

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

See attached instructions for details.

a. NEW LICENSE

b. AMENDMENT TO:
LICENSE NUMBER

c. RENEWAL OF:
LICENSE NUMBER

X 25-16250-01

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

Conoco Inc.

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
406-252-3841

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

Dean A. Lindberg, Chief Chemist

TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION
406-252-3841 Ext 2561

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

401 South 23rd, Box 2548
Billings, Montana 59103

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

401 South 23rd
Billings, Montana 59103
Temporary job sites in state of Montana

(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. Dean A. Lindberg

Chief Chemist

b. Michael S. Malone

Senior Mechanical Inspector

c. John M. Spartz

Assistant Chief Chemist

7. RADIATION PROTECTION OFFICER

Dean A. Lindberg

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 ACTI- VITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
A	B	C	D	
(1)	Americium-241	Sealed source	Amersham-Searle Model ARC 2630	14 millicuries/source
(2)	Plutonium-238	Sealed source	Texas Nuclear Model 57-57242B	One source of 30 millicuries
(3)	Americium-241	Foil source	Amersham Model AMM. 4	Not to exceed 0.5 microcuries per source
(4)				

DESCRIBE USE OF LICENSED MATERIAL
E

- (1) For use in Columbia Scientific Industries Model 720 X-ray absorption analyzer
- (2) For use in Texas Nuclear Model 9200 Series source holder for X-ray fluorescence analysis
- (3) For internal stabilization only in Texas Nuclear Model 9200 Series fluorescence analyzers

(4) 8602280287 850821
REQ4 LIC30
25-16250-01 PDR

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)	Detector Assembly	Columbia Scientific	Model 720			
(2)	Source Holder	Texas Nuclear	Model 9256			
(3)	Source Holder	Texas Nuclear	Model 9256			
(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. -	No additional	monitoring	instruments	are required	to possess or
(2)		utilize these	analyzers.			
(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 <i>Attach a separate sheet describing method, frequency and standards used for calibrating instruments.</i> N.A.

12. PERSONNEL MONITORING DEVICES		
TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
<input type="checkbox"/> (1) FILM BADGE N.A. <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD) <input type="checkbox"/> (3) OTHER (Specify): _____ _____ _____	N.A.	<input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY N.A. <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.	N.A.
<input type="checkbox"/> b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC.	N.A.
<input type="checkbox"/> c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.	N.A.
<input type="checkbox"/> d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.	N.A.

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. In the event that the use of the instrument or source is discontinued, the devices will be returned to the manufacturers.	

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)

Pu = \$110.00

AM = \$110.00

(1) **LICENSE FEE CATEGORY:** #1 I
#3 L

(2) **LICENSE FEE ENCLOSED:** \$ 220.00

b. **CERTIFYING OFFICIAL (Signature)**

R. B. Blomeyer

c. **NAME (Type or print)**

R. B. Blomeyer

d. **TITLE**

Manager, Billings Refinery

e. **DATE**

Sept. 17, 1984 ✓

SUPPLEMENTAL SHEET - ITEM 15 - RADIATION PROGRAM - LEAK TESTS

Leak test wipes will be performed on radioactive sources every six months by Mr. J. M. Spartz. The following procedures will be followed in obtaining these tests:

Columbia Scientific Industries Model 720 X-ray Absorption Analyzer

1. Move the target holder from the closed to the open position.
2. Use a Q-tip to gently wipe the outside of the source mounting arm and source target holder arm, being careful NOT to insert the swab past the source mounting arm in the vicinity of the target and source. DO NOT insert the swab into the source target cavity since this might cause damage.
3. Drop the Q-tip into a small clean plastic twirl-lock bag. Appropriately label the bag.
4. Move the target holder from the open to the closed position.
5. Place a clean unused Q-tip into a separate small clean plastic twirl-lock bag. Appropriately label the bag.
6. Fill out a sheet labeled "Leak Test" with the plant name, date, element mass number, name of manufacturer and model number, and maximum activity.
7. Mail both plastic bags, along with appropriate leak test information sheets, to Industrial Hygiene Health Services, Medical Division, Conoco Inc., P.O. Box 1267, Ponca City, Oklahoma 74603, to the attention of O. D. Steffey, Ph.D., Industrial Hygienist-Health Physicist.
8. Results of these test will be mailed to Mr. J. M. Spartz, Assistant Chief Chemist, Billings Refinery Laboratory. In the event leakage is found in the source, Mr. Dean A. Lindberg and/or Mr. J. M. Spartz will be notified by phone as well as the appropriate regional NRC office for the Billings, Montana, area.

Texas Nuclear, Model 9256

1. Move the unit to a clean, flat surface in a well-lighted area. Wash hands before starting.
2. Remove the front housing assembly by loosening the three holding screws.

SUPPLEMENTAL SHEET - ITEM 15 - RADIATION PROGRAM - LEAK TESTS (Continued)

3. Use Q-tips moistened with solvent to make wipes of the assembly as follows:
 - a. Make up a small quantity of solvent by adding a few drops of dishwashing detergent, such as "Joy," to a few ounces of distilled water contained in a clean vial.
 - b. Moisten a Q-tip with the prepared solvent and wipe the source spider assembly and drop the Q-tip into a small clean plastic twirl-lock bag. Keep the hands away from the shutter actuator pin.
 - c. With a dry Q-tip, wipe the same area until all remaining moisture is taken up. Drop this dry Q-tip into the clean plastic twirl-lock bag which contains the moist Q-tip.
 - d. Securely seal the plastic bag and appropriately label.
4. Reassemble the unit.
5. Place a clean, dry Q-tip into a separate clean plastic twirl-lock bag, seal, and label it "control."
6. Fill out an informational sheet labeled "Leak Test" with the plant name, date, element mass number, name of manufacturer and model number, and maximum activity.
7. Mail both plastic bags, along with the appropriate leak test information sheets to Industrial Hygiene Health Services, Medical Division, Conoco Inc., P.O. Box 1267, Ponca City, Oklahoma 74603, to the attention of Oran D. Steffey, Ph.D., Industrial Hygienist-Health Physicist.
8. Results of these test will be mailed to Mr. J. M. Spartz, Assistant Chief Chemist, Billings Refinery Laboratory. In the event leakage is found in the source, Mr. Dean Lindberg and/or Mr. J. M. Spartz will be notified by phone as well as the appropriate regional NRC office for the Billings, Montana, area.

All leak tests will be evaluated by using a Packard Liquid Scintillation Spectrophotometer Tricarb capable of detecting 0.005 microcuries of removable radioactive materials.

SUPPLEMENTAL SHEET - ITEMS 16, 17 - TRAINING AND EXPERIENCE

Mr. Dean A. Lindberg, Chief Chemist, Conoco Inc. Refinery, Billings, Montana, has been employed with Conoco some 30 years. He was Chief Chemist at Conoco's Wrenshall, Minnesota, Refinery prior to being transferred to Billings more recently. During these years, Mr. Lindberg has worked with the Columbia Scientific Industries, Model 720, X-ray Absorption Analyzer employing Americium-241 and is quite familiar with these types of instruments. He holds a B.A. degree in chemistry from the University of Minnesota.

Mr. Michael S. Malone, Senior Mechanical Inspector, Conoco Inc. Refinery, Billings, Montana, has had approximately 9 years experience operating 9200 Model type analyzers. He has worked with various types of radiography equipment for about 10 years and especially those utilizing Iridium-192. He is familiar with monitoring devices which are required for surveying and monitoring radioactive materials and is aware of the safety precautions and procedures which are necessary while handling radioactive materials of this type. Mr. Malone will follow the instruction concerning handling and use of the instrument given us by the manufacturer.

Mr. John M. Spartz, Assistant Chief Chemist, Conoco Inc. Refinery, Billings, Montana, has 15 years experience in the Billings Refinery Laboratory. He has familiarized himself with the listed instruments and under the supervision of Mr. Howard Anderson, retired Chief Chemist, has operated and leak tested these device. He holds a B.S. degree in chemistry from Eastern Montana College. Mr. Spartz will follow the instructions concerning handling and use of the instruments given us by the manufacturer.