11/14/80-AD
NEW LAL

FORM NRC-313 I (1-79) 10 CFR 30 — U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

1. APPLICATION FOR: *(Check and/or complete as appropriate)*
12-20060-01
030-17915

X	a. NEW LICENSE
	b. AMENDMENT TO: LICENSE NUMBER
	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.)*
Northern Petrochemical Co.
Norprop Films Division
TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
(312) 830-6900

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION
Edward C. Enderle
TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
(312) 830-6900 ext. 215

4. APPLICANT'S MAILING ADDRESS *(Include Zip Code)*
601 E. Lake St.
Streamwood, IL 60103

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED *(Include Zip Code)*
Same as #4

(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.	Willard E. Ellis	Maintenance Manager
b.	Edward C. Enderle	Technical Manager
c.	John R. Kotal	Electrical Process Engineer

7. RADIATION PROTECTION OFFICER
Williard E. Ellis

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.	A ELEMENT AND MASS NUMBER	B CHEMICAL AND/OR PHYSICAL FORM	C NAME OF MANUFACTURER AND MODEL NUMBER *(If Sealed Source)*	D MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
(1)	Strontium - 90	Sealed Sources	Amersham Buchler Sr90/VZ-255a	Three-15 millicuries ea. 45 total millicuries
(2)	Promethium - 147	Sealed Sources	Amersham Buchler Pm 147/VZ-0095	Three-500 millicuries ea. 1500 total millicuries
(3)				(See Attachment
(4)				Sheet 1 for more details)

	E DESCRIBE USE OF LICENSED MATERIAL
(1)	The Strontium - 90 sources after having been installed in a gauging device (by
(2)	Hartmann & Braun AG). Will be used to measure the thickness of polypropylene
(3)	thick sheet. (continued on Attachment Sheet 1)
(4)	8101210360 OCT 31 1980

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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)	source housing	Hartmann & Braun AG	TIAM 11
(2)	source housing	Hartmann & Braun AG	TIAM 11
(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)						
(2)		NOT APPLICABLE				
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☐ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

NOT APPLICABLE

☐ b. CALIBRATED BY APPLICANT

Attach a separate sheet describing method, frequency and standards used for calibrating instruments.

NOT APPLICABLE

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
☐ (1) FILM BADGE ☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD) ☐ (3) OTHER (Specify): _____	NOT APPLICABLE	☐ MONTHLY ☐ QUARTERLY ☐ OTHER (Specify):

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

☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC. N/A

☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. See Attachment Sheet 1

☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC. N/A

☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC. N/A

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED

NOT APPLICABLE

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.

When necessary, the Chief Radiation Officer will remove the exhausted source from holder, crate it in the special shipping container in accordance with instructions from Hartmann and Braun and ship it to Hartmann & Braun AG 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.

See Attachment Sheet 2

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.

See Attachment Sheet 3

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.

See Attachment Sheet 4

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)* H. Hormozi
	c. NAME *(Type or print)* H. Hormozi
(1) LICENSE FEE CATEGORY: 3L	d. TITLE Plant Manager
(2) LICENSE FEE ENCLOSED: $ $110.00	e. DATE 10/29/80

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Attachment Sheet 1 - Form NRC-313I

Item 8D - Only two sources of each type will be in use. One sealed source of each type will be stored as a spare and will be in closed position at all times. Only the Chief Radiation officer will install the spare source when necessary.

Item 8E - The promethium - 147 sources after having been installed (by Hartmann & Braun AG) in a gauging device will be used to measure the thickness of polypropylene thin sheet.

Item 13B - The spare sealed source will be stored in the containers supplied by the Hartmann & Braun AG. The area of storage will be clearly marked.

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Attachment Sheet 2 - Form NRC - 313-I

Item 15

A. In normal operation, sealed sources containing byproduct material (Sr-90 or Pm-147) shall not be opened or removed from their respective source holders by the licensee. If process is shut down, source holders will be placed in closed position. During start ups, the gauging mechanism will be in off position and on one side of the O-frame.

B. Initial radiation survey will be made by the Hartmann & Braun AG Field Engineer at time of installation.

C. When necessary, Chief Radiation Officer will remove the exhausted source from holder, crate it in the special shipping container and ship it to Hartmann & Braun AG for disposal. Shipping instructions will be supplied by H & B.

D. Leak Test Procedure - Byproduct source holders shall be tested for leakage and/or contamination at intervals of six months. Leak test will be performed by Willard E. Ellis or under his direct supervision. Kit HP-B2 supplied by Health Physics Associates, Ltd. will be used to perform the leak test. Instructions to perform the leak test will be supplied by Health Physics Associates, Ltd. (See Exhibit 14).

E. In case of an accident:

1. The source, source holder, and the equipment on which gauge is installed will be covered by a plastic sheet.

2. Air conditioner and other fans will be turned off to prevent spreading of radiation.

3. The area of accident will be cordoned off by a rope.

4. Health Physics Associates, Ltd. will be contacted immediately to send a certified radiation physicist to inspect and make further recommendations.

Attachment Sheet 3 - Form NRC - 313I

Item 16

Formal Training in Radiation Safety

Hartmann & Braun AG will conduct a five-day training workshop at their facility in Germany before the gauges are installed. Chief Radiation Officer (Willard E. Ellis) and Electrical Process Engineer (John R. Kotal) will attend the workshop.

Attachment Sheet 4 - Form NRC - 313 I

Item 17 - Experience

Name	Current Experience
1. Willard E. Ellis	None
2. Edward C. Enderle	None
3. John R. Kotal	None

Control No. 04053

List of Exhibits

Exhibit 1: Gauging geometry for 15 mCi Sr 90 (reference ANSl standard N 538).

Exhibit 2: Drawing # SK70330-191 showing isodose curves for Sr 90 in open and shut position.

Exhibit 3: Drawing # VZ-255a showing details of Sr 90 plane surface source.

Exhibit 4: Drawing # VZ-0257 showing details of source holder for Sr 90.

Exhibit 5: Technical details of radiation source Sr 90.

Exhibit 6: Gauging geometry for 500 mCi Pm 147 (reference ANSl standard N 538).

Exhibit 7: Drawing # SK70330-192 showing isodose curves for Pm 147 in open and shut positions.

Exhibit 8: Drawing # VZ-0095 showing details of Pm 147 source shell (Basin).

Exhibit 9: Drawing # ES-88 showing details of source holder for Pm 147.

Exhibit 10: Technical details of radiation source Pm 147.

Exhibit 11: Shipping container dimensions

Exhibit 12: Details of gaging device with Sr 90 source.

Exhibit 13: Details of gaging device with Pm 147 source.

Exhibit 14: Details of Leak Test Procedures by Health Physics Associates, Ltd.

Exhibit 15: Information on sealed source (Sr 90).

Exhibit 16: Picture of Sr 90 gaging device in use.

Exhibit 17: Information on sealed source (Pm 147).

Exhibit 18: Picture of Pm 147 gaging device in use.

List of Appendices

Appendix A:	Contains technical data, description, and instructions for use of source container TIAM 11 for Sr 90 and Pm 147 radiation sources. (10 pages)
Appendix B:	Contains all documents (Exhibits 1-10 and Appendix A) in original (German language).
AppendiX C:	Information on Nuclear Gaging Device (Sr 90).
Appendix D:	Information on Nuclear Gaging Device (Pm 147).