UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TEXAS 76011-8064

February 23, 2000

Mr. S. Jess Larsen, Vice President
Kerr-McGee Center
P.O. Box 25861
Oklahoma City, Oklahoma 73125

SUBJECT: NRC INSPECTION REPORT 70-925/99-02

Dear Mr. Larsen:

On December 15, 1999, the NRC concluded the onsite portion of an inspection of the Cimarron site near Crescent, Oklahoma. On February 14, 2000, the NRC held a telephonic exit briefing with you and a member of your staff concerning the results of the inspection and NRC analysis of confirmatory soil samples obtained during the inspection. The enclosed report presents the scope and results of the inspection.

This inspection covered the remediation and verification that soil in Sub-Area L met NRC release criteria. Soil sampling activities conducted by your staff were observed. Forty soil samples were collected from Sub-Area L for analysis by the NRC. Sub-Area L property included Burial Area 2, the Sanitary Lagoon, and the Emergency Plutonium Facility Pond. As part of the NRC's confirmatory sampling program for the Cimarron site, the results of these soil samples were compared with the results of the final status survey data from Sub-Area L soil samples collected at the same locations by Cimarron. The results of the 40 NRC soil samples were found to be consistent with the licensee's analyses in that results met the NRC's release criteria. These confirmatory sample results provided additional assurance that residual soil contamination in Sub-Area L met the NRC Branch Technical Position Option 1 criteria.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be placed in the NRC Public Document Room. Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

/RA/

Dwight D. Chamberlain, Director
Division of Nuclear Materials Safety

Docket No.: 70-925
License No.: SNM-928

Enclosure:
NRC Inspection Report
70-925/99-02

cc w/enclosure:
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ENCLOSURE

U. S. NUCLEAR REGULATORY COMMISSION

REGION IV

Docket No.:	70-925
License No.:	SNM-928
Report No.:	70-925/99-02
Licensee:	Cimarron Corporation Kerr-McGee Center Oklahoma City, Oklahoma 73125
Facility:	Cimarron Site
Location:	Crescent, Oklahoma
Dates:	December 15, 1999 and February 14, 2000
Inspectors:	Louis C. Carson II, Health Physicist Fuel Cycle & Decommissioning Branch Danny L. Rice, Health Physicist, CHP Fuel Cycle & Decommissioning Branch
Approved By:	D. Blair Spitzberg, PhD., Chief Fuel Cycle & Decommissioning Branch
Attachment:	Supplemental Information

EXECUTIVE SUMMARY

Cimarron Corporation, Cimarron Site
NRC Inspection Report 70-925/99-02

Cimarron is conducting site remediation activities in preparation for the termination of License SNM-928. Decommissioning inspections, radiological surveys, and analysis of surface and subsurface soils have been conducted at Cimarron as part of the overall NRC confirmatory survey process. This inspection was a continuation of this process. The licensee is authorized to bury soil contaminated with residual low-enriched uranium at the Cimarron site, if the soil meets the criteria of the NRC branch technical position (BTP) for soil. Sub-Area L property included Burial Area 2, the Sanitary Lagoon, and the Emergency Plutonium Facility Pond. The Sub-Area L subsurface soils had been analyzed and determined to meet the release criteria, as documented in a letter from the NRC to the licensee dated November 8, 1996. This inspection focused on reviewing final status survey records and collecting surface soil samples from Sub-Area L to confirm compliance with the license and BTP soil limits. This inspection also included a review of the site's decommissioning status.

Decommissioning, Closeout Survey, and Site Status

- Site decommissioning activities were conducted in accordance with applicable license conditions and regulatory requirements. Site fences were in good condition and perimeter postings were appropriate. No health or safety hazards were identified (Section 1).

- Forty soil samples were collected from Sub-Area L during this inspection. The samples were collected from the same locations by both the NRC and the licensee as part of the NRC confirmatory survey program (Section 1).

- NRC measurements of 40 soil samples from Sub-Area L showed that the samples met the concentration guidelines values required to meet BTP Option 1 criteria (Section 1).

- Radiation exposure rate levels at Sub-Area L were less than 10 µR/hr above background levels (Section 1).

Report Details

1 Decommissioning Inspection Procedure for Fuel Cycle Facilities, Closeout Inspection and Survey, Site Status (83890/88104)

1.1 Inspection Scope

The site status and decommissioning activities were reviewed to determine if activities were being conducted in accordance with the license, regulatory requirements, and the Cimarron Decommissioning Plan. The Cimarron Decommissioning Plan commits the licensee to follow the recommendations in NUREG/CR-5849, “Manual for Conducting Radiological Surveys in Support of License Termination.”

As part of the NRC confirmatory surveys process, 40 soil samples from Sub-Area L were collected for analysis by the NRC. The samples were analyzed for total uranium in soil to determine if the samples met the requirements of the license, BTP, and NUREG/CR-5849 for uranium in soil samples.

1.2 Observation and Findings

a. Site Status

Cimarron is in the final stages of site remediation in preparation for termination of its nuclear materials license. The licensee's decommissioning plan was submitted to the NRC in April 1995 and approved in August 1999. The licensee’s activities have been coordinated with the cognizant project manager in the Office of Nuclear Materials Safety and Safeguards. The licensee's current activities included soil sampling, radiation surveying, groundwater remediation, and facility maintenance. Remediation at the Cimarron site was more than 99 percent complete. Sub-Area L final soil remediation efforts had been underway by Cimarron since 1978. Sub-Area L property included Burial Area 2, the Sanitary Lagoon, and the Emergency Plutonium Facility Pond. Final survey activities for the site were in progress. This inspection was a continuation of the NRC’s confirmatory survey program for the Cimarron site.

b. Site Tour

A site tour was performed to verify that activities were being conducted in accordance with applicable regulations and license conditions to ensure that controls were adequate to protect the health and safety of the workers and the public. During the tour, buildings, fences, gates, and operating equipment were observed. The inspector noted that security was maintained by site security personnel who prevented unauthorized access to the site. The licensee maintained locked gates at entrances to site property, and visitors were required to check in at the main office when accessing the site property. The inspector determined that licensed material was secure within the site property as required by 10 CFR 20.1801. Additionally, fences were posted with radioactive material signs as required by 10 CFR 20.1902.

c. Confirmatory Radiation Soil and Sediment Sampling

Forty surface soil samples from Sub-Area L were collected for analysis by the NRC. The samples were analyzed for total uranium to determine if the samples met approved concentration values. All samples were obtained at a depth of 0-0.5 ft. from the surface. Sub-Area L subsurface contamination had been previously determined to meet the BTP Option 1 average residual uranium concentration of 30 picocuries/gram (pCi/g) total uranium. This was documented in the NRC letter dated November 8, 1996. The inspector reviewed the licensee's procedures for collecting and preparing soil and sediment samples and observed licensee staff collect and prepare the samples for analysis by the NRC.

The NRC soil samples were sent to the NRC Region III laboratory for analysis on December 15, 1999. All 40 of the Sub-Area L samples were determined to have concentrations below the 30 pCi/g criteria specified under BTP Option 1. The results of the NRC confirmatory surveys did not identify any new areas of contamination. Additionally, the confirmatory survey results supported the licensee's conclusion the soil in Sub-Area L met the approved criteria specified in the BTP and averaging criteria. The following table shows the results of the confirmatory soil and sediment samples at and around Sub-Area L.

Confirmatory Soil and Sediment Sample Results For Sub-Area L			
Location (Sample #)	**Sample Depth (feet)**	**Sample Mass (grams)**	**NRC Results U (pCi/g)**
1	0-0.5	816	15.3
215N\35E			
2	0-0.5	762.2	14.0
215N\75E			
3	0-0.5	827.2	16.1
220N\85E			
4	0-0.5	761.3	15.9
220N\100E			
5	0-0.5	738.2	19.7
210N\100E			
6	0-0.5	726.4	16.1
230N\100E			
7	0-0.5	804.6	15.9
230N\75E			
8	0-0.5	800.2	13.4
235N\60E			
9	0-0.5	826.2	14
250N\45E			
10	0-0.5	877.5	12.3
255N\60E			
11	0-0.5	798.4	14.3
260N\95E			
12	0-0.5	714.8	15.4
280N\100E			

Confirmatory Soil and Sediment Sample Results For Sub-Area L			
Location (Sample #)	**Sample Depth (feet)**	**Sample Mass (grams)**	**NRC Results U (pCi/g)**
13	0-0.5	866.8	11.1
295N\70E			
14	0-0.5	678.2	16
275N\30E			
15	0-0.5	771.9	17
310N\25E			
16	0-0.5	783.7	6.1
315N\50E			
17	0-0.5	761.7	11.7
325N\95E			
18	0-0.5	742.7	11.0
310N\105E			
19	0-0.5	822.6	13.7
235N\115E			
20	0-0.5	742.2	19.9
225N\110E			
21	0-0.5	775.2	14.7
205N\120E			
22	0-0.5	834.7	14.1
205N\140E			
23	0-0.5	787.6	14.1
220N\140E			
24	0-0.5	746	10.8
205N\150E			

Confirmatory Soil and Sediment Sample Results For Sub-Area L			
Location	**Sample Depth**	**Sample Mass**	**NRC Results**
(Sample #)	**feet**	**U (grams)**	**U (pCi/g)**
25	0-0.5	769.3	14.9
195N\145E			
26	0-0.5	784.8	23.2
185N\160E			
27	0-0.5	748	29.6
195N\180E			
28	0-0.5	755.7	13.2
185N\190E			
29	0-0.5	778.7	14.5
195N\165E			
30	0-0.5	694.5	19.2
155N\210E			
31	0-0.5	749.5	11.6
150N\225E			
32	0-0.5	696.4	20.5
140N\230E			
33	0-0.5	714.8	13.5
175N\230E			
34	0-0.5	755.5	13.9
160N\245E			
35	0-0.5	831	13.0
215N\255E			
36	0-0.5	840.7	3.75
195N\260E			

Confirmatory Soil and Sediment Sample Results For Sub-Area L			
Location	**Sample Depth**	**Sample Mass**	**NRC Results**
(Sample #)	**feet**	**(grams)**	**U (pCi/g)**
37	0-0.5	748	15.6
145N\260E			
38	0-0.5	797.9	13.7
135N\270E			
39	0-0.5	719.2	9.1
150N\295E			
40	0-0.5	734.9	17.2
115N\275E			

d. Confirmatory Exposure Rate Survey Results

Sub-Area L exposure rates had been evaluated by the licensee using a portable sodium iodide (NaI) detector. Background radiation levels around the site averaged 7 microRoentgen per hour (µR/hr). Sub-Area L radiation levels measured by the licensee averaged 8 µR/hr. Confirmatory exposure rate surveys were performed by the inspector using a portable NaI detector (Ludlum Model 19, NRC#015546, calibrated 10/12/99) at the Sub-Area L sample locations. Site background readings measured by the inspector averaged 11 µR/hr. The inspectors' Sub-Area L measurements were 8-15 µR/hr, and no hot-spots were found during the inspectors' survey. The inspectors concluded that radiation exposure levels at Sub-Area L were less than the release limit of 10 µR/hr above background.

1.3 Conclusion

Site decommissioning activities reviewed during the inspection had been conducted in accordance with the applicable license conditions and regulatory requirements. Site fences were in good condition and perimeter postings were appropriate. No health or safety hazards were identified.

NRC measurements of 40 soil samples from Sub-Area L showed that the samples met the release criteria. Radiation exposure levels at Sub-Area L were less than 10 µR/hr above background levels.

2 Exit Meeting Summary

The inspector presented the inspection results to the licensee's representatives at the conclusion of the onsite inspection on December 15, 1999, and during telephone conversations on February 14, 2000. Licensee representatives acknowledged the findings as presented. The licensee did not identify as proprietary any information provided to, or reviewed by, the inspector.

ATTACHMENT 1

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Cimarron Corporation

J. Larsen, Site Manager and Vice President, Cimarron
K. Morgan, Radiation Safety Officer

Contractor Personnel

S. Marshall, Nextep Environmental
W. Rogers, Technical Consultant
L. Smith, Quality Assurance Manager

INSPECTION PROCEDURES USED

IP 83822 Radiation Protection
IP 83890 Closeout Inspection and Survey
IP 88104 Decommissioning Inspection Procedure for Fuel Cycle Facilities

ITEMS OPENED, CLOSED AND DISCUSSED

Closed

None

Opened

None

Discussed

None

LIST OF ACRONYMS

ALARA	as low as is reasonably achievable
ANSI	American National Standards Institute
BTP	branch technical position
CFR	Code of Federal Regulations
PDR	public document room
QA	quality assurance
SNM	special nuclear material