

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

1. APPLICATION FOR:

(Check and/or complete as appropriate)

☒ a. NEW LICENSEb. AMENDMENT TO:
LICENSE NUMBERc. 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.)

LESTER B. KNIGHT & ASSOCIATES, INC.

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
(312) 346-2100

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

JAMES B. GUNRAJ

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
(312) 346-2100

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

549 W. RANDOLPH
CHICAGO, ILLINOIS 606065. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED
(Include Zip Code)

At address listed in Item #4 and at temporary jobsites anywhere NRC maintains jurisdiction.

(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. JOHN NOWAKOWSKY

RESIDENT ENGINEER

b.

c.

7. RADIATION PROTECTION OFFICER

JOHN NOWAKOWSKI

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)	Cs 137	Sealed Source	Troxler Drawing #102112	No Source to exceed 9 mCi
(2)	Am241:Be	Sealed Source	Troxler Drawing #102451	No Source to exceed 40 mCi
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL
E

(1) For use in Troxler 3400 series Moisture-Density gauge to measure properties of
(2) construction materials.

(3) 8506110669 850523
REQ3 LIC30
12-18922-01 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)	Moisture Density Gauge	Troxler Electronics	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	
<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY N/A	<input type="checkbox"/> 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 P1 <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD) <input type="checkbox"/> (3) OTHER (Specify): _____	R.S. Landauer, Jr. Co. Glenwood Science Park Glenwood, Illinois 60425 (312) 755-7000	<input checked="" 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).)	
<input type="checkbox"/> a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (include filtration, if any), ETC. <input checked="" 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.	

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.

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.

<p>a. LICENSE FEE REQUIRED (See Section 170.31, 10 CFR 170)</p> <p>application: \$110.00</p>	<p>b. CERTIFYING OFFICIAL (Signature) </p> <p>c. NAME (Type or print) David A. Novick</p>
<p>(1) LICENSE FEE CATEGORY: Category 3.L</p>	<p>d. TITLE Executive Vice President</p>
<p>(2) LICENSE FEE ENCLOSED: \$ 110.00</p>	<p>e. DATE April 4, 1980</p>



ATTACHMENT TO APPLICATION FOR
BYPRODUCT MATERIAL LICENSE - INDUSTRIAL

LESTER B. KNIGHT & ASSOCIATES, INC.
549 W. Randolph Street
Chicago, Illinois 60606

SUPPLEMENTARY INFORMATION

6. Only those personnel, who as a minimum, have completed the manufacturer's training or equivalent, demonstrated their knowledge in the safe use of the equipment and have been designated by the Radiation Protection Officer will be allowed to operate the equipment.

7. RADIATION PROTECTION OFFICER RESPONSIBILITIES

John Nowakowsky, reporting to management on radiation safety matters, will coordinate:

1. The safe use of the gauges.
2. Assure compliance with the requirements of Title 10 CFR, 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 under the license or persons who have completed acceptable training.
5. Assure all users wear personnel monitoring devices (when required) 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.

15. RADIATION PROTECTION PROGRAM

A. 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 or other dose measurement device 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 for justification 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.

B. SECURITY

Regulations required 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 tampering or removal by unauthorized personnel.

C. PERSONNEL MONITORING

The licensee must 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 must conduct a quarterly physical inventory to account for all sealed sources received and possessed under his license. The inventory record must be maintained for inspection.
2. Each licensee must 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 must 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 or theft.
2. The licensee must report any overexposure of operators which exceeds the limit given in 10 CFR Part 20, detailing circumstances of the exposure and possible injury.

F. HANDLING AND EMERGENCY PROCEDURES

1. No personnel will 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 his 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. must be notified. The instrument may be removed from the site by using a shovel or other long handled instrument

and placed in a suitable container such as a metal drum. Provisions must be made to have the site surveyed for possible contamination after the instrument is removed. Disposition by the factory, as covered later, must be arranged after a leak test has 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

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 CFT 177.823.

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

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

TROXLER ELECTRONIC LABORATORIES, INC.

HEREBY CERTIFIES THAT

RAYMOND PITULA

of

LESTER B. KNIGHT & ASSOCIATES, INC.

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

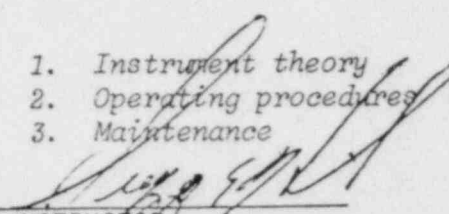
SUBJECTS INCLUDED IN THIS COURSE WERE AS FOLLOWS:

Radiological Safety

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

Gauge Operation

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


INSTRUCTOR

Gregg E. Hicks

5/6/80

DATE

William F. Troxler

PRESIDENT

N. CLINTON STREET

