

FORM NRC-313 I (3-80) 10 CFR 30		U.S. NUCLEAR REGULATORY COMMISSION		
APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL		1. APPLICATION FOR: <i>(Check and/or complete as appropriate)</i>		
See attached instructions for details. Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.		X	a. NEW LICENSE	
			b. AMENDMENT TO: LICENSE NUMBER	
			c. RENEWAL OF: LICENSE NUMBER	
2. APPLICANT'S NAME <i>(Institution, firm, person, etc.)</i> GENERAL ELECTRIC COMPANY TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION 617-381-2394		3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION ANDREW S. TONEY TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION 617-381-2394		
4. APPLICANT'S MAILING ADDRESS <i>(Include Zip Code)</i> <i>(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)</i> 62 Tremont Street Everett, Massachusetts 02149		5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED <i>(Include Zip Code)</i> 62 Tremont Street Everett, Massachusetts 02149		
(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)				
6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL <i>(See Items 16 and 17 for required training and experience of each individual named below)</i>				
FULL NAME		TITLE		
a. Andrew S. Toney		Mgr.-Program Control & Salvage Adm.		
b. Richard Pollak		Quality Control Engineer		
c. Robert Hoffman		Supervisor-Everett Laboratory		
7. RADIATION PROTECTION OFFICER John B. Feldman		Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.		
8. LICENSED MATERIAL				
LINE NO.	ELEMENT AND MASS NUMBER A	CHEMICAL AND/OR PHYSICAL FORM B	NAME OF MANUFACTURER AND MODEL NUMBER <i>(If Sealed Source)</i> C	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME D
(1)	Cd-109	Metallic Cadmium	Isotope Products Lab. Model XFB	Three sources not to exceed 8 mCi each
(2)		Solid/Sealed Source		
(3)	Am-241	Americium Oxide Solid/Sealed Source	Isotope Products Lab Model GFS	Three sources not to exceed 8mCi each
(4)				
DESCRIBE USE OF LICENSED MATERIAL E				
(1)	The device is to be used in a KEVEX Energy Dispersive X-Ray Analyzer to provide			
(2)	a source of X-Ray energy to fluorescence x-rays from a sample for the purpose of alloy sorting and identification and for quantitative chemical analysis.			
(3)	8510300163 850926 REG1 LIC30 20-19908-01 PDR			
(4)				

9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Kevev Model 6600 Analyzer with a Model 0202 Source Holder	Kevev Corporation	6600/0202
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT A.	MANUFACTURER'S NAME B.	MODEL NUMBER C.	NUMBER AVAILABLE D.	RADIATION DETECTED (alpha, beta, gamma, neutron) E.	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F.
(1)	Geiger Counter	Victoreen Vicor	Mini-Monitor II	1	Gamma and X-Ray	MR/HR 0-10, 0-100 0-1000
(2)	Geiger-Mueller Tube	Eberline	E-520	1	Gamma and X-Ray	0-0.2, 0-20 0-2, 0-200 0-2000
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

<input checked="" type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY (1) Qualitative Instrument. Factory calibrated Not subject to periodic calibration	<input type="checkbox"/> b. CALIBRATED BY APPLICANT <i>Attach a separate sheet describing method, frequency and standards used for calibrating instruments.</i> (2) See Attached Sheet
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12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A.	SUPPLIER (Service Company) B.	EXCHANGE FREQUENCY C.
<input checked="" type="checkbox"/> (1) FILM BADGE <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD) <input type="checkbox"/> (3) OTHER (Specify): _____ _____ _____	ICM DOSIMETRY SERVICE 26201 Miles Road Cleveland, Ohio 44128 Telephone 216-831-3000	<input checked="" type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY <input type="checkbox"/> OTHER (Specify): _____ _____ _____

13. FACILITIES AND EQUIPMENT (Check where appropriate and attach annotated sketch(es) and description(s).)

- ☒ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC. (See Attached Sheet)
- ☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (Fixed and/or temporary), ETC.
- ☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
- ☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

14. WASTE DISPOSAL

- a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED
 Not Applicable
- b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.
- Disposal of all isotope material will be provided by the equipment manufacturer, the Kevev Corporation.

INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. **RADIATION PROTECTION PROGRAM.** Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures (if needed), day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.
16. **FORMAL TRAINING IN RADIATION SAFETY.** Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.
 - a. Principles and practices of radiation protection.
 - b. Radioactivity measurement standardization and monitoring techniques and instruments.
 - c. Mathematics and calculations basic to the use and measurement of radioactivity.
 - d. Biological effects of radiation.
17. **EXPERIENCE.** Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

18. CERTIFICATE

(This item must be completed by applicant)

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 30, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

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.

a. LICENSE FEE REQUIRED

(See Section 170.31, 10 CFR 170)

\$ 110-

b. CERTIFYING OFFICIAL (Signature)

c. NAME (Type or print)

ANDREW S. TONEY

Adm.

d. TITLE

Manager Program Control & Salvage

e. DATE

December 18, 1981

(1) LICENSE FEE CATEGORY: New License

(2) LICENSE FEE ENCLOSED: \$ 110-

ATTACHMENT TO NRC - 3131, GENERAL ELECTRIC CO.

Item 11(b)

Calibration of meter (2) is performed on a quarterly basis at General Electric Industrial Hygiene Laboratory, Medium Steam Turbine Operation, Lynn, MA. A Technical Operation T/O 571 Rod source containing 15 mc of Cobalt 60 (sealed source model Co.-.012) inside a model 57100-1 directional source container is used. The meter is calibrated a 2 points per scale at all scales, and after each servicing. Records are maintained in the office of the Radiation Protection Officer. Meter calibration must be within 10% of calculated exposure rate or meter is removed for repairs.

Item 13(a)

Facility is to be located in southwest corner of the building in the materials reclamation area. It is separate and secured from the other manufacturing operations.

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ATTACHMENT TO NRC 3131, GENERAL ELECTRIC CO.

Item 15

- a. Routine monitoring of system will be accomplished using Mini Monitoring II. A comprehensive radiation survey will be performed semi-annually with the Eberline instrument by the Radiation Protection Officer. Sources will be kept installed in instrument at all times except when removed by manufacturer's service engineer. If removed, the source will be kept in a locked cabinet marked "CAUTION-RADIOACTIVE MATERIAL". The instrument the source is installed in will be clearly marked the same way with approved labeling.
- b. The area supervisor and the Radiation Protection Officer will maintain all records of area monitoring and filmbadge exposures. The area supervisor or the Radiation Protection Officer will safeguard and not open any box containing a source delivered to the site. The manufacturer's service engineer will open the package, install the source and perform initial radiation survey. He will also perform all service, repairs, or replacement of the source and will be responsible for disposal of spent devices.
- c. Leak tests will be performed semi-annually by the manufacturer's service engineer using test kits provided by Radiation Detection Company of Sunnyvale, California.

ATTACHMENT TO NRC- 3131, GENERAL ELECTRIC CO.

Item 16

John B. Feldman - Radiation Protection Officer

BS - Chemical Engineering
MS - Chemical Engineering
MS - Environmental Health Sciences

Formal training in Radiation Safety covering areas "a" thru "d" while enrolled as a graduate student at Harvard University - School of Public Health 1971-1972, 1 year program; and as undergraduate student at Worcester Polytechnic Institute, 1 semester course - Physics of the Atom, 1964.

Everett's Supervisor's Training/Experience

Andrew S. Toney - Mgr. - Program Control & Salvage Adm.
BS - Chemistry
MA - Education with emphasis in science
MBA - Business Administration

Served as Safety Engineer for the General Electric Hooksett Plant for 1½ years. Managed analytical and organic chemistry laboratory for five years. Served as Senior Medical Corpsman in the United States Air Force. Three years experience as part-time college chemistry instructor.

User Supervisors of Kevex Analyzer

Richard Pollak - Quality Control Engineer

Quality Control Engineer for Ring Roll Area. 15 years with General Electric, the last 2 with AEG Everett.

Robert Hoffman - Supervisor - Everett Quality Laboratory

Supervisor - Everett Quality Laboratory. 16 years with General Electric at AEC. Held many Non-Destructive Test positions. Currently, responsible and accountable for radiation badges for the Everett Plant.

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ATTACHMENT TO NRC-- 313I, GENERAL ELECTRIC CO.

Item 17

John B. Feldman - Radiation Protection Officer

Has served as Radiation Protection Officer/Industrial Hygienist for General Electric Aircraft Engine Business Group for the past four years. Responsible for radiation safety of over 20 x-ray sources used on radiography, electron beam welding, and analytical instrumentation. Prior radiation experience includes working for U.S. Department of Labor - OSHA and the U.S. Environmental Protection Agency (four year total).
Registered Professional Engineer - Massachusetts
Certified Industrial Hygienist - Comprehensive Practice

Everett Supervisor's Training/Experience

Andrew S. Toney - Mgr. - Program Control & Salvage Adm.
BS - Chemistry
MA - Education with emphasis in Science
MBA - Business Administration

Served as Safety Engineer for the General Electric Hooksett Plant for 1½ years. Managed analytical and organic chemistry laboratory for five years. Served as Senior Medical Corpsman in the United States Air Force. Three years experience as part-time college chemistry instructor.

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Quality Control Engineer for Ring Roll Area. 15 years with General Electric, the last 2 with AEG, Everett.

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11/24/81

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				c. RENEWAL OF: LICENSE NUMBER L 96 19908	
2. APPLICANT'S NAME (Institution, firm, person, etc.) GENERAL ELECTRIC COMPANY TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION 617-381-2394			3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION ANDREW S. TONEY 03120 TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION 617-381-2394		
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6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL (See Items 16 and 17 for required training and experience of each individual named below)					
FULL NAME			TITLE		
a. Andrew S. Toney			Mgr. Prog. Cont. and Salvage Admins.		
b. BROWN					
c.					
7. RADIATION PROTECTION OFFICER DAVID ROBERTS , Safety Engineer			Attach a 16 and 17		
8. LICENSED MATER					
L I N E NO.	ELEMENT AND MASS NUMBER A	CHEMICAL AND/OR PHYSICAL FORM B	NAME OF AND MODEL NUMBER (If Sealed Source) C	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME D	
(1)	Cd -109	Metallic Cd -	IPL, Model XFB	Three sources not to exceed 8 mCi	
(2)		Solid			
(3)	Am - 241	Americium Oxide Solid	IPL, Model GFS	Three sources not to exceed 8 mCi	
(4)					
DESCRIBE USE OF LICENSED MATERIAL E					
(1)	The device is to be used in a KEVEX Energy Dispersive X-Ray Analyzer				
(2)	to provide a source of X-ray energy to fluorescence x-rays from a				
(3)	sample for the purpose of alloy sorting and identification and for				
(4)	quantitative chemical analysis.				

9. STORAGE OF SEALED SOURCES

LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Model 6600 Analyzer	KeveX Corporation	6600
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

LINE NO.	TYPE OF INSTRUMENT A	MANUFACTURER'S NAME B	MODEL NUMBER C	NUMBER AVAILABLE D	RADIATION DETECTED (alpha, beta, gamma, neutron) E	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F
(1)	Geiger Counter	Victoreen	Mini-Monitor II	1	Gamma and X-ray	MR - HR
(2)						0-10, 0-100, 0-1000
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☒ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

Not subject to periodic calibration

☐ b. CALIBRATED BY APPLICANT

Attach a separate sheet describing method, frequency and standards used for calibrating instruments.

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
<input checked="" type="checkbox"/> (1) FILM BADGE	ICM DOSIMETRY SERVICE 26201 Miles Road Cleveland, Ohio 44128	<input checked="" type="checkbox"/> MONTHLY
<input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD)		<input type="checkbox"/> QUARTERLY
<input type="checkbox"/> (3) OTHER (Specify): _____	Telephone 216-831-3000	<input type="checkbox"/> OTHER (Specify): _____

13. FACILITIES AND EQUIPMENT (Check where appropriate and attach annotated sketch(es) and description(s).)

- ☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.
- ☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC.
- ☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
- ☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

NOT APPLICABLE

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED
KEVEK CORPORATION

b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

NOT APPLICABLE