

APPLICATION FOR BYPRODUCT MATERIAL LICENSE  
INDUSTRIAL

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

a. NEW LICENSE

x b. AMENDMENT TO:  
LICENSE NUMBER  
12-20056-01

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.)

UNITED CONVEYOR CORPORATION

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION  
(312) 948-0400

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

ROBERT W. KUBY

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION  
(312) 948-0400

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

(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)

300 WILMOT ROAD  
DEERFIELD, IL. 60015

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

300 WILMOT ROAD, DEERFIELD, IL. 60015  
and temporary job sites of the applicant  
in all states under NRC 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. ROBERT W. KUBY

PROJECT ENGINEER

b.

c.

7. RADIATION PROTECTION OFFICER

ROBERT W. KUBY

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 MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME  D
(1)	C <sub>S</sub> -137	Sealed source	Texas Nuclear Model 570-571-57C	(1) 1000 millicuries
(2)				
(3)				
(4)				

DESCRIBE USE OF LICENSED MATERIAL  
E

(1) See Attachment 8E

(2)

(3)

8604070053 860124  
REG3 LIC30  
12-20056-01 PDR

# 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 an 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)

\$40.00

b. CERTIFYING OFFICIAL (Signature)

*Robert W. Kuby*

c. NAME (Type or print)

ROBERT W. KUBY

d. TITLE

PROJECT ENGINEER

(1) LICENSE FEE CATEGORY: 3L

(2) LICENSE FEE ENCLOSED: \$ 40.00

e. DATE

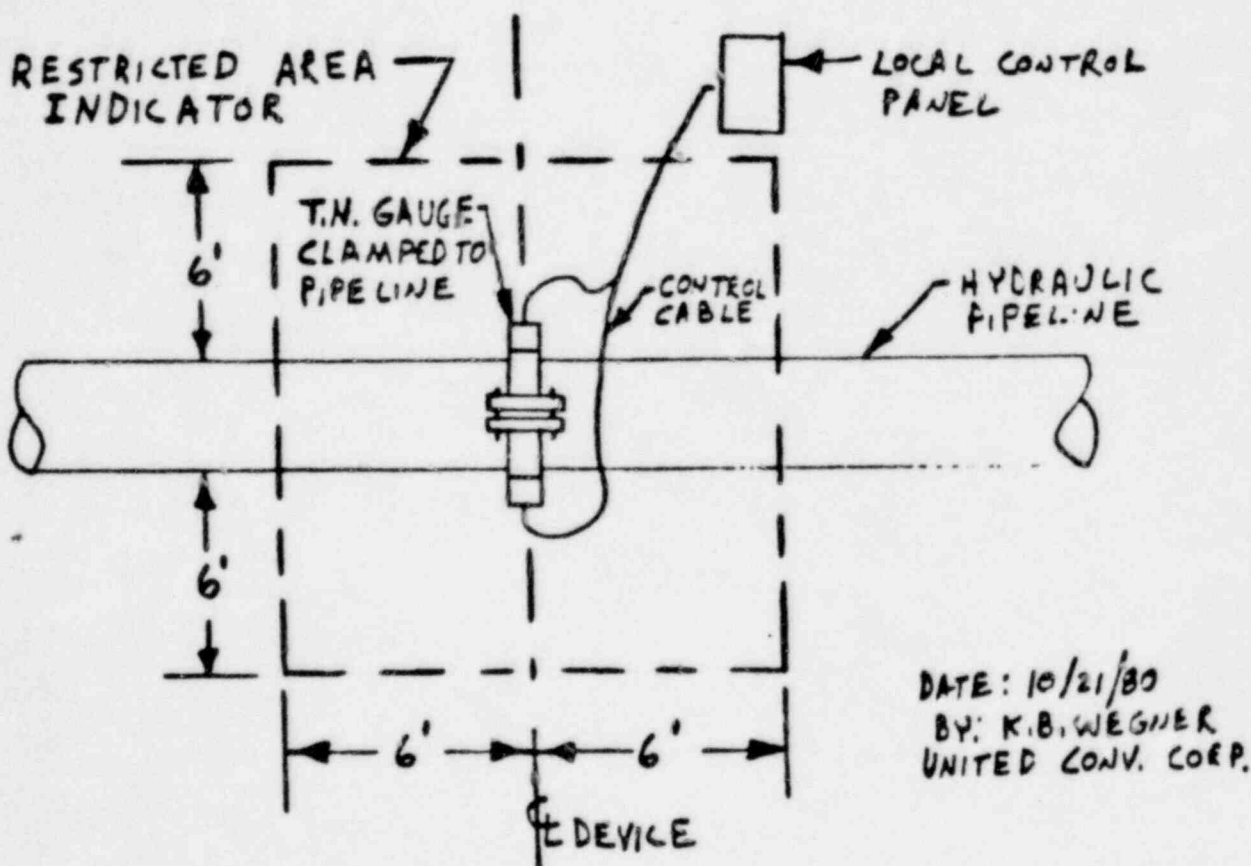
7/14/82

# ATTACHMENT 8E

The device will be used for laboratory and field testing of material flow rates through hydraulic pipe lines. The device will be attached to a section of pipe (and removed) by the applicant's radiation safety officer.

The location of the device will be in an area out of the mainstream of plant personnel involvement. The immediate area surrounding the device will be zoned off limits in accordance with plant safety procedures for a minimum of six feet in all directions of accessibility (platforms and walkways). See sketch below.

There are no severe environmental conditions that can affect the integrity of the source and shielding. All environmental factors have been presented to the manufacturer for evaluation prior to specifying these devices.



INSTALLATION SKETCH

ATTACHMENT 11

CALIBRATION OF INSTRUMENT LISTED IN ITEM 10

Calibration of the survey meter will be by Texas Nuclear initially, when instrument repairs are made and when the check source readings do not agree.

ATTACHMENT 12A

No additional personnel monitoring devices need be utilized due to the presence of these gauging devices. The source holder(s) are designed such that radiation levels will be less than 5mR/h one foot from any accessible surface at the maximum source loading for the device with the device in the OFF position. When these devices are installed in their designed configuration on the pipes and the shutter(s) opened, the radiation levels will still be less than 5mR/h one foot from any accessible surface. It is not likely, when consideration is given to the totally enclosed radiation beam area and to the precautions given below, that any individual will receive a radiation exposure in excess of 0.125 rem per calendar quarter.



ATTACHMENT 15

RADIATION PROTECTION PROGRAM

Based upon working conditions and physical accessibility, we estimate that no persons would routinely be within three feet of any of these devices one hour per week.

Our personnel will be instructed that they are not to remove the source holder under any circumstances. There is no access to the beam area as long as the source holder is installed.

The applicant's Radiation Protection Officer will perform the initial radiation survey and leak testing at the time of installation. This training will include construction features of the device, source integrity, beam geometry and intensity and operating details of the device. Any precautionary steps like the addition of shielding, signs, or precautions to be taken will be covered at the time in accordance with Texas Nuclear installation procedures and training.

The source holder (Model 5191) will be tested for source integrity at least once every three years. Leak testing will be performed by Texas Nuclear Procedure QT/1K.

In the event some catastrophic emergency occurs and this device may be involved, we will notify Texas Nuclear and await further instructions.

Any repair, maintenance, or disposal of the source holder(s) will be done by Texas Nuclear personnel.

ATTACHMENT 16

FORMAL TRAINING IN RADIATION SAFETY

The applicant's Radiation Protection Officer has attended and successfully completed a course given by Texas Nuclear. A letter of certification, certificate of training and course agenda are attached.

ATTACHMENT 17

EXPERIENCE

The applicant's Radiation Protection Officer has participated in the installation of two density gauges under the supervision of authorized Texas Nuclear personnel. Both laboratory and field installations of  $C_{S-137}$  sources were involved.





## LETTER OF CERTIFICATION

This is to certify that

ROBERT W. KUBY

United Conveyor Corp.

has attended and successfully completed a course of instruction, conducted under the auspices of Texas Nuclear Corporation and described in the attached Course Agenda. The course covers fundamentals of radiation, units of dose and quality of radiation fields, hazards of radiation exposure, detection devices, regulatory controls, industrial devices and specific training on installation and leak testing of Texas Nuclear density, level and weigh gauges.

The said course of instruction, together with prior experience, is structured to qualify persons who complete it to understand and safely perform various operations involving nuclear devices including the installation, relocation and leak testing of such equipment. The operations are to be done in accordance with the rules and regulations of the United States Nuclear Regulatory Commission and/or "Agreement States", and are in all respects subject to such rules and regulations.

This letter cannot be used in lieu of a specific license from or other sanction by an appropriate regulatory agency.

TEXAS NUCLEAR CORPORATION

W. G. Hendrick  
Health Physicist

CONTROL NO. 80195

# Certificate Of Training

This is to certify that

ROBERT W. KUBY

Has Successfully Completed a Radiation Safety Training Course  
presented by Texas Nuclear Corporation.



Issued 25TH Day Of JANUARY 19 82

W. Hendrick  
Health Physicist  
Tom Gruenewald  
President

AGENDA

RADIATION SAFETY TRAINING COURSE  
AGENDA

First Day's Session

Introduction

1. Contents and Purpose of Course
2. Agenda

Review of Preparation Material

Atomic Structure

1. Nomenclature
2. Periodic Table

Coffee Break

Radioactive Materials

1. Isotopes
2. Radioactivity
3. Decay
4. Half-Life

Lunch

Radiation Interaction with Matter

1. Ionizing Radiation
  - a. electromagnetic
  - b. charged particle
  - c. neutron
2. Specific Ionization

Coffee Break

Radiation Dosimetry

1. Definitions and Units of Dose
2. Quality Factor

HAPPY HOUR

Homework Assignment -

- Read over work covered.  
Study new definitions and concepts.

## Second Day's Session

### Question and Answer Session

#### Radiation Dosimetry (Continued)

3. Gamma Exposure Rate
4. Neutron Exposure Rate

### Coffee Break

#### Biological Effects

1. Dose Limits
2. Radiation Protection Guides

### Lunch

### Radiation Detection

#### Detection Instruments

1. Basic Operation
2. Ionization Chambers
3. Geiger-Mueller Instruments
4. Neutron Detectors

### Personnel Dosimetry

### Coffee Break

#### Distance, Time, Shielding

1. Inverse Square Law
2. Half-Value Layer

### Discussion and Review

### Homework Assignment -

- Complete Part I of Radiation Safety Manual.
- Complete Study Quiz I.
- Briefly look over Part II of Manual.



### Third Day's Session

#### Question and Answer Session

#### Working Definitions

#### Licensing

1. Title 10 Code of Federal Regulations
2. Agreement States
3. Specific License

#### Radiation Area and Posting

#### Coffee Break

#### Device Installation

1. Requirements
2. Format
3. Responsibility

#### Lunch

#### Shipping Radioactive Material

1. Definitions
2. Classification
3. Labels

#### Coffee Break

#### Occupational Safety & Health Act

#### Emergency Procedures

1. Guidelines
2. Fire or Explosion
3. Incident Report

#### Homework Assignment -

Read Part II of Radiation Safety Manual.  
Complete Study Quiz II on regulations.  
Material Review for Exam.



Fourth Day's Session

Question and Answer Session

Written Test on Lectures and Homework Assignments

Travel to Texas Nuclear

Laboratory Work at Texas Nuclear Corporation

1. Check-out and briefing on use of portable radiation survey meters.
2. Survey density, level and belt weigh devices.
3. Leak test devices using QT/IS procedure
  - a. count swabs
  - b. prepare leak test certificates

Class Discussion on Remaining Questions

ADJOURNMENT

### INDUSTRIAL DEVICE INSTALLATION

"Installation" means the placement of, or supervising the placement of, the source containing components of a measurement system in an operable use condition. Some devices are shipped and authorized so that the user may already have physically mounted the device. If this is the case, proceed with the installation surveying, leak testing and instructing of the user personnel. If the device is not authorized for the user to physically mount, then installation starts with the shipping container. Each separate placement or relocation is to be construed as a new installation.

Installation of industrial devices may be conducted only by those persons specifically licensed to perform this work. The installer must be equipped with an appropriate survey meter for the type of source utilized, a source to verify the meter operability and accuracy, calibrated leak test standard, and must be physically present at the site during the entire operation.

1. Survey the shipping box or crate at the storage location to insure that the radiation levels are the same as indicated by the shipping labels. If you find significant differences (e.g., +50%), remove any customer personnel from the immediate area and suspect shipping damage. If you are going to need any equipment to move the head for examination, make sure it is available before proceeding. If it is going to be necessary to work in areas with radiation levels in excess of 100 mrem/h, control the area physically and call Texas Nuclear before proceeding.
2. Remove the outer cover of the box or shipping crate but do not remove the unit from the base skid. Visibly inspect the unit for transportation damage to the shutter assembly, locking mechanism and correctness of labeling. Verify by radiation survey that the shutter is fully closed.
3. If visible damage is evident, the unit should be leak tested for contamination. Damage or any degree of contamination precludes installation and Texas Nuclear Health Physics should be notified immediately. Following this inspection, the device may be transported to job location and mounted.
4. A radiation survey will be made by the installer in accordance with the appropriate survey pattern sheet and the original furnished the user as a permanent record. Generally, all radiation levels measured around an installed device must be less than 5 mR/h one foot from any accessible surface. If this is not the case evaluate the installation for additional shielding needs and make user aware of posting requirements.
5. The installer will conduct a leak test and complete the appropriate leak test certificate. The original should be furnished the user as a permanent record.
6. The installer will insure that individual users are furnished the applicable training, paperwork and information called for on the check list titled "Customer Training For Use of Measuring Devices".

Y LETTERED POINTS ARE ONE FOOT FROM THE SURFACE OR AT THE SURFACE.

GEIGER TUBE TYPE SURVEY METERS MAY NOT HAVE SUFFICIENT RANGE TO TAKE SURFACE READINGS ON SOME SITUATIONS. IN SUCH CASES, USE ION CHAMBER TYPE SURVEY METER OR TAKE READINGS AT ONE FOOT.

COMPLETED, DATED AND SIGNED, THIS CERTIFICATE SHOULD BE MAINTAINED AS A PERMANENT RECORD.

# DENSITY GAUGE RADIATION SURVEY CERTIFICATE

LOCATION \_\_\_\_\_

LEAD MOD. NO. \_\_\_\_\_

LEAD SER. NO. \_\_\_\_\_

\_\_\_\_\_ mCi \_\_\_\_\_ CS137, \_\_\_\_\_ CO60

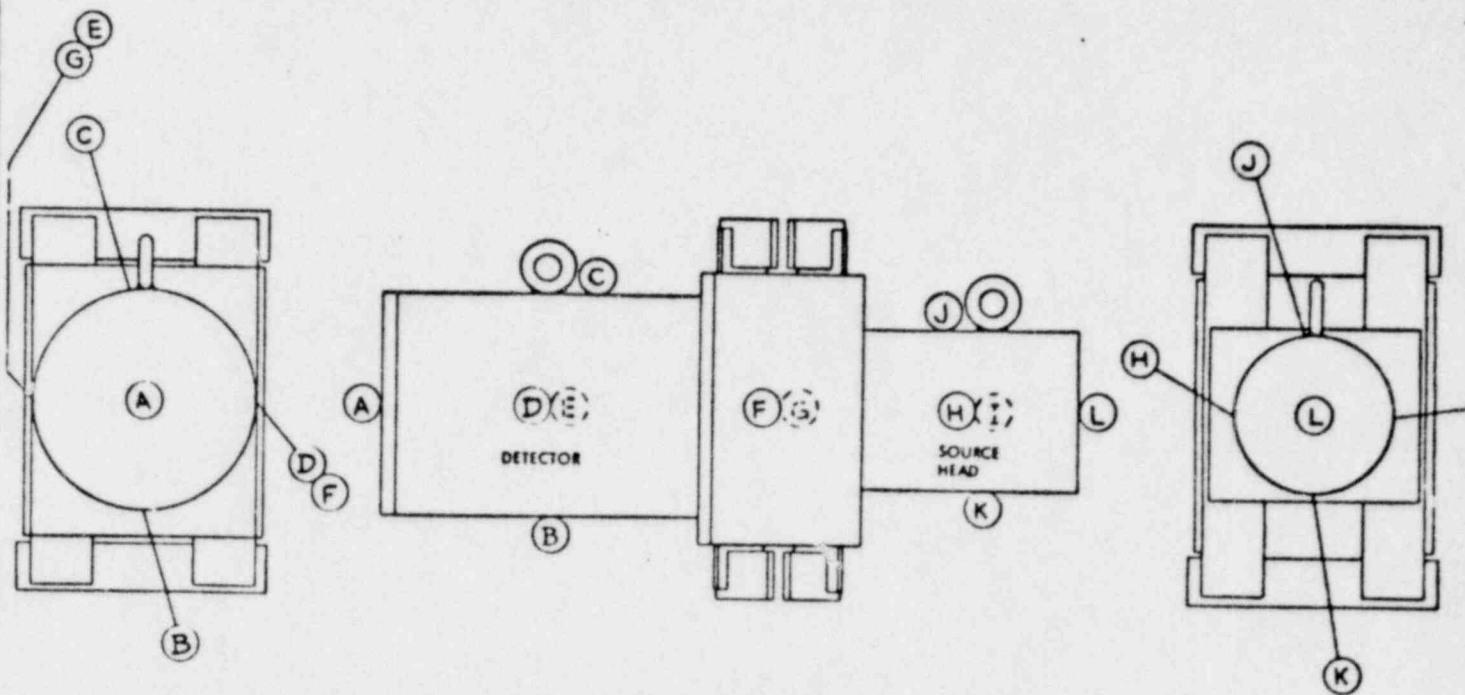
G INSTRUMENT \_\_\_\_\_

TAKEN: \_\_\_\_\_ AT SURFACE, \_\_\_\_\_ AT ONE FOOT

(ONLY AFTER RESULTS RECORDED) DATE \_\_\_\_\_

NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_



	mR/h											
SHUTTER	A	B	C	D	E	F	G	H	I	J	K	L
OPEN												
CLOSED												

PIPE FULL ☐ PIPE EMPTY ☐

CLEAR  
AT 183, AUSTIN TEXAS 78764  
2) 836-0801; TELEX: 77-6413