

HQ-9401
(9-66)

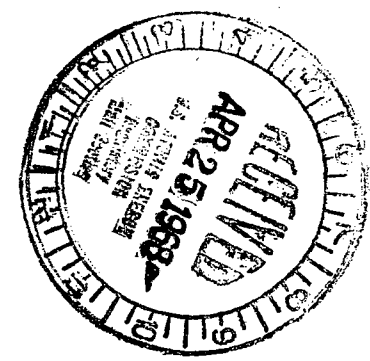
INTERMEDIATE ACTION FORM

Source & SNM Licenses

REFERENCE NUMBERS

01. PROG. CODE 62	03. DOCKET NO. 40-731b	09. TASK NO. 1466	42. PURPOSE OF TASK renewal	12. CONTROL NO. 1466	15. LICENSE NUMBER SUB-831
18. APPLICANT General Electric Company				54. AM. NO. RESULTING FROM TASK	
21. STREET & BUILDING 3198 Chestnut Street			45. CLASSIFICATION U	63. ASG. TO:	
24. CITY Philadelphia	27. STATE PA	30. ZIP 19101	33. RECEIVED YR. MO. DAY 68 04 25		36. ISSUED YR. MO. DAY
57. APPLICANT'S COMMUNICATION DATED YR. MO. DAY 68 04 22			59. ENCLOSURES (1 cys.) ABC-2 for renewal of SUB-831 Attachment 1 Attachment 2		
58. DESCRIPTION (MUST BE UNCLASSIFIED) Str. trans:			60. DISTRIBUTION 1-PDR cy. 1-compliance cy (Region)		
INTERMEDIATE ACTIONS					
TYPE	ON			ACTIV.	RETURNED
	YR.	MO.	DAY	92	YR. MO. DAY 93
ADDL. INFO. REQUESTED FROM APPLICANT	91				1
REFERRED TO:	94			95	2
REFERRED TO:					
			OTHER REFERRALS		
			Nussbaumer w/file cy. & file 1-extra cy.		
			DATE		
			YR. MO. DAY 68 04 26		

DO NOT REMOVE



Information in this record was deleted in accordance with the Freedom of Information exemptions & 2007-304

F-49

**GENERAL  ELECTRIC
COMPANY**

**MISSILE AND
SPACE DIVISION**

**RE-ENTRY SYSTEMS
DEPARTMENT**

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

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.

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

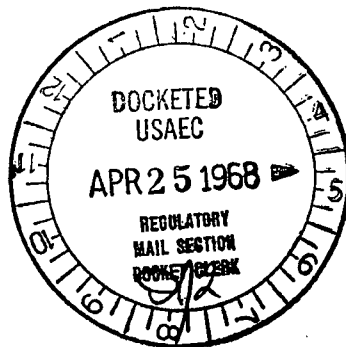
Very truly yours,



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

ktf

Enclosures



ACKNOWLEDGED
1466



DOCKET NO.

40-7344

FORM APPROVED
BUREAU OF BUDGET NO. 38-R002

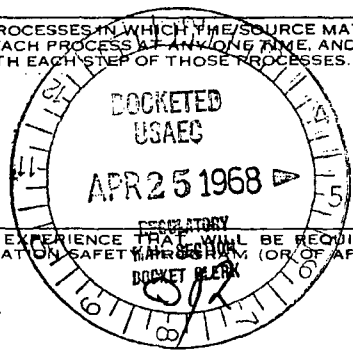
UNITED STATES ATOMIC ENERGY COMMISSION

APPLICATION FOR SOURCE MATERIAL LICENSE

Regulatory Supply Co.

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) <input type="checkbox"/> (a) New license <input type="checkbox"/> (b) Amendment to License No. _____ <input checked="" type="checkbox"/> (c) Renewal of License No. <u>SUB831</u> <input type="checkbox"/> (d) Previous License No. _____		2. NAME OF APPLICANT General Electric Company Re-entry Systems	
4. STATE THE ADDRESS(ES) AT WHICH SOURCE MATERIAL WILL BE POSSESSED OR USED Valley Forge Space Technology, Morgantown Test Facility, Elverson, Pa.		3. PRINCIPAL BUSINESS ADDRESS 3198 Chestnut St. Philadelphia, Pa. 19104	
5. BUSINESS OR OCCUPATION Manufacturing & Missile Research		6. (a) IF APPLICANT IS AN INDIVIDUAL, STATE CITIZENSHIP N/A	(b) AGE N/A
7. DESCRIBE PURPOSE FOR WHICH SOURCE MATERIAL WILL BE USED Research development and manufacturing programs related to the Missile and Space programs.			
8. STATE THE TYPE OR TYPES, CHEMICAL FORM OR FORMS, AND QUANTITIES OF SOURCE MATERIAL YOU PROPOSE TO RECEIVE, POSSESS, USE, OR TRANSFER UNDER THE LICENSE			
(a) TYPE	(b) CHEMICAL FORM	(c) PHYSICAL FORM (Including % U or Th.)	(d) MAXIMUM AMOUNT AT ANY ONE TIME (in pounds)
NATURAL URANIUM			
URANIUM DEPLETED IN THE U-235 ISOTOPE	Uranium	powder	200 lbs.
THORIUM (ISOTOPE)			
(e) MAXIMUM TOTAL QUANTITY OF SOURCE MATERIAL YOU WILL HAVE ON HAND AT ANY TIME (in pounds)			
9. DESCRIBE THE CHEMICAL, PHYSICAL, METALLURGICAL, OR NUCLEAR PROCESS OR PROCESSES IN WHICH THE SOURCE MATERIAL WILL BE USED, INDICATING THE MAXIMUM AMOUNT OF SOURCE MATERIAL INVOLVED IN EACH PROCESS AT ANY ONE TIME, AND PROVIDING A THOROUGH EVALUATION OF THE POTENTIAL RADIATION HAZARDS ASSOCIATED WITH EACH STEP OF THOSE PROCESSES. See attachment #1			
10. DESCRIBE THE MINIMUM TECHNICAL QUALIFICATIONS INCLUDING TRAINING AND EXPERIENCE THAT WILL BE REQUIRED OF APPLICANT'S SUPERVISORY PERSONNEL INCLUDING PERSON RESPONSIBLE FOR RADIATION SAFETY PROGRAM (OR OF APPLICANT IF APPLICANT IS AN INDIVIDUAL). See attachment #2			
11. DESCRIBE THE EQUIPMENT AND FACILITIES WHICH WILL BE USED TO PROTECT HEALTH AND MINIMIZE DANGER TO LIFE OR PROPERTY AND RELATE THE USE OF THE EQUIPMENT AND FACILITIES TO THE OPERATIONS LISTED IN ITEM 9: INCLUDE: (a) RADIATION DETECTION AND RELATED INSTRUMENTS (including film badges, dosimeters, counters, air sampling, and other survey equipment as appropriate. The description of radiation detection instruments should include the instrument characteristics such as type of radiation detected, window thickness, and the range(s) of each instrument). See attachment #2			
(b) METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED IN (a) ABOVE, INCLUDING AIR SAMPLING EQUIPMENT (for film badges, specify method of calibrating and processing, or name supplier). See attachment #2			



11(c). VENTILATION EQUIPMENT WHICH WILL BE USED IN OPERATIONS WHICH PRODUCE DUST, FUMES, MISTS, OR GASES, INCLUDING PLAN VIEW SHOWING TYPE AND LOCATION OF HOOD AND FILTERS, MINIMUM VELOCITIES MAINTAINED AT HOOD OPENINGS AND PROCEDURES FOR TESTING SUCH EQUIPMENT.

See attachment #1

12. DESCRIBE PROPOSED PROCEDURES TO PROTECT HEALTH AND MINIMIZE DANGER TO LIFE AND PROPERTY AND RELATE THESE PROCEDURES TO THE OPERATIONS LISTED IN ITEM 9; INCLUDE: (a) SAFETY FEATURES AND PROCEDURES TO AVOID NONNUCLEAR ACCIDENTS, SUCH AS FIRE, EXPLOSION, ETC., IN SOURCE MATERIAL STORAGE AND PROCESSING AREAS.

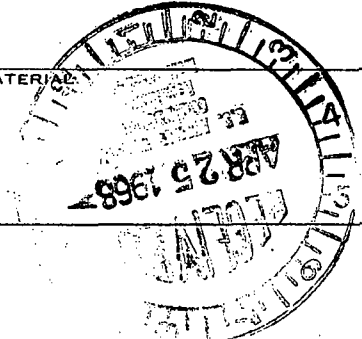
See attachment #1

(b) EMERGENCY PROCEDURES IN THE EVENT OF ACCIDENTS WHICH MIGHT INVOLVE SOURCE MATERIAL

See attachment #1

(c) DETAILED DESCRIPTION OF RADIATION SURVEY PROGRAM AND PROCEDURES.

See attachment #1



13. WASTE PRODUCTS: If none will be generated, state "None" opposite (a), below. If waste products will be generated, check here and explain on a supplemental sheet:

- (a) Quantity and type of radioactive waste that will be generated. See attachment #2
- (b) Detailed procedures for waste disposal.

14. IF PRODUCTS FOR DISTRIBUTION TO THE GENERAL PUBLIC UNDER AN EXEMPTION CONTAINED IN 10 CFR 40 ARE TO BE MANUFACTURED, USE A SUPPLEMENTAL SHEET TO FURNISH A DETAILED DESCRIPTION OF THE PRODUCT, INCLUDING:

- (a) PERCENT SOURCE MATERIAL IN THE PRODUCT AND ITS LOCATION IN THE PRODUCT.
- (b) PHYSICAL DESCRIPTION OF THE PRODUCT INCLUDING CHARACTERISTICS, IF ANY, THAT WILL PREVENT INHALATION OR INGESTION OF SOURCE MATERIAL THAT MIGHT BE SEPARATED FROM THE PRODUCT.
- (c) BETA AND BETA PLUS GAMMA RADIATION LEVELS (Specify instrument used, date of calibration and calibration technique used) AT THE SURFACE OF THE PRODUCT AND AT 12 INCHES.
- (d) METHOD OF ASSURING THAT SOURCE MATERIAL CANNOT BE DISSOCIATED FROM THE MANUFACTURED PRODUCT.

CERTIFICATE

(This item must be completed by applicant)

15. The applicant, and any official executing this certificate on behalf of the applicant named in Item 2, certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Part 40, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

General Electric Co., Re-entry Systems
(Applicant named in Item 2)

Dated April 22, 1968

BY: Edward R. Harris
(Print or type name under signature)

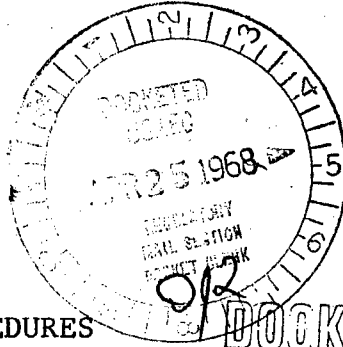
Mgr., Industrial & Product Safety
(Title of certifying official authorized to act on behalf of the applicant)

WARNING: 18 U.S.C. Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as to any matter within its jurisdiction.

ATTACHMENT #1

GENERAL  ELECTRIC

MISSILE AND SPACE DIVISION
VALLEY FORGE SPACE TECHNOLOGY CENTER
P.O. BOX 8555
PHILADELPHIA PA. 19101



COPIES: T. Handley
R. Werkley

SUBJECT

• RADIOLOGICAL PROCEDURES

DOCKET NO. 40-7344

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.
2. Receiving - 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. Storage - 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. Mixing - 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. Manufacturing - 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

5. recommended but not required. All waste materials are disposed as radiological waste and periodic contamination surveys are taken.
6. Inspection - Minimal contamination control is required for this job. All inspectors should wear gloves when handling uranium. Periodic contamination surveys are taken.
7. Shipping - 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. Emergency Procedure:
 - 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.

• E. R. Harris

- 3 -

April 18, 1968

- 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.

R. O. McClintock

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

/mlh

Attachment #2

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

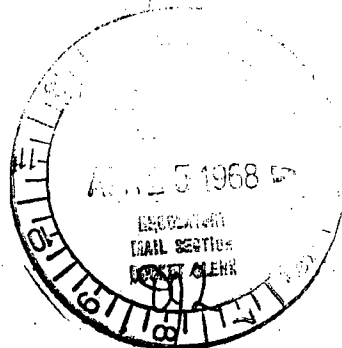
The minimum technical qualifications for supervisory personnel for source material include U. S. Department of Health, Education and Welfare course in Basic Radiological Health or equivalent, supervisory responsibility at GE and past experience in handling radioactive materials.

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

DOCKET NO. 40-7344

Regulatory Suppl File Cy.



ATTACHMENT 2a

Type of Instrument	Number Available	Radiation Detected	Sensitivity	Window Thickness	Use
Victoreen Model 440	1	Beta Gamma	0-300mr/hr	1mg/cm ²	Surveying & Measuring
Eberline Pac-46	2	Alpha (adaptable for low-energy beta)	0-5000,000 c/m	0.85mg/cm ²	Monitoring & Surveying
Eberline Model E-120	2	Beta Gamma	0-50mr/hr	30mg/cm ²	Measuring
Nuclear Measurements Corp. Model GS-3	2	Beta Gamma	0-20mr/hr	30mg/cm ²	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

ATTACHMENT 2b

- I. The Victoreen model 440, Eberline model E-120, and Nuclear Measurements Corporation model GS-3 are calibrated using a 36 mc Cobolt-60 source. The instruments are calibrated yearly and spot-checked as needed.

2. The Eberline Pac-46 and the Nuclear Measurements Corporation model Pc-3T are calibrated using a 0.2 uc Carbon 14 source and a 8×10^{-4} 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)

Ex 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 - Present Health Physicist - Responsible for all Health Physics 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

8. Type of Training

- a. University of Rochester and Brookhaven Nat'l Lab.
- b. "
- c. "
- d. "

9. Experience With Radiation

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