FORM NRC-313 I (3-80) 10 CFR 30

U.S NUCLEAR REGULATORY COMMISSION

# APPLICATION FOR BYPRODUCT MATERIAL LICENSE
## INDUSTRIAL

*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.*

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

30 - 21000

X a. NEW LICENSE

b. AMENDMENT TO LICENSE NUMBER 03120

c. RENEWAL OF LICENSE NUMBER LEL 23378

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

George C. Schwaderer, Inc.

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION

(907) 338-2062

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

George C. Schwaderer, President

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION

(907) 338-2062

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

2900 Boniface Parkway, Suite 200
Anchorage, Alaska 99508

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

a. Home office primary storage same as 4.
b. Use will be at temporary job sites within the State of Alaska.

(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. | Frederick J. Schwaderer | Grade Inspector |
| b. | James S. Robar | Grade Inspector |
| c. | | |

**7. RADIATION PROTECTION OFFICER**

Frederick J. Schwaderer

*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 *(If Sealed Source)* C | MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME D |
|---|---|---|---|---|
| (1) | Cesium 137 | Sealed Source | Troxler 3411 B | One Source 8 mCi |
| (2) | Americium 241 | Sealed Source | Troxler 3411 B | One Source 40 mCi |
| (3) | | | | |
| (4) | | | | |

**DESCRIBE USE OF LICENSED MATERIAL**
**E**

(1) The sealed sources will be contained in one Troxler Electronic Laboratories
(2) Model 3411 B Moisture/Density guage to be used for measuring moisture and
(3) surface density of construction materials.
(4)

License Fee Information on file 2/23/87

Cert Ck 17068

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## 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) | Portable Moisture/Density Guage | Troxler Electronic Laboratories | 3411-B |
| (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 | | | | | |
| (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 |
|---|---|---|
| ☒ (1) FILM BADGE<br>☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD)<br>☐ (3) OTHER (Specify): _____ | United States Testing Company, Inc.<br>2800 George Washington Way<br>Richland Washington 99352<br><br>Telephone (509) 946-5157 | ☒ MONTHLY<br>☐ QUARTERLY<br>☐ OTHER (Specify): |

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

☐ a. LABORATORY FACILITIES, PL..NT FACILITIES, FUME HOODS (Include filtration, if any), ETC.

☒ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. See Attachment

☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.

☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.

## 14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED

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.

Sealed sources will be returned to the manufacturer for disposal.

## 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)* $110.00 | b. CERTIFYING OFFICIAL *(Signature)* George C. Schwaderer |
| | c. NAME *(Type or print)* George C. Schwaderer |
| (1) LICENSE FEE CATEGORY: 3-L | d. TITLE President |
| (2) LICENSE FEE ENCLOSED: $ $110.00 | e. DATE February 23, 1984 |

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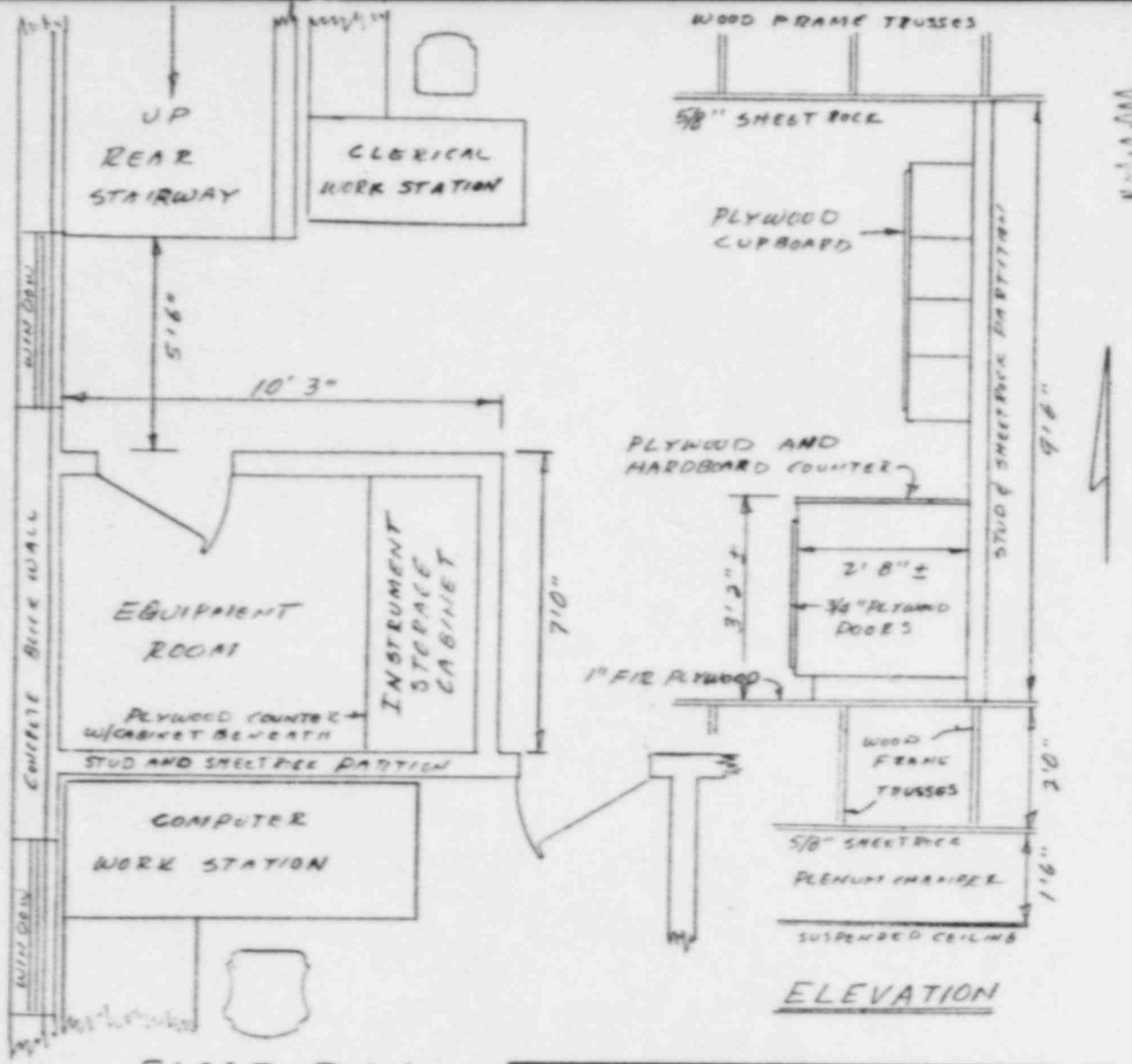
Application for BYPRODUCT MATERIAL LICENSE - INDUSTRIAL

GEORGE C. SCHWADERER, INC.

Item 13 FACILITIES AND EQUIPMENT

b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING

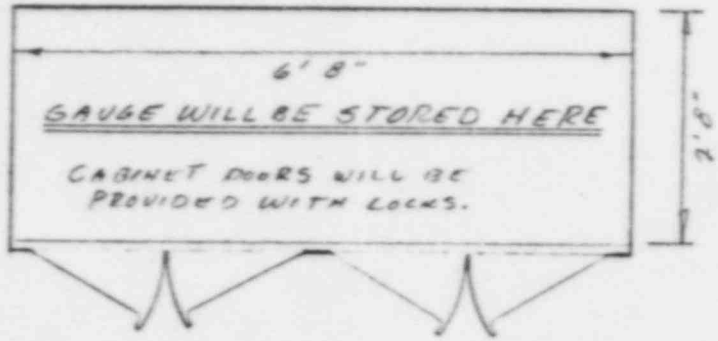
The guage will normally be stored in a locked wooden cabinet in the equipment storage room of the headquarters office at 2900 Boniface Parkway in Anchorage, Alaska. This office building is a two story concrete block structure 55 feet by 100 feet in dimension. Suite 200, the firm's office, occupies the south half of the second floor. It has a separate rear entrance and a front entrance to a central hall and stairway. Exterior doors and the interior door to the central hallway are heavy duty steel or glass and steel with dead bolt locks. The building has an electronic security and alarm system. Security for Suite 200 includes door switches at both entrances and an interior motion detector.



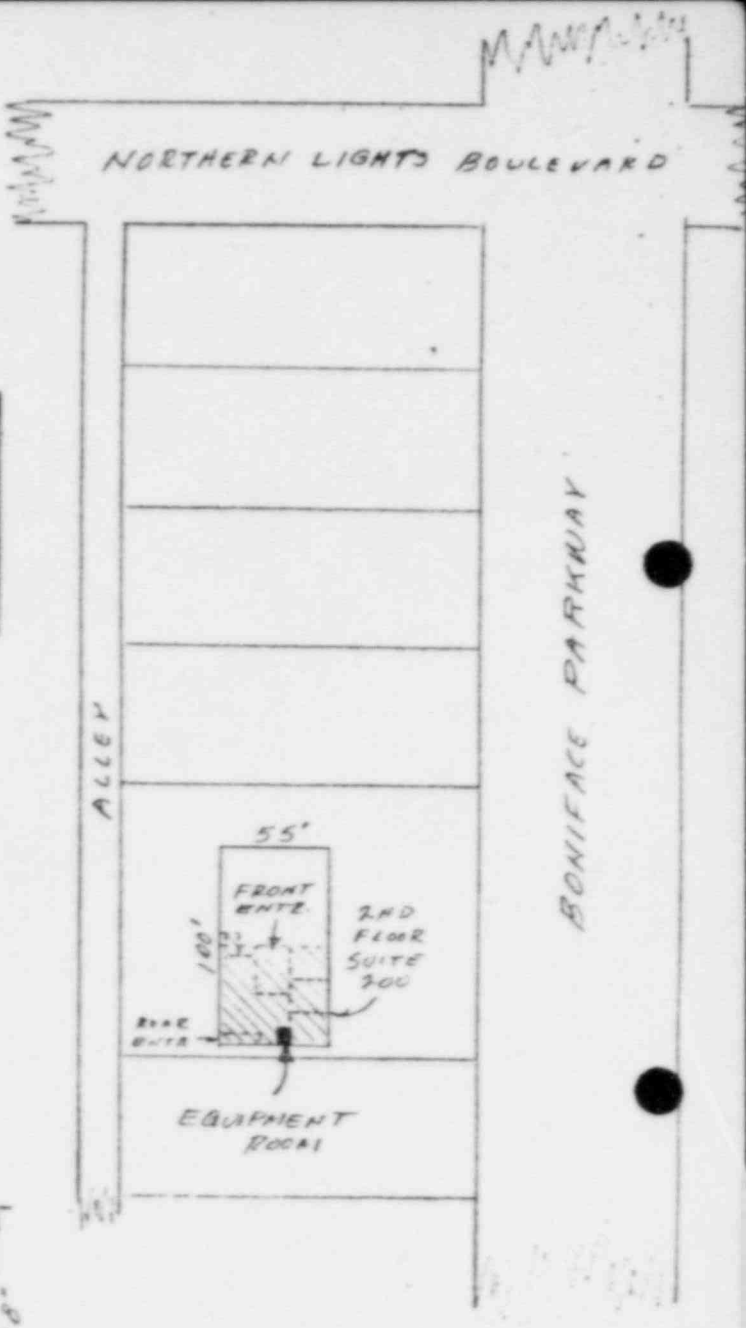

FLOOR PLAN




ELEVATION




PLAN VIEW OF CABINET




LOCATION PLAN

George C. Schwaderer, Inc.
Civil Engineers and Surveyors
2900 Boniface Parkway, Suite 200
Anchorage, Alaska 99508
(907) 338-2062

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GEORGE C. SCHWADERER, INC.

Item 15 RADIATION PROTECTION PROGRAM

A. SAFETY PROCEDURES

1. Do not operate or attempt to operate the guage unless you have been authorized to do so.

2. Do not attempt to repair, modify or open the sealed sources under any circumstance.

3. Wear a film badge at all times while operating or transporting the guage.

4. Follow operating procedures, when using the guage, in accordance with the Troxler instruction manual, the radiation control regulations and this safety program.

5. Keep unauthorized persons away from the guage.

6. Do not leave the guage unattended when in use or outside of the storage enclosure or locked vehicle.

7. Keep the guage in the "SAFE" or storage position when not in use.

8. Be sure that the guage is locked within an authorized enclosure when it is not in use. Security against the theft of a radioisotope is of utmost importance and must not be neglected. The storage enclosure must be labeled with a radiation warning sign bearing the symbol as described in 10 CFR 20.203 and the words "CAUTION RADIOACTIVE MATERIALS".

9. The guage may be only transported by authorized personnel in approved vehicles. The guage may not be transported on the front or rear seats of any vehicle. When carried in a suburban or station-wagon, the unit must be placed in the rear-most area of the vehicle. If a pickup truck is used, the guage must be locked in its shipping case and the case secured within the locked canopy or tool box bolted to the truck bed in order to prevent loss or theft.

(A. Continued)

10. If necessary to transport by common carrier, the guage will be locked in its shipping case for shipment by cargo-only aircraft and will include a Shipper's Certification for Radioactive Materials. In the event of emergency involving damage or loss the USNRC Regional Office listed in B.1.d. will be notified at the earliest opportunity.

B. EMERGENCY PROCEDURES

1. Accidents

a. In the event of possible damage to the source or source control mechanism, the operator will keep unauthorized persons at least ten feet from the gauge and prevent removal from the site until authorized by the Radiation Protection Officer or appropriate authority.

b. If there is any possibility that the source capsule might be ruptured, the location must be covered by a tarp or sheet of plastic material held down by weights to prevent scattering of radioactive material by the elements.

c. The operator must then immediately notify the Radiation Protection Officer of the incident and give an appraisal of the probable condition of the source.

d. The Radiation Protection Officer will then immediately notify the Nuclear Regulatory Commission at the following location.

Region V, U. S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
1990 N. California Blvd., Suite 202
Walnut Creek, California 94596

Daytime, night or holiday phone: (415) 932-8300

NRC will provide instructions and assistance in accordance with the circumstances of the incident.

(B. Continued)

2. Source Stolen or Lost

a. The operator must immediately notify local police or other law enforcement agency within whose jurisdiction the incident occurred.

b. The operator must also notify his Radiation Protection Officer who will notify the Nuclear Regulatory Commission office.

C. DUTIES OF THE RADIATION PROTECTION OFFICER

1. Assure compliance with all pertinent parts of the Nuclear Regulatory Commission regulations.

2. Assure compliance with the conditions in the Radioactive Materials license and amendments and items in this safety program.

3. Perform the guage leak tests at the intervals required by the Radioactive Materials License. The wipe sample will be collected using a Troxler Model 3880 leak test kit. The leak test measurement on the wipe sample will be performed by Troxler Electronic Laboratories, Inc., P.O. Box 12057, Research Triangle Park, North Carolina 27709.

4. Maintain the following items in a radiation file and keep available for inspection by the Nuclear Regulatory Commission, if requested.

(a) Current Radioactive Materials License.

(b) Copies of the license application, attachments and all pertinent correspondence referred to in the conditions of the license and amendments.

(c) Guage Source Certificate issued with the guage by the manufacturer.

(d) Film badge reports.

(e) Leak test reports.

(f) Records concerning disposal, inventory and useage of sources.

(g) Copies of this safety program.

(h) A current copy of the Nuclear Regulatory Commission regulations.

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Application for BYPRODUCT MATERIAL LICENSE - INDUSTRIAL

GEORGE C. SCHWADERER, INC.

Item 16 FORMAL TRAINING IN RADIATION SAFETY

James Robar and Frederick Schwaderer listed under Item 6 have successfully completed a comprehensive two-day training course conducted by Troxler Electronic Laboratories, Inc. Subjects covered in the sessions included:

1. Principales and practices of radiation protection.
2. Mathematics and calculations basic to the use and measurement of radioactivity.
3. Biological effects of radiation.
4. Radioactivity measurement standardization and monitoring techniques and instruments.
5. Accident and incident procedures.
6. Procedures for nuclear guage storage and transportation.
7. Leak testing procedures.
8. General safety precautions.

In addition to the above topics, one day was allotted for familiarization and operation of the Model 3411 B guage. Training focused on:

1. Instrument theory
2. Operating procedures
3. Maintenance and safety
4. Field application of operation
5. Guage calibration

Copies of Troxler training certificates for Fred Schwaderer and James Robar are attached.

# TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

Fred Schwaderer

of

George Schwaderer Engineering

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC. TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

*Radiological Safety*

1. *Principles and practices of radiation protection.*
2. *Leak testing procedures.*
3. *Mathematics and calculations basic to the use and measurement of radioactivity.*
4. *Biological effects of radiation.*
5. *Radioactivity measurement standardization and monitoring techniques and instruments.*
6. *Accident and incident procedures.*
7. *Procedures for nuclear gauge storage and transportation.*
8. *General safety precautions.*

*Gauge Operation*

1. *Instrument theory*
2. *Operating procedures*
3. *Maintenance*
4. *Field application*
5. *Gauge calibration*

INSTRUCTOR

4/7&8/81
DATE

Wm. F. Troxler
PRESIDENT

# TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

James Robar

of

George Schwaderer Engineering

HAS SUCCESSFULLY COMPLETED THE TROXLER ELECTRONIC LABORATORIES, INC. TRAINING COURSE FOR THE USE OF NUCLEAR TESTING EQUIPMENT.

SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

*Radiological Safety*

1. *Principles and practices of radiation protection.*
2. *Leak testing procedures.*
3. *Mathematics and calculations basic to the use and measurement of radioactivity.*
4. *Biological effects of radiation.*
5. *Radioactivity measurement standardization and monitoring techniques and instruments.*
6. *Accident and incident procedures.*
7. *Procedures for nuclear gauge storage and transportation.*
8. *General safety precautions.*

*Gauge Operation*

1. *Instrument theory*
2. *Operating procedures*
3. *Maintenance*
4. *Field application*
5. *Gauge calibration*

INSTRUCTOR

4/7&8/81
DATE

Wm. F. Troxler
PRESIDENT

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Application for BYPRODUCT MATERIAL LICENSE - INDUSTRIAL

GEORGE C. SCHWADERER, INC.

Item 17 EXPERIENCE

Fred Schwaderer and James Robar have successfully completed the TROXLER ELECTRONICS LABORATORIES program outlined under Item 16. Radioactive materials are those listed under Item 8 with the corresponding activity of each material as noted.

Neither Fred Schwaderer nor James Robar have had experience with radiation subsequent to completion of the Troxler training course.

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