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## GENERAL 🌮 ELECTRIC

COMPANY

3198 CHESTNUT STREET, PHILADELPHIA, PENNA. 19101 . . . TELEPHONE (215) 823-1000

MISSILE AND

SPACE DIVISION

RE-ENTRY SYSTEMS DEPARTMENT

22 April 1968

United States Atomic Energy Commission Source & Special Nuclear Materials Branch Division of Materials Licensing Washington, D. C. 20545

Attention: Mr. Donald A. Nussbaumer

RE: DML ND 40-7344

Regulatory Suppl File Cy.

Dear Sir:

, Enclosed please find the AEC-2 form, Renewal of Source Material License No. SUB-831.

DOCKETED

USAEC

APR 2 5 1968

RECOLATORY

If you have any questions regarding this, please do not hesitate to call me.

Very truly yours,

E. R. Harris, Manager Industrial & Product Safety 120 South 30th Street Philadelphia, Pa. 19104 215-823-3745/6

ktf

Enclosures



AGKNOWLEDGED 1466 FORM AEC-2 (3-64) Previous editions are obsolete.

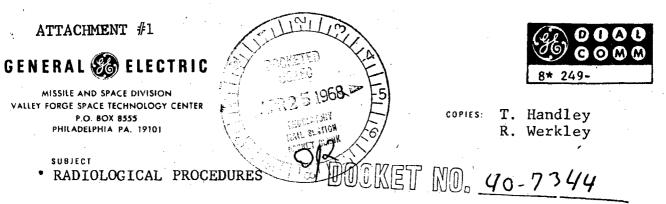
# UNITED STATES ATOMIC ENERGY COMMISSION Regulatory Suppl File vy.

Pursuant to the regulations in Title 10, Code of Federal Regulations, Chapter 1, Part 40, application is hereby made for a license to receive, possess, use, transfer, deliver or import into the United States, source material for the activity or activities described.

1. (Check one)		. NAME OF APPLICANT General	Electri	c Company
<ul> <li>□ (a) New license</li> <li>□ (b) Amendment</li> </ul>	to License No	Re-entry	<u>y System</u>	5
(c) Renewal of I	License No. SUB831	1. PRINCIPAL BUSINESS ADDRESS	estnut S	t.
(d) Previous Lic	ense No.		lphia, P	
4. STATE THE ADDRESS(ES	) AT WHICH SOURCE MATERIAL			
	Space Technology,		& Forbe	s Building
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		CITIZENSHIP		
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Missile and	Space programs.			1
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THE U-235 ISOTOPE	Uranium	powder	200	lbs.
THORIUM (ISOTOPE)				
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AND RELATED INSTRUM radiation detection instrume	AFNTS (including film badges, dosimete	rs, counters, air sampling, and other survey equi teristics such as type of radiation detected, windo	pment as appropr	hate. The description of
strument).				
	See attach	ment #2		]
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(b) METHOD. FREQUEN	CY, AND STANDARDS USED IN CA	LIBRATING INSTRUMENTS LISTED IN (a)	ABOVE. INCLU	DING AIR SAMPLING
EQUIPMENT (for film	badges, specify method of calibrating and	d processing, or name supplier).		
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11(c). VENTILATION EQUIP	MENT WHICH WILL BE USED IN OPER	Page 2 ATIONS WHICH PRODUCE D	UST, FUMES, MISTS, OR GASES, INCLUDIN
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(b) EMERGENCY PROCE	DURES IN THE EVENT OF ACCIDENTS W	HICH MIGHT INVOLVE SOUR	CE MATERIAL
	See ati	tachment #1	121 23.850
(c) DETAILED DESCRIPT	ION OF RADIATION SURVEY PROGRAM	AND PROCEDURES.	- Contraction -
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ated, check here [ (a) Quantity and	: If none will be generated, state ] and explain on a supplemental 1 type of radioactive waste that cedures for waste disposal.	sheet:	low. If waste products will be gener See attachment #2
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April 18, 1968

Regulatory Suppl File Cy.

E. R. Harris, Manager Safety and Fire Protection Room 1032, Marbar Building

The following procedures should be followed when working with depleted uranium or materials containing depleted uranium:

- 1. All programs must be reviewed and approved by the Ionizing Radiation Advisory Group prior to the start of any work with radioactive materials.
- <u>Receiving</u> All radioactive materials, including uranium, should be marked with an appropriate shipping tag. Receiving segregates all radioactive materials upon arrival and notifies the Safety Office. Safety takes a radiation and contamination survey before delivery to the user.
- 3. <u>Storage</u> Radioactive materials must be stored in a locked, properly posted room or locker which has been approved by the Health Physicist. Periodic contamination surveys are taken of the storage areas.
- 4. <u>Mixing</u> When working with uranium in powder form proper contamination procedures must be followed. All work must be performed in a hood which has been checked annually to assure air flow is at least 100 linear feet per minute. All users must wear proper protective clothing which will include gloves and lab coat. Film badges are worn by all personnel involved in this procedure. Periodic contamination surveys are taken to assure contamination is controlled. All waste materials are disposed as radiological waste.
- 5. <u>Manufacturing</u> Manufacturing work with uranium must be performed in a properly posted room. Contamination is to be controlled by papering table tops etc., and use of disposable gloves and lab coats. Work in a hood is

### GENERAL 🐲 ELECTRIC

• E. R. Harris

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April 18, 1968

- 5. recommended but not required. All waste materials are disposed as radiological waste and periodic contamination surveys are taken.
- 6. <u>Inspection</u> Minimal contamination control is required for this job. All inspectors should wear gloves when handling uranium. Periodic contamination surveys are taken.
- 7. <u>Shipping</u> All radioactive materials, including depleted uranium, should be marked with an appropriate shipping tag before shipment. Safety must take a radiation and contamination survey to assure all radiological shipping regulations are met.

### 8. Miscellaneous Suggestions:

- A. The maximum amount of material to be handled at any one time should not exceed fifty (50) pounds.
- B. The material should not be transported, carried or shipped to any location except by using proper shipping procedures.
- C. Operations causing contamination levels high enough to require a respirator should not be allowed. All high level contamination must be controlled by hoods with positive air flows.
- D. All Personnel actively engaged in uranium work should be trained in the problems involved when working with radioactive materials.

### 9. <u>Emergency Procedure</u>:

- A. An emergency is defined as a spill involving the spread of uranium dust.
- B. The immediate response of all personnel in the area is to hold their breath and leave the room.
- C. The Health Physicist or Safety Office should be called for assistance.

### GENERAL 🍪 ELECTRIC

• E. R. Harris

### . 3 -

### April 18, 1968

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- D. While waiting for assistance all involved personnel should:
  - a. Limit the spill to the room (i.e. close all doors etc.).
  - b. Remain in one area to limit spread of contamination.
- E. The Health Physicist or his designee will direct all subsequent operations. He will:
  - a. Survey the area and evaluate the extent of the emergency.
  - b. Survey all personnel involved.
  - c. Supervise decontamination of all personnel, if necessary.

d. Supervise decontamination of the room.

Wheet O. Mallerdade

R. O. McClintock Health Physicist Room M1020, Valley Forge Ext. 2-5926

/mlh

10. Supervisors of workers using radioactive materials must be approved by the Ionizing Radiation Advisory Group (IRAG) members of the IRAG include:

Chairman - E. R. Harris - Manager - Safety & Fire Protection

Secretary - R. O. McClintock - Health Physicist

Member - Dr. J. Ficke - Manager - Health and Safety

The minimum technicial qualifications for supervisory personnel for source material include U. S. Department of Health, Education and Welfare course in Basic Radiological Health or equivalent, supervisory responsibility at GE and past experience in handling radioactive materials.

The person responsible for the Radiation Safety Program will be the Health Physicist, R. O. McClintock. His resume is attached.

- 11. Attached is a partial list of Health Physics instruments available for monitoring source materials. Calibration methods are also attached. Film badge service is supplied by R. S. Landauer, Jr. & Co., 103 Bayard Street, New Brunswick, New Jersey.
- 12. Waste Disposal services are supplied by Radiological Service Co., 50 Van Buren Ave., Westwood, New Jersey

DO. KET NO. 40-7344

Regulatory Suppl File Cy.



ATTACHMENT 2a

	Number	Radiation		Window	
Type of Instrument	<u>Available</u>	Detected	Sensitivity	Thickness	Use
Victoreen Model 440	1	Beta Gamma	0-300mr/hr	1mg/cm <sup>2</sup>	Surveying & Measuring
Eberline Pac-46	2	Alpha (adaptable fo low-energy beta)	0-5000,000 c/m r	0.85mg/cm <sup>2</sup>	Monitoring & Surveying
Eberline Model E-120	2	Beta Gamma	0-50mr/hr	30mg/cm <sup>2</sup>	Measuring
Nuclear Measurements Corp. Model GS-3	2	Beta Gamma	0-20mr/hr	30mg/cm <sup>2</sup>	Measuring
Nuclear Measurements Corp. Model PC-3T	2	Alpha, Beta		Flow counter	Surveying to count smears and air samples
Staplex Air Sampler	2				Air sample counted on PC-3T
Gast Air Pump (Wattman 41 filter)	1			``	Air sample counted on PC-3T
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### ATTACHMENT 2b

- I. The Victoreen model 440, Eberline model E-120, and Nuclear Measurements Corporation model GS-3 are calibrated using a 36 mc Gobolt-60 source. The instruments are calibrated yearly and spot-checked as needed.
- The Eberline Pac-46 and the Nuclear Measurements
   Corporation model Pc-3T are calibrated using a
   0.2 uc Carbon 14 source and a 8x10<sup>-4</sup> uc Plutonium
   238 source. The instruments are calibrated weekly.

#### Attachment #1c

Robert O. McClintock

EDUCATION:

B. S. in Physics - College of William & Mary

(b)(6)

M. S. in Radiological Physics - University of Rochester 1958 (A.E.C. fellowship)

#### **EXPERIENCE:**

- 1958 1960 Health Physics Shift Engineer Covered Health Physics activities during shift hours at the Westinghouse Testing Reactor. Was responsible for radiation and contamination surveys.
- 1960 1967 Health Physicist Was responsible for all Health Physics activities at the Brookhaven Graphite Research Reactor and the High Flux Beam Reactor. Supervised staff of seven and was involved in waste disposal, environmental monitoring, tritium control and all other Health Physics activities.
- 1967 Health Physicist Responsible for all Health Physics Present activities at General Electric Missile and Space Division. Current projects include SNAP 19 and 27 Radiosotope Thermoelectric Generators.

Health Physics Certification - American Board of Health Physics 1966

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8. Type of Training

a. University of Rochester and Brookhaven Nat'l Lab.

- b. " c. " d. "
- 9. Experience With Radiation

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Isotope	Max. Amount	Experience	Duration	Type of Use
m.f.p.	、 .	Brookhaven Nat'l Lab.	7 years	Fission product from Reactor fuel
Tritium	10 <sup>3</sup> Ci	11	3 years	Reactor Coolant
all isotopes	C amounts	1)	7 years	Activation product
Pu 238	>10,000 C	GE Co.	l year	SNAP RTG
<b>all</b> isotopes	mc amounts	11	l year	Isotope usage
		1		