UNITED STATES
ATOMIC ENERGY COMMISSION
WASHINGTON, D.C. 20545

L:FFRB2:JER
40-2061
STA-583

OCT 24 1974

POOR ORIGINAL

Kerr McGee Chemical Corporation
ATTN: Mr. L. E. Craig
Vice President Chemicals Manufacturing
Kerr McGee Center
Oklahoma City, Oklahoma 73102

Gentlemen:

Pursuant to your June 13, 1974 letter and based on the results of independent radiation survey measurements made by USAEC Directorate of Regulatory Operations Region III on August 27, 1974 and September 18, 1974, you are hereby authorized to dispose of your W-1 sales office and laboratory building located at 185 West Washington Street, West Chicago, Illinois.

FOR THE ATOMIC ENERGY COMMISSION

James R. Miller, Chief
Fuel Fabrication and
Reprocessing Branch No. 2
Directorate of Licensing

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POOR ORIGINAL

alpha measurement was reduced to 13,000 dpm/100 cm² and the maximum
beta gamma level was reduced to 0.2 mr/hr. No additional smear sur-
vey was made.

October 8, 1974

As a result of the independent measurements made by RO:III on
August 27, 1974 and September 18, 1974 it was determined the licen-
see's building located at 185 West Washington Street meets the
~~Guidelines for~~ Decontamination of Facilities and Equipment Prior
W. D. Thornburg, Chief
Field Support and Enforcement Branch, December 1973.
Directorate of Regulatory Operations, Headquarters

KERR-MC GEE CHEMICAL CORPORATION, WEST CHICAGO, ILLINOIS
LICENSE NO. STA-583 (DOCKET NO. 40-2061)
RADIATION SURVEY OF BUILDING AT 185 WEST WASHINGTON STREET
WEST CHICAGO, ILLINOIS

Radiological and Environmental
Protection Branch

As requested in a memo from J. E. Rothfleisch, DL, dated August 7, 1974
an independent survey was made by W. H. Schultz and E. J. Oparka, RO:III
to verify survey results reported by the Eberline Instrument Corporation
after their radiological survey on May 6, 1974.

cc: Central Mail and Files

The licensee's W-1 building located at 185 West Washington Street was
surveyed on August 27, 1974. The instrumentation used was an Eberline
Model E-500B with a 1.4 mg/cm² end probe for beta-gamma measure-
ment and an Eberline Model PAC-3G for alpha measurement.

In addition to direct reading surveys a total of 17 smears were taken
and were analyzed by Argonne National Laboratory.

The direct reading beta-gamma measurements showed two small areas on a
wood floor with radiation levels of 1.2 mr/hr and 0.9 mr/hr. Direct
reading alpha measurements at these points was a maximum of 63,000 dpm/100
cm². These two areas that showed the highest radiation levels on the
wood floor are identified as smears number 4 and 5 on Attachment A.
Also, the inside of an oven had a radiation level of 5.0 mr/hr and a
drip pan under a hood vent had a radiation level of 0.8 mr/hr. All
other beta-gamma radiation levels averaged less than 0.1 mr/hr. Direct
reading alpha measurements averaged less than 1000 dpm/100 cm². It
was noted that although the beta-gamma levels were quite high in several
areas there was not a significant amount of removable contamination.

The licensee representative was informed the two small areas on the wood
floor, the oven and the drip pan needed additional decontamination.

A follow-up survey was made on September 18, 1974. It was noted the
oven and the drip pan had been removed and the two areas on the wood
floor had been given additional cleaning. The maximum direct reading

OFFICE ▶	RO:III	RO:III	RO:III			
SURNAME ▶	SCHULTZ	[illegible]	[illegible]			
DATE ▶	10/8/74	10/8/74	10/8/74			

Form AEC-318 (Rev. 9-53) AECM 0240

☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

ATTACHMENT "A"

alpha measurement was reduced to 13,000 dpm/100 cm² and the maximum beta gamma level was reduced to 0.8 mr/hr. No additional smear survey was made.

As a result of the independent measurements made by RO:III on August 27, 1974 and September 18, 1974 it was determined the licensee's building located at 185 West Washington Street meets the "Guidelines For Decontamination of Facilities and Equipment Prior to Release For Unrestricted Use," dated December 1973.

James H. Allan, Chief
Radiological and Environmental
Protection Branch

Attachment:
"A" - Smear Survey results

cc: Central Mail and Files
RO Files

[illegible] ILLINOIS LICENSE NO. STA-583 ([illegible]) REQUEST FOR RADIATION SURVEY OF BUILDING AT 185 WEST WASHINGTON ST. WEST CHICAGO, ILLINOIS

You will find attached a [illegible] from [illegible] for authorization to dispose of a building [illegible] through the enclosed survey conducted by Eberline Instrument Corporation indicates that surface contamination levels are within allowable limits for unrestricted use, [illegible] conduct an independent [illegible] results so that we may take appropriate action.

[illegible] briefly with [illegible] Schultz (RO, Region III) [illegible] with a copy of the Eberline survey results.

Distribution:
[illegible]
[illegible]
[illegible]
[illegible] Schultz (R.O., Region III)
[illegible] Rothfleisch
[illegible]

J. [illegible]

J. [illegible] Rothfleisch, [illegible]
Fuel Fabrication and Reprocessing Branch
Directorate of Licensing

OFFICE ▶	RO:III	RO:III	RO:III			
SURNAME ▶	SCHULTZ	[illegible]ELIUS	ALLAN			
DATE ▶	10/8/74	10/8/74	10/8/74			

Form AEC-318 (Rev. 9-53) AECM 0240

☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

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ATTACHMENT "A"

③ TYPE 6 ④ Date 9-6-74

Argonne National Laboratory, Occupational Health & Safety Division

M: U. S. Atomic Energy Commission
Region III, Division of Compliance
Glen Ellyn, Illinois
Attn: Bill Schultz 858-2660 Ext. 80

Please perform the following described special service:

Control No.	Service	Cost
PTS 1124	Evaluate wipes (Nos. 1 thru 17) for gross beta-gamma and gross alpha. Results to be expressed in dpm. Suspected activity is thorium.	

dpm/smear area

SMEAR #	ALPHA	BETA-GAMMA
1	64	BKGD.
2	42	BKGD.
3	114	BKGD.
4	1,109	1600
5	205	234
6	190	96
7	BKGD.	BKGD.
8	30	BKGD.
9	BKGD.	BKGD.
10	72	102
11	BKGD.	BKGD.
12	BKGD.	BKGD.
13	BKGD.	BKGD.
14	49	86
15	61	BKGD.
16	42	BKGD.
17	BKGD.	BKGD.

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OHS - RECORDS CENTER
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AM PM
7 8 9 10 11 12 1 2 3 4 5 6

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Cost

ATTACHMENT "A"

POOR ORIGINAL

GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT
PRIOR TO RELEASE FOR UNRESTRICTED USE
OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE, OR SPECIAL NUCLEAR MATERIAL

90018245

MAY 3 1973

The instructions in this guide in conjunction with Tables I and II specify the radioactivity and radiation exposure rate limits which should be used in accomplishing the decontamination and survey of sufaces of premises and equipment prior to abandonment or release for unrestricted use. The limits in Tables I and II do not apply to premises, equipment, or scrap containing induced radioactivity for which the radiological considerations pertinent to their use may be different. The release of such facilities or items from regulatory control will be considered on a case-by-case basis.

1. The licensee shall make a reasonable effort to eliminate residual contamination.

2. Radioactivity on equipment or surfaces shall not be covered by paint, plating, or other covering material unless contamination levels, as determined by a survey and documented, are below the limits specified in Tables I or II prior to applying the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.

3. The radioactivity on the interior surfaces of pipes, drain lines, or ductwork shall be determined by making measurements at all traps, and other appropriate access points, provided that contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces of premises, equipment, or scrap which are likely to be contaminated but are of such size, construction, or location as to make the surface inaccessible for purposes of measurement shall be presumed to be contaminated in excess of the limits.

4. Upon request, the Commission may authorize a license to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated with materials in excess of the limits specified. This may include, but would not be limited to, special circumstances such as razing of buildings, transfer of premises to another organization continuing work with radioactive materials, or conversion of facilities to a long-term storage or standby status. Such requests must:

   a. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature, extent, and degree of residual surface contamination.

   b. Provide a detailed health and safety analysis which reflects that the residual amounts of materials on surface areas, together with other considerations such as prospective use of the premises, equipment or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

5. Prior to release of premises for unrestricted use, the licensee shall make a comprehensive radiation survey which establishes that contamination is within the limits specified in Tables I and II. A copy of the survey report shall be filed with the Deputy Director for Fuels and Materials, Directorate of Licensing, USAEC, Washington, D. C. 20545, and also the Director of the Regional office of the Directorate of Regulatory Operations having jurisdiction. The report should be filed at least 30 days prior to the planned date of abandonment. The survey report shall:

   a. Identify the premises.

   b. Show that reasonable effort has been made to eliminate residual contamination.

   c. Describe the scope of the survey and general procedure followed.

   d. State the findings of the survey in units specified in the instruction.

Following review of the report, the AEC will consider visiting the facilities to confirm the survey.

9001820247

SURFACE CONTAMINATION LEVELS(1)

ISOTOPE(2)	TABLE I TOTAL(3)	TABLE I REMOVABLE(3) (4)	TABLE II TOTAL(3)	TABLE II REMOVABLE(3) (4)
U-nat, U-235, U-238, Th-nat, Th-232, and associated decay products	10,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2	Average(6) 5,000 dpm α/100 cm^2 Maximum 25,000 dpm α/100 cm^2	1,000 dpm α/100 cm^2
Other isotopes which decay by alpha emission or by spontaneous fission	1,000 dpm α/100 cm^2	100 dpm α/100 cm^2	Average(6) 500 dpm α/100 cm^2 Maximum 2,500 dpm α/100 cm^2	100 dpm α/100
Beta-gamma emitters (isotopes with decay modes other than alpha emission or spontaneous fission)	0.4 mrad/hr at 1 cm(5)	1,000 dpm β-γ/100 cm^2	Average(6) 0.2 mrad/hr at 1 cm(5) Maximum 1.0 mrad/hr at 1 cm(5)	1,000 dpm β-γ/100^2

(1) Either Table I or Table II may be used. For example, if all beta-gamma readings were less than 0.4 mrad/hr at 1 cm, Table I could be used; but if the maximum reading were 0.8 mrad/hr, material could be released under Table II providing the average was less than 0.2 mrad/hr.

(2) Where surface contamination by both alpha and beta-gamma emitting isotopes exists, the limits established for alpha and beta-gamma emitting isotopes shall apply independently.

(3) As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector and count rate meter for background, efficiency, and geometric factors associated with the instrumentation.

(4) The amount of removable radioactive material per 100 cm^2 of surface area shall be determined by wiping that area, with dry filter or soft absorbent paper and with the application of moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. In determining removable contamination on objects of lesser surface area, the pertinent levels shall be reduced proportionally and the entire surface shall be wiped.

(5) Measured through not more than 7 milligrams per square centimeter of total absorber.

(6) Measurements of total contaminant shall not be averaged over more than 10 square meters. For objects of lesser surface area, the average shall be derived for each such object.