

7/28-1980 JTH & DCS

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

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
(513) 372-8077

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

Gerald H. Degler or Gregory M. Higgins

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
(513) 372-8077

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

245 N. Valley Road
Xenia, OH 45385

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

"Temporary Job Site of the Applicant"
See attachment A for additional information

(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.	Gregory M. Higgins	Project Scientist
b.	Charles David Fada	Project Chemist
c.		

7. RADIATION PROTECTION OFFICER

Gregory M. Higgins

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 MILLCURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME D
(1)	Nickel - 63	Metallic Nickel	Part No. Perkin-Elmer-0332-3400	10-15m Ci
(2)				
(3)		8511180553 850806 REG3 LIC30		
(4)		34-18925-01 PDR		

RECEIVED BY LFMB

Date: 7/28/80

Log: July - 2011

By: [Signature]

Orig. To: [Signature]

Action Compl: 7/29/80

DESCRIBE USE OF LICENSED MATERIAL
E

(1) Used as an electron source for electron capture of gas

(2) Chromatography

(3) [Blank]

(4) [Blank]

Applicant: 1-009183
Check No. 100634
Amount/Fee Category: Application Amendment
Type of Fee: [Blank]
Date Check Rec'd: 7/28/80
Received By: [Signature]

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 ECD kit	Perkin-Elmer	Part # 0332-3400
(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)	N/A The detector will not be disassembled and/or cleaned.					
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☐ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

N/A

☐ b. CALIBRATED BY APPLICANT

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

N/A

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 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 were 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

N/A

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. At the end of the units useful life, estimated to be seven years, the sealed source will be sent to Houston Bionuclear Corporation, Houston, Texas. This Corporation disposes of the sealed source chemical for the manufacturer, Perkins-Elmer.

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)
Waldo A. Atkins

(1) LICENSE FEE CATEGORY: 170.31 3L

d. TITLE
Safety Manager

(2) LICENSE FEE ENCLOSED: \$ 110.00

e. DATE
7/3/80

ATTACHMENT A

This gas chromatograph will be located in Systems Technology's Mobile Laboratory. Presently the known sites at which the gas chromatograph will be used are located in the states of Ohio, Florida, Arkansas, and New York. Use in other states will be determined solely by our customer's location.

When not at a customer site, the mobile laboratory will be located at Systems Technology Corporation, 245 North Valley Road, Xenia, Ohio 45385.

The other known sites at which our gas chromatograph will be used are:

Hempstead Resource Recovery Corporation
200 Park Avenue
New York, New York

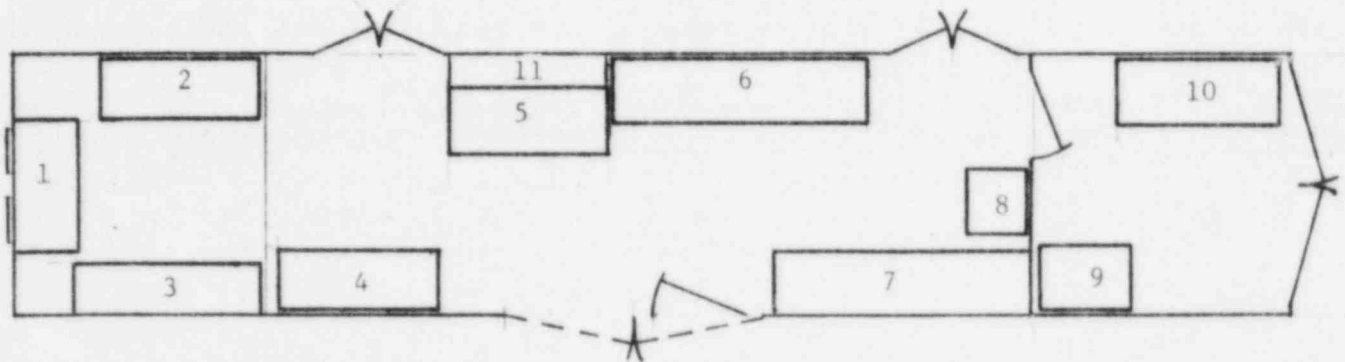
Naval Station
Mayport
Florida

North Shore Energy Facility
Short Street
North Little Rock, Arkansas

Wright Patterson Air Force Base
Dayton
Ohio

Item 13

MOBILE LABORATORY FACILITIES



1. Heat, Ventilating, and Air Conditioning Unit
2. Tool Bench and Cabinet
3. Eight (8) Sections of Personnel Lockers
4. Desk
5. Instrument Panel (Location of gas chromatograph, 2 NDIR gas detectors, 3 electrochemical cell gas detectors, 2 multipoint recorders)
6. Test Set Up Bench, Lab Balance
7. Stainless Steel Sink, Sink Top Cabinets, and Cabinets Above Sink
8. Drying Oven, Muffle Furnace & Fume Hood
9. Water Supply
10. Drying Ovens
11. Compressed Gas Cylinder

NRC 313 I (1/79)

Item 15

RADIATION PROTECTION PROGRAM

The Radiation Protection Officer will be responsible for ensuring that the equipment is used in accordance with the manufacturer's manual to prevent possible contamination of the laboratory. A leak test with Perkin-Elmer's Test Kit will be made every 6 months. The leak test kit accompanies the electron capture detector and therefore a model number is not available. The electron capture detector model number is referenced under 8, "Licensed Material."

NRC 313 1 (1-79)

Item 16

RESUME

GREGORY H. HIGGINS

FORMAL TRAINING IN RADIATION SAFETY

1976

Primary training in all areas - University of Akron
Department of Radiation Biology, Akron, Ohio
Primary person providing training - Dr. Hellmar Dollwet

Secondary training in all areas. A large number of courses taken
in physics and chemistry as a graduate and undergraduate student
at University of Akron and University of Oregon, Eugene, Oregon.

SPECIFIC TRAINING:

1. Basic training in the principles and practices of radiation protection up through and including first aid for radiation burns and decontamination procedures.
2. Training in the use of alpha, beta, and gamma radiation detection and monitoring.
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 of radiation.

SYSTEMS TECHNOLOGY CORPORATION

C. DAVID FADA, Associate Chemist

Degrees

Granted: B.S. in Chemistry, Wright State University, 1980

Professional

Experience: Mr. Fada is an associate chemist at SYSTECH currently involved in the characterization of hazardous liquid wastes to be converted to energy. He uses such techniques as calorimetry, gas chromatography, and wet chemical analysis to determine if the material is suitable for incineration according to EPA air emissions and hazard waste permitting standards.

He has provided lab data and interpretation of field test data for the energy and mass balances of municipal and industrial solid waste incinerators with energy recovery. He performed the physical and chemical analysis of the waste and residue according to ASTM and EPA procedures.

NRC 313 I (1/79)

Item 17

EXPERIENCE

Gregory M. Higgins has used an electron capture detector while employed by Howard Labs in identifying chlorinated compounds present in wastewater. The radioisotope used was nickel-63.

Mr. Higgins also conducted metabolic tracer experiments using carbon-14 while attending the University of Akron.

Charles D. Fada has not had prior work experience with radiation.