

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. Umetco Minerals Corporation

2. Post Office Box 787
Blanding, Utah 84511

3. License number

SUA-1358, as renewed

4. Expiration date September 23, 1991

5. Docket or
Reference No. 40-86816. Byproduct, source, and/or
special nuclear material

Natural Uranium

7. Chemical and/or physical
form

Any

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

Unlimited

9. Authorized place of use: The licensee's 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 uranium byproduct waste generated by the licensee's milling operations authorized by this license.

11. For use in accordance with statements, representations and conditions contained in Sections 3.6.6, 5.1, 5.2, 5.3, 5.4, 6.2 and 6.3 and Appendix E, Section 5, of the license renewal application dated January, 1985 as revised May, 1985, except where superceded by license condition below.

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

12. The mill production per calendar year shall not exceed 4,380 tons of U_3O_8 .

13. Any changes in the mill circuit as illustrated and described in Plate 3.1-3 of the renewal application shall require approval by the U.S. Nuclear Regulatory Commission in the form of a license amendment.

14. Release of equipment or packages from the restricted area shall be in accordance with Attachment No. 1 to SUA-1358, "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.

15. The licensee shall avoid by project design, where feasible, the archeological sites designated "contributing" in Attachment No. 2 to SUA-1358. When it is not feasible

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to avoid a site designated "contributing" in Attachment No. 2, the licensee shall institute a data recovery program for that site based on the research design submitted by letter from C. E. Baker of Energy Fuels Nuclear to Mr. Melvin T. Smith, Utah State Historic Preservation Officer, dated April 13, 1981.

The licensee shall recover through archeological excavation all "contributing" sites listed in Attachment No. 2 which are located in or within 100 feet of borrow areas, stockpile areas, construction areas, or the perimeter of the reclaimed tailings impoundment. Data recovery fieldwork at each site meeting these criteria shall be completed prior to the start of any project related disturbance within 100 feet of the site, but analysis and report preparation need not be complete.

Additionally, the licensee shall conduct such testing as is required to enable the Commission to determine if those sites designated as "Undetermined" in Attachment No. 2 and located within 100 feet of present or known future construction areas are of such significance to warrant their redesignation as "contributing." In all cases, such testing shall be completed before any aspect of the undertaking affects a site.

16. Archeological contractors shall be approved in writing by the Commission. The Commission will consult with the SHPO regarding the qualifications of all archeological contractors and the quality of the laboratory facilities they will use. The Commission will approve an archeological contractor who meets the minimum standards for a principal investigator set forth in 36 CFR Part 66, Appendix C, and whose qualifications are found acceptable by the SHPO.
17. 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 USNRC, Uranium Recovery Field Office. This report shall indicate any differences in land use from that described in the last report.
18. 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 USNRC, Uranium Recovery Field Office. Monitoring data shall be reported in the format shown in the Attachment No. 3 to SUA-1358, "Sample Format for Reporting Monitoring Data."
19. Before engaging in any activity not previously assessed by the USNRC, 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 prior approval of the USNRC in the form of a license amendment.

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20. The licensee shall maintain a USNRC approved surety arrangement adequate to cover tailings stabilization and reclamation, mill decommissioning, mill site reclamation, long term maintenance and monitoring, and ground water restoration as warranted. The licensee shall submit for USNRC review and approval a proposed revision to the surety arrangement within six (6) months of USNRC approval of a revised tailings area reclamation plan or approval of or revision to any ground water protection program. The revised surety shall be in effect within three (3) months of written USNRC approval. Furthermore, the licensee shall submit for USNRC review any proposed revision or update to the surety arrangement at least two (2) months prior to the proposed effective date. Along with each proposed revision or update and at least annually, the licensee shall submit documentation showing a breakdown of the costs and the cost basis for tailings stabilization and reclamation, mill decommissioning, mill site reclamation, long term maintenance and monitoring, and ground water restoration as warranted.

If the licensee chooses to retain a corporate guarantee as the surety arrangement, the licensee shall provide for USNRC review and approval in the form of a license amendment the financial data listed in Items (a) - (d) of Attachment No. 4 to SUA-1358, NRC Self-Bonding Criteria, within four (4) months of the date of this license and annually thereafter.

21. 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, at the State's option.
22. The licensee shall not make any changes to the present tailings retention system without specific prior approval of the USNRC, Uranium Recovery Field Office, in the form of a license amendment.
23. The license shall implement an interim stabilization program for all tailings not covered by standing water. This program shall include written operating procedures and shall minimize dispersal of blowing tailings. The effectiveness of the control method used shall be evaluated weekly by means of a documented tailings area inspection. The operating procedure shall be submitted for USNRC review and approval within three (3) months of the issuance of this license.
24. The licensee shall implement the effluent and environmental monitoring program specified in Section 5.5 of the renewal application as revised with the following modifications or additions:
- A. Stack sampling shall include a determination of flow rate.
 - B. TLD chips used for radon monitoring shall be exchanged and read quarterly.

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- C. Surface water samples shall also be analyzed semiannually for total and dissolved U-nat, Ra-226, and Th-230.
 - D. Ground water samples from Monitor Wells 1, 2, 3, 4, 5, 11, 12, 13 and the culinary water well shall be analyzed quarterly for pH, specific conductance, chlorides, sulfates, TDS, and U-nat. Quarterly water level measurements shall also be made. Ground water samples shall be analyzed semiannually for arsenic, selenium, sodium, Ra-226, Th-230, and Pb-210.
 - E. Data for the quarterly ground water parameters shall be maintained in graphical form and copies of the graphs included with the environmental monitoring reports submitted in accordance with 10 CFR 40.65.
 - F. The licensee shall utilize lower limits of detection in accordance with Section 5 of Regulatory Guide 4.14, Revision 1 dated April 1980, for analysis of effluent and environmental samples.
25. The licensee shall submit to the USNRC, Uranium Recovery Field Office, by March 15, 1986 for review and approval in the form of a license amendment a detailed reclamation plan for the authorized tailings disposal area which includes the following:
- A. A post operations interim stabilization plan which details methods to prevent wind and water erosion and recharge of the tailings area.
 - B. A plan to determine the best methodology to dewater and/or consolidate the tailings cells prior to placement of the final reclamation cover.
 - C. Plan and cross-sectional views of a final reclamation cover which details the location and elevation of tailings. The plan shall include details on cover thickness, physical characteristics of cover materials, proposed testing of cover materials (specifications and QA), the estimated volumes of cover materials and their availability and location.
 - D. Detailed plans for placement of rock or vegetative cover on the final reclaimed tailings pile and mill site area.
 - E. A proposed implementation schedule for items A through D above which defines the sequence of events and expected time ranges.
 - F. An analysis to show that the proposed type and thickness of soil cover is adequate to provide attenuation of radon and is adequate to assure long term stability as well as an analysis and proposal on methodology and time required to restore ground water in conformance to regulatory requirements.
 - G. The licensee shall include a detailed cost analysis of each phase of the reclamation plan to include contractor costs, projected costs of inflation

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based upon the schedule proposed in item E, a proposed contingency cost, and the costs of long term maintenance and monitoring.

26. The licensee shall conduct a tailings retention system and liner inspection program in accordance with Section 5.5.7 and Appendix D, Section 3.0, of the renewal application. Notwithstanding any statements to the contrary, changes in inspection frequency shall require the approval of the USNRC in the form of a license amendment. Further, copies of the report documenting the annual technical evaluation shall be submitted to the Uranium Recovery Field Office, USNRC, within one month of completion of the report.
27. 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."
28. 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 the USNRC regulations all such documentation shall be maintained for a period of at least five (5) years.
29. 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 mill area to which it applies.

All written procedures for both operational and nonoperational activities shall be reviewed and approved in writing by the RPO before implementation and whenever a change in procedure is proposed to ensure that proper radiation protection principles are being applied. In addition, the RPO shall perform a documented review of all existing operating procedures at least annually.
30. The Radiation Protection Officer (RPO) 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 (2) years of relevant experience are generally considered equivalent to one (1) year of academic study.

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- 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. Specialized training: At least 4 weeks of specialized classroom training in health physics specifically applicable to uranium milling. In addition, the RSO should attend refresher training on uranium mill health physics every two (2) years.
- D. Specialized knowledge: A thorough knowledge of the proper application and use of all health physics equipment used in the mill, the chemical and analytical procedures used for radiological sampling and monitoring, methodologies used to calculate personnel exposure to uranium and its daughters, and a thorough understanding of the uranium milling process and equipment used in the mill and how the hazards are generated and controlled during the milling process.
31. The license 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 already exists. The RWP shall be issued by the RPO 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.
- In addition, the RPO's review of all non-routine activities, committed to in Section 5.3.1 of the renewal application, shall be documented.
32. The licensee shall assure that both the RPO and mill foreman, or qualified designees during their absence, perform weekly inspections of all mill areas to observe general radiation control practices and that a member of the radiation protection staff perform the daily walkthrough inspection during weekdays, with qualified supervisory personnel performing the walkthrough on weekends. In addition, the RPO shall prepare a monthly report which includes a review of daily and weekly inspections, and a summary of all monitoring and exposure data for the month. A copy of the monthly report shall be submitted to the Operations Manager.
33. A copy of the semiannual ALARA report described in Section 5.3.2.2 of the renewal application shall be submitted to the Uranium Recovery Field Office, USNRC, by March 1 and October 1, 1986, and every year thereafter.

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34. The licensee shall maintain effluent control systems as specified in Table 4.1-1 of the licensee's renewal application with the following additions:
- A. Operations shall be immediately suspended in the affected area of the mill 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 period 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 four 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 any audible alarm is used, its operation shall be check 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.
35. Sample volume and analysis for all in-plant air monitoring shall be adequate to achieve an LLD of 10% of the MPC listed in Table 1, Appendix B of 10 CFR 20.
36. The licensee shall utilize the results of lapel sampling in calculating employee exposures when the lapel samplers are used.
37. 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.
38. The licensee shall conduct a bioassay program in accordance with Section 5.4.2.4 of the renewal application with the following addition:
- A. A urinalysis program shall be conducted for mill personnel as specified in Section 1.4.1 of the "Radiation Protection Procedures Manual" as revised June, 1985.
 - B. In-vivo counting of mill personnel shall be conducted at least once every two years.
 - C. Laboratory surfaces used for bioassay analyses shall be decontaminated to less than 25 dpm alpha (removable)/100 cm² prior to analysis of samples.

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- D. Anytime an action level of 15 ug/l uranium for urinalysis or 9 nCi uranium or an in-vivo measurement is reached or exceeded, the licensee shall provide documentation to the USNRC, Uranium Recovery Field Office, 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 ug/l uranium for four consecutive specimens or 130 ug/l uranium for one specimen for urinalysis or 16 nCi uranium for an in-vivo measurement is reached or exceeded, the licensee shall provide documentation within 30 days to the USNRC, Uranium Recovery Field Office, indicating what corrective actions have been performed to satisfy the requirements of Regulatory Guide 8.22.
39. Surveys for fixed and removable alpha contamination shall be conducted in accordance with Section 2.3.2.2 of the "Radiation Protection Procedures Manual" as revised June, 1985. Action levels shall be as specified in Section 2.3.4 of the procedures manual.
40. Calibration of in-plant air and radiation monitoring equipment shall be as specified in Section 3.0 of the "Radiation Protection Procedures Manual" as revised June, 1985, with the exception that in-plant air sampling equipment shall be calibrated at least quarterly. Air sampling equipment shall be checked prior to each use, and the checks documented.
41. The licensee shall submit a detailed decommissioning plan to the USNRC at least twelve (12) months prior to planned final shutdown of mill operations.
42. Within six (6) months of issuance of this license, the licensee shall submit to the Uranium Recovery Field Office a detailed proposal for the disposal of contaminated material and equipment generated at the mill site. The proposal shall include a description of the materials to be disposed of, location(s) of disposal, method(s) of disposal, estimated annual volumes of materials, and an estimate of the impact of the disposal on the tailings management plan.
43. Mill tailings other than samples for research shall not be transferred from the site without specific prior approval of the USNRC in the form of a license amendment. The licensee shall maintain a permanent record of all transfers made under the provisions of this condition.
44. All liquid effluents from mill process buildings, with the exception of sanitary wastes, shall be returned to the mill circuit or discharged to the tailings impoundment.
45. A decontamination and survey program for barrels containing yellowcake shall be conducted in accordance with Section 1.8 of Regulatory Guide 8.30, "Health Physics Programs in Uranium Mills," prior to shipment.

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46. The licensee shall implement a program to minimize dispersal of dust from the ore stockpile area(s). This program shall include written operating procedures. The effectiveness of the control method used shall be evaluated weekly by means of a documented inspection. The operating procedure shall be submitted for USNRC review and approval within three (3) months of the issuance of this license.
47. The licensee shall, by January 1, 1986, submit to the Uranium Recovery Field Office, USNRC, for review and approval in the form of a license amendment a plan for instrumentation which shall detect ruptures of the tailings discharge and solution return lines when these lines are being utilized. Indications of a possible rupture of these lines shall result in activation of an alarm in an occupied area of the mill. The instrumentation shall be tested daily, and testing documented, to ensure proper operation. The instrumentation shall be operational within sixty (60) days of USNRC approval.
48. The licensee shall implement a ground water detection monitoring program to ensure compliance to 40 CFR 192.32(a)(2) which includes the following elements:
- A. The licensee shall monitor at the point of compliance and background wells for the following indicator parameters: Arsenic, Selenium and pH. The licensee shall utilize analytical techniques capable of providing lower limits of detection of 0.005 mg/l and 0.001 mg/l for arsenic and selenium, respectively. Measurements of pH shall be reported to the nearest 1/10 standard unit.
 - B. The determination of compliance shall be based on sampling Well Nos. 2 and 3.
 - C. The determination of background levels for the parameters specified in subsection (A) shall be defined by sampling Well No. 1.
 - D. The licensee shall sample for those parameters specified in subsection (A) above at those wells designated in subsections (B) and (C) on a monthly basis for a period of one (1) year and at least twice annually thereafter. The first monthly sample shall be taken within 30 days of the date of this Order. All semiannual samples shall be taken at least four months apart.
 - E. The licensee shall, within 60 days of collection of the last of the twelve monthly samples, propose for USNRC review and approval in the form of a license amendment background levels for indicator parameters and a statistical procedure for identifying significant changes (95% confidence level) between data from the wells specified in subsections (B) and (C).
 - F. The licensee shall report the data required by subsection (D) semiannually along with those data required by License Condition No. 18 in accordance to the reporting format, Attachment No. 5 to SUA-1358, "Sample Format for Reporting Detection Monitoring Data." These monitoring requirements are in addition to the requirements specified in License Condition No. 24.

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- G. The licensee shall report at least annually in accordance to reporting requirements specified in subsection (F) the rate and direction of ground water flow under the tailings impoundment.

FOR THE NUCLEAR REGULATORY COMMISSION

SEP 20 1985

Date

BY

[Signature]
R. Dale Smith, Director
Uranium Recovery Field Office
Region IV

OFC :	URFO	URFO	URFO	URFO	:	:	:
NAME :	CJierree	PGarcia	HPettengill	RDSmith	:	:	:
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