

UNITED STATES ATOMIC ENERGY COMMISSION  
**APPLICATION FOR BYPRODUCT MATERIAL LICENSE**

Form approved  
Budget Bureau No. 38-R0027

INSTRUCTIONS.—Complete Items 1 through 16 if this is an initial application or an application for renewal of a license. Information contained in previous applications filed with the Commission with respect to Items 8 through 15 may be incorporated by reference provided references are clear and specific. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545, Attention: Materials Branch, Directorate of Licensing. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Part 20, and the license fee provisions of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 16 and the appropriate fee enclosed. (See Note in Instruction Sheet).

1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital person, etc. include ZIP Code and telephone number.)

St. Francis General Hospital  
45th Street (off Penn Avenue)  
Pittsburgh, PA 15201

(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1(a), include ZIP Code.)

Same as 1(a)

2. DEPARTMENT TO USE BYPRODUCT MATERIAL

Department of Radiation Oncology  
and Nuclear Medicine

3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)

Renewal of License #37-01072-02

4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.)

John D. McAllister, M.D.

5. RADIATION PROTECTION OFFICER. (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.)

Krishnadas Banerjee, Ph.D.

6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.)

Cobalt-60

(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.)

Teletherapy sealed sources.

Manufacturer - Picker Corporation:

Model P-3802A Serial #PX-864

Maximum Activity: 14,298 curies (2 sources of not more than 7,148 curies each)

7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for "human use," supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.)

The sealed source to be used is a Picker Corporation Model 6177 teletherapy unit for the treatment of humans.

8602110496 851231  
REG1 LIC30  
37-01072-02 PDR

86290

# TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	See License #37-01072-02		Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments	Original application dated 3/21/1967		Yes No	Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity			Yes No	Yes No
d. Biological effects of radiation			Yes No	Yes No

## 9. EXPERIENCE WITH RADIATION (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
		See License #37-01072-01		

## 10. RADIATION DETECTION INSTRUMENTS (Use supplemental sheets if necessary.)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg/cm <sup>2</sup> )	USE (Monitoring, surveying, measuring)
See Supplemental sheet #1					

## 11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

See Supplemental sheet #1

## 12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED (For film badges, specify method of calibrating and processing, or name of supplier.)

Film badges supplied by Landauer Corporation Frequency—once a month  
Glenwood Science Park  
Glenwood, Illinois 60425

## INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS IN DUPLICATE

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) ☒ Yes ☐ No

14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source.

See supplemental sheet #2

15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

## CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, 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.

License Fee Category: None

Fee Enclosed \$ \_\_\_\_\_

Applicant named in item 1

By: Sister M. Adele Meiser

Sister M. Adele Meiser

Executive Director

Title of certifying official

Date 02 01 67

**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.

# SUPPLEMENT I

Refer to Item 10 of N.R.C. Form 313.

<u>Type of Instrument</u>	<u>Number Available</u>	<u>Radiation Detected</u>	<u>Sensitivity Range</u>	<u>Window Thickness</u>	<u>Use</u>
Victoreen Panoramic Ionization Chamber; Model #470	One	$\alpha$ , $\beta$ , $\gamma$	Twelve overlapping ranges. 0-1, 3, 10, 30, 100, 300 $\frac{\text{mR}}{\text{hr}}$ and $\frac{\text{R}}{\text{hr}}$  Six overlapping ranges 0-1, 3, 10, 30, 100, 300 mR (Integrate)	17 $\text{mg}/\text{cm}^2$	Surveying and Monitoring
Victoreen Geiger Muller Counter, Model 491	One	$\alpha$ , $\beta$ , $\gamma$	0-0.1, 0-0.3, 0-100 mR/hr in seven overlapping ranges	30 $\text{mg}/\text{cm}^2$	Surveying and Monitoring
Jordan Survey Meter Model AGB-10KG-SR	One	$\beta$ and $\gamma$	Three ranges. .01 to 10 mR/hr and .01 to 10 R/hr and 10 to 10,000 R/hr	Unknown	Surveying and Monitoring

Refer to Item 11 of N.R.C. Form 313.

## Methods, Frequency and Standards used for Calibration of Survey Meters.

Now on all our survey meters will be calibrated by an outside vendor annually. We will routinely check the survey meters against some standard sources attached to the survey meters. If there is any malfunction, the instruments will be repaired and recalibrated again. At the present time, we propose to have the survey meters calibrated by:

Applied Health Physics  
P.O. Box 197  
Bethel Park, PA 15102

86290

## SUPPLEMENT II

Refer to Item 14 of A.E.C. Form 313.

### RADIATION PROTECTION PROGRAM

As a part of continuing education, lectures on Radiation Safety are given to all personnel in the hospital twice a year.

In this department, the technicians, physicists and physicians who are involved in everyday work are provided with film badges for monitoring purposes. These records are checked every month and kept in the department.

Proper radiation signs are posted in appropriate areas.

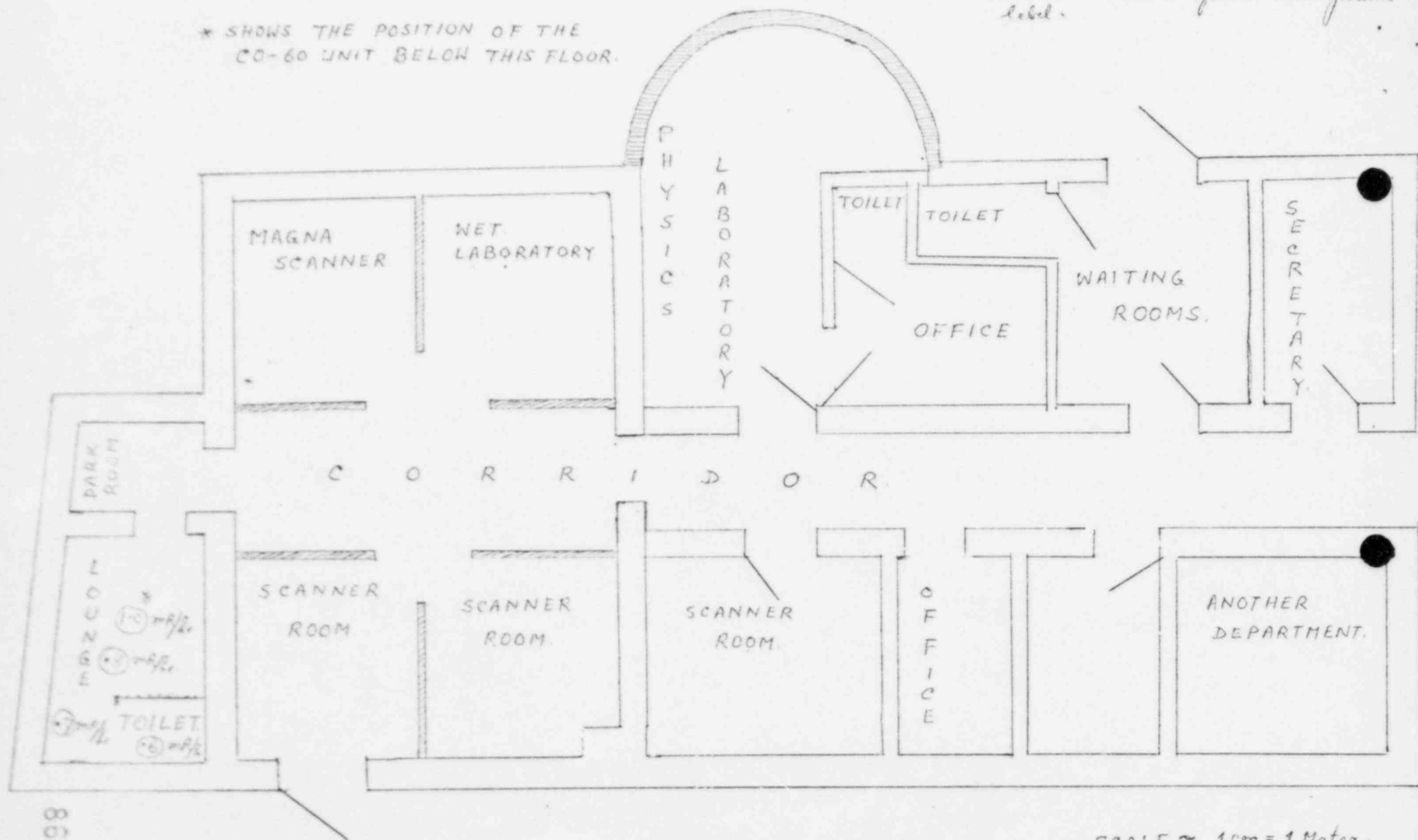
Leakage of radioactive material from the source is done every six months. With the beam in the "OFF" position, the accessible surface of the housing port and collimator is wiped with a moistened cotton swab and the activity determined by counting with a spectrometer to see that the transferred contamination does not exceed .05  $\mu\text{Ci}$ .

A full calibration of the teletherapy source is done once a year which includes measurement of the exposure in air as a function of field size, the timer check, shutter error correction if any, door interlock system check and the alignment of the radiation field and light field. Every month, spot checks are done to confirm the exposure for 10 cm x 10 cm field size, the congruence of light field and radiation field and the door interlock system and the teletherapy "ON-OFF" indicator function.

A set of emergency procedures to be followed in the event the technician is unable to turn off the teletherapy unit at the console, is posted on the wall near the console. A copy of this is attached herewith.

Except the Lounge area the radiation level is equal to background level.

\* SHOWS THE POSITION OF THE CO-60 UNIT BELOW THIS FLOOR.



SCALE  $\approx$  1cm = 1 Meter.

DIAGRAM OF THE NUCLEAR MEDICINE DEPARTMENT

86230

Cobalt 60 Teletherapy Unit

# EMERGENCY OPERATION

If it is necessary to halt treatment before the preset time has elapsed or if the beam does not turn "off" after the normal exposure cycle has been completed:

Press the "EMERGENCY" Bar on the Control Unit.

Should the beam still remain "on":

1. Quickly remove the patient from the treatment room.

### Warning

Avoid direct exposure to the beam; do not remain in the treatment room longer than absolutely necessary while the beam is "on."

2. After leaving the treatment room, lock the door or post a guard to prevent unauthorized entry.
3. Call Dr. Mc ALLISTER or the Radiation Safety Officer, Dr. BANDIERE.

If the patient cannot be removed, close the Shutter manually by turning the Emergency Shutter Handwheel on the front of the Head in the clockwise direction indicated by the arrows.

### Caution

Because the treatment table may be quickly and easily moved, the operator, rather than first taking the patient from the room, may attempt to close the Shutter manually with the handwheel (also easily turned when power fails) while simultaneously removing him from direct exposure to the beam. The operator is therefore cautioned that concern for the patient's safety must always remain the paramount consideration.

If the Shutter still does not close (the red marker on the handwheel is "up" when it is closed):

1. Move the machine so that the beam does not fall directly on the patient.
2. Leave the room, close the door, and post a guard to prevent unauthorized entry.
3. Notify Dr. Mc ALLISTER and Picker X-Ray Service.

AND Dr. BANDIERE RADIATION SAFETY OFFICER

86290

ML1B

BEFORE: William O. Miller, Chief  
License Fee Management Branch  
Office of Administration -

03000461  
02300  
11/87

John E. Glenn, Chief  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

Applicant/Licensee: St. Francis Medical Center

Application Dated: 11/20/85

Control No.: 104716

License No.: 37-01072-02

2. FEE ATTACHED

Amount: \$ 230.00

Check No.: 018026

3. COMMENTS

Signed Brenda P. Hatchek

Date 12/3/85

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 7A (\$230)

2. Correct Fee Paid. Application may be processed for:

Amendment ✓

Renewal \_\_\_\_\_

License \_\_\_\_\_

Signed B Jackson

Date 12/26/85