsibilities as described in the licensee's June 23, 1989, and February 6, 1991, submittals shall require prior approval by the NRC in the form of a license amendment. Additionally, any change in staff members reporting to and including the Corporate RSO shall require prior approval by the NRC. [Applicable Amendments: 18, 26, 28, 29, 36]
28. DELETED by Amendment No. 5.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

29. DELETED by Amendment No. 5.
30. The results of sampling, analyses, surveys and monitoring, and calibration of equipment and reports on audits and inspections, all meetings and training courses required by this license and any subsequent reviews, investigations, and corrective actions, shall be documented. Unless otherwise specified in the NRC regulations, all such documentation shall be maintained for a period of at least 5 years.
31. Release of equipment or packages from the restricted area shall be in accordance with the attachment to SUA-1511 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.
32. The total satellite facilities' throughput shall not exceed a flow rate of 7500 gallons per minute. [Applicable Amendments: 17, 36]
33. Any significant changes in the process circuit as illustrated and described in Figure 2 of the Operations Plan of the revised license application dated March 20, 1991, shall require approval by the NRC in the form of a license amendment. [Applicable Amendments: 36]
34. The licensee shall sample and analyze the irrigation fluid water quality at the irrigation sprinkler discharge on at least a monthly basis during times of irrigation. The sample shall consist of daily samples composited over the month. The following parameters shall be determined: pH, conductivity, TDS, Na, Ca, Mg, K, Cl, SO₄, HCO₃, As, B, Br, Cu, Ni, Se, Zn, U₃₀₈, and Radium-226. The irrigation fluid shall be sampled and analyzed on a monthly basis for Ra-226 at the East Radium Pond discharge. The results of these analyses shall be included with the semiannual environmental monitoring report. [Applicable Amendments: 36]
35. DELETED by Amendment No. 36. ★ ★ ★ ★ ★
36. Two months prior to conducting any mining activities for a new mining unit, the licensee shall submit hydrologic test results depicting hydrologic properties controlling ground-water flow, baseline water quality data, and proposed upper control limits (UCLs) for that unit to the NRC for review and approval. Approval shall be in the form of a license amendment to allow lixiviant injection and other mining processes to begin. [Applicable Amendments: 30, 36]
37. All liquid effluents from process buildings and other process waste streams, with the exception of sanitary wastes, shall be returned to the process circuit or discharged to the solution disposal system.
38. A. Baseline water quality sampling shall conform with the program described in the submittal dated October 7, 1987, such that baseline water quality for all new mining units shall be submitted 2 months prior to lixiviant injection. The data shall, at a minimum, consist of:

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

- ° One sample analyzed for the State of Wyoming, Department of Environmental Quality, Guideline 8, Appendix A, parameters per individual well.
- ° Two separate samples analyzed for bicarbonate, chloride, electrical conductivity, radium, selenium, total dissolved solids, uranium, iron, pH, arsenic and fluoride, per individual well.

B. DELETED by Amendment No. 24.

[Applicable Amendments: 2, 4, 6, 9, 12, 14, 16, 17, 22, 24, 36]

39. DELETED by Amendment No. 24.

40. A. Upper control limits (UCLs) and baseline water quality data for all monitor wells to be utilized for operational and restoration monitoring shall be derived for each individual mining unit. The UCLs for bicarbonate and electrical conductivity will be defined as the mining unit baseline mean plus five standard deviations. The UCL for chloride will be defined as the mining unit baseline mean plus five standard deviations or the mining unit baseline mean plus 15 mg/L, whichever is greater.

B. For the following mining units, UCLs are approved as delineated in the licensee's referenced submittals:

Mining Unit	Submittal Date
Section 21:20-Sand	November 30, 1987 and November 2, 1988
Section 21:30-Sand	November 2, 1988
Section 14:40-Sand (North)	February 13, 1989
Section 14:40-Sand (South)	April 2, 1990
Section 22/23:40-Sand	March 12, 1991
Section 15/22/23:50-Sand	September 5, 1991

C. The licensee shall implement monitoring well modifications to the mining unit denoted as Section 21, 20- and 30-Sand as outlined in their submittal of May 19, 1988. Monitoring wells M-40, M-41, M-42, and M-43 shall be monitored biweekly until such time as excursion status is removed and a request to revise sampling frequency is submitted, or unless there is a reversal in the trend towards water quality improvement as described in the submittal dated August 19, 1991. Additionally, routine monitoring for wells CMO-1, CMO-11, CMO-18, CMU-7, and DMU-1 shall consist of water levels only.

D. The licensee shall monitor Section 14:50 Sand (South) trend wells CRMW-1, COW-1, CPTW14-2, and CRMW-6 for bicarbonate, chloride, and conductivity on the frequency specified for the monitor wells.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

E. No uranium recovery shall be allowed in the "potential pattern area" shown on the Section 14 ISL Pattern map submitted by cover letter dated April 23, 1990.

[Applicable Amendments: 4, 6, 8, 9, 12, 16, 17, 22, 23, 24, 30, 33, 34, 36]

41. The licensee shall utilize a carbon dioxide solution with an oxygen or hydrogen peroxide. Any variation from this combination shall require a license amendment.
[Applicable Amendments: 12, 36]

42. Each radium settling pond shall have 3 feet of freeboard required. The storage reservoir shall have 4 feet of freeboard required.

43. The licensee shall perform and document a daily visual inspection of the radium settling ponds and the storage reservoir embankments, fences and liners, as well as measurements of pond freeboard and checks of the leak detection system. Should analyses indicate that the pond is leaking, the NRC Uranium Recovery Field Office, shall be notified by telephone within 24 hours of verification and the pond level shall be lowered by transferring its contents into the other cell. Water quality samples taken at the standpipe shall be analyzed for chloride and conductivity once every 7 days during the leak period for at least 2 weeks following repairs. Additionally, water samples collected at the settling basin standpipes shall be analyzed for the full suite of parameters as defined in WDEQ/LQD Guideline 8, Appendix 1, at least once per month during the leak period.

A written report shall be filed with the NRC Uranium Recovery Field Office, within 30 days of first notifying the NRC that a leak exists. This report shall include analytical data and describe the mitigative actions and the results of that action.

[Applicable Amendments: 5]

44. DELETED by Amendment No. 36.

45. At least 2 months prior to termination of uranium recovery in a mining area, the licensee shall submit to the NRC, Uranium Recovery Field Office, a schedule for ground-water restoration and post restoration monitoring. Any deviation from the restoration methodology described in the June 26, 1991, submittal for Section 21, 20- and 30-Sand mine units for any subsequent mining units shall require NRC review and approval in the form of a license amendment. The goal of restoration shall be to return the ground-water quality, on a mining unit average, to baseline concentrations. Additionally, failure to restore ground-water quality to baseline concentrations shall require the licensee to submit a report describing the methodology implemented during the restoration attempt, predicted results of any subsequent restoration efforts to further improve ground-water quality, and an evaluation of the impacts to the ground-water resource.
[Applicable Amendments: 32]

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

46. The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criterion 9, adequate to cover the estimated costs, if accomplished by a third party, for completion of the NRC-approved site closure plan including; above ground decommissioning and decontamination, the cost of offsite disposal of radioactive solid process or evaporation pond residues, and ground-water restoration as warranted. Within three (3) months of NRC approval of a revised closure plan and cost estimate, the licensee shall submit, for NRC review and approval, a proposed revision to the financial surety arrangement if estimated costs in the newly approved site closure plan exceed the amount covered in the existing financial surety. The revised surety shall then be in effect within 3 months of written NRC approval.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criterion 9, shall be provided to the NRC at least 3 months prior to the anniversary date which is designated as August 31 of each year. If the NRC has not approved a proposed revision 30 days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing arrangement, prior to expiration, for 1 year. Along with each proposed revision or annual update, the licensee shall submit supporting documentation showing a breakdown of the costs and the basis for the cost estimates with adjustments for inflation, maintenance of a minimum 15 percent contingency, changes in engineering plans, activities performed and any other conditions affecting estimated costs for site closure. The licensee shall also provide the NRC with copies of surety related correspondence with the State, a copy of the State's surety review and the final approved surety arrangement. The licensee must also ensure that the surety, where authorized to be held by the State, expressly identifies the NRC related portion of the surety and covers the above ground decommissioning and decontamination, the cost of offsite disposal and soil and water sample analyses and ground-water restoration associated with the site. The basis for the cost estimate is the NRC approved site closure plan or the NRC approved revisions to the plan. Reclamation/decommissioning plan, cost estimates and annual updates should follow the outline in the attachment to SUA-1511 entitled, "Recommended Outline for Site Specific Reclamation and Stabilization Cost Estimates."

Power Resources' currently approved surety, Irrevocable Letter of Credit No. SF0870IM issued by National Westminster Bank PLC in favor of the State of Wyoming, shall be continuously maintained in an amount no less than \$4,820,900 for the purpose of complying with 10 CFR 40, Appendix A, Criterion 9, until a replacement is authorized by both the State and the NRC.

[Applicable Amendments: 18, 25, 27, 36]

47. DELETED by Amendment No. 36.
48. The licensee shall implement the effluent and environmental monitoring program specified in Sections 9.7 and 9.8 of the March 20, 1991, revised license application, the submittal dated March 16, 1989, Section 2 of the July 1986, Wastewater Land Disposal Application, and Section No. 7 of the April 1986, Wyoming Groundwater Pollution Control Permit for Subsurface Injection of Mineral

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

Processing Waste. Additionally, the licensee shall implement an air particulate monitoring program external to the main processing facility in accordance with 10 CFR Part 20.

In addition to the effluent and environmental monitoring submittal in accordance with 10 CFR Section 40.65, the semiannual report shall include the following:

- ° Results of the ground-water monitoring program described in Section 8.2 of the revised license application dated March 20, 1991.
- ° Injection rates, recovery rates, and injection manifold pressures.
- ° Notwithstanding the stack sampling specified above, the licensee shall include the semiannual monitor data for the drying and packaging stacks.
- ° Results of monthly irrigation fluid water quality sample analyses for pH, conductivity, TDS, Na, Ca, Mg, K, Cl, SO₄, HCO₃⁻, As, B, Cr, Cu, Ni, Se, Zn, U₃O₈, and Ra-226.
- ° Monitoring data shall be reported in the format shown in the attachment to this license entitled, "Sample Format for Reporting Monitoring Data."

[Applicable Amendments 36]

49. Upper Control Limit (UCL) criteria shall be applied to all monitor wells to determine when action must be taken to control excursions during restoration with incidental recovery of uranium.

If any two excursion indicators in a well exceed the upper control limit, the licensee shall take another water sample within 24 hours and analyze it for at least bicarbonate, chloride, and conductivity. An excursion is confirmed if two or more UCL values are exceeded. Corrective action to mitigate the situation shall be initiated by the licensee when an excursion is confirmed and the licensee shall notify the NRC, Uranium Recovery Field Office, within 24 hours by telephone and within 7 days in writing. Corrective actions shall be maintained until the excursion is concluded. In addition to corrective actions, sampling frequency and analysis of excursion status wells shall be at least once every seven days for the three indicators listed above, as long as those wells are on excursion status. An excursion is considered concluded when the concentrations of all excursion indicators are below the concentration levels which define an excursion.

A formal report of events describing the corrective actions taken and detailed graphs and tables of all sample analyses shall be maintained during excursions as described above to document actions and the ensuing results. This report, along with pre-excursion and post-excursion data obtained from the analyses of at least

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

COPY

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

two separate samples taken both before and after an excursion from all wells included in the excursion status location, shall be submitted to the NRC, Uranium Recovery Field Office.

[Applicable Amendments: 12, 28]

50. The licensee shall monitor, maintain, decommission and reclaim the expanded pilot in-situ site in accordance with their submittal dated October 20, 1988.

[Applicable Amendments: 15]

51. Any significant changes in the High and Uranium Project schedule as described in Section 1.4 of the revised license application dated March 20, 1991, shall require approval by the NRC, Uranium Recovery Field Office.

[Applicable Amendments: 17, 36]

52. The licensee is authorized to operate a satellite facility in their Section 14 area in accordance with submittals dated November 23, 1988; December 9, 1988; January 27, 1989; February 17, 1989; and March 7, 1989.

Additionally, the pipeline that transports waste water from the Section 14 area satellite facility to the Section 21 area satellite and treatment facilities will be monitored as follows:

- (1) Standpipes will be utilized at 1,000 foot intervals along the pipeline route to the buried interface for leak detection.
- (2) Standpipes will be monitored for leak detection and integrity on a monthly basis, and all observations and maintenance checks will be logged and recorded.
- (3) Pump rates, volumes and records will be logged on a daily frequency and recorded.

[Applicable Amendments: 17, 36]

53. The licensee is authorized to dispose of waste byproduct material from the Power Resources, Inc. facility at the American Nuclear Corporation (ANC) Gas Hills, Wyoming, mill. The licensee's agreement with ANC constitutes an approved waste disposal plan, and the licensee shall be required to maintain the agreement for inspection onsite. In the event the agreement expires or is terminated, the licensee is required to notify the NRC, Uranium Recovery Field office, within 7 working days of the expiration date. A new agreement must be submitted for NRC approval within ninety (90) days of expiration, or the licensee will be prohibited from further lixiviant injection. [Applicable Amendments: 17, 27]

54. The Radiation Safety Program staff including the Site RSO and RST shall have training and experience equivalent to the recommendations contained in NRC Regulatory Guide 8.31, with Site RSO training to include a biennial refresher course. Any person newly hired as an RST shall have all work reviewed and

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

approved by the Site RSO as part of a comprehensive training program until appropriate course training is completed, but for at least six months from the date of appointment. [Applicable Amendments: 28, 35, 36]

55. DELETED by Amendment No. 36.

56. Before engaging in any activity not previously approved by the NRC, the licensee shall prepare and record an environmental evaluation of such activity. When the evaluation indicates that such activity may result in a significant adverse environmental impact that was not previously assessed or that is greater than that previously assessed, the licensee shall provide a written evaluation of such activities and obtain approval of the NRC in the form of a license amendment prior to initiation of said activity. [Applicable Amendments: 36]

57. Three months prior to construction of Satellite No. 3 and ancillary facilities, the licensee shall submit a request for a revision to operations for NRC approval in the form of a license amendment. The submittal shall include a diagram and description for all major facility process components. The submittal shall also include a facility radiological monitoring program. [Applicable Amendments: 36]

58. In the event that previously unknown cultural resources are discovered during construction, ground disturbing activities in that vicinity shall be halted and the U.S. Bureau of Land Management, Platte River Resource Area Manager (BLM-PRRA) notified immediately. Construction work may not resume until the cultural resource has been fully evaluated by a qualified archaeologist and any necessary mitigative measures carried out. In some cases, it may be necessary for a qualified archaeologist to monitor ground disturbing activities for some proposed actions.

Surface disturbance shall not occur within those Federally-administered surface areas which have not been examined at the Class III survey level until a Class III cultural resource inventory has been made and approved by the BLM-PRRA.

It is recommended that the privately owned areas within the proposed mine permit application area be resurveyed for cultural resources prior to implementing ground disturbing activities if the pertinent cultural resource inventory was conducted before 1980. Federal surface within the permit area that falls into this category shall be inventoried prior to disturbance.

All actions associated with the proposed development will be completed in compliance with the National Historic Preservation Act (as amended) and its implementing regulations (36CFR800), the Archaeological Resources Protection Act (as amended) and its implementing regulations (43CFR7). Further, guidelines such

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

SUA-1511, Amendment No. 36

Docket or Reference number

40-8857

NOV 22 1991

as the Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation, and the Bureau of Land Management 8100 manual series will be followed where appropriate.

[Applicable Amendments: 36]

FOR THE NUCLEAR REGULATORY COMMISSION

Date:

11-22-91

Ramon E. Hall
Ramon E. Hall, Director
Uranium Recovery Field Office
Region IV

