70-925 CIMARRON CORPORATION

AMENDMENT NO. 15 TO SNM LICENSE NO. SNM-928 FOR THE CIMARRON FACILITY

REC'D. W/LTR. DTD.. 8/20/99...9908300093

ENCLOSURE 1

70-925

NRC FORM 374
(7-94)

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 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. Cimarron Corporation	3. License Number	SNM-928 Amendment No. 15
2. 123 Robert S. Kerr, MT-2006 Oklahoma City, OK 73102	4. Expiration Date	June 30, 1995
	5. Docket or Reference No.	070-00925

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 to ≤ 5.0 wt. percent in U-235	A. Any compound	A. 1200 grams of contained U-235
B. Uranium enriched to > 5.0 wt. percent in U-235	B. Any compound	B. *100 grams of contained U-235
C. Natural and depleted uranium source material	C. Any compound	C. 2000 kilograms of uranium
D. Thorium source material	D. Any compound	D. 6000 kilograms of thorium

* If during the decontamination of the facilities and equipment at the Cimarron Plant, uranium solutions or compounds are generated that have a U-235 isotopic content greater than 5.0 wt. percent, prompt action shall be taken to degrade these materials to below 5.0 wt. percent U-235.

9. Authorized Place of Use:

The licensee's Cimarron Uranium Plant, located 1/2 mile North of the Highway 33 and Highway 74 junction near Crescent, Oklahoma.

10. For use in accordance with statements, representations, and conditions contained in letters dated April 12, 1995, July 5, 1995, April 25, 1996, August 28, 1996, and November 20, 1996; letters dated November 19, 1985, March 3, 1986, and November 2, 1989; letter dated June 24, 1992; letters dated September 4, 1987, February 25, 1993, April 19, 1994, May 31, 1994, July 20, 1994, September 21, 1994, and November 3, 1994; letters dated December 16, 1994, and June 5, 1995; letter dated January 23, 1996; letters dated August 9, 1995, and November 13, 1995; letters dated November 15, 1994, September 20, 1996, January 12, 1997, and May 16, 1997; letter dated May 6, 1997; letters dated August 22, 1990, and September 14, 1990; letters dated April 25, 1996, and June 10, 1996; and letters dated July 25, 1995; January 8, 1997; February 10, 1998; December 5, 1997; June 26, 1998; and July 2, 1998.

11. Deleted.

12. Deleted.

13. Deleted.

14. Deleted.

15. Deleted.

16. Deleted.

17. Deleted.

18. Deleted.

19. The licensee is exempt from the provisions of 10 CFR 70.24 insofar as this section applies to materials held under this license.

20. Deleted.

21. Deleted.

22. This condition deletes the restriction to backfill the two settling ponds (sanitary lagoons) and authorizes the licensee to proceed with the breaching of the berms and the closure of the two sewage lagoons.

    The settling ponds are described as the east and west sanitary lagoons occupying an area of approximately 6,600 square meters located just east of the Plutonium Plant and northeast of the Uranium Plant.

This condition also authorizes the licensee to backfill the former burial ground. The former burial ground occupies approximately 8,600 square meters and is located at the northeast edge of the site. The former burial ground includes four trenches located within a fenced area.

a. In collecting soil for backfill and cover of the lagoons and the former burial trenches, additional measurements will be made, including walkover surveys with a gamma scintillation instrument. An isotope analyses of soil samples shall also be conducted. Both the lagoons and the burial trenches will be gridded on a 10 meter (m) basis and evaluated for concentrations of uranium not greater than 30 picocuries per gram (pCi/g), and concentrations of thorium not greater than 10 pCi/g.

b. The soil used for fill material and cover material shall be compacted to minimize subsidence, and the cover material shall be contoured to the minimum slope that provides adequate drainage consistent with conforming to the original shape of the land.

c. Cimarron Corporation (Kerr-McGee) shall provide to the Oklahoma State Department of Health whatever information is required to satisfy state requirements on the presence/absence of potentially toxic substances or any other nonradioactive constituents of the fill and cover soil.

d. The licensee shall reseed/revegetate the barren soil cover of both remediated sites with vegetation indigenous to the area, in a manner consistent with preventing erosional gullying of the protective cover.

e. The licensee shall insure that all policies and site-specific standards are applied in a manner that is consistent with practices that are as low as reasonably achievable (ALARA).

23. The license is authorized to bury up to 14,000 cubic meters (m^3) (500,000 cubic feet) of soil contaminated with low-enriched uranium, in the 1981 Branch Technical Position (BTP) Option 2 concentration range, in the location described in the licensee's October 9, 1989, submittal to the NRC. The BTP Option 2 concentration range is up to 100 pCi/g for soluble uranium and up to 250 pCi/g for insoluble uranium.

a. If the average concentration of soil earmarked for disposal is determined to be above 100 pCi/g, the solubility of the uranium compounds in the soil in question must be determined using a method approved by the NRC. The acceptability of the soil for disposal as Option 2 material shall be ascertained by the formula:

Enriched Uranium Limit (pCi/g) = $170/[(F_1)(0.68) + (1-F_1)(2.0)]$ where F_1 is the insoluble fraction.

For cases where the above equation results in a limit that is less than 100 pCi/g (i.e., when the soluble fraction exceeds 75 percent), the limit will be equal to 100 pCi/g.

b. The average concentrations of the thorium and plutonium in the soil earmarked for disposal shall not exceed 10 pCi/g and 1 pCi/g, respectively.

c. A relatively impermeable barrier, such as a clay dam, shall be placed across the access road cut at the northwest corner of the soil disposal cell at project completion.

d. Both the soil placed in the disposal cell and the cover material shall be compacted in lifts not to exceed 0.3 m (1 foot), to 95 percent of maximum dry density as determined by the Standard Compaction Test, ASTM D698. Density testing shall be performed over the entire lift thickness. The cell cover shall be contoured to the minimum slope that provides adequate drainage consistent with conforming to the original shape of the ridge, and nowhere shall exceed 6 percent slope. A permanent vegetative cover shall be promptly reestablished to help minimize erosion potential. The licensee shall periodically monitor the disposal area for subsidence, erosion, and status of the vegetative cover for at least 5 years, and promptly repair any problems noted. Any additional measures necessary to prevent recurrence of determined problems shall be undertaken.

e. Notification shall be placed on the land title to declare that uranium-contaminated soil has been buried on the site and to record the volume, average uranium concentration, and exact location of the buried soil. This notification is not to be considered a restriction on the sale or future use of the site. Furthermore, cairns (permanent markers) shall be placed at the corners of the disposal cell when the burial is completed.

f. Licensee shall maintain and implement procedures and engineering controls, to the extent practicable, to achieve occupational doses and doses to members of the public that are ALARA.

24. Ms. Karen Morgan is the Radiation Safety Officer for the Cimarron Corporation Uranium Plant.

25. The areas designated as "Phase I" in Drawing No. 95MOST_RF3, from the Licensee's November 13, 1995, letter to NRC, are released for unrestricted use and removed from License No. SNM-928. The Phase I areas are no longer licensed by NRC.

26. Cimarron shall conduct a radiation protection program in accordance with Annex A "Radiation Protection Plan," dated September 20, 1996, and supplements dated January 12, 1997, May 16, 1997, June 30, 1997, January 23, 1998, June 29, 1998, October 26, 1998, and December 11, 1998.

27. Release Criteria

a. The licensee is authorized to remediate the Cimarron facility in accordance with the "Decommissioning Plan for Cimarron Corporation's Former Nuclear Fuel Fabrication Facility at Crescent, Oklahoma" dated April 19, 1995, with supplemental correspondence dated September 10, 1996, May 6, 1997, August 26, 1997, March 10, 1998, March 12, 1998, June 15, 1998, October 6, 1998, and March 4, 1999.

b. The release criteria for groundwater at the Cimarron site is 6.7 Bq/l (180 pCi/l) total uranium. NRC will not terminate Radioactive Material License SNM-928 until Cimarron demonstrates that the total uranium concentrations in all wells have been below the groundwater release criteria for eight consecutive quarterly samples (the past 2 years). Cimarron will retain control of the property licensed under NRC Radioactive Material License SNM-928 until the groundwater release criteria are met. The Oklahoma Department of Environmental Quality may require continued groundwater monitoring of non-radioactive components under its authority.

c. Cimarron 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, and the October 23, 1981, BTP "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations," for soils or soil-like material.

Specific values are as follow:

Surfaces of buildings and equipment -

5,000 dpm alpha/100 cm^2 (15.5 in^2), averaged over 1 m^2 (10.8 ft^2);
5,000 dpm beta-gamma/100 cm^2 (15.5 in^2), averaged over 1 m^2 (10.8 ft^2);
15,000 dpm alpha/100 cm^2 (15.5 in^2), maximum over 1 m^2 (10.8 ft^2);
15,000 dpm beta-gamma/100 cm^2 (15.5 in^2), maximum over 1 m^2 (10.8 ft^2);
1,000 dpm alpha/100 cm^2 (15.5 in^2), removable;
1,000 dpm beta-gamma/100 cm^2 (15.5 in^2), removable

Soils -

Natural uranium	0.37 Bq/g (10 pCi/g) total uranium
Enriched uranium	1.1 Bq/g (30 pCi/g) total uranium
Depleted uranium	1.3 Bq/g (35 pCi/g) total uranium
Natural thorium	0.37 Bq/g (10 pCi/g) total thorium

Exposure rates are as follow:

Surfaces of buildings and equipment -

1.3 pC/kg (5 μR/hr) above background at 1 m (3.3 ft)

Soils -

2.6 pC/kg (10 μR/hr) average above background at 1 m (3.3 ft)
5.2 pC/kg (20 μR/hr) maximum above background at 1 m (3.3 ft)

Soils and soil-like material with concentration exceeding the 1981 BTP Option 1 limits, but less than the Option 2 limits may be disposed in the onsite disposal cell in accordance with License Condition 23.

The licensee shall conduct a final survey and sampling program to ensure that residual contamination meets the unrestricted use criteria in this license. Buildings, equipment, and outdoor areas shall be surveyed in accordance with 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. Soils and soil-like materials with elevated activities exceeding the unrestricted use criteria shall be investigated to determine compliance with the averaging criteria in NUREG/CR-5849. These criteria address averaging concentrations over any 100 m^2 (1070 ft^2) area and use the $(100/A)^{½}$ elevated area method.

For areas surveyed prior to the issuance of NUREG/CR-5849, in the applicable final survey report, the licensee shall describe the survey methods used and provide the applicable references.

For Waste Ponds 1 and 2 in Phase III Subarea O, the licensee may use the "Method for Surveying and Averaging Concentrations of Thorium in Contaminated Subsurface Soils" (reference NRC letter dated February 25, 1997) for volumetric concentration averaging of enriched uranium in soils.

For concrete rubble located in Phase II and Phase III subareas, the licensee may use the concentration averaging for concrete rubble as described in submittals dated March 10, 1998, June 15, 1998, and October 6, 1998.

Material that exceeds the above averaging criteria shall be removed and shipped off-site to a licensed low-level radioactive waste disposal site.

d. Access gates to the Cimarron facility shall be locked and secured when no personnel are onsite and fences and locks will be maintained.

e. The licensee is authorized to make certain changes to the NRC-approved Decommissioning Plan (DP), Radiation Protection Plan (RPP), and associated procedures without NRC's approval, if these changes are consistent with the ALARA principle and the decommissioning process. All changes shall be approved by the Cimarron ALARA Committee, 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:

   a. Make changes in the facility or process, as presented in the NRC-approved DP and RPP;

   b. Make changes in the procedures presented in the NRC-approved DP, RPP, or applicable license conditions; and

   c. Conduct tests or experiments not present in the NRC-approved DP 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 DP or RPP, or have a significant adverse effect on the quality of the work, the remediation objectives, or health and safety; and

   c. The change, test, or experiment is consistent with the conclusions of actions analyzed in the Environmental Assessment (dated July 29,1999) and Safety Evaluation Report (dated August 20, 1999).

3. If any of these conditions are not met for the change, test, or experiment under consideration, the licensee is required to submit a license amendment application for NRC review and approval. The licensee's determinations as to whether the above conditions are met will be made by the facility's ALARA committee. All such determinations shall be documented. The licensee shall provide in an annual report to NRC, a description of all changes, tests, and experiments made or conducted pursuant to this condition, including a summary of the safety and environmental evaluation of each such action. As part of this annual report, the licensee shall include any DP or RPP pages revised pursuant to this condition. The records shall be retained until license termination. The retained records shall include written safety and environmental evaluations, made by the ALARA committee, that provide the basis for determining whether or not the conditions are met.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number: SNM-928
Docket or Reference number: 070-00925
Amendment No. 15

The ALARA Committee shall consist of a minimum of three individuals employed by the licensee, and one of these shall be designated as the ALARA Committee chairman. One member of the ALARA Committee shall have expertise in management and shall be responsible for approval of managerial and financial changes; one member shall have expertise in decommissioning and shall have responsibility for implementing any decommissioning changes; and one member shall be the site Corporate Radiation Safety Officer or equivalent, with the responsibility for assuring changes conform to radiation safety and environmental requirements. Additional members may be included in the ALARA Committee as appropriate, to address technical aspects such as health physics, groundwater hydrology, surface-water hydrology, specific earth sciences, and other technical disciplines. Temporary members or permanent members, other than the three above-specified individuals, may be consultants.

f. During the remediation operations, liquid and airborne effluents shall be sampled and analyzed to ensure that releases meet the requirements of 10 CFR Part 20, Appendix B.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: August 20, 1999

By: Larry W. Camper

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

ENCLOSURE 2