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

REGULATORY FILE CY

BURE

UNITED STATES ATOMIC ENERGY COMMISSION

APPLICATION FOR SOURCE MATERIAL LICENSE

Pursuant to the regulations in Title 10, Code of Federal Regulations, Chapter I, 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)
- ☐ (a) New license
- ☐ (b) Amendment to License No. ____
- ☒ (c) Renewal of License No. ~~SMB-1005~~
- ☐ (d) Previous License No. ____

2. NAME OF APPLICANT
General Electric Co. - Space Division

3. PRINCIPAL BUSINESS ADDRESS
Valley Forge Space Center, Rm. M1138
P.O. Box 8555, Phila., Penna., 19101

4. STATE THE ADDRESS(ES) AT WHICH SOURCE MATERIAL WILL BE POSSESSED OR USED
Space Division Facilities on Goddard Blvd., Allendale Rd. and Third Ave. in King of Prussia, Penna.

5. BUSINESS OR OCCUPATION
Space Products Research & Manufact.

6. (a) IF APPLICANT IS AN INDIVIDUAL, STATE CITIZENSHIP
N/A

(b) AGE
N/A

7. DESCRIBE THE PURPOSE FOR WHICH SOURCE MATERIAL WILL BE USED
Research, development and manufacturing programs related to 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	any	any	400 lbs. total
URANIUM DEPLETED IN THE U-235 ISOTOPE	any	any	
THORIUM (ISOTOPE)	any	any	400 lbs.

(e) MAXIMUM TOTAL QUANTITY OF SOURCE MATERIAL YOU WILL HAVE ON HAND AT ANY TIME (in pounds)
300 lbs.

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.
Any use approved by the Ionizing Radiation Advisory Group, excluding production of uranium hexafluoride, direct waste disposal, nuclear laundries, or human use.
See attachment #1 for summary of current uses.
See attachment #5 for composition of Ionizing Radiation Advisory Group.

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).
For Supervisory personnel see attachment #2 and #5.
For Radiation Safety Officer resume see attachment #3.

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 samplers, 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 of each instrument).
See attachment #4.

12. (a) 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 #4.

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[illegible]	[illegible]	[illegible]	[illegible] radiation survey	
[illegible]	[illegible]	[illegible]	a. HEPA filtered exhaust b. Area contamination surveys and air monitoring c. Physically isolated test chamber in contamination control area d. Protective clothing for operators-coveralls, boots, gloves.	aerosol generati limited by large particle size-su stantiated by ir air monitorin results to date
[illegible] examinations, [illegible] contact test, [illegible] tion	[illegible]	[illegible]	a. Work performed in dry box b. Contamination surveys c. Irradiated shells thoroughly cleaned d. Thermal waste bagged before removing from box	
[illegible]	[illegible]	[illegible] exposure	Locked storage and radiation surveys	

FORM AEC-2 (3-64) previous editions are obsolete.

REGULATORY FILE CY

FORM APPROVED BUREAU OF BUDGET NO. 38-R002.

UNITED STATES ATOMIC ENERGY COMMISSION

APPLICATION FOR SOURCE MATERIAL LICENSE

Pursuant to the regulations in Title 10, Code of Federal Regulations, Chapter I, 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.

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- ☐ (a) New license
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5. BUSINESS OR OCCUPATION: Space Products Research & Manufact.

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 space programs.

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(a) TYPE	(b) CHEMICAL FORM	(c) PHYSICAL FORM (Including U or Th.)	(d) MAXIMUM AMOUNT AT ANY ONE TIME (in pounds)
NATURAL URANIUM	any	any	400 lbs. total
URANIUM DEPLETED IN THE U-235 ISOTOPE	any	any	
THORIUM (ISOTOPE)	any	any	400 lbs.

(e) MAXIMUM TOTAL QUANTITY OF SOURCE MATERIAL YOU WILL HAVE ON HAND AT ANY TIME (in pounds): 800 lbs.

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.

Any use approved by the Ionizing Radiation Advisory Group, excluding production of uranium hexafluoride, direct waste disposal, nuclear laundries, or human use.
See attachment #1 for summary of current uses.
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For Supervisory personnel see attachment #2 and #5.
For Radiation Safety Officer resume see attachment #3.

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See attachment #4.

(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 #4.

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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.

The Valley Forge Space Center has a comprehensive and successful fire prevention program, including a full-time fire prevention staff. Procedures are documented in the Valley Forge Safety Manual. These procedures may be amended to or detailed in an Ionizing Radiation Advisory Group approval.

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

The Valley Forge Space Center has a general emergency plan which provides for actions in the event of a radiation emergency. These procedures may be amended to or detailed in an Ionizing Radiation Advisory Group approval.

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

See attachments #2 and #5.

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.

(b) Detailed procedures for waste disposal. See attachment #5.

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 DISASSOCIATED 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., Space Division
(*Applicant named in Item 2*)

Dated August 30, 1974

BY: Thomas P. Handley
(*Print or type name under signature*)

Thomas P. Handley, Manager
Industrial Security, Safety and Administrative Services
(*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.

U.S. GOVERNMENT PRINTING OFFICE: 1974—O-705-577 (81-437-6)

[illegible]	[illegible]	[illegible]	[illegible]	REMARKS
[illegible]	[illegible]	[illegible]	Inventory and radiation survey	
[illegible]	[illegible]	[illegible]	a. HEPA filtered exhaust b. Area contamination surveys and air monitoring c. Physically isolated test chamber in contamination control area d. Protective clothing for operators-coveralls, boots, gloves	Aerosol generation limited to large particle size-substantiated by [illegible] air monitoring results to date
[illegible]	[illegible]	[illegible]	a. Work performed in dry box b. Contamination surveys c. Irradiated shells thoroughly cleaned d. Thermal waste bagged before removing from box	
[illegible]	[illegible]	[illegible]	Locked storage and radiation surveys	

6.1 PURPOSE

To state the requirements that shall apply in the use of all ionizing radiation, ionizing radiation machines, and radioactive materials to insure the maximum safety to all persons in the Valley Forge Space Center. These requirements are intended to be consistent with the regulations of the Atomic Energy Commission, Pennsylvania Department of Environmental Resources, U.S. Department of Labor, and the recommended practices of the General Electric Company.

6.2 DEFINITIONS

6.2.1 Ionizing Radiation

Gamma rays and x-rays, alpha and beta particles, high-speed electrons, neutrons, protons, and other nuclear particles; but not sound or radio waves, or visible, infrared or ultraviolet light.

6.2.2 Ionizing Radiation Machine

Any device which produces ionizing radiation when the associated control devices are energized.

6.2.3 Radioactive Materials

Any material (solid, liquid, gas) which emits ionizing radiation spontaneously, for example: carbon-14, cesium-137, cobalt-60, radium, thorium, etc. Note: all compounds of uranium, thorium and radium and all general-licensed sources are included, whether labeled radioactive or not by the vendor.

6.2.3 Occupational Dose

Includes exposure of an individual to ionizing radiation, (1) in a restricted area; or, (2) in the course of employment in which the individual's duties involve exposure to ionizing radiation. Occupational dose shall not include any exposure of an individual to ionizing radiation for the purpose of medical therapy or diagnosis.

6.2.4 Rem

The quantity of any type of ionizing radiation which causes the same biological effect as one roentgen of X or gamma radiation.

Permissible Limits for External Exposure

Personnel who are occupationally exposed to ionizing radiation in programs that are conducted under AEC contracts will be governed by the limits specified in AEC Safety Manual Appendix 0524 entitled, "Standards for Radiation Protection."

Personnel who are occupationally exposed to radioactive materials licensed by the U.S. Atomic Energy Commission shall adhere to the provisions found in U.S. Code of Federal Regulations, Title 10, Part 20, "Radiation Protection."

Personnel who are occupationally exposed to other radioactive materials or to ionizing radiation machines shall be governed by the regulations found in 29 CFR 1910.96, "Occupational Safety and Health Standards - Ionizing Radiation," and in Pennsylvania Title 25, Part I, Subpart D, Article V, Chapter 227, "Standards for Control of Radiation Exposure."

Permissible Limits for External Exposure [a]

Part of Body	Dose per 13 Consecutive Weeks (rems	Accumulated Dose (rems
Whole body, head and truck blood forming organs, gonads, lens of eyes.	1.25 [b]	5(N-18) [c]
Skin of whole body	7.5	
Hands and forearms, feet and ankles	18.75	

(a) On AEC contracts exempt from licensing, the limits are slightly different. Contact the Health Physicist for information.

(b) If exposure history is documented and approved by Health Physics and Medical Services, 3.0 rems, but accumulated dose not to exceed 5(N-18) rems.

(c) Where N is age in years and is greater than 18.

Exposure to airborne radioactivity shall not exceed the concentrations listed in the applicable regulations without specific approval from the Health Physicist.

Contamination

is the spread of radioactive material to places where it may harm personnel or spoil experiments.

6.3 POLICY

6.3.1 [illegible] keep the ionizing radiation [illegible] under [illegible] and Company regulations.

6.3.2 All proposed uses of radioactive material or ionizing radiation-producing devices shall be reviewed and prior written approval for use secured from the Ionizing Radiation Advisory Group (IRAG) consisting of:

Chairman: Manager, Industrial Security, Safety & Administrative Services

Member: Manager, Medical Services

Secretary: Health Physicist

6.3.3 All ionizing radiation machines and radioactive materials shall be used, stored, handled, transported, or disposed of in accordance with existing regulations and approvals (i.e., Atomic Energy Commission, Commonwealth of Pennsylvania, General Electric Company and the IRAG).

6.3.4 The IRAG may revoke any approval it has issued when an investigation shows justification for such action. In such event, the radiation user shall immediately relinquish all radioactive materials or ionizing radiation producing devices to the Health Physicist.

6.3.5 Accidents involving radioactive materials in which there is a possibility of ingestion or inhalation of radiactive material or body contamination shall be reported immediately to the members of the IRAG. Accidental exposures (actual or suspected) in excess of the quarterly limits stated above shall be immediately reported to the IRAG.

6.3.6 Where the aforementioned rules or regulations may not necessarily apply, the Ionizing Radiation Advisory Group's activity will be guided by recommendations of organizations such as the National Committee on Radiation Protection and Measurement and also by Company recommendations, particularly where recommendations establishing lower levels of exposure are concerned.

6.4 RESPONSIBILITIES AND PROCEDURES

6.4.1 It is the responsibility of all personnel working with ionizing radiation to acquaint themselves with the regulations bearing on their duties and their responsibility with regard to ionizing radiation safety. In particular, each individual is responsible for:

wearing the prescribed monitoring equipment (i.e., film badge, etc.) whenever working with radiation.

2. Using the recommended contamination control equipment and following contamination control procedures as required.

3. Keeping his exposure as low as possible by recommending improved procedures, etc., when applicable.

4. Observing and obeying all signs, tags, etc., posted by the Health Physicist.

5. Reporting conditions that are considered hazardous or may result in over-exposure.

6. Not deviate from the approved program without the prior approval of the IRAG.

6.4.2 Supervisors are responsible for the ionizing radiation safety of all personnel reporting to them. In particular, each supervisor is responsible for:

1. Assuring that each individual understands and follows all regulations regarding ionizing radiation safety.

2. Coordinating with the Health Physicist to obtain all necessary radiation safety advice and assistance.

3. Disposal of radioactive material in accordance with AEC and State of Pennsylvania regulations as set forth by the Health Physicist.

6.4.3 The manager of a component requiring radioisotopes or ionizing radiation-producing devices shall:

1. Submit a written request to the Chairman of the IRAG prior to performing any work on the requested program. The request shall include the following information:

   a. Quantity, type and form of any radioisotopes to be used or description or ionizing radiation-producing equipment.

   b. Name, title and radiation or radioactive materials experience of the individual responsible for the work to be performed.

   c. Names, title and radiation or radioactive materials experience of individuals who will work with the materials or equipment.

   d. A description of the work to be performed and facilities to be used.

   e. A specific description of the safety precautions to be taken and procedures to be followed. (Assistance in preparing this section may be obtained from the Health Physicist.)

3. Provide such information to the IRAG as it may require for periodic audits of the approved ionizing radiation program.

4. Insure that personnel under his [illegible] are not [illegible] from the approved program without the prior approval of the IRAG.

4. Follow all Safe Work Practices in this Manual, specifically those applicable to ionizing radiation.

5. Posting the safety requirements provided by IRAG.

6. Obtaining the approval of the Health Physicist prior to performing any operation involving machining, melting, welding, heating, or otherwise altering any source of radiation.

7. Deliver radioactive materials for disposal to the Health Physicist.

6.4.4 The IRAG will:

1. Accept or reject any proposed use of radioisotopes or ionizing radiation-producing equipment which in the Group's opinion does or does not adequately meet safety requirements set forth by the AEC, State of Pennsylvania (or other states as they may apply), General Electric Company and VFSC instructions. The Group's authority is limited to the ionizing radiation safety criteria only.

2. Notify the requesting component manager of its decision, and supplement the safety requirements submitted when it feels the need to do so.

3. Perform such periodic audits and inspections as it deems necessary.

6.4.5 The Manager, Industrial Security, Safety and Administrative Services is responsible for:

1. Serving as Chairman of the Ionizing Radiation Advisory Group.

2. Providing the overall administration of an effective ionizing radiation control program and the health physics function; insuring compliance with applicable regulations; and reviewing and approving, prior to procurement or use, radioactive materials and equipment specifically designed to produce ionizing radiation.

3. Obtaining from the Atomic Energy Commission, the Interstate Commerce Commission, and other authorized government agencies those licenses required to obtain, possess, use and ship radioactive materials and register the licenses with the Commonwealth of Pennsylvania (Note: AEC

licenses will only be secured by the Chairman, IRAG as needed. In order to avoid unnecessary delays, advise him of needs well in advance of critical dates).

6.4.6 The Health Physicist is responsible for:

1. Serving as Secretary of the Ionizing Radiation Advisory Group.

2. Keeping records of IRAG activities and such other information as required by regulatory agencies.

3. Assisting supervisory personnel in the writing of all ionizing radiation safety requirements, and development of such information and training programs as may be required to assure proper handling of these materials.

4. Conducting such surveys, leakage tests, and environmental studies as may be required to insure the integrity of the program.

5. Insuring that suitable warning signs and devices are in place and operating as required in accordance with the regulations of the Department of Health, Commonwealth of Pennsylvania and the Atomic Energy Commission.

6. Developing and maintaining emergency procedures.

7. Investigating and preparing reports of all actual or suspected excessive or unauthorized exposure to ionizing radiation.

6.4.7 The Manager, Medical Services is responsible for:

1. Determining the medical program to be followed by all employees involved in working with ionizing radiation.

2. Serving as a member of the IRAG.

6.4.8 All responsible supervisory personnel shall submit for review to the Health Physicist all Planning Sheets, MSI's, STP's or other applicable documents which set forth a program, process or procedure for working with or otherwise involving ionizing radiation.

6.4.9 The initiating manager shall secure the written approval of the IRAG prior to the purchase or other means of obtaining any ionizing radiation machine or radioactive material. The Purchasing component shall not complete a Purchase Order for these items unless it has been properly approved by the IRAG. (Also see Section 6.5.)

6.4.10 Each operation using radioactive materials shall maintain detailed records of all radioactive materials on hand. These records shall be readily available for

inspection by the Health Physicist. All radioactive materials not in use shall be relinquished to the Health Physicist for storage or disposal.

1. Not release any radioactive materials or ionizing radiation-producing devices without the written approval of the Health Physicist. Procedures specified in Section 6.5.3 shall be followed.

2. Ship or transport radioactive materials only in accordance with Section 6.5.4 and applicable USAEC, DOT and state regulations.

6.4.12 The Accountant-Taxes, Insurance and Royalties will ascertain that adequate insurance coverage exists for possession and use of radioactive materials at Valley Forge area components.

6.4.13 Facilities Engineering shall obtain the approval of the Health Physicist on all drawings of ionizing radiation-producing devices, radioactive materials or facilities or devices to house or contain radiation devices or radioactive materials. All such drawings shall be labeled RADIATION DEVICE OR RADIOACTIVE MATERIALS in prominent lettering.

6.5 PROCURING, RECEIVING AND TRANSPORTING OF RADIOACTIVE MATERIALS

6.5.1 Licensees for radioactive materials are required to conform to several sets of regulations related to obtaining, receiving and transporting radioactive materials. Adherence to the procedures and requirements listed below is required to achieve compliance with the regulations. Where applicable, these procedures and requirements are amended to all SD-VF IRAG approvals.

6.5.2 Purchasing or Otherwise Obtaining Radioactive Materials

1. Each Material Request for radioactive materials shall bear the note: RADIOACTIVE.

2. All Purchase Orders for radioactive materials shall be forwarded to the Health Physicist for approval before any order, including by telephone or TWX, is placed.

3. In all other circumstances where radioactive materials are transferred into SD-VF facilities (e.g., loaned source, return of a source from a customer, etc.), the transferee shall obtain the approval of the Health Physicist before the transfer is initiated.

4. The Health Physicist shall complete the certification to receive radioactive materials (Figure 1) when necessary. The original shall accompany the Purchase Order when applicable, or be sent to the transferor in non-purchase transfers.

5. All radioactive materials shall be shipped to the attention of the Health Physicist, Bldg. 100.

6.5.3 Receiving Radioactive Materials

1. Receiving shall notify the Health Physicist, x5926 or x3130, immediately upon receipt of radioactive materials. Receiving shall not open any shipping container before the Health Physicist has completed the acceptance surveys.

2. The Health Physicist shall promptly survey the shipment, utilizing the following general procedure:

   a. Radiation and contamination survey of outer container.

   b. Radiation and contamination survey of inner container, if applicable.

   c. Leak test or radiation and contamination survey of the source, whichever is applicable, except unsealed sources.

3. In the event a leaking container is found, the carrier and USAEC Compliance, Region I, shall be notified immediately. The Health Physicist shall immediately take action to determine the extent of contamination in SD-VF facilities and decontaminate as needed.

6.5.4 Shipping or Transport of Radioactive Materials

1. Any person who plans to ship radioactive materials shall contact the Health Physicist at least three working days prior to the date of the shipment. The transferor shall supply to the Health Physicist the type, quantity and form of the material, the name and telephone number of the receiver, the type of container and the mode of transport. The Health Physicist shall contact the receiver to obtain his certification to receive radioactive materials.

2. Immediately prior to shipment, the Health Physicist shall survey the container(s), attach shipping labels and complete the shipping certification (Figure 2).

3. The Health Physicist shall be notified prior to any interplant transfers of radioactive material. USAEC or DOT approved shipping containers shall be used where applicable.

GENERAL ELECTRIC

SPACE DIVISION

GENERAL ELECTRIC COMPANY VALLEY FORGE SPACE CENTER
(MAIL: P. O. BOX 8555, PHILADELPHIA, PENNSYLVANIA 19101), Phone (215) 962-2000

Certification of Authorization to Receive Radioactive Materials

Gentlemen:

This certifies that the Space Division, General Electric Company, is authorized to receive, possess and use the radioactive materials listed below, according to the provisions of license number _____ which expires _____.

Material	Form	Quantity

All radioactive materials are to be shipped to the attention of the undersigned at the following address:

General Electric Company
Valley Forge Space Center, Room M1138
Goddard Boulevard
King of Prussia, Pennsylvania 19101

R. G. Oesterling, C.H.P.
Health Physicist

Distribution: Original accompanies Purchase Order or sent to transferor
Copy #1 Health Physicist
Copy #2 RAM Requestor

GENERAL ELECTRIC

SPACE DIVISION

VALLEY FORGE SPACE CENTER

P. O. BOX 8555, PHILA., PA.

SHIPPER'S CERTIFICATION FOR RADIOACTIVE MATERIALS

☐ AIR TRANSPORT ONLY — THIS IS TO CERTIFY THAT THE HEREON NAMED ARTICLES ARE PROPERLY CLASSIFIED, DESCRIBED, PACKED, MARKED AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION BY AIR ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION. THE SHIPMENTS ARE ACCEPTED FOR CARRIAGE BY AIR ACCORDING TO THE [illegible] OR PASSENGER) CARGO (CROSS OUT ONE) CARRYING AIRLINE.

☐ SUFACE TRANSPORT ONLY — THIS IS TO CERTIFY THAT THE HEREON NAMED ARTICLES ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND LABELED AND ARE IN PROPER CONDITION FOR TRANSPORTATION ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION.

NAME AND ADDRESS OF SHIPPER OR HIS AUTHORIZED AGENT

(SIGNATURE)

NATURE AND QUANTITY OF CONTENT				PACKAGE		
RADIONUCLIDE	GROUP	FORM	ACTIVITY	CATEGORY	TRANSPORT INDEX	TYPE
NAME OF PRINCIPAL RADIOACTIVE CONTENT	GROUP NUMBER OF GROUPS I TO VII	EITHER CHEMICAL FORM PLUS GAS/ LIQUID/SOLID, ONLY SPECIAL FORM OR ENCAPSULATION	NUMBER OF CURIES OR MILLICURIES SPECIFIED	I - WHITE OR II - YELLOW OR III - YELLOW LABEL	FOR YELLOW LABEL CATEGORY ONLY	INDUSTRIAL OR TYPE A OR TYPE B

ADDITIONAL INFORMATION REQUIRED FOR FISSILE MATERIALS ONLY

EXEMPTED FROM THE ADDITIONAL REQUIREMENT FOR FISSILE MATERIALS — NOT EXEMPTED

FISSILE CLASS I ☐

FISSILE CLASS II ☐

FISSILE CLASS III ☐

NAMES, PLUS QUANTITY IN GRAMS, OR CONCENTRATION OF ENRICHMENT IN USE

ADDITIONAL CERTIFICATION OBTAINED BY THE SHIPPER WHEN NECESSARY:

- SPECIAL FORM ENCAPSULATION CERTIFICATE(S) ☐
- TYPE B PACKAGING CERTIFICATE(S) ☐
- CERTIFICATE(S) FOR FISSILE MATERIAL ☐
- GOVERNMENT APPROVALS/PERMITS ☐

RADIATION LEVELS: SURFACE _____ MREM/HR; THREE FEET _____ MREM/HR; ONE METER _____

CONTAMINATION LEVELS: ALPHA _____ DPM/100 CM²; BETA-GAMMA _____ DPM/100 CM²

APPROVED FOR SHIPMENT _____

(SIGNATURE OF HEALTH PHYSICS)

DISTRIBUTION: ORIGINAL (COPY) COPY 1 - TRAFFIC; COPY 2 - HEALTH PHYSICS

[illegible]

(b)(6)

[illegible]	Eastern Oregon College and General Electric Co.	8 years	Yes	Yes
[illegible]	Eastern Oregon College and General Electric Co.	8 years	Yes	Yes
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(b)(6)

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	100 curies	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	megacuries	[illegible]	[illegible]	[illegible]
[illegible]	curies	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	10 curies	[illegible]	[illegible]	[illegible]
[illegible]	1 curie	[illegible]	[illegible]	[illegible]
[illegible]	80 millicuries	[illegible] Illinois State	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	1 millicurie	Eastern Oregon College	3 months	[illegible]
[illegible]	10 curies	Vallecitos & [illegible]	2 1/2 yrs.	[illegible]
[illegible]	100 curies	Vallecitos	6 months	[illegible]
[illegible]	10 curies	Valley Forge	1 1/2 [illegible]	[illegible]
[illegible]	300 kilugrams	Valley Forge	[illegible]	[illegible]
[illegible]	7,000 curies	Valley Forge	[illegible]	[illegible]

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	1 mR/cm^2	Exposure rate survey
[illegible]	[illegible]	[illegible]	[illegible]	1 mR/cm^2	Exposure rate survey
[illegible]	[illegible]	[illegible]	[illegible]	0.35 mR/cm^2	Contamination survey
[illegible]	[illegible]	0 [illegible] (0.00 counts/min)	[illegible]	10 mR/cm^2	Contamination and [illegible] surveys
[illegible]	[illegible]	0 [illegible] counts/min	[illegible]	1 mR/cm^2	Contamination survey
[illegible]	[illegible]	[illegible] counts/min	[illegible]	[illegible]	Air and wipe samples counting
[illegible]	[illegible]	[illegible] counts/min	[illegible]	0.35 mR/cm^2	Air and wipe samples counting
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Samples counted on [illegible] PC-6/AC4
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	Samples counted on [illegible]
[illegible]	[illegible]	2 [illegible] @ 0.03 m^3/min	[illegible]	[illegible]	Air monitoring and alpha energy analysis
[illegible]	[illegible]	0.1500 counts/min	[illegible]	[illegible]	Air monitoring

[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]

ATTACHMENT

RADIATION PROTECTION PROGRAM

Ionizing Radiation Advisory Group

[illegible]

[illegible] the requirements for the [illegible] broad [illegible] material license.

2. The current membership of the IRAG includes:

Chairman - [illegible] Handley, Manager, Industrial Security, Safety and Administrative Services

Member - [illegible] Fenaro, [illegible] Manager, Medical Services

Secretary - [illegible] Stearling, C.H.P., Health Physicist

3. Approval of the IRAG prior to implementation of the program is required. [illegible] presented in [illegible] Manual Section [illegible]-6. (Attachment 2) Specific requirements are established by the IRAG for each approved program to reflect current [illegible] and regulatory requirements.

Supervisory Personnel Qualifications

The minimum technical qualifications for supervisory personnel include supervisory responsibility at C.E., the [illegible] in basic radiological [illegible] or equivalent, or equivalent past experience, as determined by the IRAG.

Radiation and Contamination Survey Criteria

1. The survey program utilizes standard instrumentation (attachment 1) and techniques in various combinations and frequencies, depending on the degree of potential exposure. The techniques include exposure rate surveys, personnel dose monitoring, wipe surveys for loose contamination, direct radioactivity surveys for fixed contamination, area air monitoring for both total and specific alpha activity, lapel air sampling and emergency sampling capabilities.

2. These techniques are applied in a graded manner, according to stipulations of the IRAG, as shown by the following typical examples from low to high potential:

a. Uranium shield - exposure rate surveys [illegible] when removed from the test fixture; personnel dose monitor [illegible]

b. Storage of uranium and thorium compounds - monthly radiation and contamination survey of storage vault; survey upon [illegible] personnel dose monitoring.

[illegible] surveillance [illegible]

[illegible] during tests; [illegible] surveys; removal [illegible]

[illegible] which are carried [illegible]

[illegible]

[illegible] packaged [illegible] Radiological Services then increased [illegible]

The [illegible] was picked up by Nucleyne Radiological Services, 60 Van Buren Avenue, [illegible]

The address is Nucleyne Radiological Services, 60 Van Buren Avenue, [illegible]

Westwood, New Jersey. [illegible]