

FORM NRC-313 I  
(1-79)  
10 CFR 30

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE  
INDUSTRIAL

1. APPLICATION FOR:  
(Check and/or complete as appropriate)

☒ a. NEW LICENSE

b. AMENDMENT TO:  
LICENSE NUMBER

c. RENEWAL OF:  
LICENSE NUMBER

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.

2. APPLICANT'S NAME (Institution, firm, person, etc.)

Systems Technology Corporation  
245 N. Valley Rd. Xenia, OH 45385

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION  
(513) 372-08077

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

W. A. Atkins

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION  
(513) 372-8070

4. APPLICANT'S MAILING ADDRESS (Include Zip Code)

Systems Technology Corporation  
245 N. Valley Rd.  
Xenia, OH 45385

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED  
(Include Zip Code)

General Portland, Inc.  
County Road 176  
Paulding, OH 45879

(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

(See Items 16 and 17 for required training and experience of each individual named below)

FULL NAME

TITLE

a. David Gorden Gossman

Site Manager and Chemist

b.

c.

7. RADIATION PROTECTION OFFICER

David Gorden Gossman

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

L I N E  NO.	ELEMENT AND MASS NUMBER  A	CHEMICAL AND/OR PHYSICAL FORM  B	NAME OF MANUFACTURER 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)	Ni 63	Plated Part	Hewlett Packard Electron Capture	One (1) detector 15 mCi per detector
(2)			Detector No. 19303-80010	
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL  
E

(1) Detector for Gas Chromatograph Hewlett Packard Model 5880

(2)

(3) 8511180555 850806  
REG3 LIC30  
34-18925-01 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)	Gas Chromatograph	Hewlett Packard	A 5880
(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)	None required. The detector will not be disassembled and/or cleaned.					
(2)						
(3)						
(4)						

## 11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY  Not applicable	<input type="checkbox"/> b. CALIBRATED BY APPLICANT Attach a separate sheet describing method, frequency and standards used for calibrating instruments.  Not applicable
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## 12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
<input type="checkbox"/> (1) FILM BADGE  <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD)  <input checked="" type="checkbox"/> (3) OTHER (Specify): <u>None required</u>  		<input 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.  
☐ 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

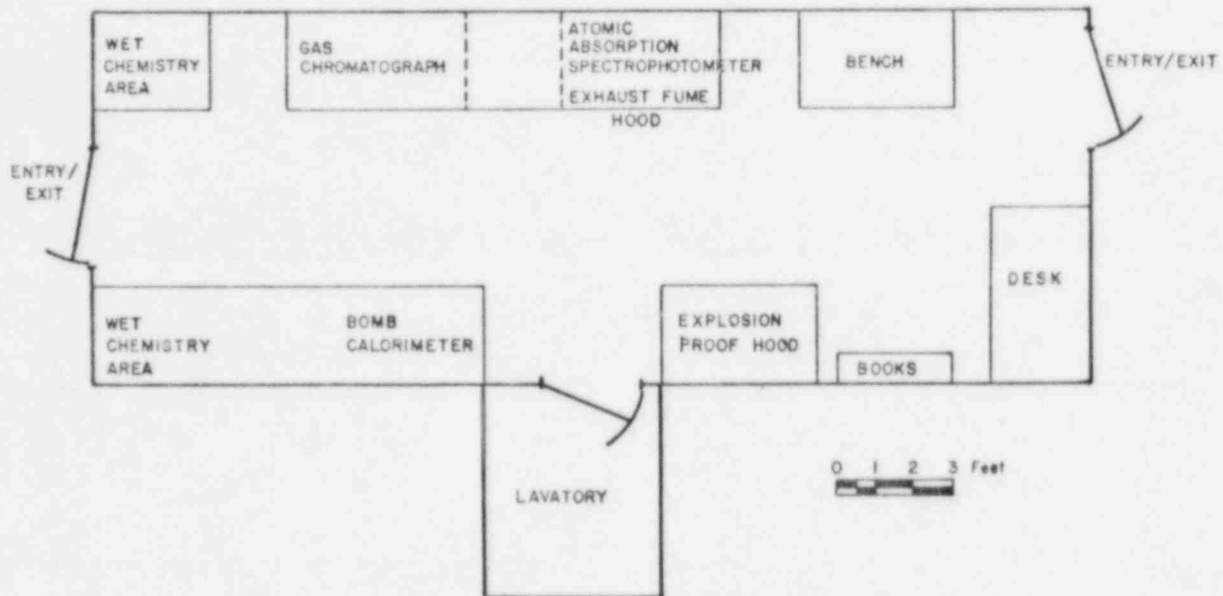
None

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.

Return detector to supplier, Hewlett Packard Co. Rt. 41 Avondale, Pennsylvania 19311

Item 13

Facilities and Equipment



Note: The gas chromatograph will be installed and operated in accordance with the manufacturer's manual and the latest revision of 10 CFR Part 20. The area will be properly posted. The detector effluent gas will be vented out through the Atomic Absorption Spectrophotometer Exhaust Fumehood. No special shielding, hoods, etc. are required for operation of this gas chromatograph.

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Item 15

RADIATION PROTECTION PROGRAM

The Radiation Protection Officer will be in charge of this laboratory and will use the equipment in accordance with the manufacturer's manual to prevent contamination of the laboratory. A leak test with Hewlett Packard Test Kit No. 18713-60050 will be made every six months.

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Item 16

RESUME

DAVID GOSSMAN

FORMAL TRAINING IN RADIATION SAFETY

June 1975 - May 1978

Primary training in all areas - Michigan State University  
Cyclotron Laboratory, E. Lansing, MI 48824  
Primary person providing training - Dr. Peter Miller

Secondary training in all areas. A large number of courses taken in physics and chemistry as a graduate and undergraduate student at Michigan State University and Hanover College, Hanover, Indiana.

SPECIFIC TRAINING:

1. Basic training in the principles and practices of radiation protection up through and including first aid for radiation burns, the design of mechanical and electrical interlock systems, and decontamination procedures.
2. Training in the use of alpha, beta, and gamma radiation detection and monitoring. Also training in the use and calibration of neutron detectors.
3. Training in the use of the mathematics involved in radioactive measurements, including dosage calculations and half-life calculations.
4. Basic training in the biological effects at radiation and first aid procedures.

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Item 17

RESUME

DAVID GOSSMAN

WORK EXPERIENCE WITH RADIATION

June 1975 - May 1978

Experience in all areas - Michigan State University  
Cyclotron Laboratory, E. Lansing, MI 48824  
Primary Supervisory Person - Dr. Peter Miller

SPECIFIC EXPERIENCE:

1. Experience in the principles and practice of radiation safety, particularly with interlock systems associated with a medium energy (50 MeV) particle accelerator.
2. Experience in the use of Geiger Counters and specific particle detectors including the calibration and use of neutron counters. Also familiar with the use and maintenance of a nuclear mass spectrograph and associated analytical particle counters.
3. Extensive experience in the mathematics and calculations basic to the use and measurement of radioactivity with particular use of calculations used in the analysis of nuclear spectra and half-life calculations.
4. Extensive experience in the use and handling of a large number of radioactive isotopes with particular emphasis on (1) long half-life low radiation level isotopes used as targets in the nuclear mass spectrograph and (2) the use of  $C^{13}$  to produce  $N^{13}$  through proton bombardment of 12 MeV. Radiation levels were frequently in the 100's at millirems range and were handled in fume hoods with lead containers and tongs. (Note:  $N^{13}$  half-life is approximately 10 minutes.) The  $N^{13}$  was used in biochemical studies at nitrogen fixation in bacteria and plants.

# 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)

b. CERTIFYING OFFICIAL (Signature)

c. NAME (Type or print)

W. A. Atkins

d. TITLE

Safety Manager

e. DATE

26 March 1986

(1) LICENSE FEE CATEGORY: 170.31 3 L

(2) LICENSE FEE ENCLOSED: \$ 110.00