DOCKET NO. 70-1193
40-8027

KERR-McGEE CORPORATION
KERR-McGEE BUILDING • OKLAHOMA CITY, OKLAHOMA 73102

Regulatory File Cy.

October 15, 1971

Mr. Harold L. Price
Director of Regulation
U.S. Atomic Energy Commission
Washington, D.C. 20545

Dear Mr. Price:

As instructed by your letter of September 24, we are submitting herewith Kerr-McGee Corporation's written statements as to why operations under SUB-1010 and SNM-1174 should not be suspended pending completion of NEPA environmental review specified in Appendix D to 10CFR part 50.

In the absence of specific guidelines as to the content of the required statement, we have restricted the statement to the pertinent paragraphs of "The Guide to the Preparation of Environmental Reports" published in February, 1971 by your office. We believe that such a submission meets the intent and specifics of the statement required by Section E of the revised Appendix D. We would be pleased to discuss the contents of these submissions or additional information which you may require at your convenience.

Sincerely,

W. J. Shelley

W. J. Shelley, Director
Regulation and Control

WJS:cp

FROM:
Kerr-McGee Corporation
Oklahoma City, Okla.
(W. J. Shelley)

DATE OF DOCUMENT: 10-15-71
DATE RECEIVED: 10-20-71
NO.: 4592
LTR. X MEMO: REPORT: OTHER:

TO:
Harold Price

ORIG.: CC: OTHER:
50 reproduced cys. rec'd

ACTION NECESSARY ☐ NO ACTION NECESSARY ☐
CONCURRENCE ☐ COMMENT ☐
DATE ANSWERED: BY:

CLASSIF: U
POST OFFICE REG. NO:

FILE CODE:
DOCKETS: 70-1193 & 40-8027

DESCRIPTION: (Must Be Unclassified)
Ltr. trans. the following in response to our 9-24-71 ltr. req. statements as to why operations under SNM-1174 and SUB-1010 should not cease:

ENCLOSURES:
(50 copies each)

Statement for the Sequoyah UF_6 Production Plant (SUB-1010)

Statement for the Cimarron Plutonium Production Plant (SNM-1174) - See 70-1193

REFERRED TO	DATE	RECEIVED BY	DATE
Nussbaumer: w/2 copies -- FOR ACTION (70-1193)	10-20		
Malaro: w/2 copies -- FOR ACTION (40-8027)			
Distribution:			
2-reg. file cys.		1-Clare Miles, PI	
2-PDR Copies (Hdqtrs)		1-J. DiNunno (A-170)	
1-C. Henderson, DR		1-J. Felton, DR	
2-CO (Hdqtrs)		1-Shapar (P-506B)	
1-R. Cunningham		1-L. Rogers, RPS	
		4-C. Edwards, DML	
		1-DTIE 1-RSIC	

DO NOT REMOVE

REMARKS:

ACKNOWLEDGED

asc

U.S. ATOMIC ENERGY COMMISSION
MAIL CONTROL FORM FORM AEC-326S (8-60)

☆ U.S. GOVERNMENT PRINTING OFFICE: 1971-424-062

KERR-McGEE CORPORATION

SEQUOYAH URANIUM HEXAFLUORIDE PRODUCTION PLANT, LICENSE SUB-1010

Section E, Appendix D Statement

Pursuant to Section E of Appendix D, 10CFR Part 50, as revised effective September 9, 1971, Kerr-McGee Corporation respectfully submits the following written statement of reasons with supporting factual data, why, with reference to the established criteria, operation of Kerr-McGee's Sequoyah Uranium Hexafluoride Production Plant, License SUB-1010, should be permitted to continue pending completion of NEPA environmental review under Section B of the revised Appendix D.

1. Physical Description

The Sequoyah Facility is located at the western edge of Sequoyah County in eastern Oklahoma on a 2100-acre site at the junction of the Illinois and Arkansas Rivers. The Facility occupies an area of approximately 75 acres near the center of the site. The nearest populated area is the town of Gore, Oklahoma, located on U.S. Highway 64 approximately two miles northwest from the Sequoyah site. The town of Vian is located four miles to the east along highway 64.

2. Site Selection

The site was selected at the conclusion of a study of available sites in eastern Oklahoma after consideration of transportation, water supply, availability of land, absence of other industrial enterprise, convenience to the Nuclear Division office in Oklahoma City, consideration of the quantity and skill of available labor supply, and recognition of the current and chronic depressed state of the eastern Oklahoma economic activity.

3. Design and Construction

Bechtel Corporation of San Francisco, California provided architectural and engineering services for the design and construction of the Sequoyah Facility in accordance with criteria supplied by Kerr-McGee Nuclear Division under a contract initiated in 1967.

Design criteria included provision for meeting the most stringent existing criteria of environmental pollution. Waste Disposal Permit IW-70-011 has been issued by the Oklahoma Water Resources Board. Oklahoma standards for liquid effluents have not been issued as yet.

4. Environmental Impact

Operation of the Sequoyah Facility commenced with auxiliary startup in January 1970, and uranium was introduced in February, 1970. Production operations have since continued without interruption. From these operations, we find no adverse effect on the environment can be measured as a result of past and continuing operation of this facility.

a. Land Use. At the time of purchase of the site, the immediate plant area was used for the cultivation of wheat and some pasture. During construction, extensive grading occurred to provide for the plant site and adjacent auxiliary facilities. Upon termination of operation of the Facility, its removal would permit the return of the land to its pastoral use without permanent adverse effect. Land owned by Kerr-McGee, on the site but not used by operation of the Facility, is being retained in its previous condition and agricultural operations have been continued under recent lease arrangements with neighboring farms where desirable.

b. Water Use. Water used for the operation is drawn from the Tenkiller Ferry Reservoir on the Illinois River, administered by the United States Army, Corps of Engineers, under water storage contract number DACW50-70-C-0083. It is piped in a 16-inch main from its withdrawal location, at the dam of the Reservoir, to a stilling basin at the plant site. The liquid outfall from the plant flows through a ditch to the Illinois River approximately 1000 yards above its junction with the Arkansas River. The quality of the water withdrawn and that returned by the outfall system has been measured and a table showing these relative qualities is attached as Table 1.

c. Heat Dissipation. The amount of heat dissipated from the Sequoyah Facility compares favorably with similar chemical plants and is nominal compared to that generated by a power-producing facility. A cooling water circuit, including a cooling tower, is provided and most of the heat dissipation from the Facility occurs in the cooling tower. Heat not dissipated in this fashion is released as overflow from the cooling tower basin and joins bypass stream water not used from the initial supply as described above. As shown on Table I, the average temperature of the outfall is approximately five degrees greater than the raw water supply.

d. Chemical Discharges. Original plant design criteria provided that chemical waste would be disposed of through the use of a deep well drilled into the Arbuckle limestone approximately 3000 feet beneath the surface. However, use of the disposal well is pending completion of AEC and Kerr-McGee geological and engineering review of recently completed tests by H. J. Gruy and Associates, Inc. These tests were authorized by Kerr-McGee to demonstrate

reservoir capacity and the negligible risk of communication of waste fluids to potable and surface waters. As a consequence, provision was made to subdivide the chemical waste into two primary types with provision for permanent storage of one and treatment of the other to meet applicable Oklahoma discharge criterion.

i. Nitrate Wastes. The primary chemical waste of the uranium hexafluoride production process used at Sequoyah is a nitrate solution of the contaminants removed from the uranium concentrate feed material. These contaminants are removed by a solvent extraction system and discharged containing small amounts of uranium and uranium daughter products in equilibrium with the original uranium content. With the disallowance of deep well disposal, holding ponds with sealed bottoms were constructed and a lime neutralization system was installed for this portion of the chemical waste. Subsequently it has become necessary to construct an additional holding pond. It is envisioned that further work with the delineation of the deep disposal well reservoir will secure license approval for its use. Concurrently, investigation as to permanent reduction of the liquid chemical waste to a solid form and recovery of its valuable components is underway. No nitrate chemical wastes have been discharged to the environment, and all those generated are currently being held in a disposal pond in the plant area.

ii. Fluoride Wastes. The second portion of chemical wastes generated by the hexafluoride production process is a weak solution of hydrofluoric acid containing the fluoride ion in excess of that allowable for discharge to surface waters. Treatment facilities for this stream consist of a neutralization system, an initial settling pond, and a clarification pond from which the supernatant liquid essentially free of fluorine is combined in the outfall with bypass water from the supply. Routine chemical testing of the fluoride level of this outfall has demonstrated compliance with accepted levels (USPHS drinking water standard) of fluoride content of the discharged stream.

e. Sanitary Wastes. Treatment of sanitary waste is provided by a stabilization lagoon system approved by the State Board of Health of Oklahoma. The discharge from the system conforms to their requirements.

5. Biological Impact

The construction of the plant affected the 75 acres described and resulted in the removal of minor amounts of native trees and grass. Except for the immediate plant area, all slopes were reseeded with a mixture of fescue and rye that rapidly became established preventing erosion. No adverse effect on the surfounding flora has been noted.

While minor dislocation of small numbers of indigenous animals and birds resulted from the construction of the plant,

there remains a large amount of natural cover and feed sources to maintain native bird and game populations. There has been no noticeable reduction of the nearby population of deer, quail, or other animals or birds.

6. Radioactive Discharge

The radioactive discharges from the Sequoyah Facility consist of small amounts of normal uranium in the fluoride solution, which is handled as described above. Liquid discharge levels in the outfall from the plant are tested on a once-a-shift basis continuously seven days a week and average 5% of MPC ($60ppm/4x10^{-5}uCi/ml$), well below 10CFR20 requirements, for 1971.

All gaseous effluents are measured by stack sampling on a 24-hour basis and analyzed for radioactivity. In addition, fence lines and remote sampling stations are in place and are monitored each week. A system of sampling biological environments each six months for an accumulation of radioactive components has also been in operation since plant startup. No airborne samples at the fence line and at remote air samplers in excess of maximum permissible levels have been measured. No deleterious effect or increase in radioactivity has been measured by the environmental surveillance samples.

7. Conclusions

Based on the above-enumerated facts and the attached table, Kerr-McGee Corporation respectfully submits (A) that, with specific reference to the criteria in paragraph 2 of Section E, Appendix D:

(i) Operation of the Facility during the prospective review period will have no adverse impact on the environment and, the Facility being completed and operating, will not serve to foreclose the possibility of subsequent adoption of any presently available alternatives in design or operation of the type that could result from the NEPA environmental review; but

(ii) Suspension of the Facility's operation during such period could prove disruptive of schedule and otherwise costly to customers for the Facility's services and would not only be exceedingly costly to Kerr-McGee, but might also make it necessary to terminate the employment of certain Facility personnel;

and (B) that accordingly, Kerr-McGee's license SUB-1010 to operate its Sequoyah Uranium Hexafluoride Production Plant should not be suspended pending completion of the NEPA environmental review.

George B. Parks
Executive Vice President
KERR-McGEE CORPORATION

TABLE I

SEQUOYAH
WATER QUALITY DAM

(U.S. ARMY CORPS OF ENGRS. APPL.
FOR PERMIT TO DISCHARGE, 6/21/71)

	Intake	Discharge
pH	7.2	8.5
Temp. Winter (At Plant Outfall)	45	50
Summer	60	65
Alkalinity ($CaCO_3$)	71	60
BOD mg/l	2	2
COD mg/l	10	10
Total Solids	138	235
Dissolved Solids	137	232
Nitrate (N) mg/l	.57	2.5
Sulfate mg/l	6.0	12.0
Fluoride mg/l	.1	1.5
Calcium mg/l	32	34
Iron mg/l	.85	1.0
Radioactivity pCi/l		
Alpha	42	229
Beta	66	387
Gamma (1)	66	387

(1) Not measured, assumed equal to Beta