



**STATE OF NEW MEXICO**

**ENVIRONMENTAL IMPROVEMENT DIVISION**  
P.O. Box 968, Santa Fe, New Mexico 87504-0968  
(505) 984-0020  
STEVEN ASHER, Director

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GOVERNOR

JOSEPH GOLDBERG  
SECRETARY

TED GUAMBANA  
DEPUTY SECRETARY

JOSEPH F. JOHNSON  
DEPUTY SECRETARY

M E M O R A N D U M

TO: Felix R. Miera  
FROM: Kent Breese *KB*  
DATE: July 31, 1984  
SUBJECT: Kerr-McGee License Amendment

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Please find attached for your signatures an amendment and cover letter for Kerr-McGee's mill license. The amendment authorizes the implementation of a new, small scale IX operation deep in the bowels of the Church Rock mine, and is not intended to supercede a previous (11/24/80), amendment authorizing them to build a full-blown IX facility above the mine, should they someday so desire.

The present amendment being of a lesser impact than the already approved amendment (for comparisons, see July 20 letter, attachment 1) an environmental report and analysis are not considered necessary.

The conditions of DOT compliance and draining the resin at the mine were added to minimize the possibility and effects of accidents in route to Ambrosia Lake.

I find Kerr-McGee's calculations in order and proposal acceptable.

KB/cvg

9803020091 840731  
PDR ADOCK 04001917  
C PDR



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July 31, 1984

Dr. John C. Stauter  
Nuclear Licensing & Regulation  
Kerr-McGee Corporation  
Kerr-McGee Center  
Oklahoma City, OK 73125

Dear Dr. Stauter:

Please find attached an amendment to your radioactive materials license authorizing removal by ion exchange of uranium from Church Rock mine water, and transport of the uranium-bearing resin to Ambrosia Lake for elution at the licensed mill facility as described in your July 20, 1984 letter with attachments to Kent Breese.

Sincerely,

Felix R. Miera, Jr.  
Program Manager  
Uranium Licensing Section



NEW MEXICO  
HEALTH AND ENVIRONMENT

ENVIRONMENTAL IMPROVEMENT DIVISION  
RADIOACTIVE MATERIAL LICENSE

License Number SUA-616  
(Former AEC source  
material license now  
under extended  
expiration date as  
provided by Section 3-  
340.B, New Mexico.)

Quivira Mining Company  
Kerr-McGee Center  
Oklahoma City, OK 73175

In accordance with letter dated July 20, 1984, with attachments, from Dr. John C. Stauter of Kerr-McGee to Mr. Kent Breese of the EID, subject license is hereby amended to add the following conditions.

37. Uranium shall be removed from Quivira Mining Company's Church Rock Mine water by ion exchange, the uranium-bearing resin shall be transported to Quivira's Ambrosia Lake mill for elution, and the eluted resin shall be returned to Church Rock for reuse in accordance with the above letters and attachments. All Department of Transportation requirements shall be followed in the transport of the resin. The resin shall be thoroughly drained at the mine prior to transport to the mill.

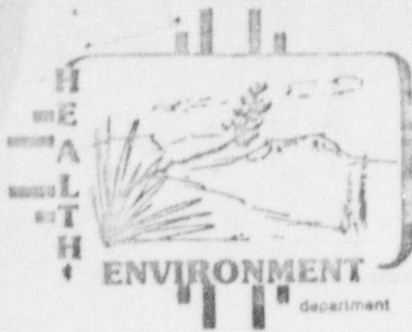
For the New Mexico PED Environmental Improvement Division

By

*Felix R. Miera, Jr.*  
Felix R. Miera, Jr., Program Manager  
Uranium Licensing Section

August 6, 1984





STATE OF NEW MEXICO

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August 6, 1984

Dr. John C. Stauter  
Nuclear Licensing & Regulation  
Kerr-McGee Corporation  
Kerr-McGee Center  
Oklahoma City, OK 73125

Dear Dr. Stauter:

In accordance with Kerr-McGee Corporation's October 7 1983 news release stating that "it is consolidating its New Mexico uranium mining and milling operations in a single subsidiary, Quivira Mining Company," Kerr-McGee Nuclear Corporation's license will be changed by the attached amendment to indicate the Quivira Mining Company is the actual licensee.

Sincerely,

Felix R. Miera, Jr.  
Program Manager  
Uranium Licensing Section

FRM/KB/cvg

enc.

~~4803020072~~



NEW MEXICO  
HEALTH AND ENVIRONMENT

ENVIRONMENTAL IMPROVEMENT DIVISION  
RADIOACTIVE MATERIAL LICENSE

License Number SUA-616  
(Former AEC source  
material license now under  
expiration date as provided by  
Section 3-340.B, New Mexico.)

Quivira Mining Company  
Kerr-McGee Center  
Oklahoma City, OK 73175

38. In accordance with Kerr-McGee Corporation's October 7, 1983 news release, subject license is amended to change the name of the licensee from Kerr-McGee Nuclear Corporation to Quivira Mining Company.

For the New Mexico HED Environmental Improvement Division

By Felix R. Miera, Jr.  
Felix R. Miera, Jr., Program Manager  
Uranium Licensing Section

August 6, 1984

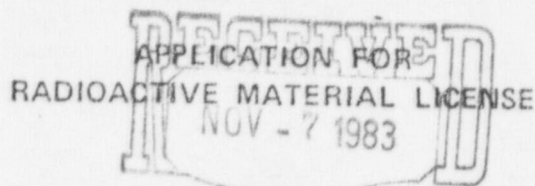


State of New Mexico

Environmental Improvement Agency

P. O. BOX 2348

SANTA FE, NEW MEXICO 87501



RADIATION PROTECTION BUREAU

INSTRUCTIONS—Complete Items 1 through 16 if this is an initial application. If application is for renewal of a license, complete only Items 1 through 7 and indicate new information or changes in the program as requested in Items 8 through 15. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: Radiation Protection Section, Box 2348, Santa Fe, New Mexico 87501. Upon approval of this application, the applicant will receive a Radioactive Material License. A Radioactive Material License is issued in accordance with the general requirements contained in the New Mexico Radiation Protection Regulations, Part 3, Licensing and the License is subject to Part 4, Standards for Protection Against Radiation.

<p>1. (a) NAME AND STREET ADDRESS OF APPLICANT (Institution, firm, hospital, person, etc.)</p> <p>Kerr-McGee Nuclear Corp. Kerr-McGee Center Oklahoma City, Oklahoma 73125</p> <p>Phone (405) 236-1313</p>	<p>1. (b) STREET ADDRESS(ES) AT WHICH A RADIOACTIVE MATERIAL WILL BE USED (if different from 1 (a).)</p> <p>Uranium will be extracted from ores at Ambrosia Lake Mill Facility. Address: Kerr-McGee Nuclear Corp. P. O. Box 218 Grants, New Mexico</p> <p>Phone (505) 876-2251</p>
<p>2. DEPARTMENT TO USE RADIOACTIVE MATERIAL</p> <p>Uranium concentrate produced for commercial sale.</p>	<p>3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)</p> <p>Renewal of AEC license: SUA-616</p>
<p>4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of radioactive material. Give training and experience in Items 8 and 9.)</p> <p>Not applicable</p>	<p>5. RADIATION PROTECTION OFFICER (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experiences as in Items 8 and 9.)</p> <p>Mr. George Sloan</p> <p>Phone (505) 876-2251 Ext. 217</p>



6. (a) RADIOACTIVE MATERIAL.  
(Elements and mass number of each.)

Natural uranium

99.3% U<sub>238</sub>

.7% U<sub>235</sub>

6. (b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.)

Nominally - ammonia diuranate

Storage can amount to as much as 3 million lbs. expressed as U<sub>3</sub>O<sub>8</sub>. This amount stored results from customers purchasing the product and requesting Kerr-McGee to withhold shipment until some later date when purchaser's needs require the product.

7. DESCRIBE PURPOSE FOR WHICH RADIOACTIVE MATERIAL WILL BE USED. (If radioactive material is for "human use," supplement RPS 16A must be completed in lieu of this item. If radioactive material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.)

For commercial sale to be used in the nuclear fuel cycle.

#### 8. INDIVIDUAL USER(S) TRAINING

Complete the following information on the individual user(s) and his training in:

- A) Nuclear physics, atomic structure, and interaction of radiation with matter
- B) Radiation detection instrumentation, calibration, and standardization
- C) Radiation protection, waste disposal, and survey and dosimetric procedures
- D) Radiobiology, including effects of radiation on the human body

Name, Title, Degree(s)	Where Trained	Length of Academic Training in A, B, C, and D	Length of On-the-job Training in A, B, C, and D
Radiation safety supervisor's qualifications given on p.36 of attached report. See also Item 5.			

9. EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience.)

Isotope	Maximum Amount	Where Experience Was Gained	Duration of Experience	Type of Use
NOT APPLICABLE				

10. RADIATION DETECTION INSTRUMENTS. (Use supplemental sheets if necessary.)

Type	Number Available	Radiation Detected	Sensitivity Range (mr/hr)	Window Thickness (mg/cm <sup>2</sup> )	Use (Monitoring, surveying, measuring)
SEE P. 15 AND 16 OF ATTACHED REPORT					

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

See p. 15 and 16 of attached report.

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)

See p. 16 of attached report.

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) Yes No  
see p. 22, 55, 46 and 47 of attached report.

14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak test, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source.  
See p. 37 to 47; 15-24; and 48-63 of attached report.

15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.  
see p. 26-68 and 33-34, also Maps 1 and 6 of attached report.

CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH THE NEW MEXICO RADIATION PROTECTION REGULATIONS, PART 3, LICENSING, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

KERR-McGEE NUCLEAR CORPORATION

Applicant Named in Item 1

DATE December 30, 1975

By: *J. M. Swales*

Vice-President

Title of Certifying Official