

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 34-01710-07

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

The Toledo Hospital
2142 N. Cove Boulevard
Toledo, Ohio 43606

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

Oncology Center
The Toledo Hospital
2142 N. Cove Boulevard
Toledo, Ohio 43606

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

James C.R. Burns, MS

TELEPHONE NUMBER

(419) 471-4376

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 AND EQUIPMENT

10. RADIATION SAFETY PROGRAM

11. WASTE MANAGEMENT

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

FEE CATEGORY 7A 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

Bryan A. Rogers

President, Toledo Hospital

14. ANNUAL RECEIPTS

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

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

16. NUMBER OF BEDS

17. 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

AMOUNT RECEIVED

CHECK NUMBER

CONTROL NO. 77682

DATE

PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(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 an 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

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE: \$300

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PERMIT No. 657

CROSS REFERENCE

313 T
(Appendix J)

313

1	2, 3
2	4
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4	7a
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9	9h
10	10a
11	7a
12	9f
13	9g
14B	9b
15	9d
17	10d, 10e
18	8
19	10c
21	10b
22	13

5a (6)

Byproduct Material:	Cobalt 60
Source Manufacturer:	AECL
Source Model Numbers:	C-146 or C-151
Maximum Activity Per Source:	7,000 curies
Maximum Number of Sources:	2

Maximum Output of Source:	130 R/min ($\pm 5\%$) at 1 meter at 35 ² field in Theratron 780
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5b (7)

Teletherapy Unit:	Theratron 780 by AECL with beam catcher
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6 (8)

Proposed Use:	Treatment of patients only
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Item 313 #5,6
Item 314 #6,7,8
10/17/81

Currently Listed on this License

William D. Eggleston, MD
Chun Il Mah, MD
Steven R. Zeidner, MD
Gerald W. Marsa, MD

Added users:

Edmund P. Ho, MD
William K. Mueller, MD

Item 313 #7a
Item 313T #4,11
10/17/84

**TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER**

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

Edmund P. Ho, MD

2. STATE OR TERRITORY IN
WHICH LICENSED TO
PRACTICE MEDICINE

Ohio

3. CERTIFICATION

**SPECIALTY BOARD
A**

**CATEGORY
B**

**MONTH AND YEAR CERTIFIED
C**

American Board of Radiology

Therapeutic Radiology

December, 1977

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION			
b. RADIATION PROTECTION			
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY			
d. RADIATION BIOLOGY			
e. RADIOPHARMACEUTICAL CHEMISTRY			

5. EXPERIENCE WITH RADIATION. (Actual use of Radioisotopes or Equivalent Experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE

**TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER**

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

William K. Mueller, MD

2. STATE OR TERRITORY IN
WHICH LICENSED TO
PRACTICE MEDICINE

Ohio

3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
American Board of Radiology	Therapeutic Radiology	December, 1976

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION			
b. RADIATION PROTECTION			
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY			
d. RADIATION BIOLOGY			
e. RADIOPHARMACEUTICAL CHEMISTRY			

5. EXPERIENCE WITH RADIATION. (Actual use of Radioisotopes or Equivalent Experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE

departmental policy and procedure

department Radiation Oncology
index no. C-315
date October 1, 1984
supersedes

subject: RADIATION SAFETY INSTRUCTION FOR EMPLOYEES

BACKGROUND

Regulations of the Nuclear Regulatory Commission require that all persons working in an area designated as restricted (for radiation protection purposes) receive periodic instruction relative to radiation safety and protection commensurate with their duties.

POLICY

Instruction as outlined in NRC Rules and Regulations, Title 10, Chapter 1, Part 19 will be provided to employees as follows:

1. Before a new employee assumes duties with or in the vicinity of radioactive materials as part of departmental orientation;
2. During annual refresher inservices;
3. At departmental meetings whenever there is a significant change in duties, regulations, or terms of the license.

PROCEDURE

Manager:

1. Include required instructions commensurate with the employee's duties as part of employee orientation.
2. Includes required instructions as part of departmental inservice meeting annually.
3. Schedule a "dry run" of emergency procedures for the Cobalt 60 unit as part of the orientation of radiation therapy technologists and annually thereafter.
4. Notify employees whenever there is a significant change in NCR's regulations in the terms of the license or in an employee's duties pertaining to work with or in the vicinity of radioactive materials.

The Radiation Safety Officer for this radiotherapy area is:

William D. Eggleston, MD

Item 313 #7c
Item 313T #5
10/17/84

Training for Individuals Working in or Frequenting Restricted Areas

Radiation Oncology

Instructions and information as required by Section 19.12 of 10 CFR

Part 19 will be provided as described in departmental policy and procedure
C-315.

Item 313 #8
ItemT 313 #18
10/17/84

No treatments will be given unless at least one of two independent television monitor systems is functional. An intercom is installed for communication with the patient.

Item 313 #9b
Item 313T #14b
10/17/84

The door into the teletherapy room is equipped with an interlock system which causes the source to move to the "off" position if the door is opened while the source is exposed. The source cannot be returned to the "on" position until the door is closed and the system is reset at the control.

Appropriate radiation warning signs are posted on the door into the teletherapy room.

The department and each room is locked by the Security Department after regular departmental working hours. An alarm is activated in the Security Department if entrance is made into the department after regular hours.

Item 313 #9c
Item 313T #14c
10/17/84

The source rotates 360° about the isocenter in a plane which is perpendicular to the gantry rotational axis and contains the isocenter. The head can rotate 360° about the source. Zero degrees into the ground, 90° west, 180° up, and 270° east.

Item 313 #9d
Item 313T #15
10/17/84

A survey meter will be in the department of the ion-chamber-type with a full scale low range of not higher than 5 MR/hr and a full scale high range of not less than 1R/hr (currently met by an Eberline RO-1 meter, low range 5MR/hr, high range 500 R/hr). Any replacement shall meet the 1MR/hr and 100MR/hr requirements.

A GM-type survey meter will be in the department with a full scale low range of not more than 1MR/hr and a full scale high range of 100MR/hr (currently met by an Eberline E-520 with low range of .2 MR/hr and a high range of 2E/hr, and by a Victoreen 490 with 491-40 probe, low range of 1MR/hr, high range of 100 MR/hr). Any replacement shall meet the 1MR/hr and 100MR/hr requirements.

Item 313 #9f
Item 313T #12
10/17/84

A permanently mounted beam-on radiation monitor with battery backup is mounted in the therapy room. A remote readout is provided at the console (Nuclear Associates PRIMALERT 35, PRIMAPAK, and PRIMALARM system is currently used). Any replacement will provide equivalent service.

Item 313 #9f₂
Item 313T #12 cont.
10/17/84

A dosimetry system is in the department for making spot checks and full calibrations (currently met by a Keithley 602 and a Keithley 616 electrometers with Capintec probes PRO 6-C chambers, and a Victoreen 470 r meter with probes #621, 131, and 651 which is currently available for spot checks only). Replacement meters or probes to be of equivalent service.

Item 313 #9f₃
Item 313T #13 cont.
10/17/84

A multichannel analyzer with an NaI (Tl) crystal well counter is available on premises to be used for leak test evaluation.

Item 313 #9f₄
Item 313 #12 cont.
10/17/84

Calibration

- 1) Survey meters to be calibrated annually and after repair. Calibrations may be inhouse or by a commercial calibration service.
- 2) The dosimetry system used for a full calibration shall have been calibrated by an AAPM accredited regional calibration laboratory within the two years preceeding the calibration.
- 3) A dosimetry system used for a spot check shall have been calibrated by an AAPM accredited regional calibration laboratory within the last two years, or have been calibrated against such a system within the last year.
- 4) The therapy room monitor is observed by television monitor each day with the Co 60 source "on" to insure that it is indicating a radiation warning.

Item 313 #9g
Item 313T #13
10/17/84

Monthly exchanged whole body film badges are issued to physicians, physicist, technologists, and the oncology nurse. Service is to be provided by a commercial supplier such as J.S. Landauer, Jr. and Company (which is currently used).

Item 313 #9h
Item 313T #9
10/17/84

Radiation Safety Committee

Members of the Radiation Safety Committee:

William D. Eggleston, MD, Radiation Oncologist, Director, Oncology Center
Warren A. Nordin, MD, Pathologist, Director, Pathology and Laboratory
C. Douglass Ford, MD, Radiation Safety Officer, Director, Nuclear Medicine Dept.
J. Robert Yoder, MD, Radiologist, Director, Department of Radiology
Roger A. Miller, MD, Cardiologist
Robert Wirtz, Assistant Vice-President
Carole Loesch, RN, Clinical Director, Patient Care Department
James Johnson, RT, Chief Technologist, Nuclear Medicine Department
James Burns, MS, Physicist, Radiation Oncology

Please refer to license 34-10710-05 for radiation safety committee information.
The application is dated February 9, 1983, the item is #7 in appendix B.

Item 313 #10a
Item 313T #10
10/17/84

ALARA Program

Please refer to license #4-01710-05 for commitment to the ALARA philosophy and the description of the formal written ALARA program for this institution. The program is appendix Q in the application dated February 9, 1983.

Item 313 #10b
Item 313T #21
10/17/84

Leak Testing

1. Test to be done by a qualified expert per 35.24.
2. Wet gauze or alcohol wipes will be used to wipe highest accessible points inside collimator, lower points in collimator, timers, and random points on tray frame, patient table, and beam catcher with wipes being placed in capped test tubes.
3. A multichannel analyzer with an NaI (Tl) well crystal is used to evaluate the wipes. A Co 60 reference of 0.099 microcurie (9/22/78) is used for comparison. The reference is counted with an overall efficiency of 50%.

4.

$$A = \frac{\left(\frac{Cs+g}{Ts} - \frac{Cg}{Tg} \right) Ar}{\left(\frac{Cr+g}{Tr} - \frac{Cg}{Tg} \right)}$$

Where A = activity picked up by wipe in microcuries

Cs+g = counts of wipe plus background

Cg = counts of background

Cr = counts of reference

Ts = time of wipe count

Tr = time of reference count

Tg = time of background count

Ar = activity of reference in microcuries

5. Negative wipes are disposed of in normal trash.

Item 313 #10c
Item 313T #19
10/17/84

Operating Procedures

Operating procedures have been developed and implemented on the following:

1. Receipt and disposal of radioactive materials
2. Use of the teletherapy unit
3. Safety device checks
4. Personnel dosimetry
5. Procedures for securing teletherapy unit
6. Instrument calibration and checks
7. Full calibration of teletherapy units
8. Monthly spot check measurements of teletherapy units
9. Leak testing
10. Inspection and servicing of teletherapy unit
11. Survey reports
12. Relocation of teletherapy unit
13. Record keeping
14. Emergency procedures
15. Procedures for notifying proper persons in the event of an accident or unusual occurrence.

Copies of these operating procedures have been reviewed with the appropriate staff members and are available for their referral.

Item 313 10d
Item 313T #17
10/17/84

Emergency Procedures

In the event that the unit cannot be turned off at the console by normal off switches or emergency off switches, then:

- I. If the patient is ambulatory, instruct him to get off the table and leave the room.
- II. If the patient is not ambulatory:
 - A. If the patient can be removed from the room, enter the room and, avoiding exposure to the useful beam, pull the treatment table as far away from the useful beam as possible, transfer the patient to a stretcher and remove him from the room.
 - B. If the patient cannot be removed from the room:
 1. Operate the teletherapy unit from the console and direct the primary beam of radiation away from the patient toward a safe barrier.
 2. If the primary beam of radiation cannot be moved off the patient, enter the room locate the device for manually turning off the primary beam of radiation and turn the unit off.
 - C. Close the door and secure the room against unauthorized entry.
 - D. Notify the responsible physician or radiation protection officer for remedial action to be taken. If the trouble cannot be corrected immediately, the manufacturer may also have to be contacted.

		<u>Office</u>	<u>On Call</u>
Physicist	(name)	Current	Current
Physician	(name)	Phone	Phone
Asst. Vice-President	(name)	Numbers	Numbers

AECL

EMERGENCY OFF BAR

Push rod protruding out of green cover back in until at least the red (and preferably most of the yellow) band disappears.

EMERGENCY OFF BAR
(The posted sign has an arrow pointing to
the emergency off bar)

Item 313 #10e
Item 313T #17
10/17/84