

**MATERIALS LICENSE**

Amendment No. 11

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, 36, 39, 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. Kerr-McGee Corporation	3. License Number SNM-1999
2. Kerr-McGee Center Oklahoma City, OK 73125	4. Expiration Date January 1, 1997
	5. Docket or Reference No. 70-3073

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
A. Uranium Enriched in U-235	A. Contaminated soil, sludge, sediment, trash, building rubble, structures, and any other contaminated material.	A. All residual contamination which currently exists at the former Cushing Refinery Site.
B. Thorium	B. Contaminated soil, sludge, sediment, trash, building rubble, structures, and any other contaminated material.	B. All residual contamination which currently exists at the former Cushing Refinery Site.
C. Natural Uranium and Depleted Uranium	C. Contaminated soil, sludge, sediment, trash, building rubble, structures, and any other contaminated material.	C. All residual contamination which currently exists at the former Cushing Refinery Site.
D. U-235	D. Calibration and reference radioactive sources containing U-235	D. No calibration or reference radioactive source containing U-235, shall exceed 0.1 microCurie per source.

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number	SNM-1999
Docket or Reference number	70-3073
Amendment No. 11	

9. Authorized Use: Licensed material shall be possessed and used in remediation activities leading to the decommissioning of the Cushing Site.
10. Authorized Place of Use: The existing facilities, as defined in Figure 1 of an November 6, 1998, letter, of Kerr-McGee Corporation, Safety and Environmental Affairs Division, P.O. Box 89, Cushing, OK 74023. Location: Two miles North - State Highway 18, 1/2 mile East - Deep Rock Road.
11. Conditions:
- A. DELETED.
  - B. DELETED.
  - C. Both the Initial Radworker Training and the Annual Radworker Requalification Training, described in Item 8 of the application, shall include all of the topics described in 10 CFR 19.12.
  - D. Lapel air samplers will be issued when required by a special work permit or at the direction of the health physics personnel. Lapel air samplers would be issued when there is a reasonable probability that personnel may be exposed to airborne radioactive material. Lapel air samplers may be issued at a minimum of one per work crew (either the maximum exposed individual or the potentially maximum exposed individual), or a maximum of one per individual, depending on the work scope and the potential for worker exposure. Downwind area air sampling shall be performed when work activities would cause the potential of producing airborne radioactivity, such as earthmoving.

Urine sampling and analysis for uranium isotopes will be performed for all workers in a crew, if either area air sample(s) or lapel air sample(s) indicate the following:

- >40 DAC-hrs for a single air sample result,
- >100 DAC-hrs/yr accumulated exposure for any one worker.

Fecal analysis will be performed in cases where thorium exposure is suspected and either area air sample(s) or lapel air sample(s) indicate the chronic or acute exposures in excess of 100 DAC-hrs.

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

SNM-1999

Docket or Reference number

70-3073

Amendment No. 11

- E. Notwithstanding statements in the application, the limits listed in "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," Policy and Guidance Directive 83-23, August 1987, shall be used as the criteria for the unrestricted release of equipment, material, and personnel.
- F. All radiation protection program procedures or revisions to these procedures shall be approved by the Radiation Safety Officer (RSO). All revisions to the Radiation Safety Plan (RSP) shall be approved by the RSO, Site Manager, Project Manager, and Program Manager.
- G. All work in radioactive materials areas or restricted areas, or work with licensed material not located in radioactive materials or restricted areas, shall be in accordance with an approved radiation safety procedure.
- H. Wastes disposed offsite shall be classified and meet waste form requirements of 10 CFR Part 61, meet applicable disposal site license conditions, and meet Department of Transportation and 10 CFR Part 71 transportation requirements.
- I. The RSO for this license is Ms. Karen Morgan.
- J. Licensee is exempt from the physical protection requirements of 10 CFR Part 73 and the criticality accident requirements of 10 CFR 70.24.
- K. Construction and operation of the Radioactive Material Storage Area (RMSA) in accordance with the licensee's letters, dated September 2, 1997, and May 28, 1998, is authorized.
- L. The licensee shall maintain liquid effluent releases from both the RMSA and the retention pond to an annual cumulative average less than 20 percent of the effluent limits stipulated in Appendix B of 10 CFR Part 20. Liquid effluents shall be measured prior to discharge and during discharge using gross alpha and isotopic analytical techniques for all effluent samples.

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

SNM-1999

Docket or Reference number

70-3073

Amendment No. 11

M. The licensee is authorized to remediate Acid Sludge Pit 4 in accordance with the methods and criteria prescribed in the licensee's letters dated November 26, 1997, February 5, 1998, March 3, 1998, June 15, 1999, and July 29, 1999.

The licensee shall use the unrestricted use criteria listed in "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of License for Byproduct, Source or Special Nuclear Material" for surfaces of buildings and equipment, and the October 23, 1981, Branch Technical Position, "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations," for soils.

Specific values are given below--

Soils:	Depleted uranium	1.3 Bq/gm (35 pCi/gm) (total uranium)
	Enriched uranium	1.1 Bq/gm (30 pCi/gm) (total uranium)
	Thorium	0.37 Bq/gm (10 pCi/gm) (total thorium)
Equipment and Building surfaces:		1,000 dpm alpha/100 cm <sup>2</sup> : average contamination level over 1 m <sup>2</sup> or smaller area
		1,000 dpm beta-gamma/100 cm <sup>2</sup> : average contamination level over 1 m <sup>2</sup> or smaller area
		3,000 dpm alpha/100 cm <sup>2</sup> : maximum over 100 cm <sup>2</sup>
		3,000 dpm beta-gamma/100 cm <sup>2</sup> : maximum over 100 cm <sup>2</sup>
		200 dpm alpha/100 cm <sup>2</sup> : removable
		200 dpm beta-gamma/100 cm <sup>2</sup> : removable
Exposure rate:	Soils	2.6 nC/kg/hr (10 uR/hr) average above background at 1 meter (m)
	Buildings	1.3 nC/kg/hr (5uR/hr) above background at 1 m
	Equipment	0.05 uC/kg/hr (0.2 mR/hr) at 1 cm for beta radiation
		0.26 uC/kg/hr (1.0 mR/hr) at 1 cm for gamma radiation

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

SNM-1999

Docket or Reference number

70-3073

Amendment No. 11

N. The licensee is authorized to remediate the Cushing Refinery Site in accordance with methods and criteria prescribed in the licensee's Site Decommissioning Plan (SDP), submitted by letter dated August 17, 1998, and supplemented by letters dated January 15, 1999, June 4, 1999, and June 18, 1999.

The licensee shall use the unrestricted use criteria listed in the August 1987, "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of License for Byproduct, Source, or Special Nuclear Material" for surfaces of buildings and equipment; the February 13, 1997, "Method for Surveying and Averaging Concentrations of Thorium in Contaminated Subsurface Soil" for subsurface contaminated soil in RMA-3, RMA-11, Skull Creek, RMA-10, Block 102, Blocks 60 or 72, and potential trench east of RMA-11; and the Branch Technical Position, the October 23, 1981, "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations," for soils.

Specific values are given below--

Soils:	Uranium	1.11 Bq/g (30 pCi/g)(total uranium)
	Thorium	0.37 Bq/g (10 pCi/g)(total thorium)

Subsurface soil (for the areas listed above):

The licensee shall survey in accordance with NRC's guidance paper, "Method for Surveying and Averaging Concentrations of Thorium In Contaminated Subsurface Soil," as a minimum, but may collect samples on a smaller grid or at more frequent depth intervals. The subsurface soil concentration limits are the same as the soil concentration for uranium and thorium, above. When multiple radionuclides are present, the sum of the ratios of the concentration of each radionuclide to its respective limit must not exceed 1.

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number	SNM-1999
Docket or Reference number	70-3073
Amendment No. 11	

Equipment and Building surfaces: Uranium 5,000 disintegrations per minute (dpm)/100 square centimeter (cm<sup>2</sup>) average contamination level over 1 m<sup>2</sup> or smaller area

15,000 dpm/100 cm<sup>2</sup> maximum  
1,000 dpm/100 cm<sup>2</sup> removable

Thorium 1,000 dpm/100 cm<sup>2</sup> average contamination level over 1 m<sup>2</sup> or smaller area  
3,000 dpm/100 cm<sup>2</sup> maximum  
200 dpm/100 cm<sup>2</sup> removable

Exposure rate: Soils 2.6 nanocoulombs per kilogram per hour (nC/kg/hr) [10 microroentgen per hour (μR/hr)] above background at 1 m  
Buildings 1.3 nC/kg/hr (5 μR/hr) above background at 1 m  
Equipment 0.05 uC/kg/hr (0.2 mR/hr) at 1 cm for beta radiation  
0.26 uC/kg/hr (1.0 mR/hr) at 1 cm for gamma radiation

0. The licensee shall conduct a final status survey and sampling program of the site in accordance with the December 1993, NUREG/CR-5849, "Manual for Conducting Radiological Surveys in Support of License Termination." Radioactivity levels shall not exceed the averaging criteria in NUREG/CR-5849, except for subsurface contaminated soil in RMA-3, RMA-11, Skull Creek, RMA-10, Block 102, Blocks 60 or 72, and potential trench east of RMA-11; RMA-11 and Disposal Trench areas. Subsurface contaminated soil in these areas shall not exceed the limit calculated in accordance with the criteria in the February 13, 1997, "Method for Surveying and Averaging Concentrations of Thorium In Contaminated Subsurface Soil." Material that exceeds these averaging criteria shall be removed and shipped off-site to a licensed low-level waste disposal site.
- P. The licensee is authorized to make certain changes to the NRC-approved SDP and RSP without NRC's approval, if these changes are consistent with the as-low-as-reasonably-achievable (ALARA) principle and the decommissioning process. All changes shall be approved by the Cushing ALARA Review Committee (ARC), subject to the following:
  1. The licensee may, without prior NRC approval, and subject to the requirements specified in Parts 2 and 3 of this condition:

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number	SNM-1999
Docket or Reference number	70-3073
Amendment No. 11	

- a. Make changes in the facility or process, as presented in the NRC-approved SDP and RSP; and
  - b. Conduct tests or experiments not present in the NRC-approved SDP or applicable license conditions.
2. The licensee shall not be required to file an application for an amendment to the license when the following conditions are satisfied:
- a. The change, test, or experiment does not conflict with requirements specifically stated in the license (excluding those aspects addressed in Part 1 of this condition), or impair the licensee's ability to meet all applicable NRC regulations;
  - b. There is no degradation in safety or environmental commitments addressed in the NRC-approved SDP or RSP, or have a significant adverse effect on the quality of the work, the remediation objectives, or health and safety; and
  - b. The change, test, or experiment is consistent with the conclusions of actions analyzed in the Environmental Assessment (EA) dated August 1999.
3. The licensee's determination shall be made by the ARC. The ARC shall consist of a minimum of three individuals employed by the licensee, of whom one shall be designated as the ARC chairman. One member of the ARC shall represent corporate (Oklahoma City office) management and shall be responsible for approval of managerial and financial changes. One member shall represent site operations and shall have responsibility for implementing any changes. One member shall be the site RSO or equivalent, with responsibility for assuring that changes conform to radiation safety requirements. Additional members may be included in the ARC, as appropriate, to address technical aspects, such as health physics, ground-water hydrology, surface-water hydrology, specific earth sciences, and other technical disciplines. Temporary or permanent members, other than three individuals who are

**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number	SNM-1999
Docket or Reference number	70-3073
Amendment No. 11	

required to be Kerr-McGee Corporation employees, may be consultants. The licensee's determinations as to whether the above conditions are met will be made by the ARC. The licensee shall provide in an annual report to NRC describing all such determinations made pursuant to the condition, including a summary of the safety and environmental evaluations of each such action. As part of this annual report, the licensee shall include any SDP and RSP pages revised pursuant to this condition. The records of each determination shall be retained until license termination. The retained records shall include written safety and environmental evaluations, made by the ACR, that provide the basis for determining whether the above conditions are met.

- Q. During the remediation operations, liquid and airborne effluents will be sampled and analyzed to ensure that releases meet the requirements of 10 CFR Part 20, Appendix B.
- R. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with statements, representations, and conditions contained in a letter dated September 25, 1992, as supplemented on December 18, 1992, and August 26, 1993.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date:

November 3, 1999

By:



Larry W. Camper, Chief  
Decommissioning Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards



**ENCLOSURE 2**



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

Docket No. 70-3073  
License No. SNM-1999

APPLICANT: Kerr-McGee Corporation

INSTALLATION: Cushing Refinery Site  
Cushing, Oklahoma

SUBJECT: CATEGORICAL EXCLUSION UNDER THE PROVISIONS OF  
10 CFR 51.22(c)(11)

By letter dated October 1, 1999, Kerr-McGee Corporation requested an amendment to Materials License SNM-1999, to change the Radiation Safety Officer listed on the license, from Mr. Terence Moore to Ms. Karen Morgan, who will be responsible for the licensed material at the Cushing Refinery Site in Cushing, Oklahoma.

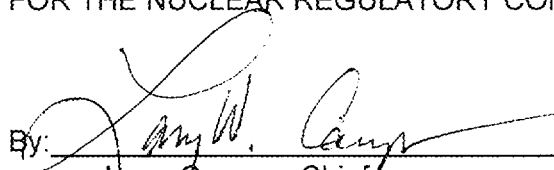
U.S. Nuclear Regulatory Commission staff has concluded that this revision involves a minor administrative change, and does not involve any changes in the scope or type of operation currently authorized by the license. Further, these revisions meet the conditions that: (i) there is no significant change in the type, or significant increase in the amounts of any effluents that may be released offsite; (ii) there is no significant increase in individual or cumulative occupational radiation exposure; (iii) there is no significant construction impact; and (iv) there is no significant increase in the potential for, or consequences from, radiological accidents.

Therefore, in accordance with 10 CFR 51.22(c)(11), an environmental assessment or an environmental impact statement is not needed for this action.

FOR THE NUCLEAR REGULATORY COMMISSION

Dated November 3, 1999

By: \_\_\_\_\_

  
Larry Camper, Chief  
Decommissioning Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards