GENERAL ELECTRIC

SPACE SYSTEMS DIVISION
GENERAL ELECTRIC COMPANY • VALLEY FORGE SPACE CENTER • P.O. BOX 8555 • PHILADELPHIA, PENNSYLVANIA 19101 • (215) 354-1000

November 7, 1985

DR. John Glenn
Nuclear Materials Safety Section
U.S. Nuclear Regulatory Commission
Region One
631 Park Avenue
King Of Prussia, Pa. 19406

Dear Dr. Glenn:

The General Electric Co. Space Systems Division is requesting approval of an alternate waste disposal procedure in accordance with provisions of 10 CFR 20.302 and 40.13.

Recently Space Systems Division utilized the services of Chem-Nuclear Systems Inc. to process an accumulation of Magnesium Thorium alloy (98% Mg, 2% Th) machine chips and turnings for disposal at their Barnwell South Carolina facility. Prior to solidification of the chips and turnings, 11 drums (approx. 605 gallons) of an oil and water cutting fluid was extracted from the original 49 drums of waste.

The chips and turnings were solidified in a concrete-like mix in accordance with applicable NRC and South Carolina requirements and are awaiting disposal at Barnwell. The total activity of all the thorium involved in this operation was less than 6 mCi.

The cutting fluid separated from the chips and turnings was filtered and distributed into clean drums. Samples of both the oil and water phases of this fluid were sent to Teledyne Isotopes for analysis for possible thorium content. A copy of the sample analysis is attached. As noted in the Teledyne report 4 of the 6 measurements made indicated levels of thorium at or below their instrumentations limits of detection. Using the lower limit of detection levels and the actual activity measured where applicable the calculated total thorium in all 11 drums of fluid would be about 400 micro curies. This is a theoretical maximum figure because some isotopes were most likely below the lower limits of detection.

Using the above figure the calculated percentage of source material in the 605 gallons of fluid is 0.0075% on a weight basis. This level is far below the 1/20th of 1% level

identified in 10 CFR 40.13 as an "Unimportant Quantity of Source Material" and thus, in my opinion, not subject to license requirements.

Further, although this material is contained and obviously not effluent in its present state, the levels of each isotope of thorium are far below the effluent limits specified in 10 CFR 20.106 table II without any dilution.

For the above reasons we are proposing that the cutting fluid only be permitted to be handled as non-radioactive waste for disposal purposes.

The proposed disposal of this material would be through our regular hazardous waste disposal broker, Advanced Environmental Technology Corporation (AETC). I have discussed this material with AETC and they have indicated they are capable of arranging approved disposal (assuming an exemption is granted from NRC). The proposed procedure for the disposal of the oil is as follows: separate the oil from the water by extraction, blend the oil with other waste oils and solvents, incinerate the blend at an approved waste incinerator. After separation, the water would be processed at an approved waste water treatment facility. At this facility all organics and suspended solids would be removed. The sludges from waste water treatment are typically further processed to reduce volume and ultimately incinerated and/or land filled.

The exact facilities used to perform the above activities have not been identified. However, all the treatment and disposal facilities used by AETC for General Electric wastes have been approved by EPA and/or the cognizant State regulatory agencies.

Due to the extremely low level of activity (in my opinion not significantly above background) associated with this fluid we believe the above outlined procedures will not cause any undue threat to health or the environment.

Sincerely,

Alfred W. Kobylinski

Alfred W. Kobylinski
Senior Industrial Hygienist
Radiation Safety Officer

Copies: T.P. Handley
C.B. Chilton
S.J. Mucha, M.D.
G.H. Webber
D.B. Olejniczak

Applicant Nov. 14
Check No. 305431 / 304326
Amount/Fee Category #120 (26)
Type of Fee AMD
Date Check Rec'd 12/23/85
Received By SH

(#230) - this determ

104645

REPORT OF ANALYSIS

OCTOBER 23, 1985

TELEDYNE ISOTOPES
50 Van Buren Ave., Westwood, New Jersey 07675
Phone: 201-664-7070 Telex 134474

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 10/22/85

WORK ORDER NUMBER	CUSTOMER P.O. NUMBER	DATE RECEIVED	DELIVERY DATE	PAGE
3-3750		10/17/85	10/25/85	1

MR A W KOBYLINSKI
GENERAL ELECTRIC CO
RE-ENTRY SYSTEMS OPERATIONS
P O BOX 8555
PHILADELPHIA PA 19101

OIL

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	START TIME	STOP DATE	STOP TIME	NUCLIDE	ACTIVITY	NUCL-UNIT-(U/M *	MID-COUNT TIME DATE	MID-COUNT TIME TIME	VOLUME - UNITS ASH-WGHT-(*	LAB.
43329	1 OIL FOR THORIUM		10/OR				TH-234	L.T. 2. E 02	PCI/LITER *	10/22			4
							TH-232	8.3 +-3.7 E 01	PCI/LITER *	10/22			4
							TH-228	4.9 +-2.1 E 01	PCI/LITER *	10/22			4

TELEDYNE ISOTOPES

REPORT OF ANALYSIS

RUN DATE 10/22/85

WORK ORDER NUMBER	CUSTOMER P.O. NUMBER	DATE RECEIVED	DELIVERY DATE	PAGE
3-3750		10/17/85	10/25/85	2

MR A W KOBYLINSKI
GENERAL ELECTRIC CO
RE-ENTRY SYSTEMS OPERATIONS
P O BOX 8555
PHILADELPHIA PA 19101

W A T E R

TELEDYNE SAMPLE NUMBER	CUSTOMER'S IDENTIFICATION	STA NUM	COLLECTION-DATE START DATE	START TIME	STOP DATE	STOP TIME	NUCLIDE	ACTIVITY (PCI/LITER)	NUCL-UNIT-(U/M *	MID-COUNT TIME DATE	MID-COUNT TIME TIME	VOLUME - UNITS ASH-WGHT-(*	LAB.
43328 1	WATER FOR THORIUM		10/0R				TH-234	L.T. 2. E 02		10/22			4
							TH-232	L.T. 7. E 01		10/22			4
							TH-228	L.T. 3. E 01		10/22			4

LAST PAGE OF REPORT

APPROVED BY H. KING 10/22/85

SEND 1 COPIES TO GE596S MR A W KOBYLINSKI
SEND 1 COPIES TO GE596T DR STEPHEN J MUCHA

2 - GAS LAB. 3 - RADIO CHEMISTRY LAB. 4 - GE(LI) GAMMA SPEC LAB. 5 - TRITIUM GAS/L.S. LAB.

BETWEEN: William O. Mille., Chief
License Fee Management Branch
Office of Administration

John E. Glenn, Chief
Nuclear Materials Section B
Division of Engineering and
Technical Programs

Note 1. 2 requests attached

Fee Needed

11300
5/89
03L

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: General Electric Company

Application Dated: 11/7/85 & 11/18/85

Control No.: 104645

License No.: SUB-831

2. FEE ATTACHED

Amount: 0 + $120 | $230 - ck 304326 returned

Check No.: 0 | 305431

3. COMMENTS

Signed Brenda P. Latchk

Date 11/15/85

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 2G ($120) 1

2. Correct Fee Paid. Application may be processed for:

Amendment ✓

Renewal

License

040-07344

Signed G Jackson

Date 12/26/85

REGION I FORM 213
(MARCH 1983)

BETWEEN: William O. Mf..er, Chief
License Fee Management Branch
Office of Administration

John E. Glenn, Chief
Nuclear Materials Section B
Division of Engineering and
Technical Programs

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: General Electric

Application Dated: 8/29/84

Control No.: 02866

License No.: SUB 831

2. FEE ATTACHED

Amount: —

Check No.: —

3. COMMENTS

for fee, see CN# 02863

Signed DRN

Date 9/6/84

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 2C - 120

2. Correct Fee Paid. Application may be processed for:

Amendment ←

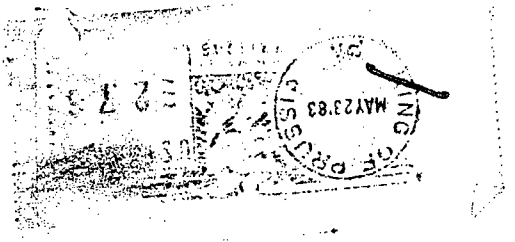
Renewal

License

Signed Allen Cahill

Date 9/13/84

REGION I FORM 213
(MARCH 1983)



BETWEEN: William O. Miller, Chief
License Fee Management Branch
Office of Administration

John E. Glenn, Chief
Nuclear Materials Section B
Division of Engineering and
Technical Programs

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: General Electric

Application Dated: 5/23/83

Control No.: 01403

License No.: SUB-831 040-07344

2. FEE ATTACHED

Amount: 970.00 Renewal Source Matl.

Check No.: G 615275

3. COMMENTS

Manufacturing

Signed Foster

Date 5/27/83

B. LICENSEE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: _____

2. Correct Fee Paid. Application may be processed for:

Amendment _____

Renewal _____

License _____

Signed _____

Date _____

REGION I Form 213
(March 83)

GENERAL ELECTRIC

PHILADELPHIA, PENNSYLVANIA

$40.00 DEC 8 1982

THIS CHECK IS IN FULL PAYMENT OF THE ACCOUNT STATED ON VOUCHER WHICH IS ACCOMPANIED IT, AND THE PAYEE ACCEPTS IT AS SUCH BY ENDORSEMENT

60-160
433

No G 610577

PAY EXACTLY 40 DOLLARS AND 00 CENTS

GENERAL ELECTRIC COMPANY
AEROSPACE GROUP, VALLEY FORGE COMMERCIAL ACCOUNTS

TO THE ORDER OF

U.S. NUCLEAR REGULATORY COMMISSION

MANAGER, ACCOUNTING OPERATIONS

Mellon Bank N.A.
PITTSBURGH, PENNSYLVANIA

(b)(4)

43

GENERAL ELECTRIC

$70.00

APR 29 1993

THIS CHECK IS IN FULL PAYMENT OF THE ACCOUNT STATED ON VOUCHER WHICH ACCOMPANIED IT, AND THE PAYEE ACCEPTS IT AS SUCH BY ENDORSEMENT.

60-160
433

PHILADELPHIA, PENNSYLVANIA

No. G615275

PAY EXACTLY $70.00

TO THE ORDER OF
NUCLEAR REGULATORY COMMISSION
OFFICE OF NUCLEAR MATERIALS & SAFEGUARDS
MATERIALS LICENSING BRANCH
WASHINGTON, DC 20555

GENERAL ELECTRIC COMPANY
AEROSPACE GROUP VALLEY FORGE COMMERCIAL ACCOUNT

A.H. Bombard
G.M. Neff

Mellon Bank N.A.
PITTSBURGH, PENNSYLVANIA

(b)(4)

H13