

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. Rio Algom Mining Corp.	3. License number	
2. La Sal Route Moab, Utah 84532		SUA-1119, Amendment No. 41
	4. Expiration date	Until terminated
	5. Docket or Reference No.	[Applicable Amendments: 40] 40-8084
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
Natural Uranium	Any	Unlimited

9. Authorized place of use: The licensee's uranium milling facilities located in San Juan County, Utah.

10. The licensee is hereby authorized to possess byproduct material in the form of uranium waste tailings and other byproduct materials generated by the licensee's milling operations authorized by this license.
[Applicable Amendments: 40]

11. For use in accordance with statements, representations, and conditions contained in Sections 5.1.1, 5.1.3, 5.1.4, 5.2, 5.3, 5.4, 5.5.1, 5.5.2, 5.5.3, 5.5.4, 5.5.5, 5.5.9, and Appendices 5.5.2, 5.5.3.3, and 5.5.5 of the licensee's renewal application dated December, 1982, as modified by supplements submitted by letters dated May 30, 1984, August and September 1984, December 6, 1985, January 30, July 21, and August 14, 1986, November 20, 1987, January 12, 1988, and July 2, 1992 except where superseded by license condition below.

In addition, the licensee shall comply with Section 6.0 of the renewal application as modified in the supplement submitted by letter dated May 31, 1985, except that specific names and telephone numbers shall be updated as necessary. Such updates shall not require an amendment to this license.

Whenever the word "will" is used in the above referenced sections, it shall denote a requirement.

[Applicable Amendments: 3, 9, 15, 16, 40]

12. DELETED by Amendment No. 40.

13. DELETED by Amendment No. 40.

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14. The licensee is hereby exempted from the requirements of Section 20.203(e)(2) of 10 CFR 20 for areas within the mill, provided that 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."

15. The results of sampling, analyses, surveys and monitoring; the results of calibration of equipment; 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 NRC regulations, all such documentation shall be maintained for a period of at least five (5) years.

16. DELETED by Amendment No. 40.

17. DELETED by Amendment No. 40.

18. Release of equipment or packages from the restricted area shall be in accordance with the attachment to SUA-1119 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).

19. Mill tailings other than samples for research shall not be transferred from the site without specific prior approval of the NRC in the form of a license amendment. The licensee shall maintain a permanent record of all transfers made under the provisions of this condition.

20. In order to ensure that no disturbance of cultural resources occurs in the future, the licensee shall have an archeological and historical artifact survey of areas of its property, not previously surveyed, performed prior to their disturbance, including borrow areas to be used for reclamation cover. These surveys must be submitted to the NRC and no such disturbance shall occur until the licensee has received authorization from the NRC to proceed.

In addition, all work in the immediate vicinity of any buried cultural deposits unearthed during the disturbance of land shall cease until approval to proceed has been granted by the NRC.

21. The licensee shall 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 miles (8 km) of any portion of the restricted area boundary and submit a report of this survey to the NRC, Uranium Recovery Field Office. This report shall indicate any differences in land use from that described in the last report.

22. The results 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 to the NRC, Uranium Recovery Field Office. Monitoring data shall be reported in the format shown in the attachment to SUA-1119 entitled, "Sample Format for Reporting Monitoring Data."

23. DELETED by Amendment No. 40.

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24. The licensee shall immediately notify the NRC, Uranium Recovery Field Office, by telephone and telegraph, of any failure to the tailings dam or tailings discharge and solution return system which results in a release of radioactive material and/or of any unusual conditions which if not corrected could lead to such a failure. This requirement is in addition to the requirements of 10 CFR 20.
25. Before engaging in any activity not previously assessed 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 assessed or that is greater than that assessed, the licensee shall provide a written evaluation of such activities and obtain prior approval of the NRC in the form of a license amendment.
26. DELETED by Amendment No. 40.
27. The licensee shall maintain an NRC-approved financial surety arrangement, consistent with 10 CFR 40, Appendix A, Criteria 9 and 10, adequate to cover the estimated costs, if accomplished by a third party, for decommissioning and decontamination of the mill and mill site, reclamation of any tailings or waste disposal areas, ground water restoration as warranted and the long-term surveillance fee. Within three months of NRC approval of a revised reclamation/decommissioning plan, the licensee shall submit for NRC review and approval, a proposed revision to the financial surety arrangement if estimated costs in the newly approved plan exceed the amount covered in the existing financial surety. The revised surety shall then be in effect within three months of written NRC approval.

Annual updates to the surety amount, required by 10 CFR 40, Appendix A, Criteria 9 and 10, shall be submitted to the NRC at least three months prior to the anniversary date which is designated as September 30 of each 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 fee, changes in engineering plans, activities performed and any other conditions affecting estimated costs for site closure. The basis for the cost estimate is the NRC approved reclamation/decommissioning plan or NRC approved revisions to the plan. The attachment to this license, entitled "Recommended Outline for Site Specific Reclamation and Stabilization Cost Estimates" outlines the minimum considerations used by the NRC in the review of site closure estimates. Reclamation/decommissioning plans and annual updates should follow this outline.

The licensee's currently approved surety, a Parent Company Guarantee issued by Rio Algom Limited, shall be continuously maintained in an amount no less than \$3,573,000 for the purpose of complying with 10 CFR 40, Appendix A, Criteria 9 and 10, until a replacement is authorized by the NRC. The use of a Parent Company Guarantee necessitates a complete NRC evaluation of the corporate parent as part of the annual surety update. In addition to the cost information required above, the annual submittal must include updated documentation of the (1) Parent Company Guarantee, (2) Letter from the Chief Financial Officer of the

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Parent Company, (3) Auditor's Special Report Confirmation of Chief Financial Officer's Letter, and (4) Schedule Reconciling Amounts in Chief Financial Officer's Letter to Amounts in Financial Statements.

[Applicable Amendments: 18, 22, 26, 33, 38]

28. Prior to termination of this license, the licensee shall provide for transfer of title to byproduct material and land, including any interests therein (other than land owned by the United States or the State of Utah), which is used for the disposal of such byproduct material or is essential to ensure the long term stability of such disposal site to the United States or the State of Utah.
29. The licensee shall submit a detailed decommissioning plan to the NRC at least 12 months prior to planned mill decommissioning. The submittal shall include a schedule for decommissioning activities. [Applicable Amendments: 40]
30. Occupational exposure calculations shall be performed and documented within one 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 airborne ore dust and yellowcake samples shall be analyzed in a timely manner to allow exposure calculations to be performed in accordance with this condition. Non-routine ore dust and yellowcake samples shall be analyzed and the results reviewed by the RSO within two working days after sample collection.
31. DELETED by Amendment No. 40.
32. DELETED by Amendment No. 40.
33. Standard written operating procedures (SOPs) shall be established for nonoperational activities to include in-plant and environmental monitoring, bioassay analyses, instrument calibrations, and emergency response. All written procedures shall be reviewed and approved in writing by the RSO before implementation and whenever a change in procedure is proposed to ensure that proper radiation protection principles are being applied. In addition, the RSO shall perform a documented review of all existing operating procedures at least annually. [Applicable Amendments: 40]
34. DELETED by Amendment No. 40.
35. DELETED by Amendment No. 40.
36. DELETED by Amendment No. 40.
37. DELETED by Amendment No. 40.
38. The licensee shall be required to use a Radiation Work Permit (RWP) issued by the RSO or his designate for work or nonroutine maintenance jobs where the potential for exposure to radioactive material exists and for which no standard written operating procedures exist. The RWP shall at least describe the following:
- A. The scope of the work to be performed.

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- B. Any precautions necessary to reduce exposure to uranium and its daughters.
- C. The supplemental radiological monitoring and sampling necessary before, during, and following completion of the work.
39. To ensure continued good radiation safety practices, the RSO or their designee shall conduct monthly documented inspections of all active work areas in accordance with the program elements specified in Section 5.1.3 of the renewal application. Inspection frequency shall be increased to weekly during mill decommissioning activities. The mill structure is exempt from routine inspections unless work activities are conducted within the building.
[Applicable Amendments: 9, 15, 40]
40. The licensee shall submit a copy of the report documenting an annual ALARA audit committed to in Section 5.1.4 of the renewal application as modified by letter dated November 20, 1987. Submittals required by this condition shall be submitted to the NRC within one month of completion of the report.
[Applicable Amendments: 15, 40]
41. All workers shall be provided on-the-job training on the radiation safety aspects of the job to be performed prior to beginning work activities and annually thereafter. The on-the-job training, as well as all other training committed to in Section 5.3 of the renewal application, shall be documented.
[Applicable Amendments: 40]
42. The licensee shall comply with the following additions to the bioassay program committed to in Section 5.5.4 of the renewal application:
- A. Baseline urinalysis shall be performed for all new employees prior to start of activities.
- B. The licensee is released from the commitment in their license application dated december 1982, for performing routine in-vivo measurements every 2 years. In-vivo measurements shall be performed in accordance with the recommendations contained in Revision 1 of Regulatory Guide 8.22.
- C. Laboratory surfaces used for bioassay analyses shall be decontaminated to less than 25 dpm alpha (removable)/100cm² prior to analysis of samples.
- D. Anytime an action level of 15 µg/l uranium for uranium for urinalysis or 9 nCi uranium for an 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 included and submitted with the semiannual 10 CFR 40.65 report.
- E. Anytime an action level of 30 µg/l uranium for four consecutive specimens or 130 µg/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 30 days to the NRC indicating what corrective actions have been performed to satisfy the requirements of Regulatory Guide 8.22.

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- F. The licensee is released from the commitment in their license renewal application dated December 1982 to perform routine monthly bioassay analysis. The licensee shall submit a bioassay program for approval by the NRC as part of the mill decommissioning plan.

[Applicable Amendments: 17, 40]

43. The licensee shall perform and document weekly checks of the alpha survey meters used in the personnel and surface contamination control program using a radiation check source.
44. The licensee shall implement the inspection programs for the disposal areas as specified in pages 5, 6, and 7 of their May 1, 1992, submittal, and in their submittal dated May 26, 1992, subject to the following:
- A. The piezometers in the upper and lower embankments shall be read monthly during milling periods. During periods of mill shutdown, embankment piezometers shall be read quarterly. On an annual basis, the piezometers shall be examined and tested for proper functioning.
 - B. The maintenance of operating facilities and features (such as pumps and valves) that pertain to the safety of the retention system shall be examined to determine the adequacy and quality of the maintenance procedures followed in maintaining the dam and facilities in safe operating condition.
 - C. The professional responsible for the technical evaluation shall ensure that field inspectors are trained to recognize and assess signs of possible distress or abnormality.
 - D. The results of the piezometer and evaporation cell water level measurements shall be maintained in graphical form.
 - E. The annual technical evaluation shall be conducted under the direction of a registered professional engineer experienced in dam design and construction. A copy of each annual report shall be submitted to the NRC, Uranium Recovery Field Office, within 1 month of completion of the report.

[Applicable Amendments: 1, 14, 15, 37]

45. The licensee shall comply with the following:
- A. DELETED by Amendment No. 24.
 - B. Runoff from the lower tailings shall be diverted into the open channel spillway constructed as located in the licensee's April 10, 1992, submittal. The capacity of the spillway shall be at least equivalent to the capacity of the 2 foot culvert proposed by the licensee's letter dated March 20, 1991.
 - C. DELETED by Amendment No. 37.
 - D. DELETED by Amendment No. 30.

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- E. DELETED by Amendment No. 24.
- F. After heavy storm runoff, the licensee shall drain Bisco Lake back to an elevation of 6715 feet msl or less as soon as possible, but in no case longer than thirty (30) days.
- G. Runoff from the upper tailings shall be diverted into the diversion ditch according to the methods described in the licensee's October 11, 1991, submittal.
- H. The evaporation pond on the upper impoundment shall be operated with a minimum freeboard of 2 feet in accordance with the licensee's August 15, 1990, submittal.

[Applicable Amendments: 13, 14, 17, 21, 24, 25, 28, 30, 37]

46. DELETED by Amendment No. 40.
47. DELETED by Amendment No. 40.
48. DELETED by Amendment No. 40.
49. DELETED by Amendment No. 40.
50. Construction and maintenance of the flood diversion structures shall be in accordance with the specifications, representations, recommendations, and commitments contained in:
- A. "Supplementary Information for Flood Control and Diversion Structures, Rio Algom Uranium Mining Facility, La Sal, Utah" by Dames & Moore, August 26, 1981.
- B. "Report on the Design of Flood Control and Diversion Structures, Rio Algom Uranium Mining Facility, La Sal, Utah" by Dames & Moore, September 8, 1981.
51. The licensee shall conduct an environmental monitoring program as specified in Section 5.5.6.1 and Table 5.5-5 of the renewal application dated December 1982, as modified by the supplement dated December 6, 1985, with the following modifications:
- A. Radon monitoring shall be conducted continuously using passive monitoring devices which are exchanged and read at least quarterly.
- B. DELETED by Amendment No. 20.
- C. The licensee shall implement a surface-water monitoring program as specified in the submittals dated July 21, and August 14, 1986, and November 20, 1987.
- D. DELETED by Amendment No. 27.

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- E. The lower limits of detection (LLD) to be utilized for sample analysis shall be as specified in the submittals dated September 29, and December 16, 1984, with the exception that the LLD for analysis of Pb-210 in water shall be $2.0E-9$ uCi/ml.
- F. Continuous air samplers shall be calibrated and the calibration documented at least quarterly.
- G. DELETED by Amendment No. 40.

[Applicable Amendments: 7, 10, 15, 20, 23, 27, 40]

52. The licensee shall submit to the NRC, Uranium Recovery Field Office, by December 31, 1985, a detailed reclamation plan which includes the following:

- A. A stabilization plan which details methods to prevent blowing, ponding, and recharge of the tailings;
- B. A plan to dewater and/or consolidate the tailings;
- C. Plan and cross-sectional views of the final reclaimed area which detail the location and elevations of tailings and cover materials;
- D. Detailed plans for placement of rock or vegetative cover on the final reclaimed tailings pile;
- E. A proposed implementation schedule for items A through D above;
- F. An analysis to show that the proposed type and thickness of soil cover is adequate to provide appropriate attenuation of radon;
- G. An erosion analysis to show that the proposed cover materials will provide long-term isolation of tailings.

[Applicable Amendments: 4, 6, 7, 8]

53. The licensee shall implement a ground-water compliance monitoring program containing the following:

- A. Sample wells OWUT-9, EF-24, MW-11A, MW-5, MW-13, H-56, EF-3, EF-5, EF-25, EF-23, MW-7, MW-8A, MW-9, RW-1, MW-4, EF-4, and EF-6 on a semiannual frequency for arsenic, molybdenum, selenium, and water level, and on a quarterly frequency for natural uranium, chloride, sulfate, pH, and conductivity.

Water levels shall also be measured annually in the following wells:

H wells 6, 10, 14, 38, 48, 55, 56, 71, 72, 73, 77, and 78; D-3 MW wells 1, 2, 6A, 10, 11, and 12; DM 80 wells 1, 2, 3, and 4; FT-1; LT well 10; GW wells 19, and 20; and EF wells 2, 8, 16, 17, 19, 20, 22, and 26.

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- B. Comply with the following ground-water protection standards (in mg/l) at the northern point of compliance wells H-56 and OWUT-9 with background being recognized in well MW-5:

arsenic = 0.05, molybdenum = 0.07, selenium = 0.01, and uranium = 0.01.

- C. Comply with the following ground-water protection standards (in mg/l) at the southern point of compliance wells EF-3 and EF-5, with background being recognized in well MW-13:

arsenic = 0.066, molybdenum = 0.05, selenium = 0.01, and uranium = 0.02.

- D. Implement a corrective action program consisting of pumping wells OWUT-9, MW-11A, and EF-24 or other wells in these areas at a combined flow rate of approximately 100 gpm due to exceedance of ground-water protection standards. The objective of the corrective action program shall be to return the concentration of arsenic, molybdenum, selenium, and uranium to the concentration limits specified in subsections (B) and (C). If a combined pumping rate of 100 gpm cannot be maintained due to possible exceedance of freeboard requirements, the licensee shall be permitted until June 30, 1993, to reduce pumping to the maximum possible gpm rate obtainable to maintain appropriate freeboard requirements.

Additionally, the licensee shall, on a semiannual frequency, submit a ground-water monitoring report as well as submit a corrective action program review by July 1 of each year that describes the progress towards attaining ground-water protection standards.

- E. Construct the enhanced evaporation system as described in the June 29, 1990, amendment application as revised by letter dated November 12, 1990.

[Applicable Amendments: 19, 20, 27, 29, 34, 35, 36, 39, 41]

54. In accordance with submittals dated February 21, March 31, May 19, September 28, 1989, and January 10, 1990, the licensee is authorized to dispose of a maximum of 70,000 cubic yards of coal ash, contaminated mill wastes, soil, waste rock, and Bisco Lake sediment within the location shown in the licensee's March 31, 1989, submittal. Materials will be disposed of according to procedures described in the March 31, 1989, submittal. The disposal shall be completed by March 31, 1991, and shall be documented.

[Applicable Amendments: 2, 5, 11, 16, 23, 24, 25, 31]

55. The licensee shall complete site reclamation in accordance with an approved reclamation plan. The ground-water corrective action plan shall be conducted as authorized by License Condition No. 53 in accordance with the following schedule.

- A. To ensure timely compliance with target completion dates established in the Memorandum of Understanding with the Environmental Protection Agency (56 FR 55432, October 25, 1991), the licensee shall complete reclamation to control radon emissions as expeditiously as practicable, considering technological feasibility, in accordance with the following schedule:

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- (1) Windblown tailings retrieval and placement on the pile - September 30, 1993.
- (2) Placement of the interim cover to decrease the potential for tailings dispersal and erosion - December 31, 1992.
- (3) Placement of final radon barrier designed and constructed to limit radon emissions to an average flux of no more than 20 pCi/m²/s above background - December 31, 1996.

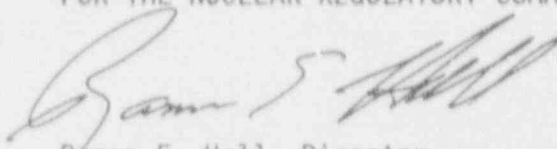
B. Reclamation, to ensure required longevity of the covered tailings and ground-water protection, shall be completed as expeditiously as is reasonably achievable, in accordance with the following target dates for completion:

- (1) Placement of erosion protection as part of reclamation to comply with Criterion 6 of Appendix A of 10 CFR Part 40 - December 31, 2015.
- (2) Projected completion of ground-water corrective actions to meet performance objectives specified in the ground-water corrective action plan - December 31, 2015.

C. Any license amendment request to revise the completion dates specified in Section A must demonstrate that compliance was not technologically feasible (including inclement weather, litigation which compels delay to reclamation, or other factors beyond the control of the licensee).

D. Any license amendment request to change the target dates in Section B above must address added risk to the public health and safety and the environment, with due consideration to the economic costs involved and other factors justifying the request such as delays caused by inclement weather, regulatory delays, litigation, and other factors beyond the control of the licensee.

FOR THE NUCLEAR REGULATORY COMMISSION



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

Dated:

Dec. 31, 1992