

Touchstone Environmental Consultants  
33 Thompson Street, Winchester, MA 01890 (617) 729 - 8450

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L 20626  
03120

July 18, 1983

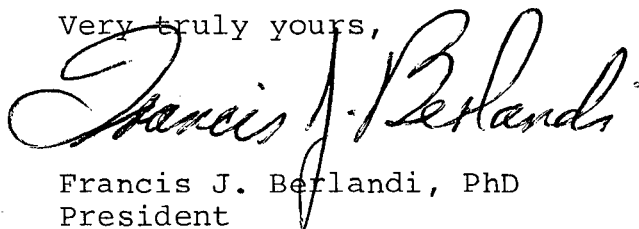
US Nuclear Regulatory Commission  
Region 1  
Material Licensing Section  
631 Park Avenue  
King of Prussia, PA 19406

Dear Sirs:

I am forwarding my license application for a sealed source gas chromatography system. The use of this system is highly urgent and your prompt attention to this application is requested.

Thanking you in advance,

Very truly yours,



Francis J. Berlandi, PhD  
President

A/9  
01598

JUL 25 1983

NRC Form 313 I (12-81) 10 CFR 30 U.S. NUCLEAR REGULATORY COMMISSION

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

APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL

a. NEW LICENSE

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.

b. AMENDMENT TO: LICENSE NUMBER

c. RENEWAL OF: LICENSE NUMBER

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

Touchstone Environmental Cnslts, Inc Francis J. Berlandi, PhD

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION

617-729-8450 617-729-8450

4. APPLICANT'S MAILING ADDRESS (Include Zip Code) (Address to which NRC correspondence, notices, bulletins, etc., should be sent.)

33 Thompson Street  
Winchester, MA 01890

3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

Francis J. Berlandi, PhD

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION

617-729-8450

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

33 Thompson Street  
Winchester, MA 01890

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. <u>Francis J. Berlandi, PhD</u>	<u>Certified Industrial Hygienist</u>
b.	
c.	

7. RADIATION PROTECTION OFFICER

Francis J. Berlandi, PhD

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	CHEMICAL AND/OR PHYSICAL FORM	NAME OF MANUFACTURER AND MODEL NUMBER (If Sealed Source)	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
A	B	C	D	
(1)	<u>Nickel 63</u>	<u>Electro-deposit Metal Foil</u>	<u>New England Nucl. NER004</u>	<u>10 mCi</u>
(2)				
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL

E

(1) Source used as part of Gas Chromatography system

(2)

(3)

(4)

Applicant: 1268

Check No. 1268

Amount, Fee Category 10.00

Type of Fee Application

Date Check Rec'd. 8/8/83

Received By Jackson

JUL 25 1983

**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)	Sealed in GC-Mini 2E Gas Chromatograph	Shimadzu	Mini 2E
(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)	NA					
(2)						
(3)						
(4)						

**11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10**

<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY  NA	<input type="checkbox"/> b. CALIBRATED BY APPLICANT Attach a separate sheet describing method, frequency and standards used for calibrating instruments.  NA
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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 checked="" type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD)  <input type="checkbox"/> (3) OTHER (Specify): _____ _____	One supplier is: Radiation Detection Co. P.O. Box 1414 Sunnyvale, CA 94088 408-735-8700  Another: Teledyne Isotopes 50 Van Buren Ave Westwood, N.J. 07675	<input type="checkbox"/> MONTHLY  <input checked="" type="checkbox"/> QUARTERLY  <input type="checkbox"/> OTHER (Specify): _____ _____

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

<input type="checkbox"/> a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC. <input type="checkbox"/> b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. <input type="checkbox"/> c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC. <input type="checkbox"/> d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.	NA
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**14. WASTE DISPOSAL**

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED	NA
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.  Device to be returned to manufacturer	

**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:

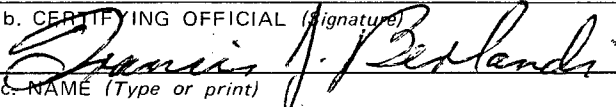
- 15. **RADIATION PROTECTION PROGRAM.** Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures *(if needed)*, day-to-day general safety instruction to be 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 <i>(See Section 170.31, 10 CFR 170)</i>  <p align="center">\$110.00</p>	b. CERTIFYING OFFICIAL <i>(Signature)</i>  c. NAME <i>(Type or print)</i> <p align="center">Francis J. Berlandi</p>
(1) LICENSE FEE CATEGORY:	d. TITLE <p align="center">President &amp; Certified Industrial Hyg</p>
(2) LICENSE FEE ENCLOSED: \$	e. DATE <p align="center">July 18, 1983</p>

## 15. Radiation Protection Program

Leak Testing will be done on receipt of and prior to shipment of device and at 6 month intervals. Collection and analysis will be done in consultation with Murray Bolton, Certified Health Physicist, MIT Radiation Safety Office, Cambridge, MA.

## 16 & 17. Formal Training in Radiation Safety & Experience

Dr. Berlandi received formal training in nuclear safety methods at the Laboratory for Nuclear Science, MIT, under the direction of Charles Coryell, Professor of Nuclear Chemistry. Additional courses and training were received at the University of Michigan, Ford Nuclear Reactor Facility, under the tutelage of W. Wayne Meinke, Professor of Nuclear Chemistry.

Dr. Berlandi established extensive education and training programs in nuclear materials handling for the Phoenix Memorial Project, University of Michigan from 1962 to 1966. He was a staff instructor for an AEC-NSF Radioisotope Handling Program. This was an eight week intensive program for college, junior college, and high school teachers to provide guidelines in using nuclear materials at their respective institutions. During two years of active duty with the US Navy at the Naval Radiological Laboratory, he was a technical investigator and duty officer in a facility dedicated to the utilization of a wide variety of nuclear materials. His research included the production of fissionable material from uranium and plutonium isotopes to determine mass-yield data.

At Teledyne Isotopes, Dr. Berlandi was Mgr., Geonuclear Department. He directly supervised over 30 personnel engaged in a broad spectrum of nuclear activities. This work included quantitative assay for alpha, beta, and gamma isotopes. The research into decay scheme characteristics of fission product gases, was also undertaken. Special nuclear assay methods were developed for the measurement of ambient level radioactivity released into the global environment from reactors, processing plants, and nuclear device tests. During his five years as manager, none of the personnel in his project were exposed to unacceptable levels of radiation including the task team performing field work at the AEC Nevada Test Site