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CIMARRON CORPORATION

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April 12, 1995

Mr. Michael F. Weber, Chief
Low-Level Waste and Decommissioning
Projects Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555-0001

Re: Docket No. 70-925
License No. SNM-928
South U Yard Decontamination

Dear Mr. Weber:

On November 17, 1994 Cimarron Corporation submitted to NRC staff a "Report on the South Uranium Yard Remediation." NRC staff reviewed this report and on February 1, 1995 provided comments to Cimarron Corporation. Cimarron submitted a response to NRC staff comments on March 6. On March 29, 1995, NRC staff provided two comments for additional response.

Cimarron Corporation provides herein a response to the U. S. Nuclear Regulatory Commission staff's two comments of March 29, 1995.

Cimarron Corporation appreciates NRC staff's timely review of the response to the comments, and looks forward to the confirmatory survey of the South Yard Area.

Areas of excavation along and under floors and foundations are still considered to be unstable. NRC's authorization to back-fill will eliminate safety hazards and the potential for any structural damage or collapse.

Should you have questions concerning the responses, please contact Joe Kegin at 405/282-6722 or me at 405/270-2934.

Sincerely,

Jess Larsen

Jess Larsen
Vice-President, Cimarron Corporation

Enclosure: as stated

1. Page 4, Paragraph 3

Comment

How is the average enrichment of 2.7 weight percent U-235 used to determine the total uranium concentration in pCi/g?

Response

The Cimarron Soil Counter was designed and calibrated with its principal area of interest of 30 pCi/g total uranium at 2.7% enrichment. Several uranium standards are used to check proper operation of this system and their concentrations range from 4.5 pCi/g total uranium to 292 pCi/g total uranium. The U-1-2 standard has always been used to establish the enrichment correction factor. The U-1-2 standard has an average assayed value of 28.66 pCi/g at 2.7% enrichment from two certified laboratories.

The Cimarron Soil Counter quantifies the total picocuries of U-235 per sample. This value is converted to pico curies per gram total uranium by performing a 6 hour count on the U-1-2 standard and developing the appropriate correction factor which results in assigning 28.66 pCi/g to this sample.

U-1-2 Standard 750 grams 28.66 pCi/g at 2.7% enrichment.

$$6 \text{ hour count} = 8.977 \times 10^2 \text{ picocuries}$$

$$\frac{8.977 \times 10^2 \text{ pCi}}{750 \text{ grams}} = 1.1969 \text{ pCi/g - U}^{235}$$

$$1.1969 \text{ pCi/g - U}^{235} \times \text{CF} = 28.66 \text{ pCi/g Total Uranium}$$

$$\text{CF} = 23.95$$

A correction factor of 23.95 is obtained to convert pCi/g-U²³⁵ to pCi/g Total Uranium for 2.7% Enriched Uranium.

2. Page 10, Paragraph 5

Comment

Was the " $(100/A)^{0.5}$ " hot-spot criteria from NUREG/CR-5849 used to evaluate results between one and three times the average limit when Method 2 was used to evaluate the weighted average?

Response

The " $(100/A)^{0.5}$ " hot - spot criteria from NUREG/CR-5849 was used to evaluate sample results between one and three times the average limit. All elevated spots in the South Uranium Yard easily met this criteria