

FORM NRC-313 I (1-79) 10 CFR 30  <b>APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL</b>  <i>See attached instructions for details.</i>  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>1. APPLICATION FOR:</b> (Check and/or complete as appropriate)	
		X	a. NEW LICENSE
			b. AMENDMENT TO: LICENSE NUMBER
			c. RENEWAL OF: LICENSE NUMBER <u>646 19271</u>
<b>2. APPLICANT'S NAME</b> (Institution, firm, person, etc.) Herbert & Associates, Ltd. 420-2797 (804) TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION		<b>3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION</b> John A. Herbert <u>03120</u> TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION 420-2797 (804) <u>30-17249</u>	
<b>4. APPLICANT'S MAILING ADDRESS</b> (Include Zip Code) Herbert & Associates, Ltd. P. O. Box 64758 Virginia Beach, Virginia 23464		<b>5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED</b> (Include Zip Code) 808-R S. Military Hwy., Va. Rch., Va. & temporary jobsites within NRC jurisdiction	
(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)			
<b>6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL</b> (See Items 16 and 17 for required training and experience of each individual named below)			
FULL NAME		TITLE	
a. Page Arnold Herbert, Sr., PE, CPG		Vice President	
b. John Austin Herbert, CET		President	
c. David Thomas Gillen		Inspector	
<b>7. RADIATION PROTECTION OFFICER</b> John A. Herbert, C.E.T.		Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.	
<b>8. LICENSED MATERIAL</b>			
LINE NO.	ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	NAME OF MANUFACTURER AND MODEL NUMBER (If Sealed Source)
A	B	C	D
(1)	Cs 137	Sealed source	Troxler Drawing #102112
(2)	Am241:Be	Sealed source	Troxler Drawing #102451
(3)			
(4)	8507260117 850626 REG2 LIC30 45-19271-01	PDR	
DESCRIBE USE OF LICENSED MATERIAL E			
(1)	For use in Troxler 3400 series Moisture-Density gauge to measure		
(2)	properties of construction materials		
(3)			
(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)	Moisture/Density Gauge	Troxler Electronic Lab	3400 Series
(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					
(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.

### 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	R.S.Landauer, Jr., Co. Glenwood Science Park Glenwood, Illinois 60425  or Atlantic X-Ray Service, Inc. 221 Pennsylvania Avenue Virginia Beach, Virginia	<input checked="" type="checkbox"/> MONTHLY
<input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD)		<input type="checkbox"/> QUARTERLY
<input type="checkbox"/> (3) OTHER (Specify): _____		<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

Sources will be returned to manufacturer

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.

# 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.

Applicant...	3605
Check No...	8110 (3L)
Amount/Fee Category	Application
Type of Fee	Application
Date Check	JAN 27 1980
Received By	Ohom

## 18. CERTIFICATE

(This item must be completed by applicant)

RECEIVED BY LFMB	
Date	JAN 22 1980
By	John A. Herbert
App. To	John A. Herbert
Action Compl.	1/22/80

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)
Application \$110.00	John A. Herbert
(1) LICENSE FEE CATEGORY:	c. NAME (Type or print)
Category 3.L	John A. Herbert
(2) LICENSE FEE ENCLOSED: \$	d. TITLE
110.00	President
	e. DATE
	January 3, 1980

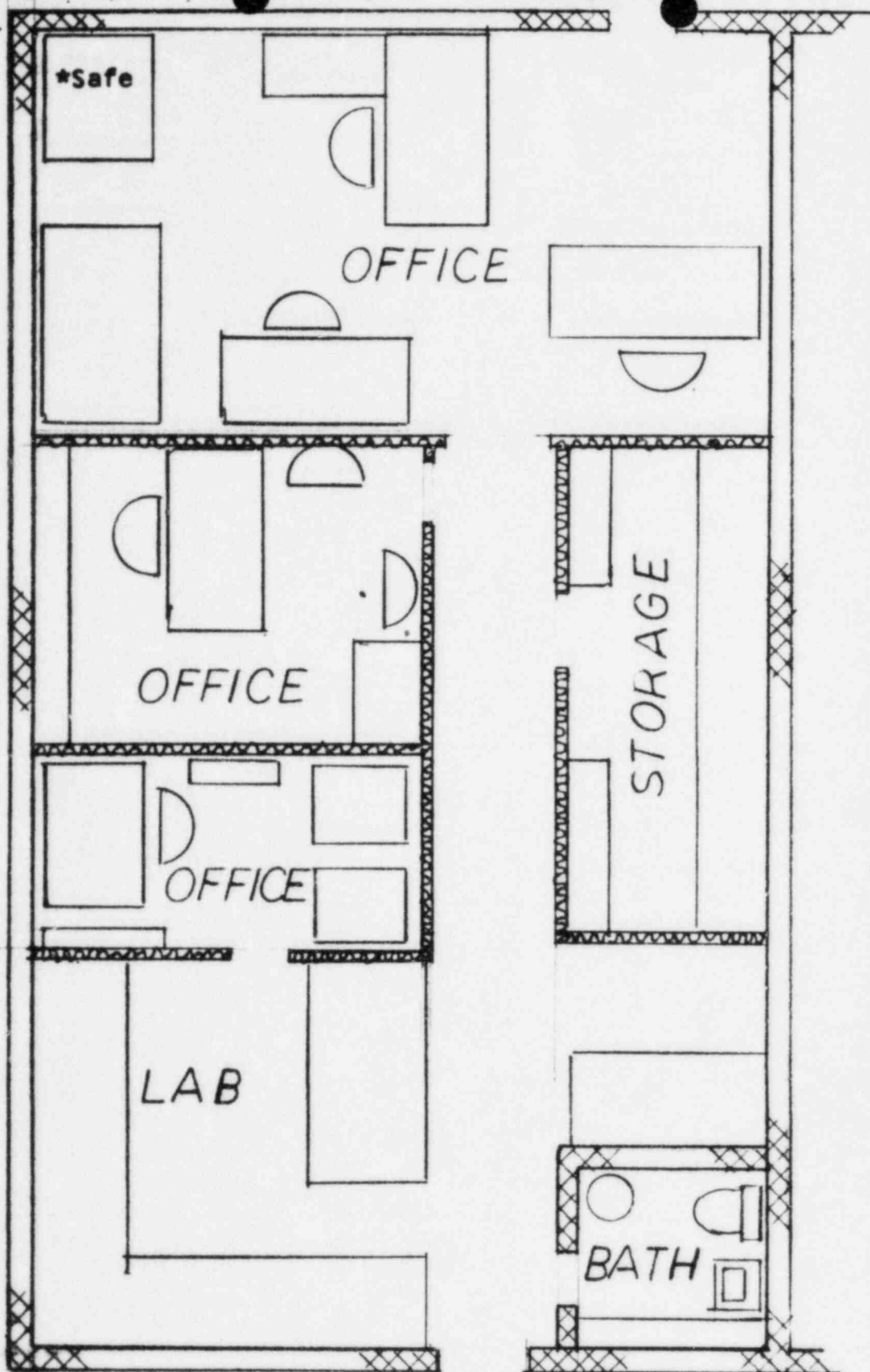
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7. RADIATION PROTECTION OFFICER

John A. Herbert, reporting to management on radiation safety matters, should coordinate:

- 1) The safe use of the gauges.
- 2) Assure compliance with the requirements of Title 10 CRF Parts 19, 20, 30, or applicable state regulations, and all applicable US DOT regulations.
- 3) Assure byproduct materials possessed under the license are in conformity to materials listed on the license.
- 4) Assure that use of devices (particularly in the field) is only by persons named as users on the license.
- 5) Assure all users wear personnel monitoring while using gauges.
- 6) Assure gauges are properly secured against unauthorized removal at all times.
- 7) To serve as point of contact and give assistance in case of emergency - to insure all proper authorities are notified promptly in case of accidents.
- 8) Assure that terms conditions of license are met such as:
  - a) Periodic leak tests are performed.
  - b) All required records are kept and reviewed periodically for compliance with regulations - these include source certificate, leak test records, personnel exposure records, and transfer of radioactive materials.
- 9) Perform leak tests every 6 months as required and as recommended by the instrument manufacturer. Using Troxler Electronic Lab. Leak test kit model 3880.

Mr. John Herbert has two years experience using the Troxler model #1401 and has completed the Troxler Electronic Laboratories, Inc. 2 day training course - January 1979.



\* Safe - 22.5 cubic foot, lined, concrete & steel safe to be used for storage of the Nuclear Gauge when not in use in the field.

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15) HANDLING PROCEDURES

The Troxler instruments were designed with operator safety as a prime consideration; however, as with any piece of potentially hazardous equipment, some general precautions should be observed.

- 1) Do not operate or attempt to operate the instrument unless you have been authorized to do so.
- 2) Keep the source position in the "SAFE" or stored position when not in use.
- 3) Wear a film badge when using or transporting the instrument.
- 4) While exposure dose levels are well within limits for radiation workers, never expose yourself to the bare source without sufficient reason or justifications of the additional dose.
- 5) Keep all unauthorized persons out of the operating area. A suggested distance is 5 meters or 15 feet. The general public must not be unnecessarily exposed to radiation.
- 6) Maintain security of the instrument at all times. The source lock should be in place when not in use and the instrument should be kept in a locked vehicle when transported. When stored, the area should be locked. Not only is it an expensive piece of equipment but, if stolen, could be abandoned under conditions which could be hazardous.
- 7) Every user organization has standard operating procedures; the operator should follow those procedures and report any that he feels are unsafe.
- 8) Insure that the gauge has had leak tests performed at the intervals required by your Radioactive Materials License.
- 9) If you have any doubts about use of the instrument, ASK. Your Radiological Safety Officer either has the answer or can obtain one.
- 10) The operator must not leave the instrument unattended while at temporary job - sites.
- 11) The operator will not attempt repair of the instrument involving removal of the source holder.

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15. continued

G. TRANSPORT BY PRIVATE MOTOR VEHICLE

The equipment, in its container, may be transported by motor vehicle under the "YELLOW II" label without placarding the vehicle as required by 49 CFR 177.823.

The lock should be in place and the container placed in a portion of the vehicle which can be locked. When not in transit the equipment should be stored in a secured area.

Since the container has a Transport Index of 0.1 or greater it may not be stored less than 30 centimeters from passengers per 49 CFR 174.586. It also should not be stored for more than 8 hours at less than 1 meter from undeveloped film.

H. It is the final responsibility of the gauge owner to obtain copies of regulations which apply to his situation and comply with them.

I. STANDARD OPERATING PROCEDURES

- 1) The radiation protection officer will on a monthly basis review the handling procedures as outlined in our application for license and also give to the individuals who are allowed to work with the instrument their results from the film badges.
- 2) The radiation protection officer will check out the instrument with the individual using it for a particular day as to insure the individual has his film badge and all other related equipment. Also makes sure that the individual's schedule is known at the office so that we know where the instrument is at all times.
- 3) The actual operation of the instrument will follow the manufacturer's recommendations as outlined in their instruction manual and what was learned in their training courses.
- 4) At the end of the day the instrument will be checked in and put back in its proper storage place.
- 5) The radiation protection officer will perform the leak test every 6 months.
- 6) The radiation protection officer will keep the records of the results of the film badges.

Application of Herbert and Associates, Ltd.

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B. SECURITY

Regulations require that locks be maintained on radiographic equipment to prevent accidental exposure of a sealed source when not under the direct supervision of approved personnel. In addition, storage containers shall be physically secured to prevent rampering or removal by unauthorized personnel.

C. PERSONNEL MONITORING

The licensee should not permit any person to use this equipment unless at all times the user is in the possession of a film badge or other form of dosimetry.

The film badge requirement may be waived upon application by the licensee if it can be demonstrated that the waiver is authorized by law and will not result in undue hazard to life or property.

D. RECORDS AND REPORTS

1. Each licensee should conduct a quarterly physical inventory to account for all sealed sources received and possessed under his license. The inventory record should be maintained for inspection.
2. Each licensee shall have all sealed sources leak tested at the interval required by the license. When transferred, in the absence of a leak test certificate, the source shall not be put into use until tested.
3. Reports from film badge service must be maintained for inspection.
4. When an individual terminates employment with a licensee, a record of his total received dose must be made available to the employee.

E. INCIDENTS

1. The licensee must report any theft or loss of licensed material by telephone or telegram to the appropriate agency, including the appropriate state agency. Within 30 days after the loss, a written report must be filed giving detailed description of the source, circumstances of the loss, statement of disposition, possible radiation exposures or hazard, actions taken to recover the source, and procedures which will be implemented to prevent a recurrence of the loss of theft.

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2. The licensee must report any overexposure of operators which exceeds the limits given in 10 CFR part 20, detailing circumstances of the exposure and possible injury.

F. HANDLING AND EMERGENCY PROCEDURES

1. No personnel may transport or use the nuclear gauges unless the individual has been approved by the radiological safety officer and the requirements of these procedures are met.
2. Each user must demonstrate their ability to correctly and safely use the nuclear gauge.
3. At the termination of each field use, the nuclear gauge will be transferred to its regular storage area.
4. In the event of physical damage to a gauge, a six (6) feet radius exclusion area should be maintained until the extent of source damage (if any) is determined. If a vehicle is involved, it must be stopped and remain stopped until the extent of contamination hazard (if any) is determined. If visual examination of the instrument and source indicates damage to the source, including fracture of the weld, the appropriate authorities and Troxler Electronic Laboratories, Inc. should be notified. The instrument may be removed from the site by using a shovel or other long handled instrument and place in a suitable container such as a metal drum. Provisions should be made to have the site surveyed for possible contamination after the instrument is removed. Disposition by the factory, as covered later, could be arranged after a leak test had been performed to determine the integrity of the source before shipment back to the factory.
5. Immediate telephone notification must be made to the following in the event of accident (4 above) or the loss of a sealed source, whether accidental or due to theft.
  - A. Company Radiological Safety Officer
  - B. NRC Regional Office if applicable
  - C. State Health Department  
Radiological protection division if applicable
  - D. Local Authorities  
Fire dept., sheriff, police, state highway patrol,  
if necessary
  - E. Troxler Electronic Laboratories, if necessary

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16. FORMAL TRAINING IN RADIATION SAFETY

Page Arnold Herbert, Sr., P.E., C.P.G. -

Mr. Herbert is a registered Professional Engineer with over 24 years experience in the soil testing business. He has worked with the Troxler Model 1401 for nearly 12 years. He is a graduate Geologist, trained in identification and utilization of both natural and artificial radiation sources. U. S. Army, 1957, research scientist in Chemical Warfare with radioactive tracers and highly classified radiation sources. Registered Fallout Shelter Analyst, certificate number 211-3253-65, and as such has been trained in all phases of radiation control.

John Austin Herbert, C.E.T. -

Mr. John Herbert has two years experience using the Troxler model #1401 and has completed the Troxler Electronic Laboratories, Inc. 2 day training course - January 1979.

David T. Gillen -

Mr. Gillen has approximately three years experience with using the Troxler model 1401 and has completed the Troxler Electronic Laboratories, Inc., 2 day training course - June 1979.

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**17. EXPERIENCE**

**Page Arnold Herbert, Sr., P.E., C.P.G. -**

Mr. Herbert is a registered Professional Engineer with over 24 years experience in the soil testing business. He has worked with the Troxler Model 1401 for nearly 12 years. He is a graduate Geologist, trained in identification and utilization of both natural and artificial radiation sources. U. S. Army, 1957, research scientist in Chemical Warfare with radioactive tracers and highly classified radiation sources. Registered Fallout Shelter Analyst, certificate number 211-3253-65, and as such has been trained in all phases of radiation control.

**John Austin Herbert, C.E.T. -**

Mr. John Herbert has two years experience using the Troxler model #1401 and has completed the Troxler Electronic Laboratories, Inc. 2 day training course - January 1979.

**David T. Gillen -**

Mr. Gillen has approximately three years experience with using the Troxler model 1401 and has completed the Troxler Electronic Laboratories, Inc., 2 day training course - June 1979.