

DOCKET NUMBER <b>040-08006</b>	MAIL CONTROL NO. <b>05122</b>	DATE REQUEST REC'D <b>09/18/72</b>	PROGRAM CODE (PRIMARY) <b>11300</b>
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SECONDARY PROGRAM CODES:

#1	#2	#3	#4	#5
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J R D I V I O N A L O R G A N I Z A T I O N S	NAME	NAME
	NAME	NAME
	NAME	NAME

ORGANIZATION NAME <b>Kerr-McGee Corporation</b>	TYPE OF ORGANIZATION		
DEPARTMENT OR BUREAU	U. S. GOVERNMENT AGENCY	EDUCATIONAL INSTITUTION	
	MEDICAL INSTITUTION	INDUST	OTHER

ADDRESS	BUILDING, STREET	CITY <b>Oklahoma City</b>	STATE <b>OK</b>	ZIP CODE <b>73102</b>
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APPLICANT'S COMMUNICATION DATED: <b>09/13/72</b>	CLASSIFICATION <b>U</b>	ASSIGNED TO: <i>Layfield</i>	RESULTING AMD. NO. <b>2</b>
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ENCLOSURES: (4 cys rec'd)

- 1 - Application for Source Material License
- 2- Addendum to Application for Amendment of Source Material License SUB-986

UNCLASSIFIED DESCRIPTION:

Ltr. reg. amendment to Item 6 of Source Material License SUB-986.....

DISTRIBUTION:

PDR  
RO

**DO NOT REMOVE**

**ACKNOWLEDGED**

OTHER REFERRALS			
NAME	DATE	NAME	DATE
Layfield: W/Reg. file & Folder	9/18		
			crj

97

HQ-9401  
(9-66)

INTERMEDIATE ACTION FORM

Source & SNM Licenses

REFERENCE NUMBERS

01. PROG. CODE <b>62</b>	03. DOCKET NO. <b>40-8006</b>	09. TASK NO. <b>1838</b>	42. PURPOSE OF TASK <b>Amendment</b>			12. CONTROL NO. <b>1838</b>	15. LICENSE NUMBER <b>SUB-986</b>				
18. APPLICANT <b>Kerr-McGee Corporation</b>						54. AM. NO. RESULTING FROM TASK					
21. STREET & BUILDING <b>Kerr-McGee Building</b>				45. CLASSIFICATION <b>U</b>		63. ASG. TO:					
24. CITY <b>Oklahoma City</b>		27. STATE <b>OKLA</b>	30. ZIP <b>73102</b>		33. RECEIVED YR. MO. DAY <b>71 04 12</b>			36. ISSUED YR. MO. DAY		39. EXPIRED YR. MO. DAY	
57. APPLICANT'S COMMUNICATION DATED			YR.	MO.	DAY	59. ENCLOSURES					
			<b>71</b>	<b>03</b>	<b>30</b>						
58. DESCRIPTION (MUST BE UNCLASSIFIED)  <b>Ltr req amdt to Item #7 of SUB-986, to read; "800 <del>lb</del> lbs uranium".</b>						60. DISTRIBUTION <b>1-Compliance(Region) 1-PDR</b>					
INTERMEDIATE ACTIONS						OTHER REFERRALS			DATE		
TYPE	ON			ACTIV.	RETURNED			YR.	MO.	DAY	
	YR.	MO.	DAY	92	YR.	MO.	DAY	93			
ADDL. INFO. REQUESTED FROM APPLICANT	91				1						
REFERRED TO:	94			95	2						
REFERRED TO:											
						<b>DO NOT REMOVE ACKNOWLEDGED</b>			<b>Layfield: 71 04 14</b> W/file cy&folder		
									<b>JPW</b>		



**KERR-McGEE CORPORATION**

KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

March 30, 1971



Mr. Robert L. Layfield  
Materials Branch  
Division of Materials Licensing  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

Regulatory

File Cy.

Reference: Source Material License No. SUB-986, Docket No. 40-8006

Dear Mr. Layfield:

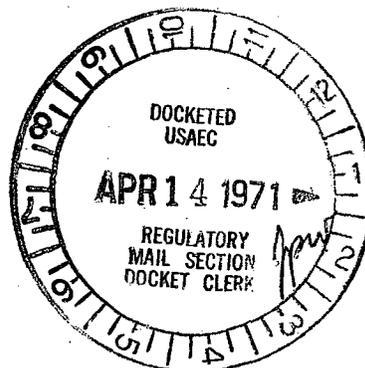
Please amend Item 7 of the referenced license to read "800 pounds uranium." Our use and control of this material continues as stated in the original application dated May 8, 1969.

Thank you for giving this request your attention and if additional information is needed, please contact me.

Sincerely,

A. M. Valentine, Coordinator  
Radiation Health and Safety

AMV:ms



DISTRIBUTION:  
File  
RLeith, OC  
Lic. File  
WOMiller, SLR (2)  
SLR R/F  
DR R/F

Kerr-McGee Corporation  
ATTN: J. P. Hewlett  
Administrative Manager  
Physical Science and  
Measurement Department  
Kerr-McGee Building  
Oklahoma City, Oklahoma 73102

MAR 26 1971

Gentlemen:

This is in response to your letters of February 12, and March 3, 1971, regarding AEC license fee Invoice L-1557-71.

We note your statement that the material is buried several feet underground and could be classified as a storage only license. The license, however, authorizes use of the material for instrument calibration and other investigations. If the material is no longer used you may file an application to amend the license to authorize storage only prior to April 7, 1971, and if the Commission acts favorably upon the application, the fee will be assessed in the amount applicable to the license as amended.

Sincerely,

Original Signed by  
Wm. O. Miller

William O. Miller  
Division of State and  
Licensee Relations

CRESS T16, R07	OFFICE ▶ SLR	WOM				
	SURNAME ▶ WOMiller:blv					
	DATE ▶ 3/25/71					



**KERR-MCGEE CORPORATION**

KERR-MCGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

*also 40-Docket*

February 12, 1971

Division of State and Licensee Relations  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

Attention: Mr. Eber Price

Reference: AEC Source Material License SUB-986,  
Docket No. 40-8006 and Invoice No. L-1557-71

Dear Mr. Price:

According to the referenced invoice, our Source Material License No. SUB-986 was placed in Category 2A for purposes of assessing a license fee. Since essentially all of our material is buried several feet underground and will remain there, we believe the license could be classified as 'storage' and that the proper licensing category would be 2B.

We should appreciate your interpretation of this as soon as possible since we intend to delay payment of the invoice pending your decision.

Thank you very much for your help.

Sincerely,

J. P. Hewlett  
Administrative Manager  
Physical Science and  
Measurement Department

JPH:kh

2-25-71

February 12, 1971

Division of State and Licensee Relations  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

Attention: Mr. Eber Price

Reference: AEC Source Material License SUB-986,  
Docket No. 40-8006 and Invoice No. L-1557-71

Dear Mr. Price:

According to the referenced invoice, our Source Material License No. SUB-986 was placed in Category 2A for purposes of assessing a license fee. Since essentially all of our material is buried several feet underground and will remain there, we believe the license could be classified as 'storage' and that the proper licensing category would be 2B.

We should appreciate your interpretation of this as soon as possible since we intend to delay payment of the invoice pending your decision.

Thank you very much for your help.

Sincerely,

J. P. Hewlett  
Administrative Manager  
Physical Science and  
Measurement Department

JPH:kh

bcc: H. C. Eberline  
A. M. Valentine



**KERR-MCGEE CORPORATION**

KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

March 3, 1971

United States Atomic Energy Commission  
Central Accounts Branch  
Washington, D. C. 20545

Reference: AEC Source Material License SUB-986,  
Docket No. 40-8006 and Invoice No. L-1557-71

Gentlemen:

Attached is a copy of our letter on the above subject, which is self-explanatory.

The purpose of this letter is to make you aware of the reason for the delay in paying the subject invoice. Just as soon as we receive an opinion from your Division of State and Licensee Relations, the invoice will be paid promptly.

Thank you for your patience while we try to resolve this matter.

Sincerely,

A handwritten signature in cursive script, reading "J. P. Hewlett".

J. P. Hewlett  
Administrative Manager  
Physical Science and  
Measurement Department

JPH:kh

Attachment

HO-9401  
(9-66)

~~SECRET~~ ~~CONFIDENTIAL~~ FORM

Source & SNM Licenses

01. PROG. CODE <b>62</b>	03. DOCKET NO. <b>40-8006</b>	09. TASK <b>1548</b>	42. PURPOSE OF TASK <b>new license</b>	12. CONTROL NO. <b>1548</b>	15. LICENSE NUMBER
18. APPLICANT <b>Kerr-McGee Corporation</b>				54. AM. NO. RESULTING FROM TASK	
21. STREET & BUILDING <b>Kerr-McGee Building</b>			45. CLASSIFICATION <b>U</b>	63. ASG. TO:	
24. CITY <b>Oklahoma City</b>	27. STATE <b>OKLA</b>	30. ZIP <b>73102</b>	33. RECEIVED YR. MO. DAY <b>69 05 12</b>		36. ISSUED YR. MO. DAY
57. APPLICANT'S COMMUNICATION DATED YR. MO. DAY <b>69 05 09</b>			59. ENCLOSURES <b>( 4 cys rec'd)</b>		
58. DESCRIPTION (MUST BE UNCLASSIFIED) <b>Ltr. 5-9-69 req for sm lic. and trans:</b>			AEC-2 Form dtd 5-9-69 Addendum to appl for sm lic.		
INTERMEDIATE ACTIONS			60. DISTRIBUTION <b>1-PDR cy 1-Compliance(Region)</b>		
OTHER REFERRALS			DATE		
TYPE			YR. MO. DAY		
ADOL. INFO. REQUESTED FROM APPLICANT			91		
REFERRED TO:			94		
REFERRED TO:			96		
ON			92		
ACTIV.			95		
RETURNED			93		
YR. MO. DAY			YR. MO. DAY		
1			2		
Nussbamer w/file cy & folder			69 05 12		
<b>DO NOT REMOVE ACKNOWLEDGED</b>			fod		



**KERR-McGEE CORPORATION**

KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

May 9, 1969

DOCKET NO. 40-8006

Regulatory

File Cy.

Mr. Donald A. Mussbaumer  
Chief of Source and Special Nuclear Materials Branch  
United States Atomic Energy Commission  
Washington, D. C. 20545

Dear Mr. Mussbaumer:

Attached is an application of Kerr-McGee Corporation for a Source-Material License on which, I believe, we have given all the required information.

We should like to begin construction of these test pits as soon as possible, and I should appreciate anything you can do to expedite consideration of this application. If all is not in order or you require any additional information, I should appreciate your calling me collect at Area Code 405, 236-1313, Extension 6425, so that we can provide this without delay.

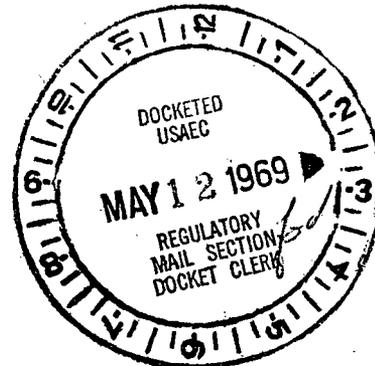
Thank you very much for your help.

Sincerely,

J. P. Hewlett

JPH:kh

Attachments



**ACKNOWLEDGED**

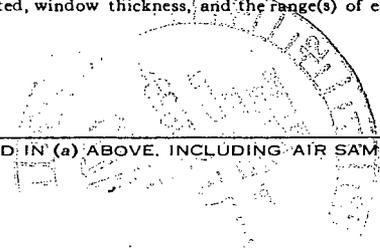
1578

**UNITED STATES ATOMIC ENERGY COMMISSION**  
**APPLICATION FOR SOURCE MATERIAL LICENSE**

Pursuant to the regulations in Title 10, Code of Federal Regulations, Chapter 1, Part 40, application is hereby made for a license to receive, possess, use, transfer, deliver or import into the United States, source material for the activity or activities described.

DOCKET NO. 70-8006

1. (Check one) <input checked="" type="checkbox"/> (a) New license <input type="checkbox"/> (b) Amendment to License No. _____ <input type="checkbox"/> (c) Renewal of License No. _____ <input type="checkbox"/> (d) Previous License No. _____		2. NAME OF APPLICANT Kerr-McGee Corporation <span style="float:right">Received w/Ltr Dated <u>5-9-69</u></span> <hr/> 3. PRINCIPAL BUSINESS ADDRESS Kerr-McGee Building <span style="float:right">Regulatory</span> Oklahoma City, Oklahoma 73102 <span style="float:right">File Cy.</span>	
4. STATE THE ADDRESS(ES) AT WHICH SOURCE MATERIAL WILL BE POSSESSED OR USED Technical Department, Kerr-McGee Building, Oklahoma City, Oklahoma 73102 Research Department, 3301 Northwest 150th Street, Oklahoma City, Oklahoma			
5. BUSINESS OR OCCUPATION Uranium mining and processing		6. (a) IF APPLICANT IS AN INDIVIDUAL, STATE CITIZENSHIP -	(b) AGE -
7. DESCRIBE PURPOSE FOR WHICH SOURCE MATERIAL WILL BE USED Material will be used to provide radiation sources of known composition and intensity for experimental work related to the design and calibration of new instruments and for related types of investigations.			
8. STATE THE TYPE OR TYPES, CHEMICAL FORM OR FORMS, AND QUANTITIES OF SOURCE MATERIAL YOU PROPOSE TO RECEIVE, POSSESS, USE, OR TRANSFER UNDER THE LICENSE			
(a) TYPE	(b) CHEMICAL FORM	(c) PHYSICAL FORM (Including % U or Th.)	(d) MAXIMUM AMOUNT AT ANY ONE TIME (in pounds)
NATURAL URANIUM	U <sub>3</sub> O <sub>8</sub>	Ore (0.1-0.4% U) Yellow Cake (85-90% U)	1200 pounds uranium
URANIUM DEPLETED IN THE U-235 ISOTOPE			
THORIUM (ISOTOPE)			
(e) MAXIMUM TOTAL QUANTITY OF SOURCE MATERIAL YOU WILL HAVE ON HAND AT ANY TIME (in pounds) 1200 pounds uranium			
9. DESCRIBE THE CHEMICAL, PHYSICAL, METALLURGICAL, OR NUCLEAR PROCESS OR PROCESSES IN WHICH THE SOURCE MATERIAL WILL BE USED, INDICATING THE MAXIMUM AMOUNT OF SOURCE MATERIAL INVOLVED IN EACH PROCESS AT ANY ONE TIME, AND PROVIDING A THOROUGH EVALUATION OF THE POTENTIAL RADIATION HAZARDS ASSOCIATED WITH EACH STEP OF THOSE PROCESSES. The source material will not be processed, except for mixing of portions with natural sand for the purpose of dilution. Its primary use will be in the calibration and standardization of instruments and in research on radiation measurements.			
10. DESCRIBE THE MINIMUM TECHNICAL QUALIFICATIONS INCLUDING TRAINING AND EXPERIENCE THAT WILL BE REQUIRED OF APPLICANT'S SUPERVISORY PERSONNEL INCLUDING PERSON RESPONSIBLE FOR RADIATION SAFETY PROGRAM (OR OF APPLICANT IF APPLICANT IS AN INDIVIDUAL). See Separate Sheet.			
11. DESCRIBE THE EQUIPMENT AND FACILITIES WHICH WILL BE USED TO PROTECT HEALTH AND MINIMIZE DANGER TO LIFE OR PROPERTY AND RELATE THE USE OF THE EQUIPMENT AND FACILITIES TO THE OPERATIONS LISTED IN ITEM 9: INCLUDE: (a) RADIATION DETECTION AND RELATED INSTRUMENTS (including film badges, dosimeters, counters, air sampling, and other survey equipment as appropriate. The description of radiation detection instruments should include the instrument characteristics such as type of radiation detected, window thickness, and the range(s) of each instrument). See Separate Sheet.			
(b) METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED IN (a) ABOVE, INCLUDING AIR SAMPLING EQUIPMENT (for film badges, specify method of calibrating and processing, or name supplier). See Separate Sheet.			



11(c). VENTILATION EQUIPMENT WHICH WILL BE USED IN OPERATIONS WHICH PRODUCE DUST, FUMES, MISTS, OR GASES, INCLUDING PLAN VIEW SHOWING TYPE AND LOCATION OF HOOD AND FILTERS, MINIMUM VELOCITIES MAINTAINED AT HOOD OPENINGS AND PROCEDURES FOR TESTING SUCH EQUIPMENT.

See Separate Sheet.

12. DESCRIBE PROPOSED PROCEDURES TO PROTECT HEALTH AND MINIMIZE DANGER TO LIFE AND PROPERTY AND RELATE THESE PROCEDURES TO THE OPERATIONS LISTED IN ITEM 9; INCLUDE: (a) SAFETY FEATURES AND PROCEDURES TO AVOID NONNUCLEAR ACCIDENTS, SUCH AS FIRE, EXPLOSION, ETC... IN SOURCE MATERIAL STORAGE AND PROCESSING AREAS.

See Separate Sheet.

(b) EMERGENCY PROCEDURES IN THE EVENT OF ACCIDENTS WHICH MIGHT INVOLVE SOURCE MATERIAL.

See Separate Sheet.

(c) DETAILED DESCRIPTION OF RADIATION SURVEY PROGRAM AND PROCEDURES.

See Separate Sheet.

13. WASTE PRODUCTS: If none will be generated, state "None" opposite (a), below. If waste products will be generated, check here  and explain on a supplemental sheet:

- (a) Quantity and type of radioactive waste that will be generated.      None
- (b) Detailed procedures for waste disposal.

14. IF PRODUCTS FOR DISTRIBUTION TO THE GENERAL PUBLIC UNDER AN EXEMPTION CONTAINED IN 10 CFR 40 ARE TO BE MANUFACTURED, USE A SUPPLEMENTAL SHEET TO FURNISH A DETAILED DESCRIPTION OF THE PRODUCT, INCLUDING:

- (a) PERCENT SOURCE MATERIAL IN THE PRODUCT AND ITS LOCATION IN THE PRODUCT.
- (b) PHYSICAL DESCRIPTION OF THE PRODUCT INCLUDING CHARACTERISTICS, IF ANY, THAT WILL PREVENT INHALATION OR INGESTION OF SOURCE MATERIAL THAT MIGHT BE SEPARATED FROM THE PRODUCT.
- (c) BETA AND BETA PLUS GAMMA RADIATION LEVELS (Specify instrument used, date of calibration and calibration technique used) AT THE SURFACE OF THE PRODUCT AND AT 12 INCHES.
- (d) METHOD OF ASSURING THAT SOURCE MATERIAL CANNOT BE DISASSOCIATED FROM THE MANUFACTURED PRODUCT.

### CERTIFICATE

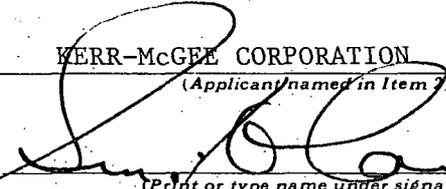
(This item must be completed by applicant)

15. The applicant, and any official executing this certificate on behalf of the applicant named in Item 2, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 40, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

WERR-McGEE CORPORATION

(Applicant named in Item 2)

Dated MAY 8, 1969

BY: 

(Print or type name under signature)

SENIOR VICE-PRESIDENT

(Title of certifying official authorized to act on behalf of the applicant)

WARNING: 18 U.S.C. Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

ADDENDUM TO APPLICATION FOR SOURCE MATERIAL LICENSE Received w/Ltr. Dated 5-9-69KERR-McGEE CORPORATION  
Oklahoma City, OklahomaDOCKET NO. 40-8006

Regulatory

File Cy.

10. Personnel responsible for supervision of use of source material and for radiation safety will have had at least 10 years of responsible experience in the handling and processing of radioactive materials and at least 5 years directly associated with radiological health and safety programs.

For the foreseeable future, both overall supervision and safety will be the responsibility of Howard C. Eberline who has had 24 years of experience in the nuclear field, including design, production and operation of radiation measurement instruments and systems, and supervision of health safety programs for the AEC.

11. (a) Approximately 50% of the source material will be buried in sealed test pits located out-of-doors on a 160-acre fenced site and some 250 yards from normal working areas. The containers will be fabricated of 12-gauge galvanized steel, 6 feet in diameter x 12 feet long with welded bottoms. The source material will be about 3 feet below grade and will be covered by 3 feet of sand and 4 inches of concrete. Access to the material will be through a center fiber glass tube which will be protected by a locked steel cover when not in use.

That portion of source material not placed in test pits will be kept in locked cabinets or rooms adequately marked with approved radiation warning signs. Air samples will be taken every 30 days or oftener if conditions require.

In addition to various scintillation and Geiger-type instruments with which we will be working, periodic radiation checks will be made using the following or equal:

1. Personnel film badges.
2. Alpha Counter (Eberline Instrument Co., Model PAC-3G).
3. Air sampling equipment (Eberline Instrument Co.).
4. Geiger Counter, range 0-20mr (Eberline Instrument Co., Model E-112).

- (b) Radiation instruments will be calibrated using small radium or standard isotopic sources for which AEC license is not required. Calibration will be done routinely every 30 days or oftener if conditions require. Personnel film badges are supplied by Landauer on a monthly basis.
- (c) Test pits will be out-of-doors with no special ventilation needed. The residual source material will be kept in closed containers so that no dust will be released.

ADDENDUM TO APPLICATION FOR SOURCE MATERIAL LICENSE

KERR-McGEE CORPORATION  
Oklahoma City, Oklahoma

12. (a) The location and storage conditions for the source material are such that the chances of nonnuclear accidents are extremely remote. For that portion kept indoors, normal fire protection is afforded by the fact that (1) the building is rated fireproof and (2) fire extinguishers are readily accessible. Access will be restricted to personnel who are competent to handle such material.
- (b) In case of accident involving source material, the affected area will be immediately evacuated until adequate clean-up and decontamination procedures have been carried out. A physician who has specialized in nuclear medicine is on the Kerr-McGee staff and will be available when required. He has established a working arrangement with the University of Oklahoma Medical Center staff for assistance in case of emergency.
- (c) The radiation survey program comprises:
1. Personnel film badges (+ control badges).
  2. Routine survey on a monthly basis of the area(s) where source materials are stored or used.
  3. Air sampling on a monthly basis in appropriate areas.
  4. Any additional monitoring for which a need develops after receipt of the materials.

11(c). VENTILATION EQUIPMENT WHICH WILL BE USED IN OPERATIONS WHICH PRODUCE DUST, FUMES, MISTS, OR GASES, INCLUDING PLAN VIEW SHOWING TYPE AND LOCATION OF HOOD AND FILTERS, MINIMUM VELOCITIES MAINTAINED AT HOOD OPENINGS AND PROCEDURES FOR TESTING SUCH EQUIPMENT.

See Separate Sheet.

12. DESCRIBE PROPOSED PROCEDURES TO PROTECT HEALTH AND MINIMIZE DANGER TO LIFE AND PROPERTY AND RELATE THESE PROCEDURES TO THE OPERATIONS LISTED IN ITEM 9: INCLUDE: (a) SAFETY FEATURES AND PROCEDURES TO AVOID NONNUCLEAR ACCIDENTS, SUCH AS FIRE, EXPLOSION, ETC., IN SOURCE MATERIAL STORAGE AND PROCESSING AREAS.

See Separate Sheet.

(b) EMERGENCY PROCEDURES IN THE EVENT OF ACCIDENTS WHICH MIGHT INVOLVE SOURCE MATERIAL.

See Separate Sheet.

(c) DETAILED DESCRIPTION OF RADIATION SURVEY PROGRAM AND PROCEDURES.

See Separate Sheet.

13. WASTE PRODUCTS: *If none will be generated, state "None" opposite (a), below. If waste products will be generated, check here  and explain on a supplemental sheet:*

(a) Quantity and type of radioactive waste that will be generated. None

(b) Detailed procedures for waste disposal.

14. IF PRODUCTS FOR DISTRIBUTION TO THE GENERAL PUBLIC UNDER AN EXEMPTION CONTAINED IN 10 CFR 40 ARE TO BE MANUFACTURED, USE A SUPPLEMENTAL SHEET TO FURNISH A DETAILED DESCRIPTION OF THE PRODUCT, INCLUDING:

(a) PERCENT SOURCE MATERIAL IN THE PRODUCT AND ITS LOCATION IN THE PRODUCT.

(b) PHYSICAL DESCRIPTION OF THE PRODUCT INCLUDING CHARACTERISTICS, IF ANY, THAT WILL PREVENT INHALATION OR INGESTION OF SOURCE MATERIAL THAT MIGHT BE SEPARATED FROM THE PRODUCT.

(c) BETA AND BETA PLUS GAMMA RADIATION LEVELS (*Specify instrument used, date of calibration and calibration technique used*) AT THE SURFACE OF THE PRODUCT AND AT 12 INCHES.

(d) METHOD OF ASSURING THAT SOURCE MATERIAL CANNOT BE DISASSOCIATED FROM THE MANUFACTURED PRODUCT.

**CERTIFICATE**

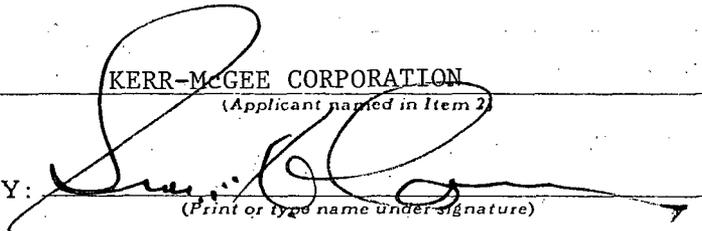
*(This item must be completed by applicant)*

15. *The applicant, and any official executing this certificate on behalf of the applicant named in Item 2, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 40, 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 CORPORATION

*(Applicant named in Item 2)*

Dated     MAY 8, 1969    

BY:    
*(Print or type name under signature)*

SENIOR VICE-PRESIDENT

*(Title of certifying official authorized to act on behalf of the applicant)*

WARNING: 18 U.S.C. Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

UNITED STATES ATOMIC ENERGY COMMISSION

APPLICATION FOR SOURCE MATERIAL LICENSE

Pursuant to the regulations in Title 10, Code of Federal Regulations, Chapter 1, Part 40, application is hereby made for a license to receive, possess, use, transfer, deliver or import into the United States, source material for the activity or activities described.

<p>1. (Check one)</p> <p><input checked="" type="checkbox"/> (a) New license</p> <p><input type="checkbox"/> (b) Amendment to License No. _____</p> <p><input type="checkbox"/> (c) Renewal of License No. _____</p> <p><input type="checkbox"/> (d) Previous License No. _____</p>	<p>2. NAME OF APPLICANT</p> <p>Kerr-McGee Corporation</p> <hr/> <p>3. PRINCIPAL BUSINESS ADDRESS</p> <p>Kerr-McGee Building Oklahoma City, Oklahoma 73102</p>																
<p>4. STATE THE ADDRESS(ES) AT WHICH SOURCE MATERIAL WILL BE POSSESSED OR USED</p> <p>Technical Department, Kerr-McGee Building, Oklahoma City, Oklahoma 73102 Research Department, 3301 Northwest 150th Street, Oklahoma City, Oklahoma</p>																	
<p>5. BUSINESS OR OCCUPATION</p> <p>Uranium mining and processing</p>	<p>6. (a) IF APPLICANT IS AN INDIVIDUAL, STATE CITIZENSHIP</p> <p>-</p> <p>(b) AGE</p> <p>-</p>																
<p>7. DESCRIBE PURPOSE FOR WHICH SOURCE MATERIAL WILL BE USED</p> <p>Material will be used to provide radiation sources of known composition and intensity for experimental work related to the design and calibration of new instruments and for related types of investigations.</p>																	
<p>8. STATE THE TYPE OR TYPES, CHEMICAL FORM OR FORMS, AND QUANTITIES OF SOURCE MATERIAL YOU PROPOSE TO RECEIVE, POSSESS, USE, OR TRANSFER UNDER THE LICENSE</p> <table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="width:25%;">(a) TYPE</th> <th style="width:25%;">(b) CHEMICAL FORM</th> <th style="width:25%;">(c) PHYSICAL FORM (Including % U or Th.)</th> <th style="width:25%;">(d) MAXIMUM AMOUNT AT ANY ONE TIME (in pounds)</th> </tr> </thead> <tbody> <tr> <td>NATURAL URANIUM</td> <td style="text-align: center;"><math>U_3O_8</math></td> <td>Ore (0.1-0.4% U) Yellow Cake (85-90% U)</td> <td>1200 pounds uranium</td> </tr> <tr> <td>URANIUM DEPLETED IN THE U-235 ISOTOPE</td> <td></td> <td></td> <td></td> </tr> <tr> <td>THORIUM (ISOTOPE)</td> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p>(e) MAXIMUM TOTAL QUANTITY OF SOURCE MATERIAL YOU WILL HAVE ON HAND AT ANY TIME (in pounds)</p> <p>1200 pounds uranium</p>		(a) TYPE	(b) CHEMICAL FORM	(c) PHYSICAL FORM (Including % U or Th.)	(d) MAXIMUM AMOUNT AT ANY ONE TIME (in pounds)	NATURAL URANIUM	$U_3O_8$	Ore (0.1-0.4% U) Yellow Cake (85-90% U)	1200 pounds uranium	URANIUM DEPLETED IN THE U-235 ISOTOPE				THORIUM (ISOTOPE)			
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<p>9. DESCRIBE THE CHEMICAL, PHYSICAL, METALLURGICAL, OR NUCLEAR PROCESS OR PROCESSES IN WHICH THE SOURCE MATERIAL WILL BE USED, INDICATING THE MAXIMUM AMOUNT OF SOURCE MATERIAL INVOLVED IN EACH PROCESS AT ANY ONE TIME, AND PROVIDING A THOROUGH EVALUATION OF THE POTENTIAL RADIATION HAZARDS ASSOCIATED WITH EACH STEP OF THOSE PROCESSES.</p> <p>The source material will not be processed, except for mixing of portions with natural sand for the purpose of dilution. Its primary use will be in the calibration and standardization of instruments and in research on radiation measurements.</p>																	
<p>10. DESCRIBE THE MINIMUM TECHNICAL QUALIFICATIONS INCLUDING TRAINING AND EXPERIENCE THAT WILL BE REQUIRED OF APPLICANT'S SUPERVISORY PERSONNEL INCLUDING PERSON RESPONSIBLE FOR RADIATION SAFETY PROGRAM (OR OF APPLICANT IF APPLICANT IS AN INDIVIDUAL).</p> <p>See Separate Sheet.</p>																	
<p>11. DESCRIBE THE EQUIPMENT AND FACILITIES WHICH WILL BE USED TO PROTECT HEALTH AND MINIMIZE DANGER TO LIFE OR PROPERTY AND RELATE THE USE OF THE EQUIPMENT AND FACILITIES TO THE OPERATIONS LISTED IN ITEM 9: INCLUDE: (a) RADIATION DETECTION AND RELATED INSTRUMENTS (including film badges, dosimeters, counters, air sampling, and other survey equipment as appropriate. The description of radiation detection instruments should include the instrument characteristics such as type of radiation detected, window thickness, and the range(s) of each instrument).</p> <p>See Separate Sheet.</p>																	
<p>(b) METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED IN (a) ABOVE, INCLUDING AIR SAMPLING EQUIPMENT (for film badges, specify method of calibrating and processing, or name supplier).</p> <p>See Separate Sheet.</p>																	

## ADDENDUM TO APPLICATION FOR SOURCE MATERIAL LICENSE

KERR-McGEE CORPORATION  
Oklahoma City, Oklahoma

10. Personnel responsible for supervision of use of source material and for radiation safety will have had at least 10 years of responsible experience in the handling and processing of radioactive materials and at least 5 years directly associated with radiological health and safety programs.

For the foreseeable future, both overall supervision and safety will be the responsibility of Howard C. Eberline who has had 24 years of experience in the nuclear field, including design, production and operation of radiation measurement instruments and systems, and supervision of health safety programs for the AEC.

11. (a) Approximately 50% of the source material will be buried in sealed test pits located out-of-doors on a 160-acre fenced site and some 250 yards from normal working areas. The containers will be fabricated of 12-gauge galvanized steel, 6 feet in diameter x 12 feet long with welded bottoms. The source material will be about 3 feet below grade and will be covered by 3 feet of sand and 4 inches of concrete. Access to the material will be through a center fiber glass tube which will be protected by a locked steel cover when not in use.

That portion of source material not placed in test pits will be kept in locked cabinets or rooms adequately marked with approved radiation warning signs. Air samples will be taken every 30 days or oftener if conditions require.

In addition to various scintillation and Geiger-type instruments with which we will be working, periodic radiation checks will be made using the following or equal:

1. Personnel film badges.
  2. Alpha Counter (Eberline Instrument Co., Model PAC-3G).
  3. Air sampling equipment (Eberline Instrument Co.).
  4. Geiger Counter, range 0-20mr (Eberline Instrument Co., Model E-112).
- (b) Radiation instruments will be calibrated using small radium or standard isotopic sources for which AEC license is not required. Calibration will be done routinely every 30 days or oftener if conditions require. Personnel film badges are supplied by Landauer on a monthly basis.
- (c) Test pits will be out-of-doors with no special ventilation needed. The residual source material will be kept in closed containers so that no dust will be released.

## ADDENDUM TO APPLICATION FOR SOURCE MATERIAL LICENSE

KERR-McGEE CORPORATION  
Oklahoma City, Oklahoma

12. (a) The location and storage conditions for the source material are such that the chances of nonnuclear accidents are extremely remote. For that portion kept indoors, normal fire protection is afforded by the fact that (1) the building is rated fireproof and (2) fire extinguishers are readily accessible. Access will be restricted to personnel who are competent to handle such material.
- (b) In case of accident involving source material, the affected area will be immediately evacuated until adequate clean-up and decontamination procedures have been carried out. A physician who has specialized in nuclear medicine is on the Kerr-McGee staff and will be available when required. He has established a working arrangement with the University of Oklahoma Medical Center staff for assistance in case of emergency.
- (c) The radiation survey program comprises:
1. Personnel film badges (+ control badges).
  2. Routine survey on a monthly basis of the area(s) where source materials are stored or used.
  3. Air sampling on a monthly basis in appropriate areas.
  4. Any additional monitoring for which a need develops after receipt of the materials.