

## APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

## FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION  
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS  
WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
NUCLEAR MATERIAL SECTION B  
631 PARK AVENUE  
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II  
MATERIAL RADIATION PROTECTION SECTION  
101 MARIETTA STREET, SUITE 2900  
ATLANTA, GA 30323

## IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
MATERIALS LICENSING SECTION  
799 ROOSEVELT ROAD  
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
MATERIAL RADIATION PROTECTION SECTION  
611 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V  
MATERIAL RADIATION PROTECTION SECTION  
1450 MARIA LANE, SUITE 210  
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

☐ A. NEW LICENSE

☐ B. AMENDMENT TO LICENSE NUMBER

☒ C. RENEWAL OF LICENSE NUMBER 12-06289-02

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)

Radiation Oncology  
Elmhurst Memorial Hospital  
200 Berteau Ave.  
Elmhurst, Illinois 60126

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Radiation Oncology  
Elmhurst Memorial Hospital  
200 Berteau Ave.  
Elmhurst, Illinois 60126

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

M. V. Broadbent, PhD

TELEPHONE NUMBER

(312)833-1400X4781

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

a. Element and mass number, b. chemical and/or physical form, and, c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES A

8509160311 850809  
REG3 LIC30  
12-06289-02 PDR

10. RADIATION SAFETY PROGRAM

11. WASTE MANA

12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY 170.31.7.A

AMOUNT

ENCLOSED \$ 270.00

13. CERTIFICATION. (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR 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.

SIGNATURE—CERTIFYING OFFICER

TYPED/PRINTED NAME

TITLE

DATE

BRUCE K. CROWTHER

Vice Pres.—Administration

1/31/85

## 14. VOLUNTARY ECONOMIC DATA

a. ANNUAL RECEIPTS

<\$250K	\$1M-3.5M
\$250K-500K	\$3.5M-7M
\$500K-750K	\$7M-10M
\$750K-1M	>\$10M

b. NUMBER OF EMPLOYEES (Total for entire facility excluding outside contractors)

c. NUMBER OF BEDS

d. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Dollar and/or staff hours) ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? (NRC regulations permit it to protect confidential commercial or financial—proprietary—information furnished to the agency in confidence)

☒ YES

☐ NO

## FOR NRC USE ONLY

TYPE OF FEE

FEE LOG

FEE CATEGORY

COMMENTS

APPROVED BY

REN

Feb. 17-III

7A

AMOUNT RECEIVED

CHECK NUMBER

\$270+/580

142635/144

CONTROL NO. 78245

DATE

3/20/85

FEB 4 1985

## PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. §52a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY:** Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).
2. **PRINCIPAL PURPOSE(S):** The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30, 32, 33, 34, 35 and 40 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.
3. **ROUTINE USES:** The information may be (a) provided to State health departments for their information and use; and (b) provided to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for an NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you.
4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION:** Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed. A request that information be held from public inspection must be in accordance with the provisions of 10 CFR 2.790. Withholding from public inspection shall not affect the right, if any, of persons properly and directly concerned need to inspect the document.
5. **SYSTEM MANAGER(S) AND ADDRESS:** U.S. Nuclear Regulatory Commission  
Director, Division of Fuel Cycle and Material Safety  
Office of Nuclear Material Safety and Safeguards  
Washington, D.C. 20555

FACILITY: Elmhurst Memorial Hospital  
200 Berteau Avenue  
Elmhurst, Illinois 60126

Date: January 30, 1985  
NRC License No.: 12-06289-02

PHONE: (312) 833-1400

5. Sealed Sources to be used in teletherapy unit:

Byproduct Material	Source Manufacturer	Source Model Number	Maximum Activity of Source	Number of Sources
$^{60}\text{Co}$	Neutron Products	NPI-20-6000W	6,500	1
		NPI-20-6000W	6,500	1
$^{60}\text{Co}$	AECL	C-146	6,500	1
		C-151	6,500	1

It is requested that a maximum of 2 sources of not more than 6,500 Curies each be allowed on the premises at the time of a source change.

6. Licensed material will be used in an AECL Theratron 780.

7. Individual users are:

Padam P. Paudel, M.D. Therapist  
James E. Turner, M.D. Therapist

Radiation Safety Officer:

Michael V. Broadbent, PhD

8. Resumes and precetor statements are currently on file. Those listed are the individuals who are currently listed on the license.

9. Facilities and equipment:

Therapy equipment is an AECL Theratron 780 Teletherapy unit. A drawing of the treatment room is attached. It should be noted that the crawl space on the west side of the treatment room can have levels up to about 3 mR per hour. These levels have been previously authorized in the past by the NRC. It is requested that they again be authorized. See letters of September 12, 1978 and December 8, 1978 as well as the report of the last source change dated June 24, 1982 and correspondence of November 12, 1982.

10. Radition Safety Program:

A copy of the emergency procedures are attached.

A copy of the list of survey and calibration meters is also attached.

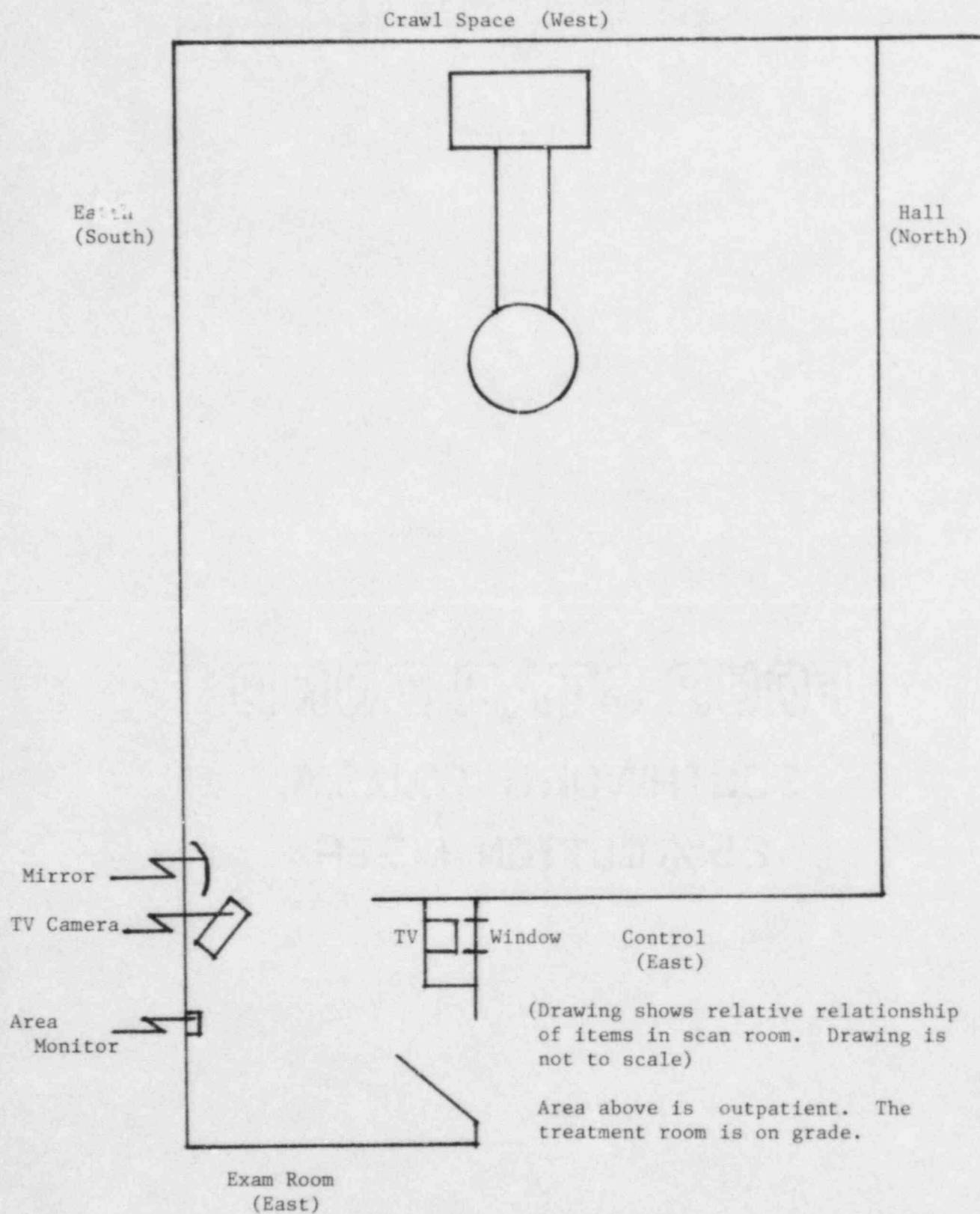
Training and reviews are conducted on a regular basis. New teletherapy employees are trained as they report for duty. Emergency procedures are reviewed at least every six months.

Film badges are provided by R. S. Landauer, Jr & Co. on a monthly basis.

Leak Tests of the sealed source is done by Health Physics Associates of Northbrook, Illinois.

11. Waste Management:

Radioactive waste is not considered a problem. Old sources are exchanged when the new source is installed. The corporation who provides the new source removes the old source from the hospital. In the unlikely event of a source rupture regulatory agencies and licensed source handlers will be called to advise and assist in the clean up.



Descriptions of the safe guards and beam stops are reviewed in the source exchange report of June 24, 1982 and the letter of November 12, 1982.

**CONTROL NO. 78245**



POST IN A PROMINENT POSITION CLOSE TO THE TELETHERAPY UNIT CONTROL CONSOLE

# IMPORTANT

## AECL MODELS

6, 8, 60, 80, 76, 78, 765, 780, 780 CTS, AND 780CC  
TELETHERAPY UNITS

### IF THE DRAWER FAILS TO CLOSE, PROCEED AS FOLLOWS:

1. Remove the patient from the treatment room.
2. The drawer return emergency T-bar, which is supplied with the unit and located at the control station, should be placed over the beam condition indicating rod. Forward pressure on the source drawer with the T-Bar will push the drawer backwards and into the safe position.

#### NOTE:

1. The amber coloured portion of the emergency T-bar must be entirely inside the front head cover before the source is in the fully safe position. This will reduce external radiation fields to normal levels and allow repairs to be made to the drawer.  
The front portion of the T-bar is painted red and the source can be considered relatively safe if no red marking appears outside the front cover.
2. Licensing authorities in some countries stipulate additional emergency procedures. Operating personnel should familiarize themselves with these requirements prior to operation of this equipment.

FOR EMERGENCY SERVICE  
TELEPHONE:

740-0160

Radiation Therapy Services, Inc.  
then

9.73 Peggy Wells, R.T. Supervisor  
690-6358

ATOMIC ENERGY OF CANADA LIMITED  
COMMERCIAL PRODUCTS

P.O. BOX 6300  
POSTAL STATION "J"  
OTTAWA, CANADA  
K2A 3W3

CONTROL NO. 78245

**IN THE EVENT OF EQUIPMENT FAILURE  
RESULTING IN THE SOURCE REMAINING "ON"  
IMMEDIATELY ENTER THE TREATMENT ROOM AND:**

**Step 1.** Close adjustable field definer.

**Step 2.** Remove patient from treatment room.

**Step 3.** Close, lock and post treatment room door.

**Step 4** Telephone:

1) Radiation Therapy Services, Inc.  
Chicago, Ill  
740-0160

2) Padam P. Paudel, M.D.  
323-5156

or

3) Peggy Wells, R.T.  
690-6358

To manually turn the source "off"

1. Take red "T" rod kept at control and enter treatment room.
2. Insert "T" rod into hole in white front head trim cover and push source drawer to "off" position.

**CAUTION: STAY OUT OF DIRECT BEAM AT ALL TIMES**

CONTROL NO. 7 8 2 4 5

## INSTRUMENTATION

### 1. Survey meters

- a. Manufacturer's name: Keithley  
Manufacturer's model number: 3600  
Number of instruments available: 1 with 3 ranges  
Minimum range: 0 mr/hr to 200 mr/hr  
Maximum range: 0 mr/hr to 20,000 mr/hr
- b. Manufacturer's name: Victoreen  
Manufacturer's model number: 444  
Number of instruments available: 1  
Ranges: 10 ranges  
Minimum range: 0 mr/hr to 3 mr/hr  
Maximum range: 0 mr/hr to 300,000 mr/hr

### 2. Beam-on Monitor

Manufacturer's name: Nuclear Associates  
Manufacturer's model number: Primalert 10  
Number of instruments available: 1  
Backup Battery Power Supply: Yes X No       

### 3. Dosimetry System

#### a. Electrometer

Manufacturer's name: Victoreen  
Manufacturer's model number: 570

#### b. Probes

Manufacturer's name: Victoreen  
Manufacturer's model number: 621  
Number of probes: 1  
Ranges: 0 to 100 R

The above 570 is calibrated by an accredited RCL run by the AAPM.  
Additional 570's are available which have also been calibrated by  
the RCL within the previous 2 years.



## CALIBRATION OF SURVEY INSTRUMENTS

Check appropriate items.

- YES 1. Survey instruments will be calibrated at least annually and following repair.
- \_\_\_\_\_ 2. Calibration will be performed at least at two points on each scale used for radiation protection purposes.

The two points will be located at approximately 1/3 and 2/3 of full scale. A survey instrument may be considered properly calibrated when the instrument readings are within  $\pm 10\%$  of the calculated or known values for each point checked. Readings within  $\pm 20\%$  are considered acceptable if a calibration chart, graph, or response factor is prepared, attached to the instrument, and used to interpret meter readings to within  $\pm 10\%$  for radiation protection purposes.

- \_\_\_\_\_ 3. Survey instruments will be calibrated
- \_\_\_\_\_ a. By the manufacturer
- \_\_\_\_\_ b. At the licensee's facility

(1) Using the calibration source described below:

Radionuclide \_\_\_\_\_

Manufacturer's name \_\_\_\_\_

Model No. \_\_\_\_\_

Activity (e.g., millicuries) or exposure rate  
output (e.g., R/hr at 1 meter) \_\_\_\_\_

Accuracy \_\_\_\_\_

\_\_\_\_\_ (2) Following the calibration procedures in this appendix,

or

\_\_\_\_\_ (3) Following the step-by-step procedures, including radiation safety procedures, that are attached.

YES

c. By a consultant or outside firm

(1) Name Health Physics Associates

(2) Location Northbrook, Illinois

(3) Procedures and sources for calibrating instruments for clients

YES have been approved by NRC and are on file in NRC

License No. 12-09160-01

\_\_\_\_\_ have been approved by an Agreement State. Attached are a copy of the Agreement State license, a description of the procedures and sources used for calibration, and a copy of the consultant's report\* on an instrument calibration.

\_\_\_\_\_ are described in the attached documents that also include a copy of the consultant's report\* on an instrument calibration.