NRC FORM 374

U.S. NUCLEAR REGULATORY COMMISSION

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and the applicable parts of Title 10, Code of Federal Regulations, Chapter I, Parts 19, 20, 30, 31, 32, 33, 34, 35, 36, 39, 40, 51, 70, and 71, 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. Pathfinder Mines Corporation Lucky Mc Uranium Mill	3. License Number SUA-672 Amendment 68
2. P.O. Box 730 Mills, Wyoming 82644	4. Expiration Date Until Terminated
	5. Docket No. 40-2259 Reference No.

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 Lucky Mc Mill site located in Fremont County, Wyoming.

   [Applicable Amendments: 29, 36]

10. The licensee is hereby authorized to possess byproduct material in the form of uranium waste tailings generated by the licensee's milling operations authorized by this license.

11. For use in accordance with statements, representations and conditions contained in Sections 5.3.5, 5.4, and 7.6, and Figure 2-3 of the license renewal application dated December 1982, except where superseded by license conditions below. Whenever the word "will" is used in the above referenced sections, it shall denote a requirement.

    Site security shall be provided by limiting access by means of locked gates at times when site personnel are not present. Radiation safety requirements shall consist of the program as outlined in the submittal dated December 5, 2002. No change room facility on a routine basis shall be required.

    [Applicable Amendments: 7, 29, 45, 64]

12. DELETED by Amendment No. 29.

13. DELETED by Amendment No. 29.

14. DELETED by Amendment No. 45.

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 5 years.

16. DELETED by Amendment No. 29.

17. DELETED by Amendment No. 45.

18. Release of equipment or packages from the restricted area shall be in accordance with guidance 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.

    [Applicable Amendment: 63]

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 5 miles (8 km) of any portion of the restricted area boundary and submit a report of this survey to NRC. This report shall indicate any differences in land use from that described in the last report.

    [Applicable Amendments: 42, 44]

22. The results of all effluent and environmental monitoring shall be reported in accordance with 10 CFR 40.65 with copies of the report sent to NRC. Monitoring data shall be reported in the format shown in guidance entitled, "Sample Format for Reporting Monitoring Data."

    [Applicable Amendments: 11, 12, 19, 42, 44, 63]

23. DELETED by Amendment No. 29.

24. The licensee shall immediately notify the NRC Operations Center at (301)816-5100, by telephone, 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.

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[Applicable Amendments: 42, 63]

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. 55

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. With submittal 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 3 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 3 months prior to the anniversary date which is designated as December 15 of each year. If the NRC has not approved a proposed revision to the surety coverage 30 days prior to the expiration date of the existing surety arrangement, the licensee shall extend the existing surety arrangement 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 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.

    Pathfinder's currently approved surety for the Lucky Mc site, Irrevocable Letter of Credit issued by Credit Industriel et Commercial, New York Branch, in favor of the NRC, shall be continuously maintained in an amount not less than $802,716 for the purpose of complying with 10 CFR Part 40, Appendix A, Criteria 9 and 10, until a replacement is authorized by the NRC.

    [Applicable Amendments: 14, 16, 21, 24, 26, 30, 33, 40, 42, 43, 47, 49, 54, 61, 63, 64, 66, 67, 68]

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 Wyoming), 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 Wyoming, at the State's option.

29. The licensee's windblown tailings cleanup completion report submitted by its letter dated February 16, 1999, is considered acceptable. Furthermore, the licensee's environmental report on the cleanup status of

Reid Draw with 'no action' alternative submitted by letter dated August 28, 1998, as revised, is accepted.

[Applicable Amendments: 29, 39, 46, 57, 58, 64]

30. DELETED by Amendment No. 64.

31. DELETED by Amendment No. 64.

32. DELETED by Amendment No. 64.

33. Standard written operating procedures (SOPs) shall be established for nonoperational activities to include environmental monitoring, and instrument calibrations. 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: 29, 45]

34. The licensee will implement a documented inspection of the dikes surrounding the No. 4 temporary evaporation pond, at least biweekly.

    [Applicable Amendments: 29, 41, 45, 55, 64]

35. The RSO shall have the following education, training and experience:

    A. Education: A bachelor's degree in the physical sciences, industrial hygiene, or engineering from an accredited college or university or an equivalent combination of training and relevant experience in uranium mill radiation protection. Two years of relevant experience are generally considered equivalent to one year of academic study.

    B. Health physics experience: At least 1 year of work experience relevant to uranium mill operation in applied health physics, radiation protection, industrial hygiene, or similar work. This experience should involve actually working with radiation detection and measurement equipment, not strictly administrative or "desk" work.

    C. DELETED by Amendment No. 45.

    D. Specialized knowledge: A thorough knowledge of the proper application and use of all health physics equipment used in the restricted area, the chemical and analytical procedures used for radiological sampling and monitoring, and methodologies used to calculate personnel exposure to uranium and its daughters.

    [Applicable Amendment: 45]

36. DELETED by Amendment No. 45.

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37. DELETED by Amendment No. 64.

38. DELETED by Amendment No. 64.

39. DELETED by Amendment No. 64.

40. DELETED by Amendment No. 64.

41. DELETED by Amendment No. 64.

42. DELETED by Amendment No. 45.

43. DELETED by Amendment No. 13.

44. The RSO shall conduct an investigation of the employee's work record and exposure history when an action level of 25 percent of the maximum permissible time weighted exposure for the week or quarter is reached depending on the material solubility. Any personnel exposure exceeding 25 percent of the maximum permissible external exposure in any calendar quarter shall also be investigated. Corrective action shall be promptly initiated.

45. DELETED by Amendment No. 29.

46. DELETED by Amendment No. 45.

47. The licensee shall follow the lower limits of detection contained in the guidance entitled, "Proposed Alternate Lower Limits of Detection for Environmental Monitoring at Lucky Mc Mill," for analysis of samples collected pursuant to the environmental monitoring program required in License Condition No. 48.

    [Applicable Amendments: 3, 63]

48. DELETED by Amendment No. 64.

49. DELETED by Amendment No. 29.

50. DELETED by Amendment No. 64.

51. DELETED by Amendment No. 29.

52. DELETED by Amendment No. 29.

53. DELETED by Amendment No. 55.

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54. The licensee shall reclaim the tailings disposal area in accordance with Sections 3 through 7 and 10 through 11 of the July 21, 1992, submittal titled Lucky Mc Mine Tailings Reclamation Plan, Source Material License No. SUA-672, Volumes I and II, as modified by letters dated June 4, June 11, and June 21, 1993; April 7, December 16, and December 29, 1994; September 26, 1995; April 7, and December 17, 1997; May 6, May 29, and July 29, 1998; March 11, May 7, and August 6, 1999; March 23, 2000; August 7, 2001; and August 16, 2002, except as stipulated below. [Applicable Amendment: 65]

A. DELETED by Amendment No. 50.

B. DELETED by Amendment No. 62.

C. DELETED by Amendment No. 44.

D. DELETED by Amendment No. 44.

E. DELETED by Amendment No. 44.

F. DELETED by Amendment No. 44.

G. DELETED by Amendment No. 44.

H. DELETED by Amendment No. 44.

I. DELETED by Amendment No. 44.

J. DELETED by Amendment No. 44.

K. DELETED by Amendment No. 44.

L. DELETED by Amendment No. 44.

M. DELETED by Amendment No. 44.

N. DELETED by Amendment No. 44.

O. Before the nuclear density gauge (ASTM D-2622) can be used to determine the in place density of the fill, an acceptable correlation between the test results from the nuclear density gauge (ASTM D-2622) and the sand cone apparatus (ASTM D-1556) shall be established. The definition of an acceptable correlation and the procedure for determining that an acceptable correlation exists shall be submitted to NRC for review and approval prior to use of the gauge in the quality control program.

P. A completion report including as-built drawings, verifying that reclamation of the site has been performed according to the approved plan, shall be provided within 6 months of the completion of construction. The report shall also include summaries of results of the quality assurance and control testing to demonstrate that the approved specifications were met.

Q. DELETED by Amendment No. 64.

R. The licensee will provide survey and sample data, within the Final Construction Completion Report, to demonstrate that the soil around all the ponds meets the requirements of Criterion 6(6) of 10 CFR 40, Appendix A.

[Applicable Amendment: 65]

55. DELETED by Amendment No. 29.

56. DELETED by Amendment No. 29.

57. DELETED by Amendment No. 28.

58. DELETED by Amendment No. 29.

59. DELETED by Amendment No. 64.

60. Based on the application for Alternate Concentration Limits (ACL) for ground water, dated December 21, 2000, as revised January 11 and November 4, 2002, the licensee shall implement a compliance monitoring program containing the following:

A. Sample wells T1-12 (POC), AL-1, AL-6 (POE), AL-7, AL-8, AL-9, and T1-6 (background) on a quarterly frequency for chloride, nitrate + nitrite, TDS, sulfate, pH, conductivity, water level, arsenic, beryllium, cadmium, chromium, nickel, combined radium-226 and 228, thorium-230, selenium, and uranium.

B. Comply with the following ground water protection standards at point of compliance (POC) well T1-12 with background being recognized in well T1-6:

arsenic = 0.05 mg/l, beryllium = 0.07 mg/l, cadmium = 0.02 mg/l, chromium = 0.05 mg/l, nickel = 0.85 mg/l, combined radium-226 and 228 = 7.5 pCi/l, selenium = 1.10 mg/l, thorium-230 = 13.2 pCi/l and uranium = 1.70 mg/l.

Submit a semiannual ground water monitoring report, on or before January 30, and July 30 of each year. This report must include ground water contour maps; iso-concentration maps for selenium, uranium, combined radium-226 and 228, sulfate, chloride, and TDS; and time versus concentration graphs for selenium, uranium, combined radium-226 and 228, sulfate, chloride, and TDS.

C. DELETED by Amendment No. 63.

D. If a groundwater protection standard (as stated in Condition 60.B) at the point of compliance is exceeded, the licensee shall notify the NRC within 30 days and shall increase the sampling frequency to monthly, until it is determined by the NRC staff, that a true exceedance has occurred.

If it is determined that a true exceedance has occurred, the licensee shall comply with the requirements per 10 CFR Part 40, Appendix A, Criterion 5D. If the NRC staff determines that it is not a true exceedance, the licensee will revert back to quarterly monitoring as indicated in License Condition 60.A.

Applicable Amendments: 4, 5, 15, 17, 19, 22, 28, 35, 38, 41, 42, 44, 63]

61. The licensee shall complete site reclamation in accordance with the approved reclamation plan and ground-water corrective action plan, as authorized by License Condition Nos. 54 and 60, respectively, in accordance with the following schedules.

A. To ensure timely compliance with target completion dates established in the Memorandum of Understanding (MOU) 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:

(1) Windblown tailings retrieval and placement on the pile - September 30, 1996.

(2) Placement of the interim cover to decrease the potential for tailings dispersal and erosion - April 30, 1993.

(3) Placement of final radon barrier designed and constructed to limit radon emissions to an average flux of no more than 20 $pCi/m^2/s$ above background - December 31, 2004.

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 date 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, 2004.

(2) DELETED by Amendment No. 63.

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 risk to the public health and safety and the environment, with the 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.

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[Applicable Amendments: 53, 63, 64]

62. Required written notice to NRC under this license should be sent: c/o Document Control Desk, Chief, Fuel Cycle Facilities Branch, Division of Fuel Cycle Safety and Safeguards, Office of Nuclear Material Safety and Safeguards, Mailstop T8-F42, U.S. Nuclear Regulatory Commission, 11545 Rockville Pike, Rockville, MD 20852-2738.

    Incident and event notifications, which require telephone notification under 10 CFR 20.2202 and 10 CFR 40.60, shall be made to the NRC Operations Center at (301) 816-5100.

    [Applicable Amendment: 63]

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FOR THE NUCLEAR REGULATORY COMMISSION

Date: 1/04/06 \RA\

Gary S. Janosko, Chief
Fuel Cycle Facilities Branch
Division of Fuel Cycle Safety
and Safeguards
Office of Nuclear Material Safety
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