



# KERR-MCGEE CORPORATION

KERR-MCGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

January 28, 1971

Mr. L. D. Low  
Director, Division of Compliance  
U. S. Atomic Energy Commission  
Washington, D. C. 20545

Reference: Source Material License No. SUB-1010  
Docket No. 40-8027

Dear Mr. Low:

In accordance with the provisions of 10CFR20.405, as applicable to the reference license, Kerr-McGee Corporation reports on the exposure of one (1) individual at its Sequoyah Facility to concentrations of airborne radioactive material in excess of the occupational concentration limits in 10CFR20, Appendix B, Table 1.

The exposure involved natural uranium as  $UO_2F_2$  and the exposure calculations were made from urinary excretion data.

Table 1

## PERSONNEL EXPOSURE TO AIRBORNE CONCENTRATIONS

Employee (1)	Period of Exposure	Conc. Averaged for 40 hours (2) (uCi/ml)
A	12/27/70 - 1/3/71	$8 \times 10^{-11}$

(1) In accordance with 10CFR20.405, the names, identification data and exposure data for the individual employee are listed in the enclosed Appendix.

(2) The maximum permissible concentration in air (MPC) limit of  $7 \times 10^{-11}$  uCi/ml for soluble natural uranium based on a forty (40) hour exposure in a seven day period was applied.

The exposure occurred when a leak developed on a small copper line being used to transfer  $UF_6$  gas between two shipping cylinders located in the Cylinder Scale Room. The employee had with a full face respirator equipped with an "ultra" particulate filter which used while taking remedial control actions. These actions included closing a valve on each of the shipping cylinders and

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leaving the scale room. Use of the plant vacuum system to collect the  $UF_6$  gas at the point of leakage was not possible because the vacuum system was temporarily shutdown for maintenance.

A urine sample was collected from the exposed employee approximately two hours after the exposure occurred. This sample had a uranium concentration of 1660 ug/l which was the highest concentration observed in any samples collected from the exposed employee. Urine data was used to calculate the employees exposure since there were no air samples collected in the immediate vicinity when the release occurred.

The individual involved is being notified of the nature and extent of exposure in accordance with 10CFR20.405(c).

Corrective Action

To protect against recurrence of similar future personnel exposures, the following actions have been taken.

1.  $UF_6$  transfer lines are inspected for leaks and faults prior to use.
2.  $UF_6$  transfer operations of the type described are done only when the vacuum system is operating properly.

Please advise us should you require any additional information.


Sincerely,



Allen Valentine  
Coordinator, Radiation  
Health and Safety

AMV:dg

Enclosure

cc: Mr. Donald Walker   
Region IV, Division of Compliance  
U. S. Atomic Energy Commission

Mr. Dale McHard, Oklahoma Department of Health  
Division of Occupational and Radiological Health

Mr. Howard Eberline  
Director, Physical Science and Measurements Dept.

Appendix to letter from A. M. Valentine, Kerr-McGee Corporation to  
L. D. Low, U. S. Atomic Energy Commission, January 28, 1971.

APPENDIX A

Employee Identification and Exposure Data

Report Symbol	Employee's Name	Birthdate	Security Number	Exposure <sup>(1)</sup> (uCi/ml)	Period
A				$8 \times 10^{-11}$	12/27/70 to 1/3/71

- (1) Average concentration exposure to airborne natural uranium as  $\text{UO}_2\text{F}_2$  for 40 hours during the reference seven (7) day period.