

U.S. NUCLEAR REGULATORY COMMISSION  
MATERIALS LICENSE  
Supplementary Sheet

License Number 20-18449-01

Docket or  
Reference No. \_\_\_\_\_

Amendment No. 01

Medical Imaging Corporation  
781 River Street  
Haverhill, Massachusetts 01830

In accordance with letter dated January 22, 1980, License Number 20-18449-01  
is amended as follows:

Condition 15. is amended to read:

15. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in letter dated February 17, 1979, application dated February 26, 1979, and letter dated January 22, 1980. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statement are more restrictive than the regulations.

B505300462 841108  
PDR FOIA  
ROSENBA84-803 PDR

MAR 21 1980

Date \_\_\_\_\_

*WJ 3/20/80*  
For the U. S. Nuclear Regulatory Commission  
Original Signed by  
*RUC/m* MICHAEL A. LAMASTRA  
Material Licensing Branch

Division of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

U. S. NUCLEAR REGULATORY COMMISSION  
MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter 1, Parts 30, 31, 32, 33, 34, 35, 36, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s); and to import such byproduct and source material. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		
1. Medical Imaging Corporation		3. License number 20-18449-01
2. 781 River Street Haverhill, Massachusetts 01830		4. Expiration date April 30, 1984
		5. Docket or Reference No.
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license
A. Any byproduct material listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35	A. Any radio- pharmaceutical listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35	A. As necessary for uses authorized in Subitem 9.A.
B. Any byproduct material listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	B. Any form listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	B. 3 curies of each byproduct material authorized in Subitem 6.B.
9. Authorized use		
A. Any diagnostic procedure listed in Groups I and II of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.		
B. Preparation and use of radiopharmaceuticals for any diagnostic procedure listed in Group III of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.		

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MATERIALS LICENSE

Supplementary Sheet

License Number 20-18449-01

CONDITIONS

Docket or  
Reference No. \_\_\_\_\_

10. Licensed material shall be used only at the licensee's address stated in Item 2. above. Licensed material listed in Subitem A. may also be used at Amesbury Hospital, Amesbury, Massachusetts; Hubbard Regional Hospital, Webster, Massachusetts; Doctor's Hospital, Worcester, Massachusetts; Huntington General and Longwood Hospitals, Boston, Massachusetts; and the Clinton Hospital, Clinton, Massachusetts.
11. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers, Inspections" and Part 20, "Standards for Protection Against Radiation."
12. Licensed material shall be used by Kirwan T. MacMillan, M.D., Dennis J. Carlson, M.D., J. V. Carroll, M.D., Francis A. White, M.D., or Stephen G. Gerzof, M.D.
13. A. Technetium-99m separated from molybdenum-99 either by elution of a molybdenum-99/technetium-99m generator or by an extraction process shall be tested to detect and quantify molybdenum-99 activity prior to administration to patients.  
B. The licensee shall not administer to patients technetium-99m containing more than one (1) microcurie of molybdenum-99 per millicurie of technetium-99m or more than five (5) microcuries of molybdenum-99 per dose of technetium-99m at time of administration. The limits for molybdenum-99 contamination represent maximum values and molybdenum-99 contamination should be kept as low as reasonably achievable below these limits.  
C. The licensee shall establish written procedures for personnel performing tests to detect and quantify molybdenum-99 contamination. These procedures shall include all necessary calculations and steps to be taken if activities of molybdenum-99 in excess of the limits specified in Subitem B. above are detected.  
D. Personnel performing tests to detect and quantify molybdenum-99 contamination shall be given specific training in performing these tests prior to conducting such tests.  
E. 1. The licensee shall maintain for inspection by the Nuclear Regulatory Commission records of the results of each test performed to detect and quantify molybdenum-99 contamination and records of training given to personnel performing these tests.

Supplementary Sheet

License Number 20-18449-01

Docket or  
Reference No. \_\_\_\_\_

CONDITIONS

13. continued

2. Records described in Subitem E.1. above shall be maintained for two (2) years following the performance of the tests and the training of personnel.
14. The licensee may transport licensed material or deliver licensed material to a carrier for transport in accordance with the provisions of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Material For Transport."
15. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in letter dated February 17, 1979 and application dated February 26, 1979. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.

MAR 30 1979

Date \_\_\_\_\_

For the U. S. Nuclear Regulatory Commission  
Original Signed By  
PATRICIA C. VACCA  
by \_\_\_\_\_ License Management Branch  
Division of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

8/22/84

## TELEPHONE OR VERBAL CONVERSATION RECORD

TIME

10:15

☒ A.M.  
☐ P.M.☐ INCOMING CALL☐ OUTGOING CALL☐ VISIT

PERSON CALLING

JOHN MILLER

OFFICE/ADDRESS

REGION 1 KING OF PRUSSIA

PHONE NUMBER

EXTENSION

215-337-5169

PERSON CALLED

William Guimond

OFFICE/ADDRESS

MEDICAL IMAGING CORPORATION  
170 WORCESTER RD. WELLESLEY, MA

PHONE NUMBER

EXTENSION

302-836-2200

CONVERSATION

617-237-0400

SUBJECT

REQUEST FOR LICENSE AMENDMENT

SUMMARY

Miller phoned Mr. Guimond and inquired if it was his intent to have Dr.'s Steven Wetzner and Alari Robbins added to the Medical Imaging Corp. license.

Mr. Guimond said that was the intent

REFERRED TO:

ACTION REQUESTED

NONE

☐ ADVISE ME OF  
ACTION TAKEN.

INITIALS

DATE

8/22/84

ACTION TAKEN

INITIALS

DATE

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"OFFICIAL RECORD COPY"

MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

November 22, 1983

United States  
Nuclear Regulatory Commission  
Att: Mr. John E. Glenn, PhD  
631 Park Avenue  
King of Prussia, Penn 19406

Dear Mr. Glenn:

Please amend our NRC license #20-18449-01 to include Medical Associates, 199 Chelmsford Street, Chelmsford, MA 01824. A letter from Medical Associates requesting this is included.

While Medical Imaging is operating at 199 Chelmsford Street, it will do so under the supervision of Dr. Herman Haimovici whose training and experience is described on the enclosure.

A check for forty (40) dollars to cover the amendment for the location and Dr. Haimovici is included.

Should there be any questions, please call me at 617/938-0232.

Sincerely,

*William Guimond*  
William Guimond,  
General Manager

WG/hgo

Enclosure

REC-117-3  
12/2/83  
Dec 11  
Brown  
12/16/83

Applicant: 164  
Check No. 40-7B  
Amount/Fee Category: Amendment  
Type of Fee: 2/2/83  
Date Check Received By: J. Haimovici

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20-18449-01 PDR

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# Medical Associates

199 CHELMSFORD STREET  
CHELMSFORD, MASSACHUSETTS 01824  
TEL. 256-6511

November 21, 1983

20-18449-01

## INTERNAL MEDICINE

DOUGLAS S. BRADSON, M.D.  
JOSE M. CARRION, M.D.  
JOHN A. DROSSCHER, M.D.  
THEODORE S. FENSON, M.D.  
THOMAS G. FITZPATRICK, M.D.  
ALDEN G. GAGNON, M.D.  
BENJAMIN J. GAISER, M.D.  
LAWRENCE HEBMAN, M.D.  
PETER M. LEWIS, M.D.  
WILLIAM S. MAST, M.D.  
JAMES J. PEPPER, M.D.  
A. BRADLEY VARNUM, M.D.  
FREDERICK W. WIKANDER, M.D.

## GENERAL SURGERY

LEONARD BLOCK, M.D.  
ROGER W. DIETRICH, M.D.  
MARVIN E. NEIPRIS, M.D.  
WILLIAM F. THOMPSON, M.D.

## OBSTETRICS AND GYNECOLOGY

F. RANDOLPH HARRIS, M.D.  
TERRY T. HOWARD, M.D.  
EDWARD M. LIPMAN, M.D.  
DAVID W. MERENI, M.D.

## PEDIATRICS

KATHLEEN BRADEN, M.D.  
DANIEL W. DUBNER, M.D.  
G. GREGORY FELCH, M.D.  
CHARLES R. FIKAR, M.D.  
MICHAEL A. GILCHRIST, M.D.  
SUSANNE FORNETTE, M.D.  
SYRON D. ROSEMAN, M.D.

## RADIOLOGY

PRADEEP SACHWAR, M.D.  
HERMAN HAIMOVICI, M.D.  
ERIC J. MELLENCAMP, M.D.  
LEON N. ORACHUR, M.D.

## ORTHOPAEDIC SURGERY

ROGER L. BENOIT, M.D.  
GEORGE N. YERID, M.D.

## PSYCHIATRY

WILLIAM S. EVANS, M.D.

## VASCULAR SURGERY

LEONARD BLOCK, M.D.  
ROGER W. DIETRICH, M.D.

## LABORATORY

ALDEN G. GAGNON, M.D.

## EMERITUS

BENJAMIN BLECHMAN, M.D.  
RALPH E. COLE, M.D.  
MAURICE HUCKLE, JR., M.D.  
W. G. MACKS-LEIS HUNS, M.D.  
BENJAMIN D.F. LAUBERT, M.D.

## MEDICAL DIRECTOR

MARVIN E. NEIPRIS, M.D.

## ADMINISTRATION

MICHAEL T. LACONTE

Director  
Office of Nuclear Material  
Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Gentlemen:

This is to request that our office be included in the list of facilities at which Medical Imaging Corporation of 10V Roessler Road, Woburn, Massachusetts, is licensed to perform Nuclear Medicine services. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this office, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated under the general supervision of Dr. Herman Haimovici whose training and experience is described on the enclosure. Dr. Herman Haimovici will work closely with Medical Imaging Corporation personnel throughout this program.

Yours truly,

*Michael T. Laconte*  
Administrator

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20-18449-01 PDR

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NOV 23 1983





# The American Board of Nuclear Medicine

A CONJOINT BOARD OF THE  
AMERICAN BOARDS OF INTERNAL MEDICINE,  
PATHOLOGY, AND RADIOLOGY, & SPONSORED  
BY THE SOCIETY OF NUCLEAR MEDICINE

475 Park Avenue South, New York, New York, 10016 Telephone 212-889-0717

November 22, 1976

Herman Haimovici, M.D.  
84 Littlefield Road  
Newton, Massachusetts 02159


Dear Dr. Haimovici:

With great pleasure the Conjoint American Board of Nuclear Medicine informs you that you have passed its September 18, 1976 Certifying Examination in the broad field of Nuclear Medicine and now are recognized as a Certified Specialist with special competence in all aspects of the diagnostic, therapeutic, and medical research uses of radioactive materials.

A certificate indicating this recognition will be sent to you in the near future.

The Conjoint American Board of Nuclear Medicine congratulates you upon your achievement and this recognition.

Sincerely,

  
Joseph F. Ross, M.D.  
Chairman

JFR:vc

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# The American Board of Nuclear Medicine

Incorporated 1971

A conjoint Board organized with the sponsorship of the American Board of Internal Medicine, American Board of Pediatrics, American Board of Radiology and the Society of Nuclear Medicine

hereby certifies that

**Herman Blimovici, M.D.**

has met the requirements of this Board and is  
certified as qualified to practice as a specialist in  
all aspects of clinical and laboratory

## Nuclear Medicine

including but not limited to Radiobiology, Nuclear Imaging,  
in vivo Measurements and Therapy with unsealed Radionuclides.

*Joseph J. Conamp*



*S. A. Adelman*  
Secretary

\_\_\_\_\_  
Date

\_\_\_\_\_  
Number

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## MATERIALS LICENSE

Amendment No. 02

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

## Licensee

1. Burbank Hospital  
Department of Nuclear Medicine
2. Nichols Road  
Fitchburg, Massachusetts 01420

In accordance with application dated  
July 25, 1983,

3. License number 20-14767-C1 is amended in  
its entirety to read as follows:

4. Expiration date September 30, 1986

5. Docket or  
Reference No. 030-14395

6. Byproduct, source, and/or  
special nuclear material

- A. Any byproduct material  
listed in Groups I and  
II of Schedule A, Section  
35.100 of 10 CFR 35
- B. Any byproduct material  
listed in Group III of  
Schedule A, Section  
35.100 of 10 CFR 35
- C. Any byproduct material  
listed in Group IV of  
Schedule A, Section  
35.100 of 10 CFR 35
- D. Any byproduct material  
listed in Group V of  
Schedule A, Section  
35.100 of 10 CFR 35
- E. Xenon 133

7. Chemical and/or physical  
form

- A. Any radiopharmaceutical  
listed in Groups I and  
II of Schedule A, Section  
35.100 of 10 CFR 35
- B. Any form listed in Group  
III of Schedule A, Section  
35.100 of 10 CFR 35
- C. Any radiopharmaceutical  
listed in Group IV of  
Schedule A, Section  
35.100 of 10 CFR 35
- D. Any radiopharmaceutical  
listed in Group V of  
Schedule A, Section  
35.100 of 10 CFR 35
- E. Gas or gas in solution  
that is the subject of  
an active (i.e., not  
withdrawn or terminated)  
"New Drug Application"  
(NDA) approved by FDA  
or an active (i.e., not  
withdrawn, terminated or  
on "clinical hold")  
"Notice of Claimed In-  
vestigational Exemption  
for a New Drug" (IND)  
that has been accepted  
by FDA

8. Maximum amount that licensee  
may possess at any one time  
under this license

- A. As necessary for uses  
authorized in Subitem  
9.A.
- B. 2 curies of each  
byproduct material  
authorized in Subitem 9.B.
- C. As necessary for uses  
authorized in Subitem 9.C.
- D. As necessary for uses  
authorized in Subitem 9.D.
- E. 200 millicuries

9. Authorized use

- A. Any diagnostic procedure listed in Groups I and II of Schedule A, Section 35.100  
Title 10, Code of Federal Regulations.

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**MATERIALS LICENSE  
SUPPLEMENTARY SHEET**

License number

20-14767-01

Docket or Reference number

030-14395

Amendment No. 02

(9. continued)

- C. Preparation and use of radiopharmaceuticals for any diagnostic procedure listed in Group III of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
- D. Any therapeutic procedure listed in Group IV of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
- E. Any therapeutic procedure listed in Group V of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
- F. Blood flow and pulmonary function studies.

**CONDITIONS**

10. Licensed material shall be used only at the licensee's facilities, Nichols Road, Fitchburg, Massachusetts.
11. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions, and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."
12. Licensed material listed in Item 6 above is authorized for use by, or under the supervision of, the following individual(s) for the materials and uses indicated:  
  

Leon H. Osachuk, M.D.	Groups I, II and III Xenon 133
Herman Haimovici, M.D.	Groups I, II, III, IV and V Xenon 133
13. Licensed material shall be used in accordance with the provisions of Section 35.14(b)(c)(e) and (f) of Title 10, Code of Federal Regulations.
14. For a period not to exceed sixty (60) days in any calendar year, a visiting physician is authorized to use licensed material for human use under the terms of this license, provided the visiting physician:
  - (a) Has the prior written permission of the hospital's Administrator and its Medical Isotopes Committee, and
  - (b) Is specifically named as a user on a Nuclear Regulatory Commission license authorizing human use, and
  - (c) Performs only those procedures for which he is specifically authorized by a Nuclear Regulatory Commission license.

The licensee shall maintain for the inspection by the Commission, copies of the written permission specified in subitem (a) above and of the license(s) specified in subitems (b) and (c) above. These records shall be maintained for five (5) years from the time the licensee grants its permission under subitem (a) above.

5. Patients containing Iodine 131 for the treatment of thyroid carcinoma or patients containing therapeutic quantities of Gold 198 shall remain hospitalized until the residual activity is 30 millicuries or less.

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MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

20-14767-01

Docket or Reference number

030-14395

Amendment No. 02

(continued)

## CONDITIONS

16. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash provided:
- A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of ten (10) half-lives.
  - B. Prior to disposal as normal waste, radioactive waste shall be monitored to determine that its radioactivity cannot be distinguished from background with typical low-level laboratory survey instruments. All radiation labels will be removed or obliterated.
  - C. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.
17. The licensee may use the Calcheck device for performing linearity tests of the dose calibrator in accordance with the procedures in the Calcorp, Inc. Manual dated March 2, 1982.
18. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated July 25, 1983 including ALARA program, and letter dated August 16, 1983. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.

For the U.S. Nuclear Regulatory Commission

Original Signed By

By John E. Glenn, Ph.D.

Nuclear Materials and Safeguards Branch  
Region I

King of Prussia, Pennsylvania 19406

Date September 20, 1983

"OFFICIAL RECORD COPY"

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# BH Burbank Hospital

Nichols Road  
Fitchburg, Massachusetts 01420  
617 345-4311

8 July 1983

John E. Glenn, Ph.D.  
Nuclear Materials Section B  
U.S. Nuclear Regulatory Commission, Region 1  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Dear Sir:

This is a list of my training for therapy procedures  
involving radiopharmaceuticals.

Veteran's Hospital, Jamaica Plain, Boston, Mass.  
Training Nuclear Medicine April & May 1966 and April & May 1967

Albert Einstein College of Medicine, New York April 29 - May 2, 1974

University of Miami School of Medicine, Florida Jan. 4-7, 1976  
Div. of Nuc.Med., College of Wisconsin, Nuc. Cardiology July 1982 Hiltonhead, NC  
Div. of Nuc.Med., College of Wisconsin, Nuc. Cardiology July 1981 Myrtle Beach,  
CERTIFICATION: 1967 American Board of Radiology S.C.

1972 Senior member of American Society of Neuroradiology

1976 American Board of Nuclear Medicine

I have had 17 yrs. experience in the diagnosis of thyroid  
function.

Sincerely,

*Herman Haimovici*

Herman Haimovici, M.D.  
Radiologist-In-Chief

~~6408220482~~ 2P

MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

February 18, 1983

United States  
Nuclear Regulatory Commission  
Attention: Phillip C. Jerman  
Materials Program Section #2  
Division of Engineering &  
Technical Programs  
Washington, DC 20555

Gentlemen:

Please amend our NRC license #20-18449-01 to include USAF Hospital, Pease (SAC), Pease Air Force Base, New Hampshire 03801. Stephen Moore Lindsey, M.D. Major USAF MC who is listed on the enclosed Training and Experience Supplement A and the Preceptor Statement Supplement B will supervise the program.

Also enclosed, please find a letter for the above mentioned hospital requesting their addition to our license and a check for forty (40) dollars to cover the amendment.

Should there be any questions, please do not hesitate to call me at (617) 938-0232.

Sincerely,

*William Guimond*

William Guimond  
General Manager

WG/hgo

Enclosure

RECEIVED BY LFMB	
Date	3/17/83
Log	MAR 1 I
By	Brown
Orig To	3/8/83

Applicant	480
Check No.	440-7B
Amount/Fee	Amendment
Type of Fee	3/17/83
Date Check Rec'd	
Received By	Brown

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NMS LIC30  
20-18449-01 PDR

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FEB 25 1983



DEPARTMENT OF THE AIR FORCE  
USAF HOSPITAL, PEASE (SAC)  
PEASE AIR FORCE BASE, NEW HAMPSHIRE 03801

REPLY TO  
ATTN OF: SG

SUBJECT: Application for Nuclear Medicine Services  
from Medical Imaging Corporation

TO: Director  
Office of Nuclear Material  
Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Gentlemen:

1. This is to request that the USAF Hospital Pease be included in the list of medical installations at which Medical Imaging Corporation of 10V Roessler Road, Woburn, Massachusetts is licensed to perform Nuclear Medicine Services. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this hospital and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.
2. Nuclear Imaging procedures will be requested by any physician who is a member of the USAF Hospital Pease medical staff but will be coordinated under the general supervision of Dr. Stephen M. Lindsey, Maj USAF MC, whose training and experience is described on the enclosure. Dr. Lindsey is the only physician who will be permitted to supervise the nuclear medicine technicians of Medical Imaging Corporation during their performance of Nuclear Medicine procedures at the USAF Hospital Pease and he will work closely with Medical Imaging Corporation personnel throughout this program.
3. Nuclear Medicine Services will be provided to the USAF Hospital Pease by Medical Imaging Corporation contingent upon concurrent approval of the USAF Surgeon General and USAF Radioisotope Committee as well as the Nuclear Regulatory Commission.

R. J. JONES, Col USAF MC FS  
Commander

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NMS LIC30  
20-18449-01 PDR

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Peace....is our Profession

ML10  
FEB 25 1983

(7-77)  
10 CFR 30

# TRAINING AND EXPERIENCE AUTHORIZED USER OR RADIATION PROTECTION OFFICER

## 1. NAME OF AUTHORIZED USER OR RADIATION PROTECTION OFFICER

Dr. Stephen Moore Lindsey, Maj USAF MC

## 2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE

Ohio, Wisconsin

## 3. CERTIFICATION

SPECIALITY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
American Board of Radiology	Diagnostic Radiology	June 1979

## 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	August 1977 - June 1978 Medical College of Wisconsin Milwaukee County General Hosp.	110	15
b. RADIATION PROTECTION	August 1977 - June 1978 Medical College of Wisconsin Milwaukee County General Hosp.	25	
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	August 1977 - June 1978 Medical College of Wisconsin Milwaukee County General Hosp.	26	
d. RADIATION BIOLOGY	August 1977 - June 1978 Medical College of Wisconsin Milwaukee County General Hosp.	18	
e. RADIOPHARMACEUTICAL CHEMISTRY	April 1978 - June 1978; May 1979. Medical College of Wisconsin Milwaukee County General Hosp.	25	10

PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS		<b>KEY TO COLUMN C</b> <b>PERSONAL PARTICIPATION SHOULD CONSIST OF:</b> 1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage. 2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data. 3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.
FULL NAME Stephen Moore Lindsey, Maj USAF MC		
STREET ADDRESS Chief, Radiology Service USAF Hospital Pease (SGHR)		
CITY Pease AFB	STATE N.H.	

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	18	
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME	4	
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES	41	
	IN VITRO STUDIES		
OTHER	Gallium 67	12	
I-125	DETECTION OF THROMBOSIS	5	
I-131	THYROID IMAGING		
P-32	EYE TUMOR LOCALIZATION		
Se-75	PANCREAS IMAGING		
Yb-169	CISTERNOGRAPHY	10	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	25	
OTHER			
Tc-99m	BRAIN IMAGING	84	
	CARDIAC IMAGING	16	
	THYROID IMAGING	25	
	SALIVARY GLAND IMAGING	1	
	BLOOD POOL IMAGING		
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING	79	
	LUNG IMAGING	36	
	BONE IMAGING	58	
OTHER	Thallium-201 cardiac	10	



## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		
P-32 (Colloidal)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA	2	
	TREATMENT OF HYPERTHYROIDISM AND CARDIAC CONDITION	1	
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
Co-60 or Cs-137	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION	6	
Mo-99/ Tc-99m	GENERATOR	10	
Sr-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS	7	
Other			

## 3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

April - June 1978 500 hours

## 4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

## a. NAME OF SUPERVISOR

Jagmeet S. Soin M.D.

## b. NAME OF INSTITUTION

Medical College of Wisconsin  
Milwaukee County General Hospital

## c. MAILING ADDRESS

8700 W. Wisconsin Ave

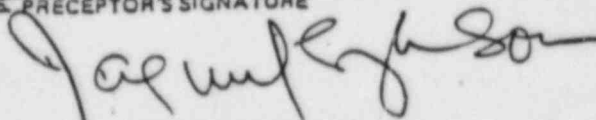
## d. CITY

Milwaukee, WI 53201

## 5. MATERIALS LICENSE NUMBER(S)

48-4193-0

## 6. PRECEPTOR'S SIGNATURE



## 7. PRECEPTOR'S NAME (Please type or print)

Dr. Jagmeet S. Soin

## 8. DATE

February 2, 1983

MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

January 4, 1983

United States  
Nuclear Regulatory Commission  
Attention: Phillip C. Jerman  
Materials Program Section #2  
Division of Engineering and  
Technical Programs

Gentlemen:

Please amend our NRC license #20-18449-01 to include the  
two (2) hospitals listed below:

- 1) Mary Lane Hospital, 85 South Street, Ware,  
Massachusetts 01082. Thomas O'Connor, M.D.  
who is named on NRC license number #20-12561-  
01 for Marlboro Hospital, Marlboro, Massachu-  
setts, will supervise the program.
- 2) Central Hospital Inc., 26 Central Street,  
Somerville, MA 02143. Philip Andrews, M.D.  
who is named on NRC license number #20-13162-  
02 for Cambridge City Hospital, Cambridge,  
Massachusetts, will supervise the program.

RECEIVED
Date <i>1/14/83</i>
Log <i>Jan 6 I</i>
By <i>Drown</i>
Orig. To
Action Compl. <i>1/17/83</i>

Also, enclosed, please find letters from each of the above  
hospitals requesting their addition to our license.

A check for forty (40) dollars to cover the amendment is  
enclosed.

Should there be any questions, please do not hesitate to  
call me at (617) 938-0232.

Sincerely,

Applicant	<i>316</i>	<i>William Guimond</i>
Check No.	<i>#40</i>	
Amount	<i>\$40.00</i>	William Guimond
Type of	<i>Amendment</i>	General Manager
Date Check Recd.	<i>1/14/83</i>	

*O'Connor*

WG/hgo

Enclosure

*1p*

8409210113 840523  
NMS LIC30  
20-18449-01 PDR

"OFFICIAL RECORD COPY"

01035

*MLK*  
JAN 10 1983

# CENTRAL HOSPITAL

*Incorporated*

Twenty-six Central Street  
Somerville, Massachusetts, 02143  
Telephone 625-8900

December 15, 1982

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Gentlemen:

This is to request that our hospital be included in the list of facilities at which Medical Imaging Corporation of 10V Roessler Road, Woburn, Massachusetts, is licensed to perform Nuclear Medicine services. Ours is a general hospital facility with 99 beds. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this hospital, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated through the Radiology Department under the general supervision of Dr. Philip J. Andrews whose training and experience is described on the enclosure. Dr. Andrews will work closely with Medical Imaging Corporation personnel throughout this program.

Yours truly,

*Edmund H. Stone*

Edmund H. Stone  
Vice President/Treasurer

*Edmund H. Stone*

EHS:lc

Enclosure: 1

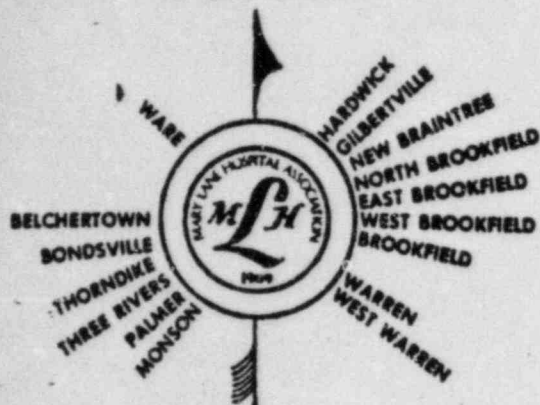
~~804040072~~ 1P "OFFICIAL RECORD COPY"

ML10

*Mary Lane Hospital*  
ASSOCIATION

85 South Street, Ware, Massachusetts 01082

Tel. (413) 967-6211



WILLIAM J. ZWEMKE  
EXECUTIVE DIRECTOR

December 21, 1982

Director  
Office of Nuclear Material  
Safety and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Gentlemen:

This is to request that our Hospital be included in the list of facilities at which Medical Imaging Corporation of 10V Roessler Road, Woburn, Massachusetts, is licensed to perform Nuclear Medicine services. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in our facilities, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by members of our medical staff and will be coordinated under the general supervision of Dr. Thomas O'Connor, whose training and experience is described on the enclosure. Dr. O'Connor will work closely with Medical Imaging Corporation personnel throughout this program.

Sincerely,

*William J. Zwemke*

William J. Zwemke  
Executive Director

WJZ/ccb  
Encl.

cc - Luigi Tella, MLH  
Dr. Thomas O'Connor, MLH  
William Guimond, MIC ✓

01035

~~8304040546~~ 2p "OFFICIAL RECORD COPY"

ML10



MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

May 13, 1982

RECEIVED

MAY 24 AM 11 33

U.S. NUCLEAR REG  
COMMISSION  
INS MAIL SECTION

United States  
Nuclear Regulatory Commission  
Attention: Mr. William Walker  
Material Licensing Branch  
Division of Fuel Cycle &  
Material Safety  
Washington, DC 20555

Gentlemen:

Please amend our NRC license #20-18449-01 to include Charles River Medical Center, 25 Walnut Street, Wellesley Hills, Massachusetts 02181. A letter from Charles River Medical Center requesting this is included.

A check for forty dollars (\$40.00) to cover this amendment is enclosed.

Should there be any questions, please do not hesitate to call me at 617/938-0232.

Sincerely,

*William Guimond*

William Guimond  
Director

WG/hgo  
Enclosure

RECEIVED BY LFMB	
Date	6/1/82
Log	June PC I Rec II
By	<i>Oborn</i>
Orig. To	
Action Compl	6/2/82

Applicant	
Check No.	1281
Amount	\$40.00
Type	Amendment
Date	6/1/82
Received by	<i>Oborn</i>

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INSPECTION AND ENFORCEMENT

"OFFICIAL RECORD COPY"

21441

ML14





**CHARLES RIVER  
MEDICAL CENTER**

25-18 4219 Reg I  
Reg. I  
04/16/82 RECEIVED  
0521

March 29, 1982

APR 2 AM 11 02

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

U.S. NUCLEAR REG  
COMMISSION  
MAIL SECTION

Gentlemen:

This is to request that our medical building be included in the list of facilities at which Medical Imaging Corporation of 10V Roessler Road, Woburn, Massachusetts, is licensed to perform Nuclear Medicine services. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this building, and for performance of whatever procedures may be necessary by Medical Imaging Corp. personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated through the Charles River Radiology, under the general supervision of Dr. David Tamaren, who is named on the Medical Imaging Corporation license.

Dr. Tamaren will work closely with the Medical Imaging Corporation personnel throughout this program.

Sincerely,

John C. Athans, M.D., Director

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INSPECTION AND ENFORCEMENT

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8409210124 840523  
NMS LIC30  
20-18449-01 PDR

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MLIP



# CHARLES RIVER MEDICAL CENTER

March 29, 1982

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

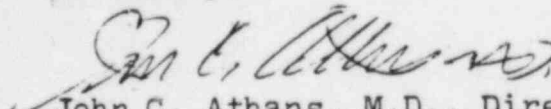
Gentlemen:

This is to request that our medical building be included in the list of facilities at which Medical Imaging Corporation of 10V Roessler Road, Woburn, Massachusetts, is licensed to perform Nuclear Medicine services. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this building, and for performance of whatever procedures may be necessary by Medical Imaging Corp. personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated through the Charles River Radiology, under the general supervision of Dr. David Tamaren, who is named on the Medical Imaging Corporation license.

Dr. Tamaren will work closely with the Medical Imaging Corporation personnel throughout this program.

Sincerely,

  
John C. Athans, M.D., Director

~~8304040189~~ 1P  
"OFFICIAL RECORD COPY"

MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

January 27, 1982

United States  
Nuclear Regulatory Commission  
Attention: Mr. William Walker  
Material Licensing Branch  
Division of Fuel Cycle &  
Material Safety  
Washington, DC 20555

U.S. NUCLEAR REG.  
COMMISSION  
MAIL SECTION

1982 FEB 2 AM 11 16

RECEIVED

Gentlemen:

Please add the name of David Stephen Tamaren, M. D. to the list of authorized physicians on the Medical Imaging Corporation's MRC license #20-18449-01. As indicated in the enclosed data, Dr. Tamaren has fulfilled the necessary hours of training to be added to MIC's Nuclear license.

A check for forty dollars (\$40.00) to cover this admendment is enclosed.

Should there be any questions, please do not hesitate to call me at 617/928-0232.

Sincerely,

*REC-1*  
RECEIVED  
Date *2/8/82*  
Log *FEB PG 4*  
By *Brown*  
Chg. To  
Action *2/9/82*

*William Guimond*  
William Guimond  
Director

WG/hgo

Enclosure

*998 #40/7B*  
*Amendment*  
*2/8/82*  
*Brown*

COPIES SENT TO OFF. OF  
INSPECTION AND ENFORCEMENT

"OFFICIAL RECORD COPY"

10221

ML10

## APPLICATION FOR MATERIALS LICENSE - MEDICAL

Approved:  
GAO R0557

**INSTRUCTIONS** - Complete Items 1 through 26 if this is an initial application or an application for renewal of a license. Use supplemental sheets where necessary. Item 26 must be completed on all applications and signed. Retain one copy. Submit original and one copy of entire application to: Director, Office of Nuclear Materials Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Upon approval of this application, the applicant will receive a Materials License. An NRC Materials 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, Parts 19, 20 and 35 and the license fee provision of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 26 and the appropriate fee enclosed.

1.a. NAME AND MAILING ADDRESS OF APPLICANT (institution, firm, clinic, physician, etc.) INCLUDE ZIP CODE

David Stephen Tamaren  
9 Phalen St.  
Acton, Mass. 01720

TELEPHONE NO.: AREA CODE (617) 263 6198

1.b. STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED (If different from 1.a.) INCLUDE ZIP CODE

2. PERSON TO CONTACT REGARDING THIS APPLICATION

TELEPHONE NO.: AREA CODE ( ) \_\_\_\_\_

3. THIS IS AN APPLICATION FOR: (Check appropriate item)

a. ☒ NEW LICENSE

b. ☐ AMENDMENT TO LICENSE NO. \_\_\_\_\_

c. ☐ RENEWAL OF LICENSE NO. \_\_\_\_\_

4. INDIVIDUAL USERS (Name individuals who will use or directly supervise use of radioactive material. Complete Supplements A and B for each individual.)

5. RADIATION SAFETY OFFICER (RSO) (Name of person designated as radiation safety officer. If other than individual user, complete resume of training and experience as in Supplement A.)

## 6.a. RADIOACTIVE MATERIAL FOR MEDICAL USE

RADIOACTIVE MATERIAL LISTED IN:	ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS (In millicuries)	ADDITIONAL ITEMS:	MARK ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS (In millicuries)
10 CFR 31.11 FOR IN VITRO STUDIES	X	0.2 mCi	IODINE-131 AS IODIDE FOR TREATMENT OF HYPERTHYROIDISM		
10 CFR 35.100, SCHEDULE A, GROUP I	X	AS NEEDED	PHOSPHORUS-32 AS SOLUBLE PHOSPHATE FOR TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA AND BONE METASTASES		
10 CFR 35.100, SCHEDULE A, GROUP II	X	AS NEEDED	PHOSPHORUS-32 AS COLLOIDAL CHROMIC PHOSPHATE FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP III	X	?	GOLD-198 AS COLLOID FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP IV	X	AS NEEDED	IODINE-131 AS IODIDE FOR TREATMENT OF THYROID CARCINOMA		
10 CFR 35.100, SCHEDULE A, GROUP V		AS NEEDED	XENON-133 AS GAS OR GAS IN SALINE FOR BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES.		
10 CFR 35.100, SCHEDULE A, GROUP VI					

6.b. RADIOACTIVE MATERIAL FOR USES NOT LISTED IN ITEM 6.a. (Sealed sources up to 3 mCi used for calibration and reference standards are authorized under Section 35.14(d), 10 CFR Part 35, and NEED NOT BE LISTED.)

ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	MAXIMUM NUMBER OF MILLICURIES OF EACH FORM	DESCRIBE PURPOSE OF USE
1			



# INFORMATION REQUIRED FOR ITEMS 7 THROUGH 23

For Items 7 through 23, check the appropriate box(es) and submit a detailed description of all the requested information. Begin each item on a separate sheet. Identify the item number and the date of the application in the lower right corner of each page. If you indicate that an appendix to the medical licensing guide will be followed, do not submit the pages, but specify the revision number and date of the referenced guide: Regulatory Guide 10.8, Rev. 1, Date: Oct 1980

7. MEDICAL ISOTOPES COMMITTEE		15. GENERAL RULES FOR THE SAFE USE OF RADIOACTIVE MATERIAL (Check One)	
<input type="checkbox"/>	Names and Specialties Attached; and	<input type="checkbox"/>	Appendix G Rules Followed; or
<input type="checkbox"/>	Duties as in Appendix B; or (Check One)	<input type="checkbox"/>	Equivalent Rules Attached
<input type="checkbox"/>	Equivalent Duties Attached	16. EMERGENCY PROCEDURES (Check One)	
8. TRAINING AND EXPERIENCE		<input type="checkbox"/>	Appendix H Procedures Followed; or
<input type="checkbox"/>	Supplements A & B Attached for Each Individual User; and	<input type="checkbox"/>	Equivalent Procedures Attached
<input type="checkbox"/>	Supplement A Attached for RSO.	17. AREA SURVEY PROCEDURES (Check One)	
9. INSTRUMENTATION (Check One)		<input type="checkbox"/>	Appendix I Procedures Followed; or
<input type="checkbox"/>	Appendix C Form Attached; or	<input type="checkbox"/>	Equivalent Procedures Attached
<input type="checkbox"/>	List by Name and Model Number	18. WASTE DISPOSAL (Check One)	
10. CALIBRATION OF INSTRUMENTS		<input type="checkbox"/>	Appendix J Form Attached; or
<input type="checkbox"/>	Appendix D Procedures Followed for Survey Instruments; or (Check One)	<input type="checkbox"/>	Equivalent Information Attached
<input type="checkbox"/>	Equivalent Procedures Attached; and	19. THERAPEUTIC USE OF RADIOPHARMACEUTICALS (Check One)	
<input type="checkbox"/>	Appendix D Procedures Followed for Dose Calibrator; or (Check One)	<input type="checkbox"/>	Appendix K Procedures Followed; or
<input type="checkbox"/>	Equivalent Procedures Attached	<input type="checkbox"/>	Equivalent Procedures Attached
11. FACILITIES AND EQUIPMENT		20. THERAPEUTIC USE OF SEALED SOURCES	
<input type="checkbox"/>	Description and Diagram Attached	<input type="checkbox"/>	Detailed Information Attached; and
12. PERSONNEL TRAINING PROGRAM		<input type="checkbox"/>	Appendix L Procedures Followed; or (Check One)
<input type="checkbox"/>	Description of Training Attached	<input type="checkbox"/>	Equivalent Procedures Attached
13. PROCEDURES FOR ORDERING AND RECEIVING RADIOACTIVE MATERIAL		21. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE GASES (e.g., Xenon - 133)	
<input type="checkbox"/>	Detailed Information Attached	<input type="checkbox"/>	Detailed Information Attached
14. PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS (Check One)		22. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL IN ANIMALS	
<input type="checkbox"/>	Appendix F Procedures Followed; or	<input type="checkbox"/>	Detailed Information Attached
<input type="checkbox"/>	Equivalent Procedures Attached	23. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL SPECIFIED IN ITEM 6.b	
<input type="checkbox"/>	Detailed Information Attached		

## 24. PERSONNEL MONITORING DEVICES

	TYPE <small>(Check appropriate box)</small>	SUPPLIER	EXCHANGE FREQUENCY
a. WHOLE BODY	FILM		
	TLD		
	OTHER <i>(Specify)</i>		
b. FINGER	FILM		
	TLD		
	OTHER <i>(Specify)</i>		
c. WRIST	FILM		
	TLD		
	OTHER <i>(Specify)</i>		

d. OTHER *(Specify)*

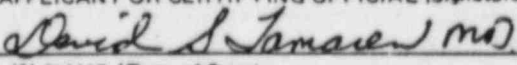
## 25. FOR PRIVATE PRACTICE APPLICANTS ONLY

a. HOSPITAL AGREEING TO ACCEPT PATIENTS CONTAINING RADIOACTIVE MATERIAL			
NAME OF HOSPITAL		b. ATTACH A COPY OF THE AGREEMENT LETTER SIGNED BY THE HOSPITAL ADMINISTRATOR.	
MAILING ADDRESS			
CITY	STATE    ZIP CODE		
c. WHEN REQUESTING THERAPY PROCEDURES, ATTACH A COPY OF RADIATION SAFETY PRECAUTIONS TO BE TAKEN AND LIST AVAILABLE RADIATION DETECTION INSTRUMENTS.			

## 26. CERTIFICATE

*(This item must be completed by applicant)*

The applicant and any official executing this certificate on behalf of the applicant named in Item 1a certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Parts 30 and 35, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

<p style="text-align: center;">a. LICENSE FEE REQUIRED <small>(See Section 170.31, 10 CFR 170)</small></p>	<p>b. APPLICANT OR CERTIFYING OFFICIAL <i>(Signature)</i></p> <div style="text-align: center;">               (1) NAME <i>(Type or Print)</i>              David S. Tamaren M.D.              (2) TITLE              M.D.           </div>
<p>(1) LICENSE FEE CATEGORY:</p>	<p>c. DATE</p>
<p>(2) LICENSE FEE ENCLOSED: \$ _____</p>	

FORM NRC-313M (8-78) 10 CFR 35	U.S. NUCLEAR REGULATORY COMMISSION <b>APPLICATION FOR MATERIALS LICENSE – MEDICAL</b>	Approved: GAO R0557
--------------------------------------	--	------------------------

**INSTRUCTIONS** – Complete Items 1 through 26 if this is an initial application or an application for renewal of a license. Use supplemental sheets where necessary. Item 26 must be completed on all applications and signed. Retain one copy. Submit original and one copy of entire application to: Director, Office of Nuclear Materials Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Upon approval of this application, the applicant will receive a Materials License. An NRC Materials 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, Parts 19, 20 and 35 and the license fee provision of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 26 and the appropriate fee enclosed.

<b>1.a. NAME AND MAILING ADDRESS OF APPLICANT</b> (institution, firm, clinic, physician, etc.) INCLUDE ZIP CODE David Stephen Tamaren 9 Phalen St. Acton, Mass. 01720 * TELEPHONE NO.: AREA CODE 617 263 6190	<b>1.b. STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED</b> (if different from 1.a.) INCLUDE ZIP CODE  
<b>2. PERSON TO CONTACT REGARDING THIS APPLICATION</b> TELEPHONE NO.: AREA CODE ( ) _____	<b>3. THIS IS AN APPLICATION FOR:</b> (Check appropriate item) a. <input checked="" type="checkbox"/> NEW LICENSE b. <input type="checkbox"/> AMENDMENT TO LICENSE NO. _____ c. <input type="checkbox"/> RENEWAL OF LICENSE NO. _____
<b>4. INDIVIDUAL USERS</b> (Name individuals who will use or directly supervise use of radioactive material. Complete Supplements A and B for each individual.)	<b>5. RADIATION SAFETY OFFICER (RSO)</b> (Name of person designated as radiation safety officer. If other than individual user, complete resume of training and experience as in Supplement A.)

6.a. RADIOACTIVE MATERIAL FOR MEDICAL USE			
RADIOACTIVE MATERIAL LISTED IN:	ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS (In millicuries)	<div style="display: flex; justify-content: space-between;"> <div>ADDITIONAL ITEMS:</div> <div>           MARK ITEMS DESIRED            "X"         </div> </div>
10 CFR 31.11 FOR IN VITRO STUDIES	X	.2 mCi	IODINE-131 AS IODIDE FOR TREATMENT OF HYPERTHYROIDISM
10 CFR 35.100, SCHEDULE A, GROUP I	X	AS NEEDED	PHOSPHORUS-32 AS SOLUBLE PHOSPHATE FOR TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA AND BONE METASTASES
10 CFR 35.100, SCHEDULE A, GROUP II	X	AS NEEDED	PHOSPHORUS-32 AS COLLOIDAL CHROMIC PHOSPHATE FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.
10 CFR 35.100, SCHEDULE A, GROUP III	X	?	GOLD-198 AS COLLOID FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.
10 CFR 35.100, SCHEDULE A, GROUP IV	X	AS NEEDED	IODINE-131 AS IODIDE FOR TREATMENT OF THYROID CARCINOMA
10 CFR 35.100, SCHEDULE A, GROUP V		AS NEEDED	XENON-133 AS GAS OR GAS IN SALINE FOR BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES.
10 CFR 35.100, SCHEDULE A, GROUP VI			

6.b. RADIOACTIVE MATERIAL FOR USES NOT LISTED IN ITEM 6.a. (Sealed sources up to 3 mCi used for calibration and reference standards are authorized under Section 35.14(d), 10 CFR Part 35, and NEED NOT BE LISTED.)			
ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	MAXIMUM NUMBER OF MILLICURIES OF EACH FORM	DESCRIBE PURPOSE OF USE
			ML10

# **INFORMATION REQUIRED FOR ITEMS 7 THROUGH 23**

For Items 7 through 23, check the appropriate box(es) and submit a detailed description of all the requested information. Begin each item on a separate sheet. Identify the item number and the date of the application in the lower right corner of each page. If you indicate that an appendix to the medical licensing guide will be followed, do not submit the pages, but specify the revision number and date of the referenced guide: Regulatory Guide 10.8, Rev. \_\_\_\_\_ Date: \_\_\_\_\_

<b>7. MEDICAL ISOTOPES COMMITTEE</b>		<b>15. GENERAL RULES FOR THE SAFE USE OF RADIOACTIVE MATERIAL (Check One)</b>	
Names and Specialties Attached; and		Appendix G Rules Followed; or	
Duties as in Appendix B; or (Check One)		Equivalent Rules Attached	
Equivalent Duties Attached		<b>16. EMERGENCY PROCEDURES (Check One)</b>	
<b>8. TRAINING AND EXPERIENCE</b>		Appendix H Procedures Followed; or	
Supplements A & B Attached for Each Individual User; and		Equivalent Procedures Attached	
Supplement A Attached for RSO.		<b>17. AREA SURVEY PROCEDURES (Check One)</b>	
<b>9. INSTRUMENTATION (Check One)</b>		Appendix I Procedures Followed; or	
Appendix C Form Attached; or		Equivalent Procedures Attached	
List by Name and Model Number		<b>18. WASTE DISPOSAL (Check One)</b>	
<b>10. CALIBRATION OF INSTRUMENTS</b>		Appendix J Form Attached; or	
Appendix D Procedures Followed for Survey Instruments; or (Check One)		Equivalent Information Attached	
Equivalent Procedures Attached; and		<b>19. THERAPEUTIC USE OF RADIOPHARMACEUTICALS (Check One)</b>	
Appendix D Procedures Followed for Dose Calibrator; or (Check One)		Appendix K Procedures Followed; or	
Equivalent Procedures Attached		Equivalent Procedures Attached	
<b>11. FACILITIES AND EQUIPMENT</b>		<b>20. THERAPEUTIC USE OF SEALED SOURCES</b>	
Description and Diagram Attached		Detailed Information Attached; and	
<b>12. PERSONNEL TRAINING PROGRAM</b>		Appendix L Procedures Followed; or (Check One)	
Description of Training Attached		Equivalent Procedures Attached	
<b>13. PROCEDURES FOR ORDERING AND RECEIVING RADIOACTIVE MATERIAL</b>		<b>21. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE GASES (e.g., Xenon - 133)</b>	
Detailed Information Attached		Detailed Information Attached	
<b>14. PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS (Check One)</b>		<b>22. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL IN ANIMALS</b>	
Appendix F Procedures Followed; or		Detailed Information Attached	
Equivalent Procedures Attached		<b>23. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL SPECIFIED IN ITEM 6.b</b>	
		Detailed Information Attached	



## 24. PERSONNEL MONITORING DEVICES

	TYPE <small>(Check appropriate box)</small>	SUPPLIER	EXCHANGE FREQUENCY
<b>a. WHOLE BODY</b>	FILM		
	TLD		
	OTHER <i>(Specify)</i>		
<b>b. FINGER</b>	FILM		
	TLD		
	OTHER <i>(Specify)</i>		
<b>c. WRIST</b>	FILM		
	TLD		
	OTHER <i>(Specify)</i>		

**d. OTHER *(Specify)***

## 25. FOR PRIVATE PRACTICE APPLICANTS ONLY

<b>a. HOSPITAL AGREEING TO ACCEPT PATIENTS CONTAINING RADIOACTIVE MATERIAL</b>			
NAME OF HOSPITAL		<b>b. ATTACH A COPY OF THE AGREEMENT LETTER SIGNED BY THE HOSPITAL ADMINISTRATOR.</b>  <b>c. WHEN REQUESTING THERAPY PROCEDURES, ATTACH A COPY OF RADIATION SAFETY PRECAUTIONS TO BE TAKEN AND LIST AVAILABLE RADIATION DETECTION INSTRUMENTS.</b>	
MAILING ADDRESS			
CITY	STATE    ZIP CODE		

## 26. CERTIFICATE

*(This item must be completed by applicant)*

The applicant and any official executing this certificate on behalf of the applicant named in Item 1a certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Parts 30 and 35, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

<b>a. LICENSE FEE REQUIRED</b> <small>(See Section 170.31, 10 CFR 170)</small>	<b>b. APPLICANT OR CERTIFYING OFFICIAL <i>(Signature)</i></b> <div style="text-align: center; font-family: cursive; font-size: 1.2em;">David S. Tamaren MD</div>
<b>(1) LICENSE FEE CATEGORY:</b>	<b>(1) NAME <i>(Type of Print)</i></b> <div style="text-align: center; font-family: cursive; font-size: 1.2em;">David S. Tamaren M.D.</div>
<b>(2) LICENSE FEE ENCLOSED: \$</b>	<b>(2) TITLE</b> <div style="text-align: center; font-family: cursive; font-size: 1.2em;">M.D.</div>
<b>c. DATE</b>	

Education: University of Conn., Storrs, Conn. 1963-1967  
B.S. in Mechanical Engineering and Mathematics

Mass. Institute of Technology, Cambridge, Mass. 1967-70  
Northeastern University, Boston Mass.  
M.S. in Bioengineering

Mass. Institute of Technology, Cambridge, Mass. 1970-71  
Completed Bioengineering Ph.D. Coursework

Albert Einstein College of Medicine, Bronx, New York  
M.D., 1971-1974

Hartford Hospital, Hartford, Conn. 1974-1977  
Internship and two year Internal Medicine Residency  
Eight month cardiology specialization during second  
year of residency

Beth Israel Hospital, Boston, Mass. 1978-1981  
Radiology Residency

Honors: University of Connecticut: Graduation with High Honors  
Pi Tau Sigma, Tau Beta Pi: Engineering Honor Societies  
Phi Kappa Phi: Academic Honor Society  
American College of Physicians: Member, November 1978

Licenses  
and  
Certificates: Engineer in Training, 1967

Board Certified in Internal Medicine, October 1977  
Mass. Medical License # 424-78, March 1978

Air Force Institute of Pathology, Washington, D.C.  
Certificate for Radiologic Pathology, May 1979  
Advanced Life Support Certification, April 1981  
Board Certified in Radiology, June 1981

Work

Experience: 1968-1970 MIT Instrumentation Laboratory  
Thermoelectric Design of Guidance Systems  
Design of Strap-down Guidance System for  
deep water sensor and multiple integrated  
re-entry vehicles

1977-1979 Emergency Room Physician: Bristol Hospital,  
Bristol, Ct. and New Britain General Hos-  
pital, New Britain, Ct.

1977- Connecticut and Massachusetts State Social  
Present Security Disability Physician

1979- Radiology (Part time): UMASS, Worcester, Mass.  
Present Whidden Hospital, Everett, Mass.  
St. John's Hospital, Lowell, Mass.

1981- Emergency Room Physician: Melrose-Wakefield  
Hospital, Melrose, Massachusetts

References:

Dr. Ralph Reinfrank, Director of Medicine,  
Hartford Hospital, Hartford, Ct.

Dr. Morris Simon, Assistant Director of  
Radiology, Beth Israel Hospital, Boston, Mass.

Dr. Sven Paulin, Director of Radiology, Beth  
Israel Hospital, Boston, Mass.

Dr. Aldo Belluchi, Assistant Director of  
Medicine, Hartford Hospital, Hartford, Ct.

# TRAINING AND EXPERIENCE AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

David Stephen Tamaren

2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE *New Hampshire*  
MASSACHUSETTS

## 3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
① Radiology ② Internal Medicine		June 1981 June 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	<i>Scattered thruout 3yrs @ Beth Israel Hosp and 1 month @ Hfd. Hosp. (Nuclear med. Dept)</i> June 1 - July 1, 1977 - Hfd. Hospital - Hfd, Conn. July 1, 1978 - July 1, 1981 - Beth Israel Hosp. Boston, Mass.	150	50
b. RADIATION PROTECTION	Same as above	100	20
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	Same	150	20
d. RADIATION BIOLOGY	Same	50	10
e. RADIOPHARMACEUTICAL CHEMISTRY	Same	45	10

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
<i>Tc 99m</i>	<i>20 mCi</i>	<i>Beth Israel Hosp. Boston, Mass &amp; Hartford Hosp. Hartford, Ct.</i>	<i>4 months</i>	<i>Clinical</i>
<i>Tl 201</i>	<i>2 mCi</i>			<i>"</i>
<i>I 123</i>	<i>200 uCi</i>			<i>"</i>
<i>I 131</i>	<i>200 uCi</i>			<i>"</i>
<i>In 111</i>	<i>500 uCi</i>			<i>"</i>
<i>Ga 67</i>	<i>6 mCi</i>			<i>"</i>
<i>Co 57</i>	<i>200 uCi</i>			<i>"</i>
<i>Xe 133</i>	<i>20 mCi</i>			



(8-78)

# TRAINING AND EXPERIENCE AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

David Stephen Tamaren

2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE

Mass. &amp; New Hampshire

## 3. CERTIFICATION

SPECIALTY BOARD

A

CATEGORY

B

MONTH AND YEAR CERTIFIED

C

- ① Radiology  
② Internal medicine

June 1981  
June 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

Scattered throughout 3 yrs @ Beth Israel Hosp & 1 month @ Hfd. Hosp  
June 1 - July 1, 1977 Hfd. Hosp  
Hfd., Ct.  
July 1, 1978 - July 1, 1981  
Beth Israel Hosp Boston, Mass.

150

50

b. RADIATION PROTECTION

Same as above

100

20

c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY

Same

150

20

d. RADIATION BIOLOGY

Same

50

10

e. RADIOPHARMACEUTICAL CHEMISTRY

Same

45

10

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

ISOTOPE

MAXIMUM AMOUNT

WHERE EXPERIENCE WAS GAINED

DURATION OF EXPERIENCE

TYPE OF USE

Tc99m

20mCi

Beth Israel Hosp  
Boston, Mass. &  
Hartford Hosp.  
Hartford, Ct.

4 months

Clinical

Tl201

2mCi

I123

200µCi

I131

200µCi

In111

500µCi

Ga67

6mCi

Co57

200µCi

Xe133

20mCi

I125

100µCi

Cs137

200µCi

## PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

## 1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME

David Stephen Tamaren

STREET ADDRESS

9 Phalen St.

CITY

Acton

STATE

Mass 01720

## KEY TO COLUMN C

## PERSONAL PARTICIPATION SHOULD CONSIST OF:

- 1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.
- 2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.
- 3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125 or I-123 or Ga-67 citrate	DIAGNOSIS OF THYROID FUNCTION	80	Thallium 201 - cardiac - 100 studies - cases Cr-51 RBC's - red cell mass - 30 cases Cardiac studies include: (a) gated equilibrium ventriculography - rest, exercise first pass study (b) Thallium - rest, exercise, post strepto- kinase (c) Tc-99m PYP - acute myocardial infarction Blood pool imaging include: (a) liver flow studies + other organ flow studies (brain, thyroid, etc) (b) GI bleeding (c) Testicular scanning meckel's scan - 10 cases (pertechnetate)
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME		
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES	55	
	IN VITRO STUDIES	20	
	Schilling test	50	
I-125	DETECTION OF THROMBOSIS		
I-131	THYROID IMAGING	50	
P-32	EYE TUMOR LOCALIZATION		
Se-75	PANCREAS IMAGING	2	
In-111 oxalate	CISTERNOGRAPHY	30	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	160	
Ga-67 citrate	soft tissue (abscess)	100	
Tc-99m	BRAIN IMAGING	70	
	CARDIAC IMAGING	400	
	THYROID IMAGING	130	
	SALIVARY GLAND IMAGING	120	
	BLOOD POOL IMAGING	60	
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING	500	
	LUNG IMAGING	160	
	BONE IMAGING	450	
Tc-99m citrate	gall bladder	65	

# PRECEPTOR STATEMENT (Continued)

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES	—	
P-32 (Colloid)	INTRACAVITARY TREATMENT	—	
I-131	TREATMENT OF THYROID CARCINOMA	—	
	TREATMENT OF HYPERTHYROIDISM	5	
Au-198	INTRACAVITARY TREATMENT	—	
Co-60 or Cs-137	INTERSTITIAL TREATMENT	—	
	INTRACAVITARY TREATMENT	—	
I-125 or Ir-192	INTERSTITIAL TREATMENT	—	
Co-60 or Cs-137	TELETHERAPY TREATMENT	—	
Sr-90	TREATMENT OF EYE DISEASE	—	
	RADIOPHARMACEUTICAL PREPARATION	—	
Mo-99/ Tc-99m	GENERATOR	—	
Sr-113/ In-113m	GENERATOR	—	
Tc-99m	REAGENT KITS	—	
Other			

## 3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

One month, June 1977; or 1,160 hours in  
clinical radioisotope training.

## 4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

### a. NAME OF SUPERVISOR

John J. Sziklas, M. D.

### b. NAME OF INSTITUTION

Hartford Hospital

### c. MAILING ADDRESS

Seymour Street

### d. CITY

Hartford, Conn.

## 5. MATERIALS LICENSE NUMBER(S)

06-00253-04

## 6. PRECEPTOR'S SIGNATURE

John J. Sziklas, MD

## 7. PRECEPTOR'S NAME (Please type or print)

John J. Sziklas, M. D.

## 8. DATE

12/8/81

## PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

## 1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME

David Stephen Tamaren

STREET ADDRESS

9 Phalen St.

CITY

Acton

STATE

Mass. 01720

ZIP CODE

## KEY TO COLUMN C

## PERSONAL PARTICIPATION SHOULD CONSIST OF:

1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.

2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.

3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	33	
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME	—	
	LIVER FUNCTION STUDIES	—	
	FAT ABSORPTION STUDIES	—	
	KIDNEY FUNCTION STUDIES	—	
	IN VITRO STUDIES	—	
OTHER		—	
I-125	DETECTION OF THROMBOSIS	—	
I-131	THYROID IMAGING	—	
P-32	EYE TUMOR LOCALIZATION	—	
Se-75	PANCREAS IMAGING	—	
Yb-169	CISTERNOGRAPHY	1	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	—	
OTHER		—	
Tc-99m	BRAIN IMAGING	146	
	CARDIAC IMAGING	1	
	THYROID IMAGING	94	
	SALIVARY GLAND IMAGING	—	
	BLOOD POOL IMAGING	—	
	PLACENTA LOCALIZATION	—	
	LIVER AND SPLEEN IMAGING	180	
	LUNG IMAGING	128	
OTHER	BONE IMAGING	157	
	Renal Tc-99m	40	



# PRECEPTOR STATEMENT (Continued)

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES	5	
P-32 (Colloidal)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA	10	
	TREATMENT OF HYPERTHYROIDISM	25	
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
Co-60 or Cs-137	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR	5	
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS	5	
Other			

3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

Nov. 1978	}	600 hours - formal involvement (reading scans, pt involvement, etc.)
Dec. 1980		200 hours - lectures - involving discussion of clinical cases - throat 3yr past
May 1981		800 hours - total

4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR  
*Gerald M. Kolodny M.D.*

b. NAME OF INSTITUTION  
*Beth Israel Hosp.*

c. MAILING ADDRESS  
*300 Brookline Ave.*

d. CITY  
*Boston, Mass 02215*

e. MATERIALS LICENSE NUMBER(S)  
*20-00742-18*

6. PRECEPTOR'S SIGNATURE

*Gerald M. Kolodny M.D.*

7. PRECEPTOR'S NAME (Please type or print)

*Gerald M. Kolodny M.D.  
(CHIEF OF NUCLEAR MEDICINE)*

8. DATE

*1/10/82*

AUG 25 1981

FCMLB:JEG  
030-15104  
(00019)

Medical Imaging Corporation  
ATTN: William Guimond  
500 New Boston Park  
10 V Roessler Road  
Woburn, MA 01801

Gentlemen:

Enclosed is Amendment No. 05 to License No. 20-18449-01 as requested by letter dated June 4, 1981.

Condition 16. has been added in accordance with our June 4, 1981 letter to ALL MEDICAL LICENSEES.

We wish you continued success with your nuclear medicine service.

Sincerely,

Original Signed By  
John E. Glenn, Ph.D.

John E. Glenn, Ph.D.  
Material Licensing Branch  
Division of Fuel Cycle  
and Material Safety

Enclosure: Amendment No. 05

"OFFICIAL RECORD COPY"

2P.

ML10

OFFICE ▶						
SURNAME ▶	GLENN	JEG				
DATE ▶	8/24/81					

MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

JUN 8 AM 10 36

June 4, 1981

U.S. NUCLEAR REGULATORY COMMISSION  
GENERAL INVESTIGATIVE SECTION

United States  
Nuclear Regulatory Commission  
Attention: Larry W. Camper  
Material Licensing Branch  
Division of Fuel Cycle and Material Safety  
Washington, D. C. 20555

Gentlemen;

Pursuant to your letter dated May 21, 1981 regarding our previously used facility at 781 River Street, Haverhill, Massachusetts, I have enclosed a copy of the comprehensive close-out survey performed by Fx. Masse Associates, Inc. on October 2, 1980.

This location was listed on our Byproducts Material License # 20-18449-01.

Should there be need for any additional material, please do not hesitate to contact me at 617. 938-0232.

Sincerely,

*William Guimond*

William Guimond  
Director

WG/mjh  
enclosures: as stated.

RECEIVED BY LFMB	
Date	8/1/81
Log	AUG PG 2 REC. I
By	BROWN
Orig. To	
Action Compi	

**FEE EXEMPT**

continuation of  
9/10/82 app & response  
to 5/21/81 ltr.

~~2304040063~~

"OFFICIAL RECORD COPY"

00019

MLI

JUL 17 1981

Health Physics Consultants

MAPLE ST. P. O. BOX 95

MIDDLETON, MASS. 01949

## RADIOISOTOPE LABORATORY SURVEY

INSTITUTION: Medical Imaging Corporation DEPARTMENT SUPERVISOR: Kerwan McMillan, M.D.  
 DEPARTMENT: Nuclear Medicine INDIVIDUAL RESPONSIBLE: Frank Masse, CHIP  
 FOR USE OF RADIONUCLIDES: Carl Greico  
 (if different from above)

NUMBER: Hot Lab and Truck DATE OF SURVEY: 2 October 1991  
 (or Designation) <sup>99mTc</sup>  
 LOCATION SOURCES IN FACILITY: \_\_\_\_\_  
 LTH PHYSICS

INSTRUMENTS USED: Survey GM Survey E120 & HP190; PICA Measuring Baird Atomic 530A

REQUIRED POSTING: N/A Ludlum & 44-3 probe All postings removed Proportional Counter  
 Form NRC-3 \_\_\_\_\_ D. Appropriate Radiation Signs \_\_\_\_\_  
 10 CFR Parts 19 & 20 \_\_\_\_\_ E. Emergency Notification \_\_\_\_\_  
 License \_\_\_\_\_ F. Unpackaging Instructions \_\_\_\_\_

RECORDS: Removed to L. Allen  
 In House \_\_\_\_\_ E. Dose Calibrator \_\_\_\_\_  
 Laboratory Survey \_\_\_\_\_ Calibrations \_\_\_\_\_  
 Radionuclide Inventory \_\_\_\_\_ F. Patient Dose \_\_\_\_\_  
 Incoming Shipment \_\_\_\_\_ Calculations \_\_\_\_\_  
 Surveys \_\_\_\_\_ G. Waste Disposal \_\_\_\_\_  
 Purchase Orders \_\_\_\_\_ H. Personnel Monitoring \_\_\_\_\_  
 I. Leak Tests \_\_\_\_\_

SURVEY/MONITORING INSTRUMENTS AVAILABLE: On Truck  
 Type B. Manufacturer C. Operational D. Calibrated  
GM Survey Victoreen \_\_\_\_\_  
Ion Chamber Victoreen \_\_\_\_\_

WASTE DISPOSAL: Any above background removed to waste  
 Sink Records \_\_\_\_\_ Contained Waste Records; Liquid \_\_\_\_\_ Solid \_\_\_\_\_

SOURCE SECURITY: N/A  
 Locked Storage Area \_\_\_\_\_ B. Room Lock \_\_\_\_\_

IDENTIFICATION OF SOURCES (in storage): N/A  
 Nuclide, Amount, Date of Assay

DOSSIMETER SCHEDULE: N/A  
 Thyroid Counting \_\_\_\_\_ B. Whole Body Counting \_\_\_\_\_

CONTAMINATION/EXPOSURE CONTROL: N/A  
 Personnel Dosimeters \_\_\_\_\_ D. Separate Area for Eating, etc. \_\_\_\_\_  
 Coats \_\_\_\_\_ E. Adequate Shielding \_\_\_\_\_  
 Gloves \_\_\_\_\_

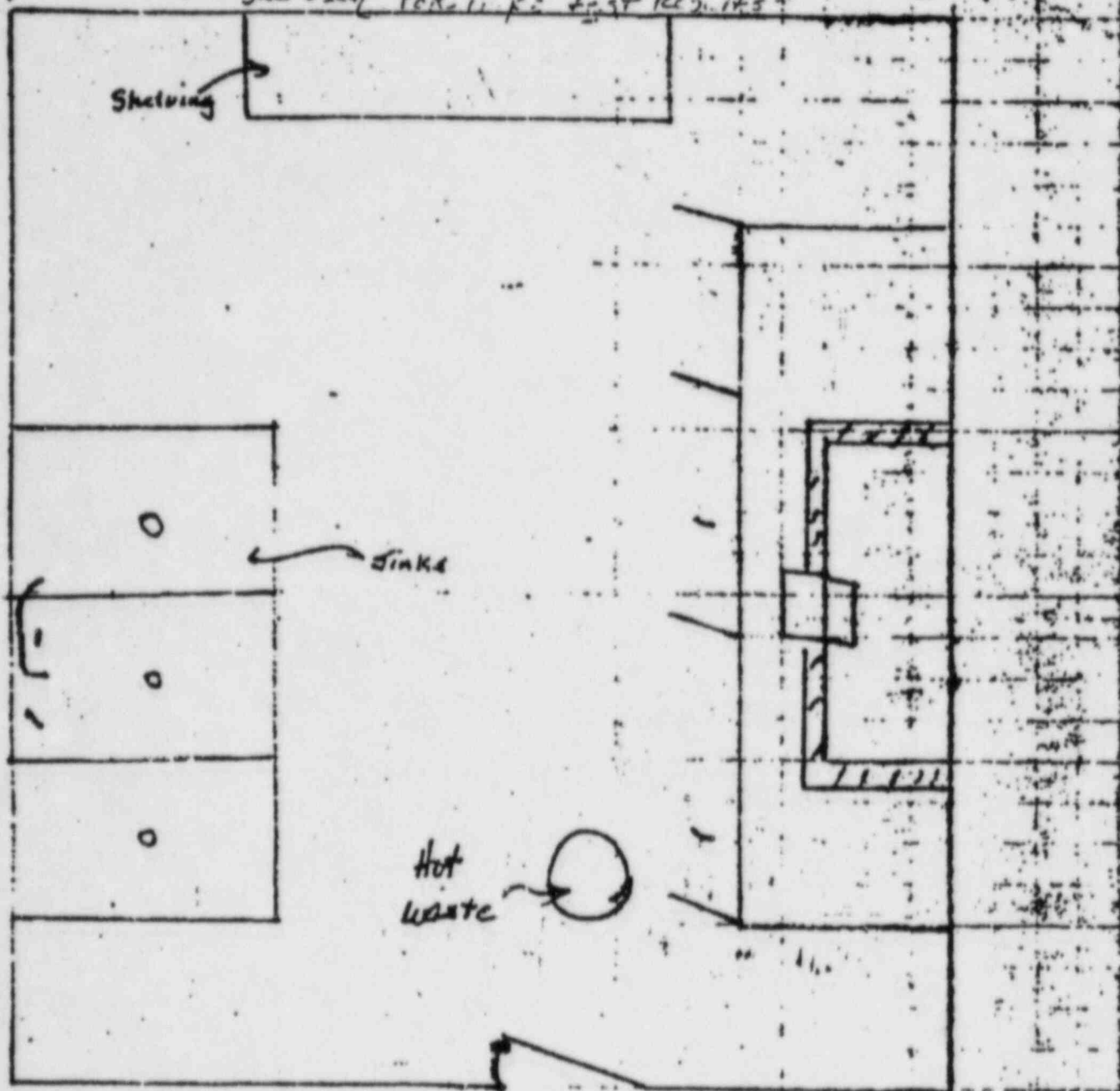
PERSONNEL INSTRUCTION SCHEDULE: N/A "OFFICIAL RECORD COPY"  
 Initial Instruction \_\_\_\_\_ B. Date of Last Formal Lecture \_\_\_\_\_ MLIP

GENERAL COMMENTS AND APPEARANCE OF THE LABORATORY: Well cleaned. Carl Greico



Monthly Survey Report: 2 October 1980

Survey done with a Lindam Model 12 E 44-3 S. instrument  
probe. No activity anywhere in Hot Lab, Garage, or  
Office areas were above background (Bg = 600 cpm)  
See next for all test results.



Unless otherwise indicated all measurements were made with an Eberline E1200M survey meter with an HP19D probe. Nothing was greater than 0.1 mcp/hr.

Truck survey  $\pm 0.05$  mcp/hr anywhere unless otherwise noted here. ✓

"OFFICIAL RECORD COPY" MLI

MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

JUN 2 AM 10 '81

June 4, 1981

United States  
Nuclear Regulatory Commission  
Attention: Larry W. Camper  
Material Licensing Branch  
Division of Fuel Cycle and Material Safety  
Washington, D.C. 20555

Gentlemen;

Please add the name of George Evans, M.D. to the list of authorized physicians on the Medical Imaging Corporation's NRC license # 20-18449-01. As indicated in the enclosed data, Dr. Evans is Board Certified in Nuclear Medicine and is currently authorized to practice Nuclear Medicine under the NRC license issued to Winchester Hospital, Winchester, Massachusetts.

A check for forty dollars (\$40.00) to cover this amendment is enclosed.

Should there be any questions, please do not hesitate to call me at 617/938-0232.

Sincerely,

*William Guimond*

William Guimond  
Director

WG/mjh  
enclosures

RECEIVED BY LFMD	
Date	6/17/81
Log	JUNE PG 9 Amend.
By	Brown
Orig. To	
Action Compl.	6/15/81

Applicant	425
Check No.	440/81
Category	Amendment
Check Rec'd	6/17/81
Check by	Brown

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INSPECTION AND ENFORCEMENT

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08163

ML10

Sp

~~0304340070~~

08163

MLP

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# THE AMERICAN BOARD OF NUCLEAR MEDICINE

INCORPORATED 1971

A CONJOINT BOARD ORGANIZED WITH THE SPONSORSHIP OF THE AMERICAN BOARD OF INTERNAL MEDICINE,  
AMERICAN BOARD OF PATHOLOGY, AMERICAN BOARD OF RADIOLOGY AND THE SOCIETY OF NUCLEAR MEDICINE  
HEREBY CERTIFIES THAT

*George Walton Evans*

HAS MET THE REQUIREMENTS OF THIS BOARD AND IS  
CERTIFIED AS QUALIFIED TO PRACTICE AS A SPECIALIST IN  
ALL ASPECTS OF CLINICAL AND LABORATORY

NUCLEAR MEDICINE

INCLUDING BUT NOT LIMITED TO RADIOBIOASSAY, NUCLEAR IMAGING,  
IN VIVO MEASUREMENTS AND THERAPY WITH UNSEALED RADIONUCLIDES

*Marion L. Decker*  
CHAIRMAN



*Joseph F. Ron M.D.*  
SECRETARY

NUMBER 01854

DATE MAY 5, 1972

CURRICULUM VITAE

GEORGE W. EVANS, M.D.

HOME ADDRESS: 47 Jefferson Road  
Winchester, Massachusetts 01890

BUSSINESS ADDRESS: Winchester Hospital  
41 Highland Avenue  
Winchester, Massachusetts 01890

DATE OF BIRTH: February 19, 1928

PLACE OF BIRTH: Wilkes-Barre, Pennsylvania

SCHOOLS AND DEGREES: University of Scranton-1950-BS  
University of Pennsylvania School of Medicine-1954-M.D.

INTERSHIP: Wilkes-Barre General Hospital-1954-1955-rotating

MILITARY SERVICE: Lt. then Captain, Medical Corps., U.S. Army  
July 1955-July 1957

POSITIONS: Resident in Anatomical Pathology  
Allegheny General Hospital  
Pittsburg, PA.  
1957-58  
R.C. Graver, M.D., Pathologist

Resident in Pathology and Assistant Instructor in Pathology  
and Surgical Pathology  
University of Pennsylvania  
1958-1961  
R.F. Norris, M.D. and H.T. Enterline, M.D., Pathologists

Associate Surgical Pathologist and Instructor in Surgical Pathology  
Hospital of the University of Pennsylvania  
1961

Associate in Surgical Pathologist and Associate in Pathology  
1963

Assistant Professor of Pathology  
January 1965

Pathologist  
Albemarle Hospital  
Elizabeth City  
North Carolina  
February 1965 to August 1965

Pathologist  
Winchester Hospital  
Winchester, Massachusetts  
1965-present

Assistant in Pathology  
Harvard University Medical School  
August 1965-present

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ML14



CURRICULUM VITAE GEORGE W. EVANS, M.D.

LICENSURE: State of Pennsylvania (1955)  
State of North Carolina (1965)  
State of Massachusetts (1965)

CERTIFIED: American Board of Pathology, Anatomical and Clinical Pathology-1962  
American Board of Nuclear Medicine-July 1972

SOCIETIES: College of American Pathologists  
American Medical Association  
New England Society of Pathologist  
Massachusetts Medical Society, Middlesex East Chapter  
Massachusetts Society of Pathologists  
Fellow in the American Society of Clinical Pathologists  
Society of Nuclear Medicine  
AAAS  
New York Academy of Science  
World Future Society

ACTIVITIES: Inspector AABB-1967  
Chairman-Clinical Practice section on GI Tract and Lymphnodes-  
SNM-25th Annual Meeting-1978

PUBLISHED ARTICLES:

Malignant Potential of Adenomas of Colon and Rectum  
The Journal of American Medical Assoc.  
February 3, 1962-vol.179-pp.322-330  
(with H.T. Enterline, M.D., Roberto Mercado-Lugo, M.D.,  
Leonard Miller, M.D., and William T. Fitts, Jr., M.D.)

Comparitive Effects of Portosystemic Shunting on Liver Function;  
Use of New Technique; Half-and-Half Shunt Surgery, St. Louis  
Vol. 54-no.1-pp. 67-77- July 1963 (joint author)

Neonatal Gastric Perforation AMA Arch. Surgery  
Vol. 88-pp.471-485-1964 (with William Inouye)

An Indigogenic Substrate for Acid Phosphatase  
Journal of Histochemistry and Cytochemistry  
March 1966 (with K.C.Tsou and Cecilia Lowe)

An Isotopic Study of Lipid Metabolism in Regenerated Pseudo-  
Intima of Vascular Prostheses. In preparation (work completed)  
with William Inouyr and Arthur Whereat

The Occurence and Significance of Striated Muscle in the Prostate  
Journal of Urology-vol.92-no.6-pp. 703-704 Dec.1964 (with  
L.V. Krose)

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PUBLISHED ARICLES CONTINUED:

A New Histochemical Method for Acid Phosphatase by the use  
of 5-Iodoidoxyl Phosphate  
The Journal of Histochemistry and Cytochemistry-vol. 14-no. 2-  
pp. 171-175-1966 (with K.C. Tsou and Cecilia L. Whinney)

Familial Occurance of Thrombotic Thrombocytopenic Purpura  
American Journal of Medicine-vol.43-no. 1-pp. 294-303-1967  
(with Stanislav A. Norkin, M.D. and Howard H. Freedman, M.D.)

Malignant Potential of Adenomas of Colon and Rectum. Current  
Perspectives in Gastro-enterology.  
copyright 1967 Part II, chapter 8, pp. 66-67 (with Horatio  
T. Enterline, Roberto Mercado-Lugo, Leonard Miller, and  
William T. Fitts, Jr.)

Intrasplenic Dissection By Pancreatic Pseudocysts  
New England Journal of Medicine-vol.287-pp.72-75-1972  
(with Andrew L. Warshaw, M.D., Thomas McChesney, M.D., and  
Hugh F. McCarthy, M.D.)

Scintigraphy in Traumatic Lesions of Liver and Spleen  
JAMA-vol.-222-no.6-1972 (with F. Gregory Curtin, M.D.,  
H.F. McCarthy, M.D., and James Kieran)

Radionuclide Imaging in the Diagnosis of Splenic Trauma  
Clinical Nuclear Medicine-vol.2-no.1-pp.32-36-1977

Pulmonary Scintiangiography in the Diagnosis of Pulmonary  
Thromboembolism  
Clinical Nuclear Medicine-vol. 2-no.2-pp. 37-46-1977

SCIENTIFIC EXHIBITS:

1971-Society of Nuclear Medicine Convention  
Boston, Massachusetts  
"Traumatic Lesion of Liver and Spleen"

1977-Society of Nuclear Medicine Convention  
Chicago, Illinois  
"Infusion Component of Lung Scans"  
Bronze Medal Award

Cutaneous Malignant Mixed Tumor, with Harrist, T.V., Aretz, TH, and  
Mihm, MC. Submitted for public Sept. 1979

"OFFICIAL RECORD COPY"

ML10  
08163

MAY 21 1981

FCMLB:LWC  
030-15104  
(05302)

Medical Imaging Corporation  
ATTN: William Guimond  
Director  
500 New Boston Park, 10 Roesler Road  
Woburn, MA 01801

Gentlemen:

Enclosed is Amendment No. 3 to Byproduct Material License No. 20-18449-01, which authorizes your new facility at 10 Roesler Road.

You are reminded that before your previously used facility at 781 River Street, Haverhill, Massachusetts, may be released for use as an unrestricted area, it will be necessary for you to perform a comprehensive close out survey and submit the results to the Material Licensing Branch. This decontamination survey should be conducted in a manner similar to that outlined in the enclosed "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material" (enclosed).

Please note that your license now incorporates the use of NRC's Model ALARA Program contained in Appendix O of Regulatory Guide 10.8, "Guide for the Preparation of Applications for Medical Programs," October 1980. This action was taken since your amendment application did not contain any information concerning an ALARA program which your facility will follow. As of August 15, 1980, licensees will be required to submit an ALARA program with any significant amendment, renewal, or byproduct material license application. If you wish to develop and/or submit an alternative ALARA program, that is at least equivalent to the Model ALARA Program, your license may be amended accordingly.

We wish you continued success with your nuclear medicine service.

Sincerely,

Larry W. Camper  
Material Licensing Branch  
Division of Fuel Cycle and  
Material Safety

Enclosure: As stated

CRESS  
Camper 2/b  
5/12/81

FCMLB  
LWCamper:mlw  
5/13/81

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MLC

MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

April 16, 1981

Mr. Larry Camper  
Material Licensing Branch  
Division of Fuel Cycle and Material Safety  
United States Nuclear Regulatory Commission  
Washington, D.C. 20555

U.S. NUCLEAR REG.  
COMMISSION  
DIVISION  
SECTION

APR 21 AM 11 40

RECEIVED

Dear Mr. Camper;

Pursuant to our phone conversation of April 15, 1981 and your letter dated March 31, 1981, I am forwarding the enclosed detailed description and diagram of our location at 10V Roessler Road, Woburn, Massachusetts.

I hope this material satisfies your demands. Should there be need for further information, please contact me at 617/938-0232.

Sincerely yours,

*William Guimond*

William Guimond  
Director

enc;  
WG/mjh

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INSPECTION AND ENFORCEMENT

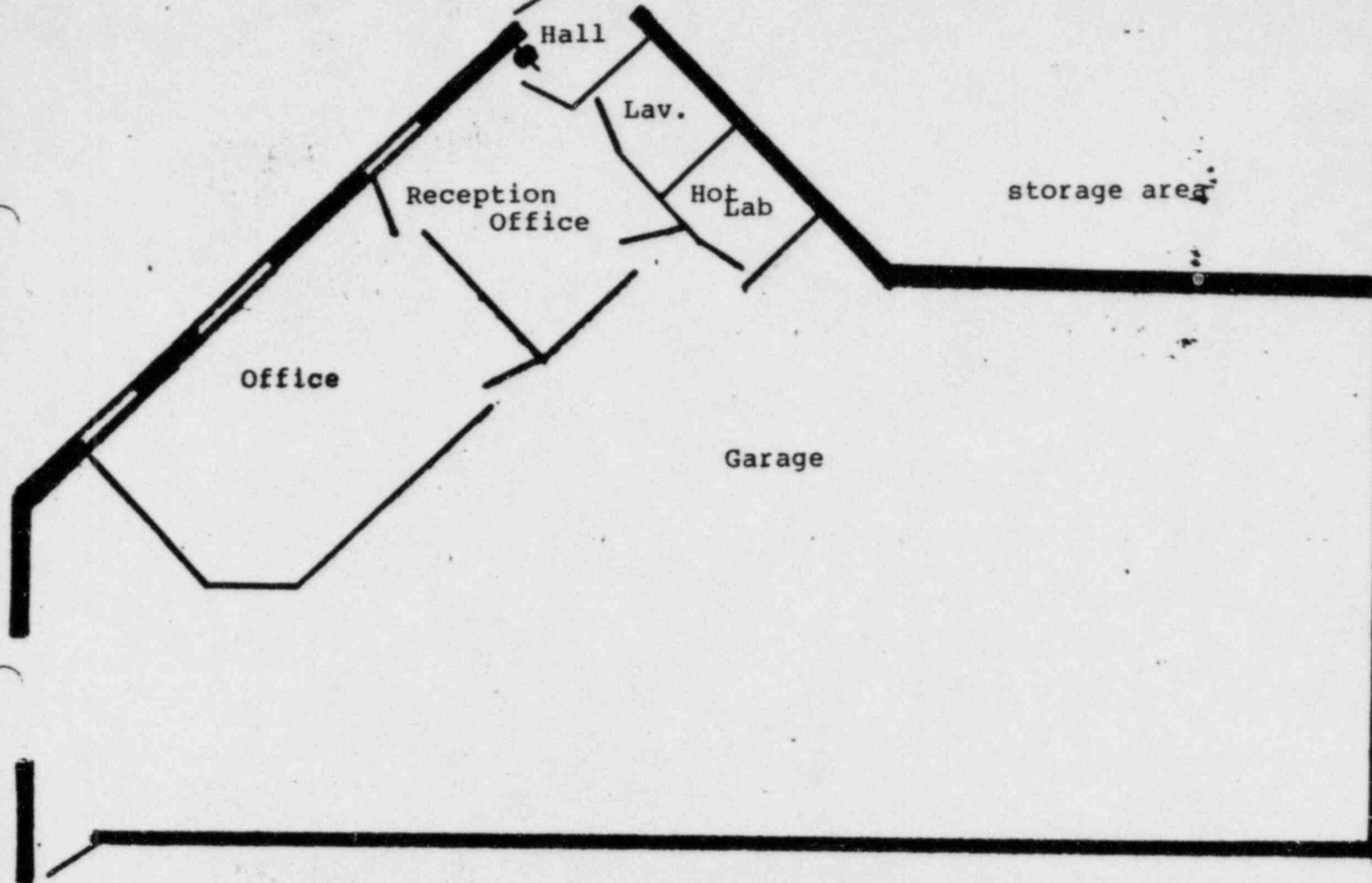
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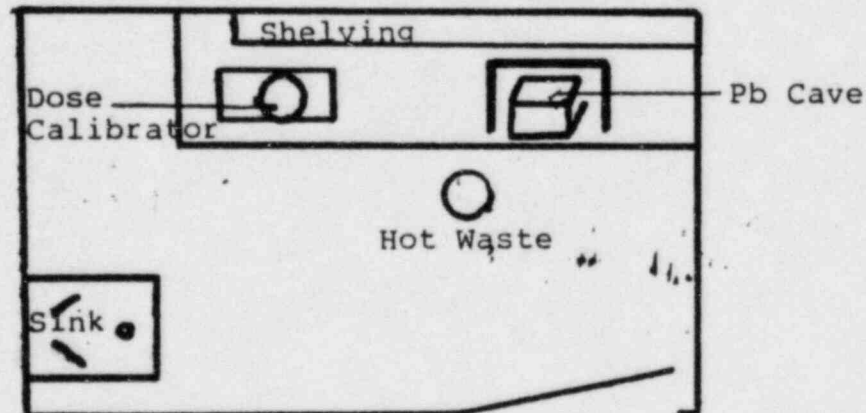
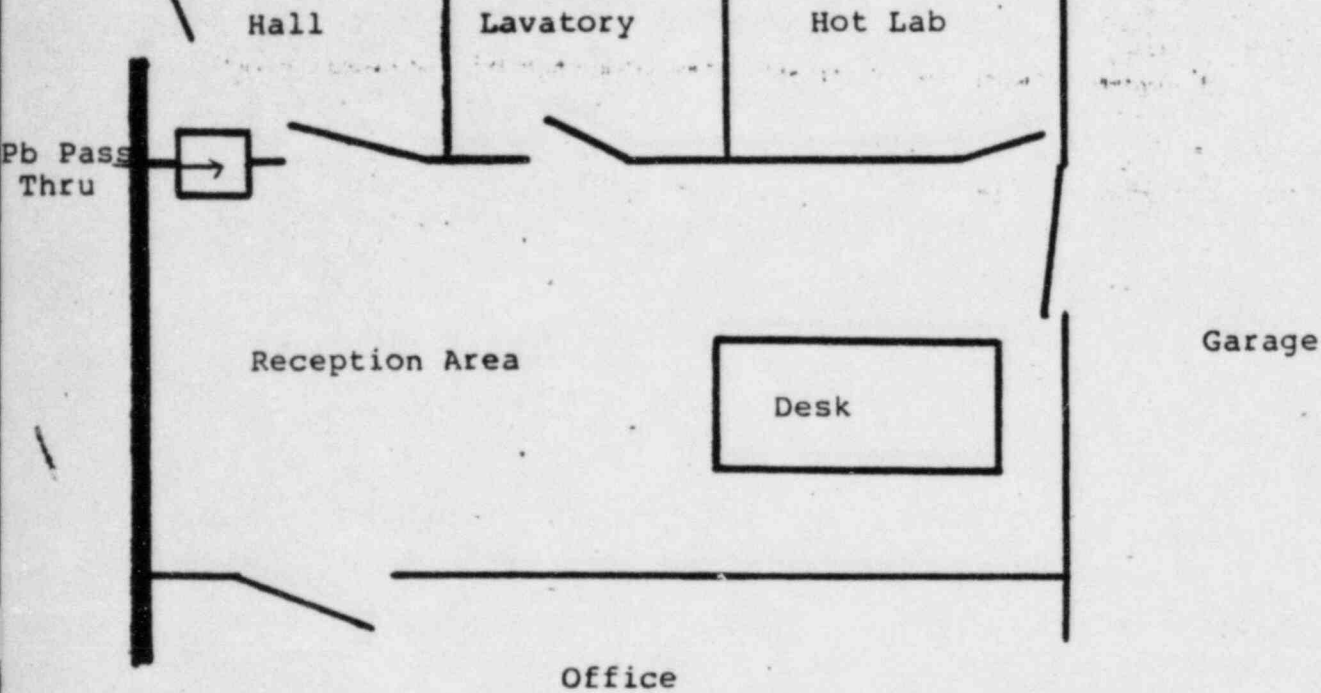
BAY STATE BUSINESS SYSTEMS, INC.



MEDICAL IMAGING CORPORATION  
10 V Roessler Road  
Woburn, Massachusetts 01801

"OFFICIAL RECORD COPY"

MLP



MEDICAL IMAGING CORPORATION  
 10 V Roessker Road  
 Woburn, Massachusetts 01801

MAR 31 1981

Medical Imaging Corporation  
ATTN: James Dennen  
President  
500 New Boston Park  
10 Roesler Road  
Woburn, MA

Docket Number 030-15104

License Number 20-18449801

Control Number 05302

SUBJECT: APPLICATION FOR BYPRODUCT MATERIAL LICENSE DATED  
September 10, 1980 AND OUR REQUEST FOR INFORMATION  
DATED December 16, 1980

Gentlemen:

This concerns the subject application for byproduct material license and our letter in which we notified you that the application was deficient and that certain additional information was required.

You are hereby notified that unless within thirty (30) days from the date of this notice we receive the additional information requested, we will consider your application as having been abandoned by you. This action is without prejudice to the resubmission of an application.

Sincerely,

Michael A. Lamastra  
Material Licensing Branch  
Division of Fuel Cycle and  
Material Safety

Enclosure:  
Copy of letter dated: December 16, 1980

MALamastra 3/31/81

DPE 1P  
~~21043304~~ ~~2~~ "OFFICIAL RECORD COPY" ML 18

DEC 16 1980

FCMLB:MAL  
030-15104  
(05302)

Medical Imaging Corporation  
500 New Boston Park  
10 Roesler Road  
Woburn, MA

Gentlemen:

This is in reference to your request of September 10, 1980, and to confirm our telephone conversation with Mr. Francis F. Massey on October 28, 1980. In order to approve your new facility as an authorized place of use, we need a detailed description and diagram of your new facility. In addition, in order to keep our records up to date, we would appreciate your new zip code for your new address.

Upon receipt of this information, we will be pleased to amend your license accordingly. You should make your response in duplicate, and refer to Control No. 05302.

Sincerely,

Michael A. Lamastra  
Material Licensing Branch  
Division of Fuel Cycle and  
Material Safety

10  
8102060231  
"OFFICIAL RECORD COPY"

RESS: WILLICE	FCMLB				
C#009335:gtw					
SURNAME	MALamastra:gtw				
2/11/80 DATE	12/15/80				





# MEDICAL IMAGING CORPORATION

781 River Street Haverhill Massachusetts 01830

617/ 374-4344

SEP 24 1980  
September 10, 1980

U. S. Nuclear Regulatory Commission  
Radioisotope Licensing Branch  
Division of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

RECEIVED BY LFMB	
Date...	9/24/80
Log...	Oct-1 Amn
By...	ers
Orig. To...	
Action Compl...	10/2/80

Gentlemen:

Medical Imaging Corporation hereby notifies the Commission of the relocation of its base of operations to 500 New Boston Park, 10 Roesller Rd., Woburn, Massachusetts from its previous location at 781 River Street, Haverhill, MA. Enclosed is a diagram of the facilities involved at Cummings Park. The relocation will have little effect on the operation of our program since at this time we are using instant technetium exclusively, and hence we purchase only the amount needed each day and all of the radionuclides that is in possession travels with the mobile unit to the customer hospitals each day.

The new facility equals the Haverhill location in terms of available space for office, reading, and Hot Lab, but provides additional secured parking for our vehicles, and includes a 24 hour patrol to minimize vandalism. The Hot Lab will be set up in much the same way as that in the Haverhill address, with lead brick (2 inch) shielding around any radionuclides in possession, dose calibrator, stainless steel sink, and waste drum. The space adjacent to our facilities and backing up to the Hot Lab has not been rented as yet, but it is expected that the area immediately adjacent to the Hot Lab will be lavatory facilities and will be available for our monitoring as necessary.

Shipments of incoming radionuclides will be delivered to a locked receiving station that is fastened to the wall in the entryway. This will be emptied before 7:00 a.m. each morning by MIC personnel upon their arrival.

Applicant...	166/40(7B)
Check...	
Amendment	
OCT 20 1980	
Blown	

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05302

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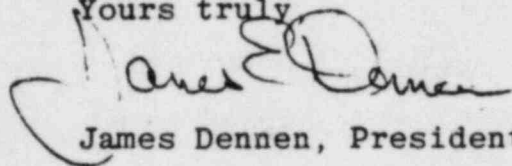
ML 40

3p

8510160768

Please contact us if you have any questions regarding the relocation. The move is expected to be completed before October 1, 1980, and F. X. Masse Associates will perform a closeout survey on the Haverhill facility before it is turned over to the owner.

Yours truly,

A handwritten signature in dark ink, appearing to read "James Dennen", written over a horizontal line.

James Dennen, President

Enclosure

"OFFICIAL RECORD COPY"

ML10

500 New 130000

10 Roosevelt Rd  
Woburn Ma 01801

99'

4'2.1

5'2.1

CO

55'-8" L.D.

35' L.D.

30'-3" L.D.

MEDICAL IMAGING  
3100 SF

34'-4" L.D.

R2-C" L.D.

2XGA

HANSA  
INTERNATIONAL

MLIP

NEW CLERK  
WATER  
TELEPHONE

20' L.D.

"OFFICIAL RECORD COPY"

0530.

MAR 21 1980

FCMLB:LWC  
030-15104  
(02658)

Medical Imaging Corporation  
ATTN: Frank Masse  
Vice President  
Nuclear Division  
781 River Street  
Haver Hill, MA 01830

Gentlemen:

Enclosed is Amendment No. 1 to Byproduct Material License No. 20-18449-01, authorizing the changes requested in your letter of January 22, 1980.

Although presently there are no NRC regulations which require assay of patient doses prior to injection, it is the policy of the Material Licensing Branch that all radiopharmaceuticals, prior to injection, must be assayed for activity to an accuracy of 10 percent. Refer to the Medical Licensing Guide (Regulatory Guide 10.3), Section 2. However, your proposed system for individual dose calibration does seem adequate in view of the fact that your operation is a mobile medical service.

Please be advised that you should take any and all necessary and appropriate steps to ensure that the geometry involved with your calibration procedures is reproducible, and that this calibration procedure is performed only by competent qualified nuclear medicine technologists or other responsible professionals.

We wish you continued success with your nuclear medicine service.

Sincerely, " 4.1.

Larry W. Camper  
Material Licensing Branch  
Division of Fuel Cycle and  
Material Safety

DATE 2p

~~200427037~~

CRESS:SS	FCMLB	FCMLB	FCMLB		
OFFICE					
MC#256268	LWCamper:ecw	NALamastra	WJWalker	"OFFICIAL RECORD COPY"	
SURNAME					
2/29/80	2/29/80	2/29/80	2/29/80		
DATE					





**MEDICAL IMAGING CORPORATION**

781 River Street

Haverhill Massachusetts 01830

RECEIVED

617 / 374-4344

MS 0601

1980 MAR 21 AM 10 44 March 17, 1980

U.S. NUCLEAR REG  
COMMISSION  
MAIL SECTION

Michael A. Lamastra  
Material Licensing Branch  
Division of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

Ref. Control No. 01890

Gentlemen:

In response to your 12/31/79 letter requesting additional information on Drs. Burke and Hannon, attached are updated copies of NRC 313M Supplement A on each physician. The 200 hours of basic handling techniques for Dr. Burke was a formal part of his three month-500 hour residency in the approved Nuclear Medicine residency program at New England Medical Center Hospital. Dr. Hannon participated in a similar residency program at Georgetown University Hospital followed by a year of practice in Nuclear Medicine in California.

With respect to your concern for the length of time since Dr. Burke's training at NEMCH was completed, I enclose a NRC-313M-Supplement B preceptor statement, signed by Walter L Barnes, M.D. at St. Luke's Hospital in New Bedford as an update on Dr. Burke's experience. Dr. Burke has been spending approximately one day per week at St. Luke's in the practice of Nuclear Medicine for several years with Dr. Barnes.

Please contact the undersigned if further information is required.

Yours truly,

*F. X. Masse'*

F. X. Masse'

Enclosures

FXM/jg

DUP 5p

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FORM NRC-313M-SUPPLEMENT B  
(8-78)

U. S. NUCLEAR REGULATORY COMMISSION

## PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS		<b>KEY TO COLUMN C</b> <b>PERSONAL PARTICIPATION SHOULD CONSIST OF:</b> 1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage. 2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data. 3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.
FULL NAME		
STREET ADDRESS		
CITY	STATE	
ARTHUR D. BURKE 401 CANTON AVE MILTON MASS 02187		

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	50	
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME		
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES		
	IN VITRO STUDIES		
OTHER			
I-125	DETECTION OF THROMBOSIS		
I-131	THYROID IMAGING	60	
P-32	EYE TUMOR LOCALIZATION		
Se-75	PANCREAS IMAGING		
Yb-169	CISTERNOGRAPHY	5	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES		
OTHER			
Tc-99m	BRAIN IMAGING	200	
	CARDIAC IMAGING		
	THYROID IMAGING		
	SALIVARY GLAND IMAGING		
	BLOOD POOL IMAGING		
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING	150	
	LUNG IMAGING	175	
	BONE IMAGING	150	
OTHER			

MLP  
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# PRECEPTOR STATEMENT (Continued)

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		
P-32 (Colloidal)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA		
	TREATMENT OF HYPERTHYROIDISM		
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
Co-60 or Cs-137	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR		
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS		
Other			

## 3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

1974 - 1980 (continuing) 2000 hours (8 hours per week)

## 4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR	5. PRECEPTOR'S SIGNATURE  Walter F. Barnes, M.D.
b. NAME OF INSTITUTION St Luke's Hospital	
c. MAILING ADDRESS	
d. CITY New Bedford, Mass.	
5. MATERIALS LICENSE NUMBER(S) 20-00713-03	

## 5. PRECEPTOR'S SIGNATURE

Walter F. Barnes, M.D.

## 7. PRECEPTOR'S NAME (Please type or print)

Walter F. Barnes

## 8. DATE

3/14/80

(8-78)

# TRAINING AND EXPERIENCE AUTHORIZED USER OR RADIATION SAFETY OFFICER

## 1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

Arthur D. Burke, M.D.

## 2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE

MA

## 3. CERTIFICATION

SPECIALTY BOARD  
ACATEGORY  
BMONTH AND YEAR CERTIFIED  
C

Radiology

1972

## 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	Residency at New England Medical Center Hospital, Boston, MA June - Sept., 1971	15	3 months
b. RADIATION PROTECTION	"	12	"
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	"	15	"
d. RADIATION BIOLOGY	"	10	"
e. RADIOPHARMACEUTICAL CHEMISTRY	"	10	"

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
$^{99m}\text{Tc}$	1 Curie	NEMCH and St. Luke's Hospital, New Bedford	6 years	Nuclear Medicine
$^{131}\text{I}$	200 mCi	"	"	"
$^{125}\text{I}$	25 mCi	"	"	"
$^{75}\text{Se}$	100 mCi	"	"	"

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MLIP



0601

FORM NRC-313M-SUPPLEMENT A

U.S. NUCLEAR REGULATORY COMMISSION

(8-78)

# TRAINING AND EXPERIENCE AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER Robert Hannon, M.D.	2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE MA
---	--

## 3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
Radiology		1974

## 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	Residency at Georgetown Univ. Hospital 1971-74 Practise at San Antonio Comm. Hosp. Upland, CA 1974-75	10	6 months
b. RADIATION PROTECTION	"	10	6 months
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	"	10	6 months
d. RADIATION BIOLOGY	"	10	6 months
e. RADIOPHARMACEUTICAL CHEMISTRY	"	10	6 months

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
$^{99m}\text{Tc}$	300 mCi	Georgetown Univ. Hosp & San Antonio Comm. Hosp.	2 years	Nuclear Med.
$^{131}\text{I}$	20 mCi	"	"	"
"OFFICIAL RECORD COPY"				
MLIP				

FEB 21 1980

FCMLB:DJF  
030-15104  
(00415)

Medical Imaging Corporation  
ATTN: Mr. Mark Peterson, Director  
Nuclear Medicine  
781 River Street  
Haverhill, MA 01830

Gentlemen:

This is in reference to a telephone conversation on July 16, 1979 with Mr. Mark Peterson regarding a request to amend Material License No. 20-18449-01. I informed Mr. Peterson that in order to add Dr. Desmond Fitzgerald as an authorized user, additional information concerning his experience and training would be required, specifically:

1. Completion of Item 4, Supplement A to Form NRC-313M with a breakdown of hours spent in each field of training, and
2. Completion of Item 3, Supplement B to Form NRC-313M (preceptor statement) signed by Antonio Rodriguez-Antunez, M.D. This should include specific dates and total number of hours received in clinical radioisotopes training.

You are hereby notified that unless within thirty (30) days from the date of this notice we receive the additional information requested, we will consider your application as having been abandoned by you. This action is without prejudice to the resubmission of an application.

Please respond in duplicate and refer to Control No. 00415.

Sincerely,

*Duke*  
*1p* "OFFICIAL RECORD COPY"

William J. Walker, Jr., Ph.D.  
Material Licensing Branch  
Division of Fuel Cycle and  
Material Safety

*MLIP*

CRESS:WILL MC#8478: OFFICE	FCMLB	FCMLB
Enclosures:	DJFoster:gtw	WJWalker
1. Form NRC-313M	2/14/80	2/14/80
2. Appendix A to Regulatory		
DATE: 2/12/80		
Guide 10.8		



# MEDICAL IMAGING CORPORATION

781 River Street

Haverhill Massachusetts 01830

617 / 374-4344

RECEIVED

FEB 4 AM 10 45

January 22, 1980

U.S. NUCLEAR REG.  
COMMISSION  
SPECIAL SECTION

U. S. Nuclear Regulatory Commission  
Radioisotope Licensing Branch  
Division of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

Attn: Michael A. Lamastra

Gentlemen:

Medical Imaging Corporation hereby requests an amendment to NRC Material License #20-18449-01 to allow a modification in the procedures to be followed in the preparation and handling of radiopharmaceuticals to be used at customer-hospitals. Experience in the operation to date has clearly indicated that the most practical means of obtaining the necessary  $Tc^{99m}$  pertechnatate is through the daily purchase of the required amount of "instant technetium" rather than the purchase of a generator. We therefore receive each morning a stock shipment of the order of 100 mCi of  $^{99m}Tc$  pertechnatate, which is properly packaged in accordance with DOT regulations, and which is ideally shielded for our transport to the day's appointments. We then open this package and go through the necessary package checkout at the Haverhill headquarters, checking the activity present and the Mo-99 contamination in the Dose calibrator.

We now propose to take advantage of the manufacturers packaging and shielding and to minimize the probability of contamination (both pharmaceutically and radioactively) by transporting this bulk  $Tc^{99m}$  container to the customer hospital for removal of individual patient doses as necessary. Although it is not usually mandatory to again check the calibration of individual patient doses extracted

RECEIVED BY LFMB	
Date.	FEB 8 1980
Log.	FEB. PG 7 Amendment
By.	Proton
Orig. To.	
Action Compl.	2/8/80

Applicant	
Check No.	0992
Amount/Fee	\$40
Type of Fee	Amendment
Date Check Rec.	FEB 8 1980
Received By	Proton

(7b)

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MLIP  
02658

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6003120105

January 22, 1980

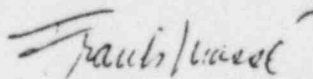
from a certified and prechecked container of instant technetium, we have devised a means of individual dose calibration using a Victoreen "Cutie Pie" ion chamber. By defining a reproducible geometry on the surface of the ion chamber in which to place the syringe containing the patient dose, we find that a 10 mCi dose yields a reading of 350 mr/hr, and that smaller or larger doses yield proportionate readings within an error of less than 5%. We plan to utilize this technique to check each patient dose.

The patient dose withdrawal and calibration will be done in the area designated by the customer/hospital for use by our operation (e.g. an empty patient room), and all waste materials will be returned to MIC headquarters as is currently the practice. A thorough survey of the area in which the dose is prepared and administered will be conducted with a thin-window G.M. survey meter, and the entire area is surveyed and left contamination-free at the end of each hospital visit. The multidose vial and all syringes are also returned to MIC headquarters at the end of the work day. As is currently the practice, vial and syringe shields and gloves are used throughout such procedures.

We feel strongly that the above proposed procedures will significantly improve both radiation safety and pharmaceutical safety for an operation such as ours without compromising patient dose calibration.

Please contact me at 617-245-6600 if you have any questions regarding this proposal. A check for \$40 covering the licensee fee for this request is enclosed.

Yours truly,



Frank Masse

Vice President Nuclear Division

FXM/jg  
Enclosure

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02658

ML10



DEC 31 1979

FCMLB: MAL  
030-15104  
(01890)

Medical Imaging Corporation  
ATTN: Mr. Frank Masse  
781 River Street  
Haverhill, MA 01830

Gentlemen:

This is in reference to your request of November 6, 1979, to amend your Materials License No. 20-18449-01. In order to continue our review of your application, we need the following additional information:

1. In order to list Arthur D. Burke, M.D. as an authorized user under your license No. 20-18449-01, please provide the following:
  - a. Evidence of 200 hours of training in basic radiological handling techniques as specified in Section 1.a. of Appendix A of Regulatory Guide 10.8. You should use Supplement A of Form NRC 313-M for this purpose.
  - b. The documentation of training and experience submitted for Dr. Burke indicates that a considerable amount of time has elapsed since his original training was obtained. If Dr. Burke has evidence of more recent training and experience or evidence of authorization to perform nuclear medicine procedures from the AEC/NRC or from an Agreement State, he should submit this information. Any additional timely training and experience should be documented on signed, completed preceptor statement (Form NRC-313M, Supplements A and B enclosed).

Evidence of certification by the American Board of Nuclear Medicine or certification by the American Board of Radiology in diagnostic radiology with special competence in nuclear radiology may be submitted in lieu of the above.

2. In order to approve Dr. Robert Hannon as an onsite physician at Youville Hospital, we need evidence of 40 hours training in basic radiological handling techniques. You should use Supplement A, Form NRC-313M to supply this information.

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We will continue our review of your application upon receipt of this information.  
Please reply in duplicate and refer to Control No. 01890.

Sincerely,

Michael A. Lamastra  
Material Licensing Branch  
Division of Fuel Cycle and  
Material Safety

Enclosure: Form NRC-313M

St. Br. Dist.

CRESS  
12/29/79  
Lam 4/a

FCMLB *MLB*  
MALamastra:en  
12/31/79

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*ML10*



# MEDICAL IMAGING CORPORATION

781 River Street

Haverhill Massachusetts 01830

617 / 374-4344

RECEIVED

Applicant... 0809  
Check No... 40 (7B)  
Amount...  
Type of fee... Amendment  
Date Check... NOV 2 1979  
Received By... Brown

November 6, 1979

NOV 19 AM 11 09

U. S. Nuclear Regulatory Commission  
Radioisotope Licensing Branch  
Division of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

Attn: Michael A. Lamastra

Gentlemen:

Please amend U.S. NRC Material License #20-18449-01 Condition 10 to include the Union Hospital of New Bedford and Youville Hospital of Cambridge, MA. Letters requesting this amendment from appropriate officials in each of these hospitals are enclosed. Also, please amend Condition 12 to add the name of Arthur D. Burke, M.D. to the list of physicians who will supervise the medical procedures under this program. Dr. Burke is on the staff of the Radiology Dept. at Union Hospital and will coordinate our efforts there. Enclosed is a summary of Dr. Burke's training and experience.

The Youville Hospital aspect of the program will be coordinated by Dr. Robert Hannon, who is a member of the Dept. of Radiology in that hospital, and associated with Medical Imaging Corporation in the Ultrasound Division. Nuclear Medicine procedures will be prescribed by and interpreted by Dr. Kirwan T. MacMillan of Medical Imaging Corporation.

A check for \$40 covering the amendment fee for the above request is enclosed. Please contact the undersigned at 617-245-6600 if further information is required.

Yours truly,

*Frank Masse*  
Frank Masse

FXM/jg

Enclosure

DUP

1p

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01890

MLY

U.S. NUCLEAR REG.  
COMMISSION  
MAIL SECTION

RECEIVED BY LFMB

Date NOV 2 1979

Log. Nov 15 Amend

By... Brown

Orig. To...

Action Compl 11/21/79



## YOUVILLE HOSPITAL

1575 CAMBRIDGE STREET, CAMBRIDGE, MASSACHUSETTS 02138 • (617) 876-4344

(Formerly Holy Ghost Hospital)

October 2, 1979

Director  
Office of Nuclear Materials Safety  
& Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Gentlemen:

This is to request that our hospital be included in the list of facilities at which Medical Imaging Corporation of 781 River Street, Haverhill, Massachusetts, is licensed to perform Nuclear Medicine Services. Ours is a Chronic & Rehabilitation hospital facility with 305 beds. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this hospital, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated through the Radiology Department under the general supervision of Dr. Robert Hannon, M.D. and Dr. Kervan T. MacMillan. Dr. Hannon and Dr. MacMillan will work closely with Medical Imaging Corporation personnel throughout this program.

Yours truly,

*Sister Annette Caron*  
Sister Annette Caron  
Executive Director

Dupe

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# UNION HOSPITAL OF NEW BEDFORD, INC.

LEONARD A. LANGLOIS  
Executive Director

4499 ACUSHNET AVENUE, NEW BEDFORD, MASSACHUSETTS 02745

TELEPHONE: 617-995-4611

October 16, 1979

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Gentlemen:

This is to request that our hospital be included in the list of facilities at which Medical Imaging Corporation of 781 River Street, Haverhill, Massachusetts, is licensed to perform Nuclear Medicine services. Ours is a general hospital facility with 116 beds. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this hospital, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated through the Radiology Department under the general supervision of Dr. Arthur Burke, whose training and experience is described in the enclosure. Dr. Burke will work closely with Medical Imaging Corporation personnel throughout this program.

Sincerely,

Leonard A. Langlois  
Executive Director

LAL/i

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~~MITCHELL~~

## 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	NEW ENGLAND MED. CENTER	JUNE 71 SEPT 71	<input checked="" type="radio"/> Yes    No	Yes    No
b. Radioactivity measurement standardization and monitoring techniques and instruments	NEMCH	JUNE 71 SEPT 71	<input checked="" type="radio"/> Yes    No	Yes    No
c. Mathematics and calculations basic to the use and measurement of radioactivity	NEMCH + BCH	1973	Yes    No	<input checked="" type="radio"/> Yes    No
d. Biological effects of radiation			Yes    No	Yes    No

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
<sup>99m</sup> Tc	1 curie	NEW ENGLAND MED CENTER	7/1/71 - 9/30/71	CLINICAL N.M.
<sup>131</sup> I	200 mC	"	"	RADIATION SAFETY
<sup>203</sup> Bi	25 mC	"	"	RADIO PHARMACY
<sup>57</sup> Co	100 mC	"	"	"

## 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)

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

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

## 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.
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.

Date 6/12/78

By: Arthur D. Fink  
Applicant named in item 1

Title of certifying official \_\_\_\_\_

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.

UNITED STATES ATOMIC ENERGY COMMISSION  
**APPLICATION FOR BYPRODUCT MATERIAL LICENSE—MEDICAL**  
SUPPLEMENT A—PRECEPTOR STATEMENT

This page is to be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each. Page 2 may be used for comments and additional information.

10. NAME AND ADDRESS OF APPLICANT PHYSICIAN (Include ZIP Code)

ARTHUR D. BURKE MD  
401 CANTON AVE  
MILTON MASS 02187

11. CLINICAL TRAINING AND EXPERIENCE OF PHYSICIAN NAMED IN ITEM 10 ABOVE

(A) ISOTOPE	(B) CONDITIONS DIAGNOSED OR TREATED	(C) No. Cases Observed (See 1 in key below)	(D) No. Cases Involving Personal Participation (See 2 in key below)
I-131 or I-125	Diagnosis of thyroid function	50	25
	Determination of blood and blood plasma volume		
	Liver function studies		
	Fat absorption studies		
	Kidney function studies	6	3
	In vitro studies	23	12
Cr-51	Gastrointestinal protein loss studies		
	Determination of red blood cell volume and studies of red blood cell survival		
Fe-59	Iron turn over studies		
Co-58 or Co-60	Intestinal absorption studies		
K-42	Potassium space determinations		
I-131	Thyroid imaging		
	Brain tumor localization and cardiac imaging		
	Cisternography	7	5
	Lung imaging		
	Liver imaging		
	Kidney imaging		
	Placenta localization		
Cr-51	Placenta localization		
	Spleen imaging		
Au-198	Liver imaging		
Hg-197	Brain imaging		
	Kidney imaging		
Hg-203	Brain imaging		
Sr-85	Bone imaging		
Tc-99m	Brain imaging	216	108
	Thyroid imaging	35	18
	Salivary gland imaging	1	1
	Blood pool imaging		

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MLI



# APPLICATION FOR BYPRODUCT MATERIAL LICENSE—MEDICAL SUPPLEMENT A—HUMAN USE

(A) ISOTOPE	(B) CONDITIONS DIAGNOSED OR TREATED	(C) No. Cases Observed (See 1 in key below)	(D) No. Cases Involving Personal Participation (See 2 in key below)
Tc-99m	Placenta localization		
	Liver and spleen imaging	134	75
	Lung imaging	71	60
	Bone imaging	3	3
Xe-133	Blood flow studies and pulmonary function studies		
Ce-75	Pancreas imaging	12	12
P-32	Treatment of polycythemia, leukemia, and Bone metastases		
	Intracavitary treatment		
I-131	Treatment of thyroid carcinoma		
	Treatment of hyperthyroidism and cardiac condition		
Au-198	Intracavitary treatment		
Co-60 or Co-137	Interstitial treatment		
	Intracavitary treatment		
Ir-192	Interstitial treatment		
Co-60 Co-137	Teletherapy treatment		
Sr-90	Treatment of eye disease		

\*Key to Column (C) and (D) above

1. Observation should consist of observing radioisotope administration techniques and discussion with preceptor the case histories to establish most appropriate diagnostic and/or therapeutic procedure, limitation, contraindications, etc.
2. Personal participation should consist of (a) supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation on dosage to be prescribed; (b) collaboration in calibration of the dose and the actual administration of the dose to the patient, including calculation of the radiation dose, related measurements, and plotting of data; and (c) adequate period of training to enable the physician to manage radioactive patients and to follow patients through diagnosis and/or the course of treatment.

12. DATES AND TOTAL NUMBER OF HOURS OF CLINICAL RADIOISOTOPE TRAINING July 1, 1971 - September 30, 1971, 500 hrs.

13. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF Dr. Paul C. Kahn

At New England Medical Center 20-003857-06  
171 Harrison Avenue  
Boston, MA 02111

(Byproduct Material License Number)

*Paul C. Kahn*  
(Signature of Preceptor)

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ML 01890





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*File*  
*RECEIVED*  
OCT 23 AM 10 26  
**UNION HOSPITAL OF NEW BEDFORD, INC.**

**LEONARD A. LANGLOIS** *EXECUTIVE DIRECTOR*  
Executive Director  
MASS MAIL SECTION

4499 ACUSHNET AVENUE, NEW BEDFORD, MASSACHUSETTS 02745

TELEPHONE: 617-995-4611

October 16, 1979

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Gentlemen:

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Sincerely,

Leonard A. Langlois  
Executive Director

LAL/i

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~~7912060412~~ *X*  
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ML18

## 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	NEW ENGLAND MED. CENTER	JUNE 71 SEPT 71	<input checked="" type="radio"/> Yes No	Yes No
b. Radioactivity measurement standards, diagnosis and monitoring techniques and instruments	NEMCH	JUNE 71 SEPT 71	<input checked="" type="radio"/> Yes No	Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity	NEMCH + BCH	1973	Yes No	<input checked="" type="radio"/> Yes No
d. Biological effects of radiation			Yes No	Yes No

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Tc 99m	1 curie	NEW ENGLAND MED CENTER	7/1/71 - 9/30/71	CLINICAL N.M.
I 131	200 mC			RADIATION SAFETY
S 125	25 mC			RADIO PHARMACY
Se 75	100 mC			

## 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)

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*Arthur D. Fink* as  
Applicant named in item 1

Date 6/12/78

By: \_\_\_\_\_

Title of certifying official

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.

Page 4		APPLICATION FOR BYPRODUCT MATERIAL LICENSE—MEDICAL SUPPLEMENT A—HUMAN USE	
(A) ISOTOPE	(B) CONDITIONS DIAGNOSED OR TREATED	(C) No. Cases Observed (See 1 in key below)	(D) No. Cases Involving Personal Participation (See 2 in key below)
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	Treatment of hyperthyroidism and cardiac condition		
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Co-60 or CO-137	Interstitial treatment		
	Intracavitary treatment		
Ir-192	Interstitial treatment		
Co-60 CO-137	Teletherapy treatment		
Sr-90	Treatment of eye disease		

Key to Column (C) and (D) above

- Observation should consist of observing radioisotope administration techniques and discussion with preceptor the case histories to establish most appropriate diagnostic and/or therapeutic procedure, limitation, contraindications, etc.
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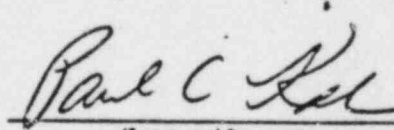
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AT New England Medical Center     20-003857-06

171 Harrison Avenue     (Byproduct Material License Number)

Boston, MA. 02111



(Signature of Preceptor)

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ML10



UNITED STATES ATOMIC ENERGY COMMISSION  
**APPLICATION FOR BYPRODUCT MATERIAL LICENSE—MEDICAL**  
SUPPLEMENT A—PRECEPTOR STATEMENT

2943

This page is to be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each. Page 2 may be used for comments and additional information.

10. NAME AND ADDRESS OF APPLICANT PHYSICIAN (Include ZIP Code.)

ARTHUR D. BURKE MD  
401 CANTON AVE  
MILTON MASS 02187

11. CLINICAL TRAINING AND EXPERIENCE OF PHYSICIAN NAMED IN ITEM 10 ABOVE

(A) ISOTOPE	(B) CONDITIONS DIAGNOSED OR TREATED	(C) No. Cases Observed (See 1 in key below)	(D) No. Cases Involving Personal Participation (See 2 in key below)
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	Determination of blood and blood plasma volume		
	Liver function studies		
	Fat absorption studies		
	Kidney function studies	6	3
	In vitro studies	23	12
Cr-51	Gastrointestinal protein loss studies		
	Determination of red blood cell volume and studies of red blood cell survival		
Fe-59	Iron turn over studies		
Co-58 or Co-60	Intestinal absorption studies		
K-42	Potassium space determinations		
I-131	Thyroid imaging		
	Brain tumor localization and cardiac imaging		
	Cisternography	7	5
	Lung imaging		
	Liver imaging		
	Kidney imaging		
	Placenta localization		
Cr-51	Placenta localization		
	Spleen imaging		
Au-198	Liver imaging		
Hg-197	Brain imaging		
	Kidney imaging		
Hg-203	Brain imaging		
Sr-85	Bone imaging		
Tc-99m	Brain imaging	216	108
	Thyroid imaging	35	18
	Salivary gland imaging	1	1
	Blood pool imaging		

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ML18





YOUVILLE HOSPITAL

1575 CAMBRIDGE STREET, CAMBRIDGE, MASSACHUSETTS 02138 • (617) 876-4344

979 OCT 5 AM 8 53

(Formerly Holy Ghost Hospital)

October 2, 1979

U.S. NUCLEAR REGULATORY  
COMMISSION  
MAIL MAIL SECTION

Director  
Office of Nuclear Materials Safety  
& Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Gentlemen:

This is to request that our hospital be included in the list of facilities at which Medical Imaging Corporation of 781 River Street, Haverhill, Massachusetts, is licensed to perform Nuclear Medicine Services. Ours is a Chronic & Rehabilitation hospital facility with 305 beds. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this hospital, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

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Yours truly,

*Sister Annette Caron*

Sister Annette Caron  
Executive Director

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INSPECTION AND ENFORCEMENT

~~61459~~

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MLP

*In Local Imaging Corp*  
*Mail Cont # 00415*

NRC FORM 218  
(4-76)  
NRCM 0240

U.S. NUCLEAR REGULATORY COMMISSION

DATE

*7/16/79*

TELEPHONE OR VERBAL CONVERSATION RECORD

TIME

*13:45*

☐ A.M.  
☐ P.M.

☐ INCOMING CALL

☒ OUTGOING CALL

☐ VISIT

PERSON CALLING

*Walker*

OFFICE/ADDRESS

PHONE NUMBER

EXTENSION

PERSON CALLED

*Mark Peterson*

OFFICE/ADDRESS

PHONE NUMBER

EXTENSION

*(617) 394-4344*

CONVERSATION

SUBJECT

*Telephone deficiency - New User.*

SUMMARY

*For adding Dr. D. Fitzgerald to lic.*  
*1) must complete item 4 in Sup A and*  
*breakdown hours.*  
*2) Complete item 3 on Sup B. Send to*  
*Preceptor - have him add dates*  
*and hours, then initial corrected*  
*copy.*  
*Ref to Cont # 00415 in reply.*

REFERRED TO:

ACTION REQUESTED

ACTION TAKEN

☐ ADVISE ME OF  
ACTION TAKEN.

INITIALS

DATE

INITIALS

DATE

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*MLIP*

On July 16, 1979 ~~via telephone~~ ~~contracted~~  
~~Conversation with~~  
Mr. Mark Peterson in reference  
to a request to amend  
your NRC lic # 20-18449-01.

~~Mr. Peterson~~  
I informed ~~you~~, that in order  
to add Dr. Desmond Fitzgerald  
as an authorized user, additional  
information concerning his  
experience and training would  
be required, specifically:

1. Completion of item 4, Supplement  
A to Form NRC 313 M with  
a breakdown of hours spent  
in each field of training, and
2. Completion of item 3, Supplement  
B to Form NRC 313 M ~~with~~

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by Dr. Rodriguez - ~~Antonio~~  
Centures, Dr. Fitzgerald's  
preceptor. This should include  
specific dates and total number  
of hours received in Clinical  
Radioisotopes Training.

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# MEDICAL IMAGING CORPORATION

781 River Street, Needham Heights, Massachusetts 01830

RECEIVED  
617 / 374-4344

1979 JUN 28 AM 11 35

U.S. NUCLEAR REG.  
COMMISSION  
MAIL SECTION

June 22, 1979

Mr. Michael A. Lamastra  
U. S. Nuclear Regulatory Commission  
Radioisotope Licensing Branch  
Division of Fuel Cycle and Material Safety  
Washington, D.C. 20555

Dear Mr. Lamastra:

Enclosed please find the completed form NRC-313M as well as Supplements A and B, the purpose of which is to obtain certification of Dr. Desmond Fitzgerald as a "user".

If any additional information is needed to complete the forms or to expedite matters, please do not hesitate to call.

Yours sincerely,

*Mark Peterson jme*

Mark Peterson  
Director, Nuclear Medicine

MP/jme  
Enclosures

**FEE EXEMPT -**

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response to  
3/30/79 letter  
CO415 from ML

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MLIP

FORM NRC-313M (8-78) 10 CFR 35	U.S. NUCLEAR REGULATORY COMMISSION <b>APPLICATION FOR MATERIALS LICENSE – MEDICAL</b>	Approved: GAO R0557			
<b>INSTRUCTIONS</b> – Complete Items 1 through 26 if this is an initial application or an application for renewal of a license. Use supplemental sheets where necessary. Item 26 must be completed on all applications and signed. Retain one copy. Submit original and one copy of entire application to: Director, Office of Nuclear Materials Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Upon approval of this application, the applicant will receive a Materials License. An NRC Materials 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, Parts 19, 20 and 35 and the license fee provision of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 26 and the appropriate fee enclosed.					
1.a. NAME AND MAILING ADDRESS OF APPLICANT (institution, firm, clinic, physician, etc.) INCLUDE ZIP CODE  <div style="text-align: center;"> <b>Desmond Fitzgerald, M.D.</b>  <b>27 Beaman Road</b>  <b>Sterling, Mass. 01564</b> </div> TELEPHONE NO.: AREA CODE (617) 365 4531		1.b. STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED (If different from 1.a.) INCLUDE ZIP CODE  <div style="text-align: center;"> <b>Clinton Hospital</b>  <b>201 Highland Street</b>  <b>Clinton, Mass. 01510</b> </div>			
2. PERSON TO CONTACT REGARDING THIS APPLICATION  <div style="text-align: center;"> <b>Mark Peterson</b> </div> TELEPHONE NO.: AREA CODE (617) 374 4344		3. THIS IS AN APPLICATION FOR: (Check appropriate item) a. <input type="checkbox"/> NEW LICENSE b. <input checked="" type="checkbox"/> AMENDMENT TO LICENSE NO. <b>20-18449-01</b> c. <input type="checkbox"/> RENEWAL OF LICENSE NO. _____			
4. INDIVIDUAL USERS (Name individuals who will use or directly supervise use of radioactive material. Complete Supplements A and B for each individual.)  <div style="text-align: center;"> <b>Desmond Fitzgerald, M.D.</b>  <b>Physician in charge</b>  <b>Mark Peterson,</b>  <b>Chief Technologist</b> </div>		5. RADIATION SAFETY OFFICER (RSO) (Name of person designated as radiation safety officer. If other than individual user, complete resume of training and experience as in Supplement A.)  <div style="text-align: center;"> <b>F. X. Masse, C.H.P.</b>   <b>Gail A. Magenis, M.S.</b> </div>			
<b>6.a. RADIOACTIVE MATERIAL FOR MEDICAL USE</b>					
RADIOACTIVE MATERIAL LISTED IN:	ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS (In millicuries)	ADDITIONAL ITEMS:	MARK ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS (In millicuries)
10 CFR 31.11 FOR IN VITRO STUDIES			IODINE-131 AS IODIDE FOR TREATMENT OF HYPERTHYROIDISM		
10 CFR 35.100, SCHEDULE A, GROUP I	X	AS NEEDED	PHOSPHORUS-32 AS SOLUBLE PHOSPHATE FOR TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA AND BONE METASTASES		
10 CFR 35.100, SCHEDULE A, GROUP II	X	AS NEEDED	PHOSPHORUS-32 AS COLLOIDAL CHROMIC PHOSPHATE FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP III	X	3 Curies	GOLD-198 AS COLLOID FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP IV		AS NEEDED	IODINE-131 AS IODIDE FOR TREATMENT OF THYROID CARCINOMA		
10 CFR 35.100, SCHEDULE A, GROUP V		AS NEEDED	XENON-133 AS GAS OR GAS IN SALINE FOR BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES.		
10 CFR 35.100, SCHEDULE A, GROUP VI					
<b>6.b. RADIOACTIVE MATERIAL FOR USES NOT LISTED IN ITEM 6.a.</b> (Sealed sources up to 3 mCi used for calibration and reference standards are authorized under Section 35.14(d), 10 CFR Part 35, and NEED NOT BE LISTED.)					
ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	MAXIMUM NUMBER OF MILLICURIES OF EACH FORM	DESCRIBE PURPOSE OF USE		
<div style="position: relative;"> <div style="position: absolute; top: 0; left: 0;">           DUPE            6p  <del>6351-15-30</del> </div> <div style="position: absolute; bottom: 0; right: 0; text-align: right;">             00415              MLIP           </div> </div>			<div style="border: 1px solid black; padding: 5px; display: inline-block;">             "OFFICIAL RECORD COPY"           </div>		

# **INFORMATION REQUIRED FOR ITEMS 7 THROUGH 23**

For Items 7 through 23, check the appropriate box(es) and submit a detailed description of all the requested information. Begin each item on a separate sheet. Identify the item number and the date of the application in the lower right corner of each page. If you indicate that an appendix to the medical licensing guide will be followed, do not submit the pages, but specify the revision number and date of the referenced guide: Regulatory Guide 10.8, Rev. \_\_\_\_\_ Date: \_\_\_\_\_

<b>7. MEDICAL ISOTOPES COMMITTEE</b>		<b>15. GENERAL RULES FOR THE SAFE USE OF RADIOACTIVE MATERIAL (Check One)</b>	
<input type="checkbox"/>	Names and Specialties Attached; and	<input type="checkbox"/>	Appendix G Rules Followed; or
<input type="checkbox"/>	Duties as in Appendix B; or _____ (Check One)	<input type="checkbox"/>	Equivalent Rules Attached
<input type="checkbox"/>	Equivalent Duties Attached	<b>16. EMERGENCY PROCEDURES (Check One)</b>	
<b>8. TRAINING AND EXPERIENCE</b>		<input type="checkbox"/>	Appendix H Procedures Followed; or
<input type="checkbox"/>	Supplements A & B Attached for Each Individual User; and	<input type="checkbox"/>	Equivalent Procedures Attached
<input type="checkbox"/>	Supplement A Attached for RSO.	<b>17. AREA SURVEY PROCEDURES (Check One)</b>	
<b>9. INSTRUMENTATION (Check One)</b>		<input type="checkbox"/>	Appendix I Procedures Followed; or
<input type="checkbox"/>	Appendix C Form Attached; or	<input type="checkbox"/>	Equivalent Procedures Attached
<input type="checkbox"/>	List by Name and Model Number	<b>18. WASTE DISPOSAL (Check One)</b>	
<b>10. CALIBRATION OF INSTRUMENTS</b>		<input type="checkbox"/>	Appendix J Form Attached; or
<input type="checkbox"/>	Appendix D Procedures Followed for Survey Instruments; or _____ (Check One)	<input type="checkbox"/>	Equivalent Information Attached
<input type="checkbox"/>	Equivalent Procedures Attached; and	<b>19. THERAPEUTIC USE OF RADIOPHARMACEUTICALS (Check One)</b>	
<input type="checkbox"/>	Appendix D Procedures Followed for Dose Calibrator; or _____ (Check One)	<input type="checkbox"/>	Appendix K Procedures Followed; or
<input type="checkbox"/>	Equivalent Procedures Attached	<input type="checkbox"/>	Equivalent Procedures Attached
<b>11. FACILITIES AND EQUIPMENT</b>		<b>20. THERAPEUTIC USE OF SEALED SOURCES</b>	
<input type="checkbox"/>	Description and Diagram Attached	<input type="checkbox"/>	Detailed Information Attached; and
<b>12. PERSONNEL TRAINING PROGRAM</b>		<input type="checkbox"/>	Appendix L Procedures Followed; or _____ (Check One)
<input type="checkbox"/>	Description of Training Attached	<input type="checkbox"/>	Equivalent Procedures Attached
<b>13. PROCEDURES FOR ORDERING AND RECEIVING RADIOACTIVE MATERIAL</b>		<b>21. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE GASES (e.g., Xenon - 133)</b>	
<input type="checkbox"/>	Detailed Information Attached	<input type="checkbox"/>	Detailed Information Attached
<b>14. PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS (Check One)</b>		<b>22. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL IN ANIMALS</b>	
<input type="checkbox"/>	Appendix F Procedures Followed; or	<input type="checkbox"/>	Detailed Information Attached
<input type="checkbox"/>	Equivalent Procedures Attached	<b>23. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL SPECIFIED IN ITEM 6.b</b>	
		<input type="checkbox"/>	Detailed Information Attached

## 24. PERSONNEL MONITORING DEVICES

TYPE <small>(Check appropriate box)</small>		SUPPLIER	EXCHANGE FREQUENCY
a. WHOLE BODY	FILM		
	TLD		
	OTHER (Specify)		
b. FINGER	FILM		
	TLD		
	OTHER (Specify)		
c. WRIST	FILM		
	TLD		
	OTHER (Specify)		

d. OTHER (Specify)

## 25. FOR PRIVATE PRACTICE APPLICANTS ONLY

a. HOSPITAL AGREEING TO ACCEPT PATIENTS CONTAINING RADIOACTIVE MATERIAL			
NAME OF HOSPITAL		b. ATTACH A COPY OF THE AGREEMENT LETTER SIGNED BY THE HOSPITAL ADMINISTRATOR.	
MAILING ADDRESS			
CITY	STATE    ZIP CODE		
c. WHEN REQUESTING THERAPY PROCEDURES, ATTACH A COPY OF RADIATION SAFETY PRECAUTIONS TO BE TAKEN AND LIST AVAILABLE RADIATION DETECTION INSTRUMENTS.			

## 26. CERTIFICATE

*(This item must be completed by applicant)*

The applicant and any official executing this certificate on behalf of the applicant named in Item 1a certify that this application is prepared in conformity with Title 10, Code of Federal Regulations, Parts 30 and 35, and that all information contained herein, including any supplements attached hereto, is true and correct to the best of our knowledge and belief.

<p>a. LICENSE FEE REQUIRED <small>(See Section 170.31, 10 CFR 170)</small></p>	<p>b. APPLICANT OR CERTIFYING OFFICIAL <small>(Signature)</small></p> <p style="text-align: center;"><i>[Signature]</i></p> <p>(1) NAME (Type of Print)</p>
<p>(1) LICENSE FEE CATEGORY:</p>	<p>(2) TITLE</p> <p style="text-align: center; font-size: 1.2em;">00415</p>
<p>(2) LICENSE FEE ENCLOSED: \$ _____</p>	<p>c. DATE</p> <p style="text-align: center;">"OFFICIAL RECORD COPY" MLI</p>



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

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER  
**Desmond Fitzgerald, M.D.**

2. STATE OR TERRITORY IN  
WHICH LICENSED TO  
PRACTICE MEDICINE  
**MA., CT., PA., Ohio**

**3. CERTIFICATION**

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
American Board of Radiology	Diagnostic Radiology	June 9, 1972

**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
		"OFFICIAL RECORD COPY"		00415

PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS		<b>KEY TO COLUMN C</b> <b>PERSONAL PARTICIPATION SHOULD CONSIST OF:</b> 1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage. 2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data. 3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.
FULL NAME		
Desmond Fitzgerald, M.D.		
STREET ADDRESS		
27 Beaman Road		
CITY	STATE	ZIP CODE
Sterling	Mass.	01564

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	150	
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME		
	LIVER FUNCTION STUDIES	10	
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES	160	
	IN VITRO STUDIES		
OTHER			
I-125	DETECTION OF THROMBOSIS	0	
I-131	THYROID IMAGING	50	
P-32	EYE TUMOR LOCALIZATION	2	
Se-75	PANCREAS IMAGING	25	
Yb-169	CISTERNOGRAPHY	0	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	0	
OTHER			
Tc-99m	BRAIN IMAGING	280	
	CARDIAC IMAGING		
	THYROID IMAGING		
	SALIVARY GLAND IMAGING		
	BLOOD POOL IMAGING		
	PLACENTA LOCALIZATION	0	
	LIVER AND SPLEEN IMAGING	180	
	LUNG IMAGING	20	
	BONE IMAGING	30	
OTHER			

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# PRECEPTOR STATEMENT (Continued)

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES	3	
P-32 (Colloidal)	INTRACAVITARY TREATMENT	2	
I-131	TREATMENT OF THYROID CARCINOMA	8	
	TREATMENT OF HYPERTHYROIDISM	68	
Au-198	INTRACAVITARY TREATMENT	1	
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT	0	
	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE	2	
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR	6	
Sn-113/ In-113m	GENERATOR	0	
Tc-99m	REAGENT KITS	20	
Other			

## 3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

### 4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR  
Antonio Rodriguez-Antunez, M.D.

b. NAME OF INSTITUTION  
The Cleveland Clinic Foundation

c. MAILING ADDRESS  
9500 Euclid Avenue

d. CITY  
Cleveland, Ohio

5. MATERIALS LICENSE NUMBER(S)

### 6. PRECEPTOR'S SIGNATURE

*Antonio Rodriguez-Antunez*

### 7. PRECEPTOR'S NAME (Please type or print)

52 11 WA 80 NCP 020

### 8. DATE

June 12, 1979

Do  
FCLMB:MAL

MAR 30 1979

Medical Imaging Corporation  
ATTN: Mr. F. X. Masse  
781 River Street  
Haverhill, MA 01830

Gentlemen:

Please find enclosed your new Materials License authorizing your mobile nuclear medicine service at several hospitals in your area. Note that Condition 10 limits your use of Group III generators and reagent kits to your base location at 781 River Street, Haverhill, Massachusetts. Group I and II materials may be used at your base location and at the hospital listed in Condition 10.

We have reviewed the training and experience of Dr. Desmond Fitzgerald and find that he has the required training to be an onsite physician. However, to add Dr. Fitzgerald as an authorized user under your license, we need a completed signed preceptor statement and a completed Item 4, Supplement A of Form NRC-313M.

We wish you every success in operating under your new material license. If you have any questions or require clarification, you may contact us at (301)427-4232.

Sincerely,

Michael A. Lamastra  
License Management Branch  
Division of Fuel Cycle and  
Material Safety

Enclosure: As Stated

DUP Std. Br. Dist.

~~7904240438~~ 2p

GRESS:WIBEFICE  
MC#4253:gtw  
SURNAME

ECLMB

FCLMB

MALamastra:gtw PCVacca

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3/20/79

DATE

3/20/79

3/20/79





# MEDICAL IMAGING CORPORATION

781 River Street

Haverhill Massachusetts 01830

617 / 374-4344

February 17, 1979

Applicant: F. X. Masse, Jr.
Check No. 389
Amount: \$170.00
Type of Fee: Application
Date of Fee: MAR 6 1979
Received by: Brown

Michael A. Lamastra  
U. S. Nuclear Regulatory Commission  
Radioisotope Licensing Branch  
Division of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

RECEIVED BY LFMB	
Date: MAR 6 1979	
Log: MAR 16 21	License
By: Konow	
Orig. To: .....	
Action Compl: 3/8/79	

Gentlemen:

Enclosed is a completed 313M application form for Medical Imaging Corporation, a Massachusetts Corporation that proposes to initiate a mobile Nuclear Medicine service to hospitals in the New England area. Medical Imaging Corporation was founded in 1977 and is currently providing mobile ultrasound services to some 14 hospitals in its general service area. Expansion into the Nuclear Medicine area is now proposed, the company having recently purchased an Ohio Nuclear mobile gamma camera, complete with on-board VIP computer, which is capable of performing all currently approved routine diagnostic procedures, including dynamic cardiac studies. As indicated in the application, the Nuclear Medicine program will be under the general supervision of F. X. Masse, CHP, Vice President of the corporation in charge of the nuclear program, and Kirwan T. MacMillan, M.D., a member of the board of directors of the corporation and Certified by the American Board of Nuclear Medicine. Mark Peterson, the Chief Nuclear Medicine Technologist, will be responsible for day-to-day procedures as outlined in the following description of the program.

Much of the activities of the company will involve the providing of hospitals with existing nuclear medicine programs the equipment and operating manpower necessary to enable them to perform state-of-the art dynamic studies (e.g. cardiac studies). In such cases, MIC will provide the mobile camera and operator, but not the radiopharmaceuticals or the medical licensing, hence we do not specifically list such hospitals in this application, since such services are widely variable both in frequency of

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~~7704035115~~

service and in variety of facilities involved. In such cases, however, all licensed activities are both covered by and under the total control of the licensed nuclear medicine program at the customer hospital. Even the calibration and tune-up of the diagnostic equipment which MIC routinely performs at each stop will be conducted with the customer-hospital radioactive sources.

The following description of services therefore applies to those hospitals that currently hold no Nuclear Medicine licensing and whose total Nuclear Medicine service will be limited to that provided by MIC. In general, that service is described as follows:

A. Ordering, Receipt, and Preparation of Radiopharmaceuticals:

All radiopharmaceuticals are ordered by the Nuclear Med Technologist and received by MIC at its headquarters in Haverhill, Massachusetts. All materials as received are placed in the restricted access Hot Laboratory for opening only by the Nuclear Med Technologist or the RSO. All individual patient doses are prepared at MIC headquarters and only those materials needed for a specific day's scheduled patients are loaded into the locked, shielded radiopharmaceutical storage container in the van. The only exception to this general plan is preparation of reagents that are too unstable to permit early morning preparation for patient use later in the day. In such cases the radionuclide necessary for labeling will be precalibrated into individual vials for labeling of the reagent kit at the customer hospital. In any case, all radioactive material (both unused radiopharmaceuticals and waste and/or contaminated utensils) will be returned to MIC and accounted for by the technologist. A last-minute closeout survey of each customer facility utilizing the end-window G.M. counter will be conducted by the technologist at each facility visited. Decontamination will be performed as necessary to reduce residual radiation levels to no more than 0.5 mr/hr on contact with any surfaces that are found contaminated.

B. Transportation and Set-up of Diagnostic Equipment:

The mobile Nuclear Gamma Camera will be transported to the customer hospital in a van equipped with loading ramps and a winch with which to easily load and unload the equipment at each using facility. The access route and unloading location have been identified at each customer facility, as has the room in which the procedures will be performed. This room is equipped with a private lavatory in which last-minute preparation of radiopharmaceutical is performed. The camera is equipped with a special thermal

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shroud to minimize instability in the equipment due to severe thermal stresses in our severe northeast weather, and the van is equipped with special heating equipment to maintain a heated atmosphere both during transportation and in overnight storage. The camera is calibrated and tuned-up at each location before patient studies commence. The camera high voltage and amplifier electronics continue to operate in battery power in transit to ensure the stability of operation. At the end of each work day, the van is returned to MIC headquarters where it is garaged in a heated secured garage. Both the van and the garage are equipped with burglar alarms to minimize the chance of theft or vandalism and to further guarantee control of the relatively small amounts of radioactive material on board.

C. Medical Coordination:

As indicated above, Dr. MacMillan bears the prime responsibility for the medical aspects of this program, and will maintain close contact with the designated coordinator for the Nuclear Medicine program in each hospital for which MIC provides service. As will be noted in the initial list of hospitals serviced, most of these facilities has designated a resident staff physician who appears to be fully qualified to undertake all aspects of the medical supervision without input from the MIC physician. Even in cases such as this, however, Dr. MacMillan will work closely with these designated physicians until such time as they are completely familiar with the MIC equipment and its performance of the procedures requested. In general the physician designated by each of the hospital listed with this application will be responsible for approving patients for radiopharmaceutical administration, prescribing the type and dosage of radionuclide to be administered, interpreting the results of the diagnosis and prescribing any additional tests which may be indicated. This physician shall be on-site while MIC is performing procedures at a given hospital.

D. Radiation Safety Responsibility:

MIC personnel will bear full responsibility for radiation safety throughout its operations involving the hospital listed in this application. Mark Peterson, whose resume is attached, will bear prime responsibility for preparation, transport, administration, waste disposal and record keeping, with assistance and supervision as necessary from F. X. Masse and /or G. A. Magenis with respect to radiation safety.

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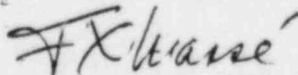
ML 18

February 27, 1979

Prime storage location for the radiopharmaceuticals involved in this proposal will be in the Hot Laboratory at MIC headquarters access to which is restricted to Peterson, Masse', Magenis and Dr. MacMillan, each of whom are routinely monitored for personal radiation exposure. Only that radioactive material that is necessary for the scheduled studies for a given day will be loaded on the van each morning and all radioactive waste material will be returned to MIC headquarters at the end of each day. Radioactive waste will be stored for decay and/or disposed of via a licensed disposal agency, depending upon the half-life of the material. Syringe shields and vial shields will be used throughout the operation by Peterson, who will be responsible for administration of the radionuclide at each hospital under the supervision of the on-site nuclear medicine physician. Individual patient doses will be precalibrated in the Capintec Dose Calibrator at MIC headquarters following their preparation each morning. Peterson will also be responsible for maintaining records of patient studies performed and the physician responsible for the approval of and participation in such procedures.

Attached are the requests for inclusion in this program by the customer-hospital, resume's of Peterson, Masse' and Magenis, a statement of responsibility for medical aspects of the program by Dr. MacMillan, and a check covering the necessary licensing fee. Please contact the undersigned at 617-245-6600 if further information is required.

Very truly yours,



F. X. Masse'

Vice President, Nuclear Division

FXM/jg

Enclosures

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FORM NRC-313M 7-77 10 CFR 30	U.S. NUCLEAR REGULATORY COM. <small>SSION</small> <b>APPLICATION FOR MATERIALS LICENSE — MEDICAL</b>				
<p><b>INSTRUCTIONS</b> - Complete Items 1 through 26 if this is an initial application or an application for renewal of a license. Use supplemental sheets where necessary. Item 26 must be completed on all applications and signed. Mail two copies to: Director, Office of Nuclear Materials Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Upon approval of this application, the applicant will receive a NRC Materials License. A NRC Materials 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, Parts 19, 20, and 35 and the license fee provision of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 26 and the appropriate fee enclosed.</p>					
<b>1.a. NAME AND MAILING ADDRESS OF APPLICANT</b> (institution, firm, clinic, physician, etc.) INCLUDE ZIP CODE  Medical Imaging Corporation 781 River Street Haverhill, MA 01830 TELEPHONE NO.: AREA CODE ( ) _____		<b>1.b. STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED</b> (If different from 1.a.) INCLUDE ZIP CODE  Hospitals contracting for mobile nuclear medicine service (see enclosed listing and data from each hospital)  <div style="text-align: right;">630-15104</div>			
<b>2. PERSON TO CONTACT REGARDING THIS APPLICATION</b>  F. X. Masse  TELEPHONE NO.: AREA CODE 617 1245-6600		<b>3. THIS IS AN APPLICATION FOR:</b> (Check appropriate item) a. <input type="checkbox"/> NEW LICENSE b. <input type="checkbox"/> AMENDMENT TO LICENSE NO. 02120 c. <input type="checkbox"/> RENEWAL OF LICENSE NO.			
<b>4. INDIVIDUAL USERS</b> (Name individuals who will use or directly supervise use of radioactive material. Complete Supplements A and B for each individual.)  Kirwan T. MacMillan, M.D., Physician in charge  Mark Peterson, Chief Technologist		<b>5. RADIATION PROTECTION OFFICER</b> (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Supplement A.)  F. X. Masse, C.H.P.  G. A. Magenis, M.S.			
<b>6.a. RADIOACTIVE MATERIAL FOR MEDICAL USE</b>					
<b>RADIOACTIVE MATERIAL LISTED IN:</b>	<b>MARK ITEMS DESIRED</b> "X"	<b>MAXIMUM POSSESSION LIMITS</b> (In millicuries)	<b>ITEM</b>	<b>MARK ITEMS DESIRED</b> "X"	<b>MAXIMUM POSSESSION LIMITS</b> (In millicuries)
10 CFR 31.11 FOR IN-VITRO STUDIES			IODINE-131 AS IODIDE FOR TREATMENT OF HYPERTHYROIDISM AND CARDIAC DYSFUNCTION		
10 CFR 35.100, SCHEDULE A, GROUP I	X	AS NEEDED	PHOSPHORUS-32 AS SOLUBLE PHOSPHATE FOR TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA AND BONE METASTASES		
10 CFR 35.100, SCHEDULE A, GROUP II	X	AS NEEDED	PHOSPHORUS-32 AS COLLOIDAL CHROMIC PHOSPHATE FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP III	X	3 Curies	GOLD-198 AS COLLOID FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP IV		AS NEEDED	IODINE-131 AS IODIDE FOR TREATMENT OF THYROID CARCINOMA		
10 CFR 35.100, SCHEDULE A, GROUP V		AS NEEDED	XENON-133 AS GAS OR GAS IN SALINE FOR BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES.		
10 CFR 35.100, SCHEDULE A, GROUP VI					
<b>6.b. RADIOACTIVE MATERIAL FOR USES NOT LISTED IN ITEM 6.a.</b> (Small sealed sources (up to 3m Ci) used for calibration and reference standards are authorized under Section 35.14(d), 10 CFR Part 35, and NEED NOT BE LISTED.)					
<b>ELEMENT AND MASS NUMBER</b>	<b>CHEMICAL AND/OR PHYSICAL FORM</b>	<b>MAXIMUM NUMBER OF MILLICURIES OF EACH FORM</b>	<b>DESCRIBE PURPOSE OF USE</b>		

 FORM NRC-313M  
 (7-77)

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24. PERSONNEL MONITORING DEVICES			
TYPE (Check appropriate box)		SUPPLIER	EXCHANGE FREQUENCY
a. WHOLE BODY	<input checked="" type="checkbox"/> FILM	R. S. Landauer, Jr. & Co.	Monthly
	<input type="checkbox"/> TLD		
	<input type="checkbox"/> OTHER (Specify)		
b. FINGER	<input type="checkbox"/> FILM		
	<input checked="" type="checkbox"/> TLD	R. S. Landauer, Jr. & Co.	Monthly
	<input type="checkbox"/> OTHER (Specify)		

c. OTHER (Specify)

#### 25. FOR PRIVATE PRACTICE APPLICANTS ONLY

a. HOSPITAL AGREEING TO ACCEPT PATIENTS CONTAINING RADIOACTIVE MATERIAL		b. ATTACH A COPY OF THE AGREEMENT LETTER SIGNED BY THE HOSPITAL ADMINISTRATOR.
NAME OF HOSPITAL		c. WHEN REQUESTING THERAPY PROCEDURES, ATTACH A COPY OF RADIATION SAFETY PRECAUTIONS TO BE TAKEN AND LIST AVAILABLE RADIATION DETECTION INSTRUMENTS.
MAILING ADDRESS		
CITY	STATE ZIP CODE	

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

The applicant and any official executing this certificate on behalf of the applicant named in Item 1a 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.

a. LICENSE FEE REQUIRED (See Section 170.31, 10 CFR 170)	b. APPLICANT OR CERTIFYING OFFICIAL (Signature) <i>F. X. Masse</i>
	(1) NAME (Type of Print) F. X. Masse
(1) LICENSE FEE CATEGORY: 7B	(2) TITLE Vice President, Nuclear Service
(2) LICENSE FEE ENCLOSED: \$ 190	c. DATE 2/26/79



# MEDICAL IMAGING CORPORATION

781 River Street

Haverhill Massachusetts 01830

617 / 374-4344

## Additional Information for 313M Application

7. Due to the nature of this application, no Medical Isotopes Committee is involved. Close cooperation between the MIC physician, the coordinating physician at the customer-hospitals, the Nuclear Med Technologist and the physicist is an ongoing part of the program.
8. Resumes are attached for the technologist and RSO. Dr. MacMillan is board certified in Nuclear Medicine. Resumes of each of the coordinating physicians are included with the information from the hospitals.
9. The following instruments are utilized in this program.
  - A. Ohio Nuclear Sigma 420 Mobile Gamma Camera with VIP550, Video Image Processor
  - B. Capintec CRC-16 Dose Calibrator
  - C. Eberline E-120 End Window Survey Meter (1.4 mg/cm<sup>2</sup>, 0-50 mr/hr)
  - D. Eberline PIC6A Ion Chamber (30 mg/cm<sup>2</sup>, 0-1000 R/hr)
  - E. Shielding Devices: 24 - 2" x 4" x 8" lead bricks  
1 - ½" bench-top L Shield  
1 - ½" exterior shield for generator  
various syringe shields, vial shields
10. Calibration of instruments will be performed as follows:
  - A. Camera will be calibrated and performance checked during set-up at each hospital. Sources used will be a patient dose of radiopharmaceutical and/or <sup>57</sup>Co flood source.
  - B. Dose calibrator will be calibrated on each day of use using commercial sources in accordance with ANSI N42.13 -1978.
  - C. Survey instruments will be calibrated by F. X. Masse Associates at 6-month intervals under license #20-17148-01.
11. A diagram of the facility complete with equipment placement is attached. The building is secured with electronic intrusion alarms that sound locally and at the local police headquarters. The Hot Laboratory is locked with access restricted to members of the Nuclear Division of MIC.

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12. The resume of Mark Peterson, the technologist, is attached. As may be noted, Mark has extensive prior experience, including several years as Chief Technologist in the Nuclear Medicine program at the Cambridge Hospital. While at Cambridge, Mark was responsible for compliance with NRC regulations as regards record-keeping and general radioisotope controls, and worked extensively with F. X. Masse Associates personnel in the routine training programs for technologists in that program with respect to the contents of the Federal Register regarding Nuclear Medicine. Additionally, Mark has participated as an instructor in the Nuclear Medicine training program at Bunker Hill Community College.
13. The procedures for ordering and receiving materials are described in detail in the covering letter. Basically Peterson orders all materials as necessary. Materials are received at MIC headquarters on a prearranged schedule and are either received by Mark or are placed in the Hot Lab for Mark to check in on his return. Mark will maintain a running inventory of all such material.
14. The procedures for opening packages, including the record sheet for recording receiving data are enclosed.
- 15,17. General Rules for Safe Use of Radioactive Materials are attached. As will be noted, these include rules on the use of such materials at customer-hospitals, survey procedures and close-out surveys at customer-hospitals.
16. Emergency Procedures are attached.
18. All radioactive waste will be returned to MIC headquarters when it is stored for decay or disposed of via a licensed disposal agency (Nuclear Container Corp, Worcester, MA). <sup>99m</sup>Tc waste will be segregated for one week, surveyed thoroughly and disposed of as normal trash. Generators will be stored for at least 3 months, before dismantling, the column will be disposed of as radioactive waste, the lead surveyed thoroughly and sold for scrap.
- 19,20. Not applicable.

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# MEDICAL IMAGING CORPORATION

781 River Street

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## GENERAL RULES FOR USE OF RADIOACTIVE MATERIAL

### A. Hot Laboratory

1. All work with radiopharmaceuticals at MIC Headquarters is restricted to Hot Lab.
2. Wear lab coat and gloves while handling radioactive materials.
3. Monitor hands and clothing before leaving Hot Lab.
4. Use syringe shields and vial shields during preparation of radioactive material. Use syringe shields whenever possible during administration to patients.
5. No eating, drinking, smoking or use of cosmetics in the Hot Lab area. Never pipette by mouth any material in the Hot Lab.
6. Assay each patient dose in the Dose Calibrator prior to administration. Do not use doses that differ from prescribed dose by more than 10%.
7. Wear personnel monitoring devices (body and finger) at all times when radioactive material is being handled or while in the Hot Lab.
8. Dispose of radioactive waste in either the Nuclear Container Corporation waste drum (long-lived materials, vials, columns etc.) or the  $^{99m}\text{Tc}$  waste holding container.  $^{99m}\text{Tc}$  waste shall be held for at least one week, monitored carefully, and disposed of as normal trash if no reading above 0.1 mr/hr is observed.

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9. Survey entire Hot Lab at end of each day and log survey results.
10. Confine all radioactive solutions to closed, well identified containers.

B. Transportation & Remote Hospital Use

1. Individual patient doses being transported to customer-hospitals will be individually contained in lead shielded syringe containers, which are clearly labeled.
2. During transportation, radioactive material will be packaged in compliance with DOT regulations and locked in the lead-lined steel box which is bolted to the truck bed at the rear of the vehicle.
3. Upon arrival at a customer-hospital, the shielded patient doses intended for use at that hospital will be transferred in a well-identified locked case to the restricted lavatory adjacent to the room in which nuclear imaging procedures will be performed.
4. Final preparation (including reagent kit labeling if necessary) will be performed in this lavatory prior to patient administration.
5. Area in which patient is injected will be surveyed for contamination following administration.
6. Hospital room and lavatory used will be surveyed with end-window survey meter at end of hospital visit. All contamination will be reduced to below 0.5 mr/hr and all radioactive waste will be returned to MIC Headquarters.

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PROCEDURES FOR RECEIPT AND OPENING OF RADIONUCLIDE SHIPMENT

1) All packages shall be surveyed as soon as practicable after receipt. NRC regulation include the requirement that higher level shipments be inspected within 3 hours of receipt, further emphasizing the time requirement.

2) All measurements called for on the accompanying record sheets shall be made as follows:

1. Dose rate at surface and at 3 ft from the package as received shall be measured either with GM survey meter or with higher range instrument if necessary.
2. Surface wipe test on shipping container shall be made as indicated.
3. Wearing protective gloves and working in the booth, open package carefully, inspecting for signs of leakage or breakage.
4. Survey packing material as a further check for leakage.
5. Remove primary container (using tongs) from shipping container and smear primary container across tissue paper to further check for leakage. Survey tissue paper.
6. When it has been established that inner container is contamination free, place entire unshielded shipment on bench and measure dose rate one meter away with GM survey meter or with higher range instrument if necessary.
7. Place material back in containers as originally received and deliver to ordering department.

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# Record Of Checking-in Shipments Of Radioactive Material

rc. No.	Rec. Date	Mat. Rec. Nuclide Amt	Lot No.	Dose Rate Surface @ 3' (mrem/hr mrem/hr)	Surface Wipe test* dpm/100cm <sup>2</sup>	Packing Contami- nation mr/hr	Primary Container Contami- nation mr/hr	Calibra- tor read- ing of total activity	Checked by	Comments

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Wipe test instructions: (1) Wipe approximately 100 cm<sup>2</sup> of each surface. (2) Count wipe using end window survey meter. Calculate the net dpm using the efficiency posted on side of instrument. (4) Notify the consulting health physicist if: Wipe test results exceeds 500 dpm/100 cm<sup>2</sup>. b) Dose rate on external surface exceeds 200 mrem/hr. c) Dose rate at 6 feet exceeds 10 mrem/hr.



## EMERGENCY PROCEDURES FOR INCIDENTS INVOLVING RADIOACTIVE MATERIAL

### Minor Spills:

1. NOTIFY persons in the area that a spill has occurred.
2. PREVENT THE SPREAD by covering the spill with absorbent paper.
3. CLEAN UP RADIOACTIVE MATERIAL: Using disposable gloves and remote handling tongs. Carefully fold the absorbent paper. Insert into a plastic bag and dispose of in the radioactive waste container. Include all other contaminated materials such as disposable gloves.
4. SURVEY THE ENTIRE AREA INVOLVED: With a G.M. Survey Meter. Check the area around the spill, your hands and clothing for contamination. Window on G. M. Survey Meter must be thin enough to measure radiation emitted by the radionuclide spilled.
5. REPORT incident to the Radiation Safety Officer.

### Major Spills:

1. CLEAR THE AREA: Notify all persons not involved in the spill to vacate the room.
2. PREVENT THE SPREAD by covering the spill with absorbent pads. Do not attempt to clean it up. Confine the movement of all personnel potentially contaminated to prevent the spread. Assemble all potential involved personnel in an adjacent room for personnel monitoring and decontamination.

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3. SHIELD THE SOURCE if practical. The spill should be shielded, but only if it can be done without further contamination or without significantly increasing your radiation exposure.
4. CLOSE AND LOCK THE ROOM to prevent inadvertent entry by authorized personnel.
5. NOTIFY the Radiation Safety Officer immediately.
6. PERSONNEL DECONTAMINATION: Contaminated clothing should be removed and stored for further evaluation by the Radiation Safety Officer. If the spill is on the skin, flush thoroughly and then wash with mild soap and lukewarm water. Contact dose rate on skin should be reduced as far below 1 mrem/hr as possible.

RADIATION SAFETY OFFICER: Frank Masse

OFFICE PHONE: 245-6600

HOME PHONE: 267-3300

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# The American Board of Radiology

*Organized through the cooperation of the  
American College of Radiology, the American Roentgen Ray Society,  
the American Radiological Society, the Radiological Society of North America, the Society  
on Radiology of the American Medical Association and the American Society of Therapeutic Radiologists  
It is hereby certified that*

**Stephen G. Gerzof, M.A.**

*Has passed an accepted course of graduate study and clinical work has met certain standards  
and qualifications and has passed the examination conducted under the authority of*

**The American Board of Radiology**

*Therby demonstrating to the satisfaction of the Board that he is qualified to practice the specialty of*  
**Diagnostic Radiology**

*And further the American Board of Radiology acting in conjunction and cooperation with*

**The American Board of Nuclear Medicine**

*A special board formed with the sponsorship of the American Board of Internal Medicine the American  
Board of Pathology. The American Board of Radiology and the Society of Nuclear Medicine*

*On this the ninth day of June, 1978*

*acknowledge Special Competence in*

**Nuclear Radiology**



*For W. Nelson*  
**C. Allen Good**

*F. J. Smith*  
**A. V.**





# MEDICAL IMAGING CORPORATION

781 River Street

Haverhill Massachusetts 01830

617 / 374-4344

## List of Hospitals to be Covered by MIC License

### 1. Amesbury Hospital, Amesbury, MA

Coordinating Physician: Dennis J. Carlson, M.D.  
Dr. Carlson is currently practicing Nuclear Medicine at Anna Jacques Hospital in Newburyport, Mass and is listed as a user on that license. He will be present at Amesbury, where he is also on the staff, during our visits to that hospital.

### 2. Hubbard Regional Hospital, Webster, MA

Coordinating Physician: J. V. Carroll, M.D.  
Dr. Carroll is currently practicing Nuclear Medicine at Worcester City Hospital under license #20-05969-01. Dr. Carroll will be present at Hubbard Regional Hospital where he is also on the staff, during our visits there.

### 3. Doctor's Hospital, Worcester, MA

Coordinating Physician: Francis A. White, M.D.  
Dr. White is currently practicing Nuclear Medicine at Worcester City Hospital and is Board Certified in Nuclear Medicine. Dr. White will be present during our visits to Doctor's Hospital where he is also on the staff.

### 4. Huntington General and Longwood Hospitals, Boston, MA

Coordinating Physician: Stephen G. Gerzof, M.D.  
Dr. Gerzof is Certified by the American Board of Medical Imaging and will be present at these hospitals, where he is on the staff.

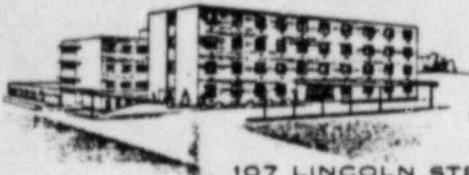
### 5. The Clinton Hospital, Clinton, MA

Coordinating Physician: Desmond Fitzgerald, M.D.  
Dr. Fitzgerald is Chief of Radiology in the hospital and has had extensive training and experience in Nuclear Medicine in the past. During the initial part of this program Dr. Fitzgerald will act as coordinator only, consulting with Dr. MacMillan on patient selection and dosage, and deferring to Dr. MacMillan for interpretation. Dr. Fitzgerald requests that his qualifications be reviewed for his eventual approval to conduct all medical aspects of the Clinton program, but that the initial licensing not be delayed if there is any question in that regard.

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*Doctors Hospital*  
OF WORCESTER INC.

1948-1973 25 YEARS OF MEDICAL SERVICE TO THE WORCESTER AREA

107 LINCOLN STREET • WORCESTER, MASSACHUSETTS 01605 • 617/799-0531

DAVID W. HILLIS

ADMINISTRATOR

January 11, 1979

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Gentlemen:

This is to request that our hospital be included in the list of facilities at which Medical Imaging Corporation of 781 River Street, Haverhill, Massachusetts, is licensed to perform Nuclear Medicine Services.

Doctors Hospital is an acute care, general medical-surgical hospital of 101 beds. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this hospital and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff but will be coordinated through the Radiology Department under the general supervision of Francis White, M.D. Doctor White will work closely with Medical Imaging Corporation personnel throughout this program.

Sincerely,

David W. Hillis  
Administrator

DWH/lms

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AN EQUAL OPPORTUNITY EMPLOYER



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# MEDICAL IMAGING CORPORATION

781 River Street Haverhill Massachusetts 01830

617 / 374-4344

February 27, 1979

Michael A. Lamastra  
U. S. Nuclear Regulatory Commission  
Radioisotope Licensing Branch  
Division of Fuel Cycle and  
Material Safety  
Washington, D.C. 20555

Gentlemen:

This is to acknowledge my role in the Nuclear Medicine program proposed by Medical Imaging Corporation. As a stockholder and member of the Board of Directors, I will take responsibility for the medical aspects of the program as it relates to those hospitals whose licensing is gained through Medical Imaging Corporation. For those hospitals with qualified physicians acting as coordinator of this program, I will work closely with them in determining appropriate patients, dosage and interpretation until they are comfortable with these responsibilities themselves, and totally familiar with MIC equipment. For hospitals with coordinating physicians who are not qualified in Nuclear Medicine, the coordinating physician will be responsible for examining the patient and clinical history and discussing the outcome of such examination with me. I will then prescribe the study to be performed and the dose to be administered, and will interpret the results of the scan.

My qualifications for the performance of this service are based primarily on my Certification by the American Board of Nuclear Medicine and my 8 years experience in operating the Nuclear Medicine program at Hale Hospital in Haverhill, MA (license #20.14816-01). In the latter program, we are operating an Ohio Nuclear mobile gamma camera, and are conducting dynamic studies with computer assistance.

Very truly yours,

Kirwan T. MacMillan, M.D.

DUP 1p

~~6304040111~~

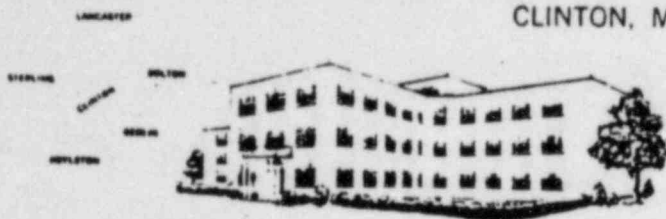
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COMMUNITY  
OF CARE

# The Clinton Hospital

CLINTON, MASSACHUSETTS 01510 TEL. (617) 365-4531



RICHARD D. MILLS  
President

February 26, 1979

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Gentlemen:

This is to request that our hospital be included in the list of facilities at which Medical Imaging Corporation of 781 River Street, Haverhill, Massachusetts, is licensed to perform Nuclear Medicine services. Ours is a general hospital facility with 82 beds. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this hospital, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated through the Radiology Department under the general supervision of Dr. Desmond FitzGerald whose training and experience is described on the enclosure. Dr. Fitzgerald will work closely with Medical Imaging Corporation personnel throughout this program.

Yours truly,

Richard D. Mills, President

DUPE

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TRAINING AND EXPERIENCE  
AUTHORIZED USER OR RADIATION PROTECTION OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION PROTECTION OFFICER

Dr. Desmond Fitzgerald

2. STATE OR TERRITORY IN WHICH LICENSED TO

PRACTICE MEDICINE  
MA., CT., Penn., Ohio

3. CERTIFICATION

SPECIALITY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
American Board of Radiology	Diagnostic Radiology	June 9, 1972

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	Attended Lectures pertaining to Radioisotope Physics between 1962-63		
b. RADIATION PROTECTION	Lectures given by Dr. Webster of M.G.H. Boston, Mass. Lectures given at M.I.T. Boston, Mass.		
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY			
d. RADIATION BIOLOGY			
e. RADIOPHARMACEUTICAL CHEMISTRY			



PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS			<b>KEY TO COLUMN C</b> <b>PERSONAL PARTICIPATION SHOULD CONSIST OF:</b> 1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage. 2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data. 3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.
FULL NAME Dr. Desmond Fitzgerald			
STREET ADDRESS 27 Beaman Road			
CITY Sterling	STATE Mass.	ZIP CODE 01564	

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	40	
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME	-	
	LIVER FUNCTION STUDIES	10	
	FAT ABSORPTION STUDIES	10	
	KIDNEY FUNCTION STUDIES	10	
	IN VITRO STUDIES	-	
OTHER			
I-125	DETECTION OF THROMBOSIS	-	
I-131	THYROID IMAGING	25	
P-32	EYE TUMOR LOCALIZATION	-	
Sr-75	PANCREAS IMAGING	15	
Yb-169	CISTERNOGRAPHY	-	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	-	
OTHER			
Tc-99m	BRAIN IMAGING	250	
	CARDIAC IMAGING	-	
	THYROID IMAGING	100	
	SALIVARY GLAND IMAGING	-	
	BLOOD POOL IMAGING	-	
	PLACENTA LOCALIZATION	-	
	LIVER AND SPLEEN IMAGING	300	
	LUNG IMAGING	300	
	BONE IMAGING	200	
OTHER			

# PRECEPTOR STATEMENT (Continued)

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		
P-32 (Colloidal)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA		
	TREATMENT OF HYPERTHYROIDISM AND CARDIAC CONDITION		
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR		
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS		
Other			

### 3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

Accumulated approximately 624 hours of clinical Nuclear Medicine during the year of 1966.

### 4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR

Dr. Antonio Antunez

b. NAME OF INSTITUTION

Cleveland Clinic

c. MAILING ADDRESS

d. CITY  
Cleveland, Ohio

5. MATERIALS LICENSE NUMBER(S)

6. PRECEPTOR'S SIGNATURE

*Dr. Desmond Fitzgerald*  
Dr. Desmond Fitzgerald

7. PRECEPTOR'S NAME (Please type or print)

Dr. Antonio Antunez

8. DATE

February 28, 1979

CURRICULUM VITAE

Mark D. Peterson, R.T., B.A.  
20 A Washington Park Drive  
Andover, Massachusetts 01810

Personal Data

Date of Birth: January 18, 1951  
Place of Birth: St. Paul, Minnesota  
Marital Status: Divorced

Height: 5'11"  
Weight: 170 lbs.

Occupational Objectives

Application and administration of Nuclear Medicine services

Education

- 1) University of Vermont, Allied Health Program; 1971-1974  
Registered Nuclear Medicine Technologist
- 2) University of Vermont; 1969-1973  
B.A.; Zoology

Experience

- |   |  |
|---|--|
| 1) University of Vermont<br>Medical School<br>Burlington, Vermont | Research Assistant in the<br>Biochemistry Laboratory<br>Sept. 1972- May 1973 |
| 2) Mass. General Hospital<br>Fruit St.<br>Boston, Mass.           | Staff Nuclear Medicine Tech.<br>April 1974- Jan. 1975                        |
| 3) Mass. General Hospital<br>Fruit St.<br>Boston, Mass.           | Coordinator of Nuclear Med.<br>Research Laboratory<br>Jan. 1975- Aug. 1975   |
| 4) Cambridge Hospital<br>Cambridge St.<br>Cambridge, Mass.        | Chief Nuclear Medicine Tech.<br>Aug. 1975- Jan. 1979                         |
| 5) Medical Imaging Corp.<br>781 River St.<br>Haverhill, Mass.     | Director of Nuclear Medicine<br>Services<br>Jan. 1979- present               |

Memberships

- 1) Society of Nuclear Medicine, Technologist Section
- 2) New England Society of Health Physicists

References upon request.

"OFFICIAL RECORD COPY"

ML 14

Curriculum Vitae:

Francis X. Masse

Date of Birth: December 5, 1933

Place of Birth: Woburn, Massachusetts

Education:

Northeastern University, Boston, Massachusetts 1956 B.S.  
Majors, Physics and Mathematics

Certified by the American Board of Health Physics 1962

Professional Activities:

Radiological Safety Officer, New England Center Hospital	1956-59
Assistant Radiological Safety Officer, Massachusetts Institute of Technology	1959-62
Associate Radiation Protection Officer, Massachusetts Institute of Technology	1962-71
Radiation Safety Officer, New England Medical Center Hospitals	1963-
Executive Secretary, New England Medical Center Hospitals Radiation Committee	1963-
Nuclear Incidents Advisors, Massachusetts Department of Public Health	1964-
Secretary, MIT Advisory Committee on Human Use of Radioisotopes	1966-74
Radiation Protection Officer, Bates Linear Accelerator, MIT	1971-
Member, Massachusetts Department of Public Health, Division of Medical Care, Advisory Committee on Nuclear Medicine	1971-72
Member, Tufts University Human Investigational Review Committee	1972-
Executive Secretary, MIT Committee on Radiation Exposure to Human Subjects	1974-
Member, MIT Committee on Use of Humans as Experimental Subjects	1974-
Member, American National Standards Institute Committees N43.9 and N44.4	1974-
Chairman, ANSI N43.9 Task Group on Ion Chamber Standardization	1974-

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Francis X. Masse' Curriculum Vitae continued

Professional Societies:

Member, Health Physics Society	1959-
Member, Boston Medical Physics Group, 1959 - Chairman	1967-68
Member, New England Chapter Health Physics Society	1960-
Charter Member, American Association of Physicist in Medicine	1960-
Executive Board Member, New England Chapter Health Physics Society	1963-69
President, New England Chapter Health Physics Society	1967-68
Member, Society of Nuclear Medicine	1968-
Member, New England Chapter, Society of Nuclear Medicine	1968-
Charter Member, New England Radiological Physics Organization	1969-
Nuclear Medicine Standards Joint Committee of the New England Chapter Society of Nuclear Medicine and the New England Radiological Physics Organization	1970-75
Co-Chairman, Nuclear Medicine Standards Joint Committee of the New England Chapter, SNM and the NERPO	1973-74

Business Activities:

Director, North Cambridge Co-Operative Bank	1963-
Member, Finance Committee, North Cambridge Co-Operative Bank	1967-
Chairman, Finance Committee, North Cambridge Co-Operative Bank	1972-
President and Co-Founder, Bio-Nuclear Measurements Inc.	1968-
President and Co-Founder, F. X. Masse' Associates Inc.	1974-
President and Co-Founder, Medical Imaging Corporation	1976-

Health Physics Consultant to the Following:

Tufts University School of Medicine, Boston, MA	1957-
Memorial Hospital, Pawtucket, R.I.	1965-1970
Veterans Administration Hospital, Boston, MA	1971-
Lemuel Shattuck Hospital, Boston, MA	1969-
Hale Hospital, Haverhill, MA	1971-

Francis X. Masse Curriculum Vitae continued

Tufts University, Medford, MA	1971-
American Science & Engineering, Cambridge, MA	1973-
Worcester City Hospital, Worcester, MA	1973-
The Cambridge Hospital, Cambridge, MA	1973-
Ohio-Nuclear Corporation, Solon, Ohio	1973-1976
St. Elizabeth's Hospital, Brighton, MA	1973-
University of Massachusetts Medical Center, Worcester, MA	1974-
Charles Choate Memorial Hospital, Woburn, MA	1974-
Lawrence Memorial Hospital, Medford, MA	1974-
Fairlawn Hospital, Worcester, MA	1974-
Whidden Hospital, Everett, MA	1975-
Institute for Laboratory Medicine, Cambridge, MA	1975-
Bunker Hill Community College, Charlestown, MA	1975-
Massachusetts Nuclear Corporation, Cambridge, MA	1976-1977
University of Massachusetts Harbor Campus, Boston, MA	1976-
Nuclear Container Corporation, Worcester, MA	1976-
Holden District Hospital, Holden, MA	1977-
Northeastern University, Boston, MA	1977-
Brain Diagnostic Laboratories, Providence, R.I.	1977-

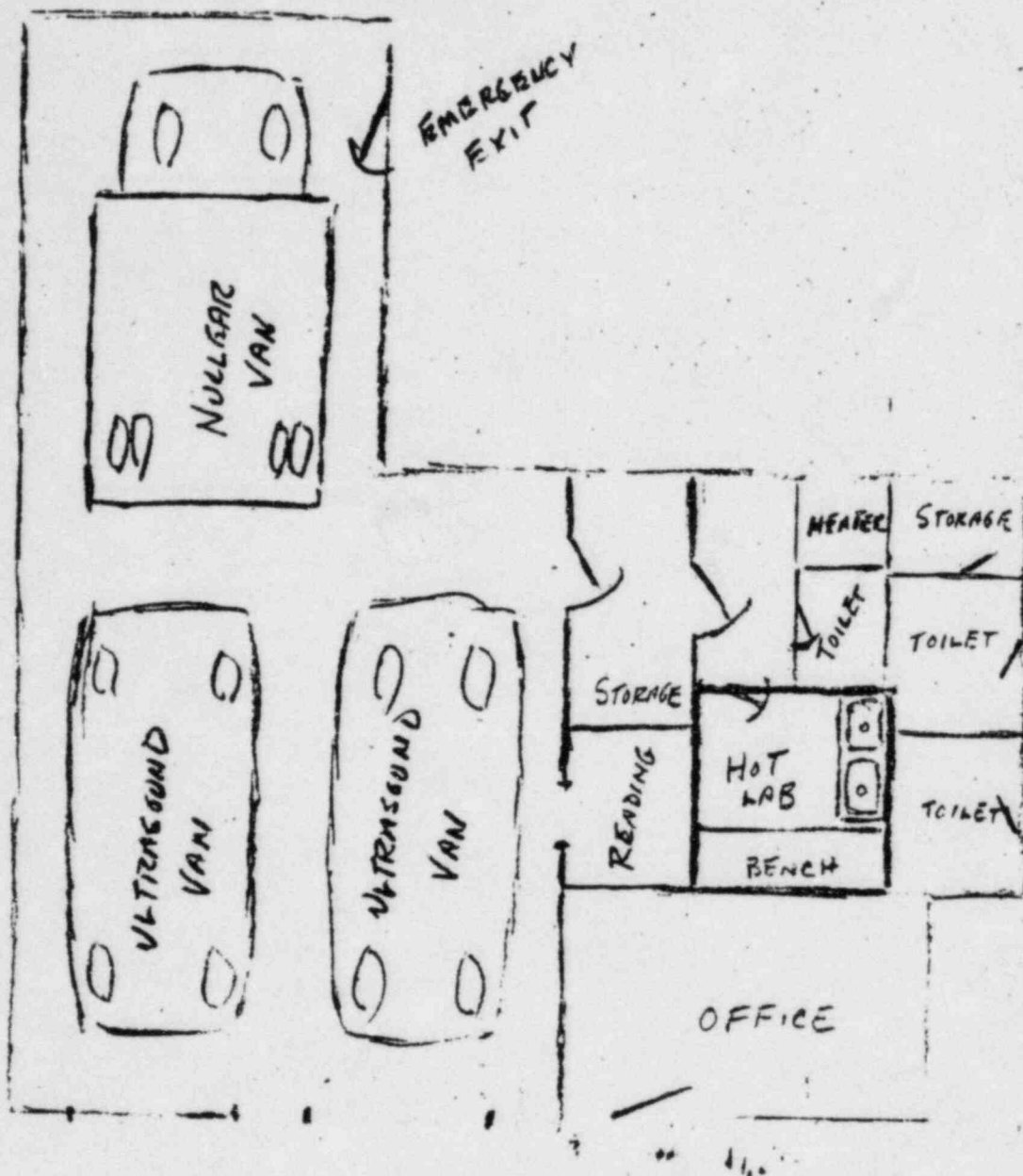


# MEDICAL IMAGING CORPORATION

781 River Street

Haverhill Massachusetts 01830

617 / 374-4344



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## CURRICULUM VITAE

Name: Gail A. Magenis

Born: 15 September 1944, Waltham, Massachusetts

Education: 1966 A.B., Connecticut College, New London, Connecticut,  
Zoology

1973 M.S., University of Miami, Coral Gables, Florida,  
Radiological Health

### Professional Experience:

- 1966-69: Mammalian Genetics Research Assistant, Shields Warren Radiation Laboratory, New England Deaconess Hospital
- 1969-70: Human Cytogenetics Research Assistant, University of California Medical Center, San Francisco
- 1970-71: Graduate Student, University of Miami
- 1972-73: Immunology Research Assistant, Robert Breck Brigham Hospital
- 1973-77: Assistant Radiation Protection Officer, Massachusetts Institute of Technology
- 1974- : Ex Officio Member, MIT Committee on Radiation Exposure to Human Subjects
- 1975-77: Ex Officio Member, MIT Radiation Protection Committee
- 1975- : Health Physicist and Treasurer, F. X. Masse Associates Inc.

### Professional Society Memberships:

- 1973- : Member, Health Physics Society
- 1973- : Member, New England Chapter, Health Physics Society
- 1974- : Member, Society of Nuclear Medicine
- 1974- : Member, New England Chapter, Society of Nuclear Medicine
- 1974- : Member, New England Chapter, American Association of Physics in Medicine
- 1975- : Associate Member, Radiation Research Society
- 1976-78: Member, Executive Board of New England Chapter, HPS
- 1977-78: Editor, New England Chapter, HPS Newsletter

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Continued

CURRICULUM VITAE

Consultant to the following Organizations via F. X. Masse Associates Inc.

Charles Choate Hospital, Woburn, Massachusetts

Lawrence Memorial Hospital, Medford, Massachusetts

The Cambridge Hospital, Cambridge, Massachusetts

Fairlawn Hospital, Worcester, Massachusetts

University of Massachusetts Medical Center, Worcester, Massachusetts

St. Elizabeth's Hospital, Brighton, Massachusetts

Whidden Hospital, Everett, Massachusetts

Bunker Hill Community College, Charlestown, Massachusetts

Worcester City Hospital, Worcester, Massachusetts

Northeastern University, Boston, Massachusetts

University of Massachusetts, Boston Harbor Campus, Boston, Massachusetts

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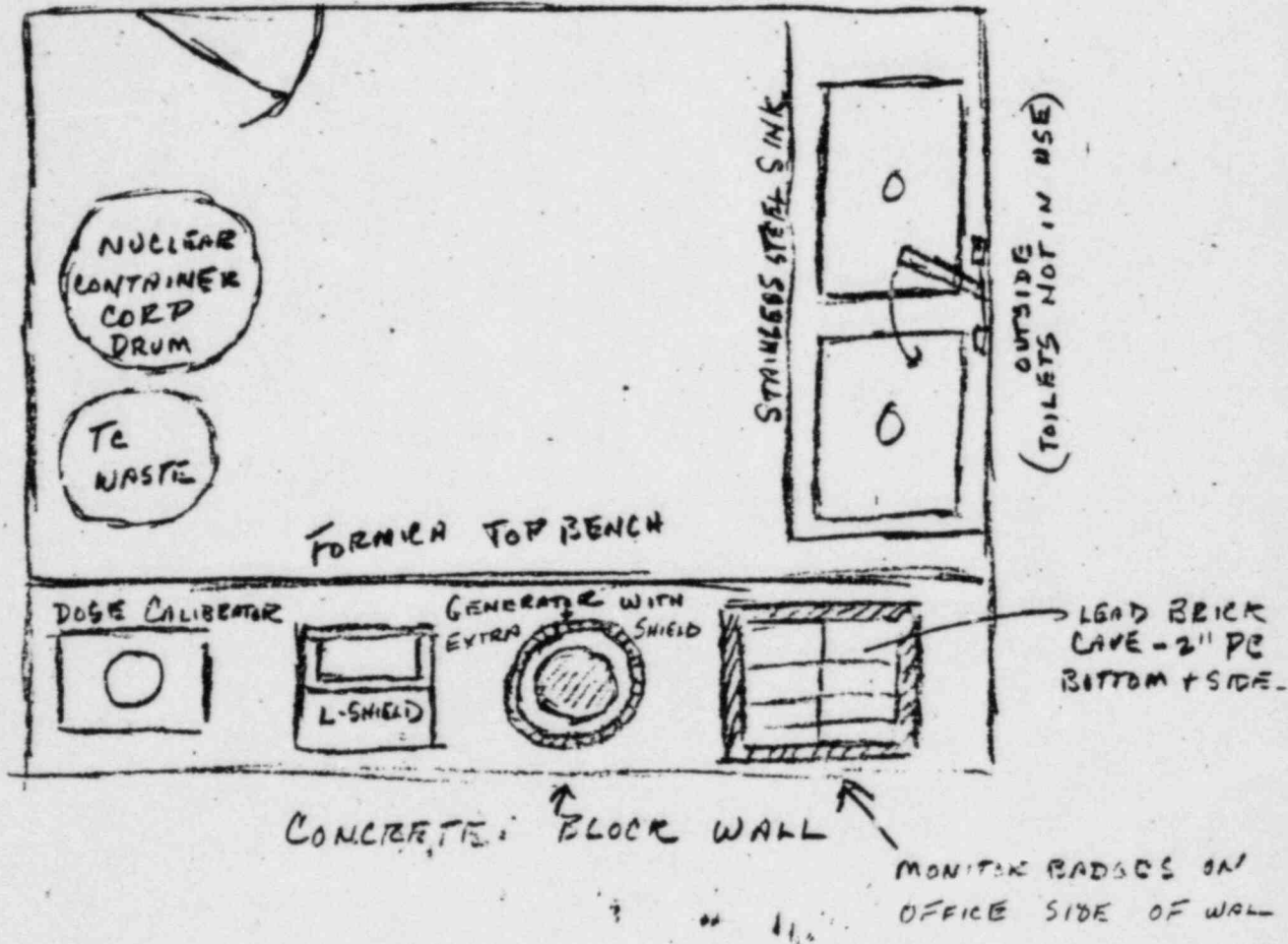


# MEDICAL IMAGING CORPORATION

781 River Street

Haverhill Massachusetts 01830

617 / 374-4344



HOT LAB DETAIL

"OFFICIAL RECORD COPY"

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00000

AMESBURY HOSPITAL  
AMESBURY, MASS.

February 14, 1979

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Medical Imaging Corporation  
781 River Street  
Haverhill, Massachusetts 01830

Gentlemen:

The Amesbury Hospital is interested in nuclear scanning and would like you to proceed with procuring the necessary licenses.

The person responsible for nuclear medicine at our hospital is Dennis J. Carlson, M. D.

If there are any further questions, please contact me.

Sincerely,

  
Robert Ponticelli  
Administrator

Rp/ajs

DUP 1P

~~830404054~~

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# HUBBARD REGIONAL HOSPITAL

THOMPSON ROAD

*Webster, Massachusetts 01570*

February 15, 1979

BERNARD P. GAGNON  
ADMINISTRATOR

(617) 943-2600

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, D.C. - 20555

Gentlemen:

This is to request that our hospital be included in the list of facilities at which Medical Imaging Corporation of 781 River Street, Haverhill, Massachusetts, is licensed to perform Nuclear Medicine services. Ours is a general hospital facility with 97 beds. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this hospital, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated through the Radiology Department under the general supervision of Dr. J. V. Carroll whose training and experience is described on the enclosure. Dr. Carroll will work closely with Medical Imaging Corporation personnel throughout this program.

Yours truly,

*B. P. Gagnon*

B. P. Gagnon  
Administrator

BPG:lks

DUP 1P

~~830404060~~

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# HUNTINGTON GENERAL HOSPITAL

An Osteopathic Institution

222 SOUTH HUNTINGTON AVENUE, BOSTON, MASS. 02130

TEL. (617) 522-4300

February 7, 1979

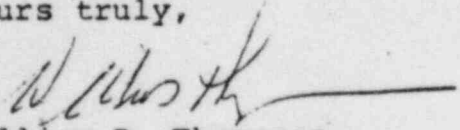
Director  
Office of Nuclear Materials Safety  
and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Gentlemen:

This is to request that our Hospital, including the Longwood Hospital Division, be included in the list of facilities at which Medical Imaging Corporation of 781 River Street, Haverhill, Massachusetts, is licensed to perform Nuclear Medicine services. Ours is a general Hospital facility with 135 beds. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this Hospital, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated through the Radiology Department under the general supervision of Dr. Gerzof, whose training and experience is described on the enclosure. Dr. Gerzof will work closely with Medical Imaging Corporation personnel throughout this program.

Yours truly,

  
William D. Thompson  
Administrator

WDT:bs

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~~530-404063~~

An Equal Opportunity Employer

28281

MLD



AMERICAN COLLEGE OF RADIOLOGY

*Continuing Medical Education Requirement*

*This is to Certify That*

STEPHEN G. GERZOF, M.D.

*has fulfilled the requirements for the  
American College of Radiology's  
Continuing Medical Education Requirements*

Valid until July 1, 1981



*Byron S. Bechtel, M.D.*

President

Issued 10/15/78

"OFFICIAL RECORD COPY"

MLB

# American College Medical<sup>of</sup> Imaging

This is to Certify that

**Stephen G. Gerzof, M.D.**

having been duly qualified for membership is entitled to all rights  
and privileges of Charter membership in this association through  
December 31, 1978

*In Witness whereof we have hereunto affixed the official seal  
this First day of November A.D. 1978*



*Robert Klein*  
President

*Allan M. Marmorek*  
Secretary

"OFFICIAL RECORD COPY"

ML-18

SEP 07 1984

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 02526

Medical Imaging Corporation  
ATTN: William Guimond  
Marketing  
500 New Boston Park, 10 V Roessler Road  
Woburn, Massachusetts 01801

Gentlemen:

Enclosed is Amendment No. 15 to License No. 20-18449-01. You should review this amendment for correctness and to assure that any changes in procedures required by the conditions are implemented.

We wish you continued success with your nuclear medicine service.

Sincerely,

**Original Signed By**

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

Enclosures:

1. Amendment No. 15
2. Form NRC-313(M)
3. Form NRC-3

RI:DETP

Miller/cop

8/31/84

RI:DETP

Glenn

9/7/84

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20-18449-01/LTR - 0001.0.0  
08/24/84

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NMS LIC30  
20-18449-01 PDR

MLIO



MEDICAL IMAGING CORPORATION  
170 WORCESTER ROAD  
WELLESLEY, MASSACHUSETTS 02181

(617) 237-0400

May 31, 1984

U.S. Nuclear Regulatory Commission  
Mr. John E. Glenn  
631 Park Avenue  
King of Prussia, PA 19406

Dear Mr. Glenn:

Please amend our Nuclear Regulatory Commission license #20-18449-01 to include The Boston Imaging Group P.C. with locations at 830 Boylston Street Chestnut Hill, MA 02167 and 422 Worcester St, Wellesley Hills, Mass., 02181. A letter from The Boston Imaging Group, PC requesting this is included.

While Medical Imaging Corporation is operating at The Boston Imaging Group's locations, it will do so under the supervision of Dr.'s Steven Wetzner and Alan Robbins who are currently named on NRC materials license #20-15522-01.

A check for forty (40) dollars to cover the amendment is included. Should there be any questions please call me at (617) 938-0232.

Sincerely,

MEDICAL IMAGING CORPORATION

*William Guimond*

William Guimond  
Marketing

RECEIVED BY LFML  
Date... 6/25/84  
Log... June 11  
By... Brown  
Orig. To...  
Action Compl. 6/27/84

WG:CK

Applicant...  
Check No... 211  
Amount, Fee... \$40.00  
Type of Fee... Amendment  
Let's Check Rec'd... 6/25/84  
Received By... Brown

0252E

JUN 15 1984

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NMS LIC30  
20-18449-01 PDR

"OFFICIAL RECORD COPY"

Postmarked 6/13/84

ML17

**The Boston Imaging Group P.C.**

P.O. Box 3915  
Boston, MA 02241  
Telephone (617) 783-8004

May 31, 1984

Director  
Office of Nuclear Material  
Safety and Safeguards  
U. S. Nuclear Regulatory Commission  
Washington, D.C. 20555

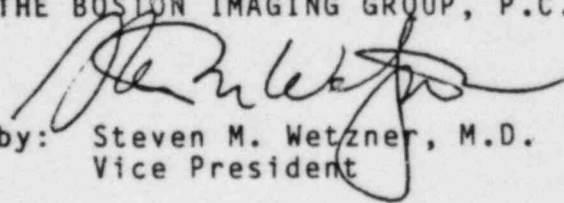
Gentlemen,

This is to request that our offices located at 422 Worcester Street, Wellesley Hills, Massachusetts, 02181, and at 830 Boylston Street, Chestnut Hill, Massachusetts, 02167, be included in the list of facilities at which Medical Imaging Corporation of 10V Roessler Road, Woburn, Massachusetts, is licensed to perform Nuclear Medicine services. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this office, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by qualified practitioners and will be coordinated under the general supervision of Drs. Steven Wetzner and Alan Robbins who are currently named on U.S. Nuclear Regulatory Commission materials license Number 20-15522-01 (see enclosure). Drs. Wetzner and Robbins will work closely with Medical Imaging Corporation personnel throughout this program.

Yours truly,

THE BOSTON IMAGING GROUP, P.C.

  
by: Steven M. Wetzner, M.D.  
Vice President

Enclosure

1P  
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NMS LIC30  
20-18449-01 PDR

MATERIALS LICENSE

Amendment No. 13

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter 1, Parts 30, 31, 32, 33, 34, 35, 36, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s); and to import such byproduct and source material. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

<p>Licensee</p> <p>1. New England Baptist Hospital</p> <p>2. 91 Parker Hill Avenue Boston, Massachusetts 02120</p>		<p>In accordance with application dated April 15, 1983,</p> <p>3. License number 20-15522-01 is amended</p> <p>-in its entirety to read as follows:</p>	
		<p>4. Expiration date June 30, 1988</p>	
		<p>5. Docket or Reference No. 030-09263</p>	
<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Any byproduct material listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35</p> <p>Any byproduct material listed in Group III of Schedule A, Section 35.100 of 10 CFR 35</p> <p>C. Xenon 133</p>	<p>7. Chemical and/or physical form</p> <p>A. Any radiopharmaceutical listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35</p> <p>B. Any form listed in Group III of Schedule A, Section 35.100 of 10 CFR 35</p> <p>C. Gas or gas in solution that is the subject of an active (i.e., not withdrawn or terminated) "New Drug Application" (NDA) approved by FDA or an active (i.e., not withdrawn, terminated, or on "clinical hold") "Notice of Claimed Investigational Exemption for a New Drug" (IND) that has been accepted by FDA</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. As necessary for uses authorized in Subitem 9.A.</p> <p>B. 2 curies of each byproduct material authorized in Subitem 6.B.</p> <p>C. 400 millicuries</p>	



MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number:

20-15522-01

Docket or Reference number:

030-09263

Amendment No. 13

(continued)

## 9. Authorized use

- A. Any diagnostic procedure listed in Groups I and II of Schedule A, Section 35.100 Title 10, Code of Federal Regulations.
- B. Preparation and use of radiopharmaceuticals for any diagnostic procedure listed in Group III of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.
- C. Blood flow and pulmonary function studies.

## CONDITIONS

10. Licensed material shall be used only at the licensee's facilities, 91 Parker Hill Avenue, Boston, Massachusetts.
11. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."
12. Licensed material shall be used by, or under the supervision of, Steven M. Wetzner, M.D., Alan H. Robbins, M.D., or James S. Bezreh, M.D.
13. Licensed material shall be used in accordance with the provisions of Section 35.14(b)(c)(e) and (f) of Title 10, Code of Federal Regulations.
14. For a period not to exceed sixty (60) days in any calendar year, a visiting physician is authorized to use licensed material for human use under the terms of this license, provided the visiting physician:
  - (a) Has the prior written permission of the hospital's Administrator and its Medical Isotopes Committee, and
  - (b) Is specifically named as a user on a Nuclear Regulatory Commission license authorizing human use, and
  - (c) Performs only those procedures for which he is specifically authorized by a Nuclear Regulatory Commission license.

The licensee shall maintain for the inspection by the Commission, copies of the written permission specified in subitem (a) above and of the license(s) specified in subitems (b) and (c) above. These records shall be maintained for five (5) years from the time the licensee grants its permission under subitem (a) above.

15. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash provided:
  - A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of ten (10) half-lives.



MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number:

20-15522-01

Docket or Reference number:

030-09263

Amendment No. 13

(15. continued)

## CONDITIONS

- B. Prior to disposal as normal waste, radioactive waste shall be monitored to determine that its radioactivity cannot be distinguished from background with typical low-level laboratory survey instruments. All radiation labels will be removed or obliterated.
- C. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.
16. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated April 15, 1983, including the ALARA Program, and letter dated June 13, 1983, signed by F. X. Masse. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.



For the U.S. Nuclear Regulatory Commission

28 JUN 1983

By

*Phillip C. Dorman*  
Nuclear Materials and Safeguards Branch  
Region I

King of Prussia, Pennsylvania 19406

MAY 23 1984

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 02271

Medical Imaging Corporation  
ATTN: James Dennan  
President  
500 New Boston Park  
10 V Roessler Road  
Woburn, Massachusetts 01801

Gentlemen:

Enclosed is Amendment No. 14 to License No. 20-18449-01. You should review this amendment for correctness and to assure that any changes in procedures required by the conditions are implemented.

We wish you continued success with your nuclear medicine service.

Sincerely,

Original Signed By  
Laurence F. Friedman, Ph.D.

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

Enclosures:

1. Amendment No. 14
2. Form NRC-313(M)
3. Form NRC-3

RI:DETP *scw*  
Wurtz/kl  
5/23/84

RI:DETP *for*  
Glenn *for*  
5/23/85

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20-18449-01 PDR

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
621 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

April 6, 1984

Docket No. 030-15104 -

Medical Imaging Corporation  
ATTN: James Dennen  
President  
500 New Boston Park  
10 V Roessler Road  
Woburn, MA 01801

License No. 20-18449-01

Control No. 02271

SUBJECT: LICENSE RENEWAL APPLICATION

Gentlemen:

This is to acknowledge receipt of your application for renewal of the material(s) license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.

Any correspondence regarding the renewal application should reference the control number specified and your license number.

Sincerely,

Original Signed By  
Doris J. Foster

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

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20-18449-01 PDR

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MLIP

MEDICAL IMAGING CORPORATION

10 V ROESSLER ROAD  
WOBBURN, MASSACHUSETTS 01871

(617) 938-0232

Mar 30, 1984

U.S. Nuclear Regulatory Commission

Region I

631 Park Avenue

King of Prussia, PA 19406

Fe: License #20-18449-01

Gentlemen:

Medical Imaging Corp. hereby requests renewal of license #20-18449-01 covering our mobile nuclear medicine program. In this renewal process we have chosen to follow the optional simplified application procedure.

As suggested in your notice of expiration, we have thoroughly reviewed our current license and have determined that it accurately represents our current and anticipated program. The current facilities associated with this program are accurately described in the amendment request that covered relocation of our facilities from Haverhill to Woburn.

The documents submitted in the past and referenced in our current license accurately describe our management control program, facilities, equipment, personnel, radiation safety procedures, waste disposal procedures and locations of use and should continue to be referenced in the renewal license. Since this is the first renewal of this license, it may be expected that the information and procedures are current and in no need of change at this time.

A review of NRC regulations for changes that might affect the conduct of this program has been undertaken, and no changes that significantly affect the conduct of our operations have been detected.

We therefore request renewal of this license as currently written with the understanding that we will continue to operate in accordance with the current license and conditions.

Enclosed please find a check for \$150 covering the renewal fee under category 7B of 10CFR170.31. Please don't hesitate to contact Frank Masse at 617-245-6600 if there are questions concerning this request.

Yours truly,

*James E. Dennen*  
James Dennen  
President

JD/ret  
Enc.

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20-18449-01 PDR

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APR 05 1984

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Action:	4/12/84

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Renewal  
4/11/84  
Brown



MAR 13 1984

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 02114

Medical Imaging Corporation  
ATTN: Mr. William Guimond  
General Manager  
500 New Boston Park  
10 V Roessler Road  
Woburn, Massachusetts 01801

Gentlemen:

Enclosed is Amendment No. 13 to License No. 20-18449-01. You should review this amendment for correctness.

We wish you continued success with your nuclear medicine service.

Sincerely,

Original Signed By:  
Phillip C. Jerman

Phillip C. Jerman  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

Enclosures:

1. Amendment No. 13
2. Form NRC-313(M)

RI:DETP  
Jerman/slf  
3/17/84

RI:DETP

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20-18449-01

PDR

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MEDICAL IMAGING CORPORATION

10 V ROESSLER ROAD  
WOBBURN, MASSACHUSETTS 01801

(617) 938-0232

February 14, 1984

United States  
Nuclear Regulatory Commission  
Attention: John E. Glenn, PhD  
631 Park Avenue  
King of Prussia, Penn 19406

Dear Doctor Glenn:

Please amend our license #20-18449-01 to include Shameen Menon, M.D. Doctor Menon's training and background is described on the enclosed supplements A and B.

Doctor Menon would supervise the nuclear program at Clinton Hospital, Clinton, Mass. This hospital is presently listed on our license.

A check for forty (40) dollars to cover this amendment is included.

Should there be any questions, please call me at 671/938-0232.

Sincerely,

*William Guimond*  
William Guimond  
General Manager

WG/hgo

Enclosure

Applicant...

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20-18449-01 PDR

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FEB 17 1984

MLIØ

TRAINING AND EXPERIENCE  
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

SHAMEEN MENON M.D.

2. STATE OR TERRITORY IN  
WHICH LICENSED TO  
PRACTICE MEDICINE

MASSACHUSETTS

## 3. CERTIFICATION

SPECIALTY BOARD  
ACATEGORY  
BMONTH AND YEAR CERTIFIED  
C

NUCLEAR MEDICINE

SEPT, '81

## 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	THE JOHNS HOPKINS UNIVERSITY, BALTIMORE MARYLAND, JULY 75 to JUNE 77	150 hours over 2 years	75 hours over 2 years
b. RADIATION PROTECTION	SAME	50 hours over 2 years	50 hours over 2 years
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	SAME	20 hours over 2 years	20 hours over 2 years
d. RADIATION BIOLOGY	SAME	20 hours over 2 years	20 hours over 2 years
e. RADIOPHARMACEUTICAL CHEMISTRY	SAME	60 hours over 2 years	60 hours over 2 years

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
<sup>99m</sup> Tc	25 mCi / patient (25,000 pCi)	THE JOHNS HOPKINS HOSP	JULY 75 to JUNE 77	CLINICAL DIAGNOSTIC USE.
<sup>131</sup> I	50 mCi / " " (20,000 pCi)	" "	"	DIAGNOSTIC USE.
<sup>131</sup> I	10 mCi / " " (20,000 pCi)	" "	"	Therapeutic
<sup>67</sup> Ga	3-5 mCi (500,000 pCi)	" "	"	Diagnostic USE.

## PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

## 1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME

SHAMEEN MENON, M.D.

STREET ADDRESS

29, BROOKSHIRE RD

CITY

WORCESTER

STATE

MA

ZIP CODE

01609

## KEY TO COLUMN C

## PERSONAL PARTICIPATION SHOULD CONSIST OF:

- 1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.
- 2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.
- 3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	8000	
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME	200	
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES	10	
	KIDNEY FUNCTION STUDIES		
	IN VITRO STUDIES	16,000	
OTHER			
I-125	DETECTION OF THROMBOSIS	-	
I-131	THYROID IMAGING	4000	
P-32	EYE TUMOR LOCALIZATION	-	
Se-75	PANCREAS IMAGING	-	
Yt-169	CISTERNOGRAPHY	-	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	4000	
OTHER			
Tc 99m	BRAIN IMAGING	8000	
	CARDIAC IMAGING	10,000	
	THYROID IMAGING	4000	
	SALIVARY GLAND IMAGING	50	
	BLOOD POOL IMAGING	10,000	
	PLACENTA LOCALIZATION	-	
	LIVER AND SPLEEN IMAGING	8000	
	LUNG IMAGING	10,000	
	BONE IMAGING	10,000	
OTHER			



# PRECEPTOR STATEMENT (Continued)

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE	CONDITIONS DIAGNOSED OR TREATED	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.)
A	B	C	D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES	—	} I gained experience at The Provident Hospital, and The Fallston General Hosp, Baltimore, Md
P-32 (Colloidal)	INTRACAVITARY TREATMENT	—	
I-131	TREATMENT OF THYROID CARCINOMA	50	
	TREATMENT OF HYPERTHYROIDISM	30	
Au-198	INTRACAVITARY TREATMENT	—	
Co-60 or Cs-137	INTERSTITIAL TREATMENT	—	
	INTRACAVITARY TREATMENT	—	
I-125 or Ir-192	INTERSTITIAL TREATMENT	—	
Co-60 or Cs-137	TELETHERAPY TREATMENT	—	
Sr-90	TREATMENT OF EYE DISEASE	—	
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR	30	
Sn-113/ In-113m	GENERATOR	—	
Tc-99m	REAGENT KITS		
Other	After, I finished training in Nuclear Medicine at The Johns Hopkins Hospital, Dr Menon was engaged in private Practice of Nuclear Medicine from '77 to '80 at The Provident Hospital, Fallston General Hospital and Luker Hosp, Baltimore, Md		

## 3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

7.75 to 8.77 . Approximately 8000 hours

## 4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR HENRY N. WAGNER, M.D.,
b. NAME OF INSTITUTION THE JOHNS HOPKINS HOSPITAL
c. MAILING ADDRESS Radiation Control, Rm 13032
d. CITY BALTO, MD 21205
e. MATERIALS LICENSE NUMBER(S) MD 0700503

## 5. PRECEPTOR'S SIGNATURE

Henry N. Wagner Jr.

## 7. PRECEPTOR'S NAME (Please type or print)

HENRY N. WAGNER, M.D.

## 8. DATE

25 Jan 1984

MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801  
(617) 938-0232

February 8, 1984

RECEIVED BY	2/21/84
Date	2/21/84
Log	Feb 9
By	Brown
Orig. To	
Action Compl	2/22/84

United States  
Nuclear Regulatory Commission  
Attention: John E. Glenn, PhD  
631 Park Avenue  
King of Prussia, Penn 19406

169	640-2B
Amendment	2/21/84
Date Check	Brown
Received By	

Dear Doctor Glenn:

Please amend our NRC license #20-18449-01 to include the following physicians. I have included the license number they are currently named on and the name of the hospital.

PHYSICIAN	LICENSE	HOSPITAL
James Simmons, M.D.	20-12561-01	Marlborough Hospital Marlborough, MA
Colin Schaeffer, M.D.	20-12561-01	Marlborough Hospital Marlborough, MA
Paul E. Conley, M.D.	20-00713-03	St. Lukes Hospital New Bedford, MA
Emery D. Lewis, M.D.	20-00713-03	St. Lukes Hospital New Bedford, MA
Walter F. Barnes, M.D.	20-00713-03	St. Lukes Hospital New Bedford, MA
Anthony H. deBarros, M.D.	20-00713-03	St. Lukes Hospital New Bedford, MA
Robert Fx. Gilday, M.D.	29-12732-01	West Essex General Hosp Livingtons, NJ

A check for forty (40) dollars to cover these amendments is included.

Should there be any questions, please call me 617/938-0232.

Sincerely,

*William Guimond*  
William Guimond  
General Manager

8409210074 840523  
NMS LIC30  
20-18449-01 PDR

WG/hgo

Enclosure

"OFFICIAL RECORD COPY"

02114  
ML10  
FEB 10 1984

DEC 23 1983

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 01935

Medical Imaging Corporation  
ATTN: William Guimond  
General Manager  
10 V Roessler Road  
Woburn, MA 01801

Gentlemen:

Enclosed is Amendment No. 11 to License No. 20-18449-01. You should review this amendment for correctness.

We wish you continued success with your nuclear medicine service.

Sincerely,

Original Signed By:  
Phillip C. Jerman

Phillip C. Jerman  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

Enclosures:

1. Amendment No. 11
2. Form NRC-313(M)
3. Form NRC-3

18  
~~8409210080~~ 840523  
NMS LIC30  
20-18449-01 PDR

RI:DETP  
Jerman/cop  
12/8/83

21

RI:DETP  
Glenn

OFFICIAL RECORD COPY

01935JERMAN12/9/83 - 0001.0.0  
12/09/83

"OFFICIAL RECORD COPY"

MLIP

MAR 25 1983

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 01167

Medical Imaging Corporation  
ATTN: William Guimond  
General Manager  
500 New Boston Park  
10 V Roessler Road  
Woburn, Massachusetts 01801

Gentlemen:

Enclosed is Amendment No. 10 to License No. 20-18449-01. You should review this amendment for correctness and to assure that any changes in procedures required by the conditions are implemented.

We wish you continued success with your nuclear medicine service.

Sincerely,

Original Signed By:  
Phillip C. Jerman

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

Enclosure:

1. Amendment No. 10
2. Form NRC-3134
3. Form NRC-3

8409210098 840523  
NMS LIC30  
20-18449-01 PDR

OFFICE	RI:DETP	RI:DETP					
RNAME	Foster/lp	Glenn					
DATE	3/21/83	3/21/83					

MLIP

OFFICIAL RECORD COPY



JAN 26 1983

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 01085

Medical Imaging Corporation  
ATTN: William Guimond  
General Manager  
500 New Boston Park  
10 V Roessler Road  
Woburn, Massachusetts 01801

Gentlemen:

Enclosed is Amendment No. 09 to License No. 20-18449-01. You should review this amendment for correctness.

We wish you continued success with your nuclear medicine service.

Sincerely,

Original Signed By  
John E. Glenn, Ph.D.

for  
Phillip C. Jerman  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

Enclosure: Amendment No. <sup>09</sup>~~08~~

OFFICE	RI:DETP	RI:DETP				
JURNAME	Jerman/lp	Glenn				
DATE	1/19/83	1/25/83				

"OFFICIAL RECORD COPY"

JAN 17 1983

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 12392

Medical Imaging Corporation  
ATTN: William Guimond  
General Manager  
500 New Boston Park  
10 V Roessler Road  
Woburn, Massachusetts 01801

Gentlemen:

Enclosed is Amendment No. 08 to License No. 20-18449-01 which authorizes Dr. Taylor as a user. You should review this amendment for correctness and to assure that any changes in procedures required by the conditions are implemented.

We wish you continued success with your nuclear medicine service.

Sincerely,

Original Signed By:  
Phillip C. Jerman

Phillip C. Jerman  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

Enclosures:

1. Amendment No. 08
2. Form NRC-313M

~~23-1249-081~~ 18

OFFICE	RI:DETP	RI:DETP			
SURNAME	Jerman/1p	Glenn		'OFFICIAL RECORD COPY'	
DATE	1/12/83	1/13/83			

MLIP

MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

January 4, 1983

Phillip C. Jerman  
Materials Program Section #2  
Division of Engineering  
& Technical Programs  
United States Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

MS-12  
P3  
20-18449-01

030-15104

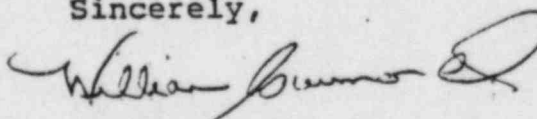
Dear Mr. Jerman:

Subsequent to your letter of October 7, 1982, (copy enclosed), and a recent phone conversation regarding our request to amend our license to include Dr. Donald Taylor, I am enclosing a letter signed by his preceptor at Montefiore Hospital substantiating a full five hundred (500) hours in radioisotope training.

In respect to item two (2), please exclude Dr. Taylor from being able to perform any MO-99/tc-99m generator elutions.

Should there be any additional information, please feel free to contact me.

Sincerely,



William Guimond  
General Manager

WG/hgo

Enclosure

28  
~~8304010005~~  
"OFFICIAL RECORD COPY"

12392

JAN 10 1983

ML10

MONTEFIORE HOSPITAL AND MEDICAL CENTER  
ALBERT EINSTEIN COLLEGE OF MEDICINE

LEONARD M. FREEMAN, M.D.

Professor of Radiology  
and

Co-Director, Divisions of Nuclear Medicine

ALBERT EINSTEIN COLLEGE OF MEDICINE

Chief, MONTEFIORE HOSPITAL and MEDICAL CENTER Division

December 10, 1982

Mailing Address:

Department of Nuclear Medicine

MONTEFIORE HOSPITAL and MEDICAL CENTER

111 East 210th Street

Bronx, N. Y. 10467

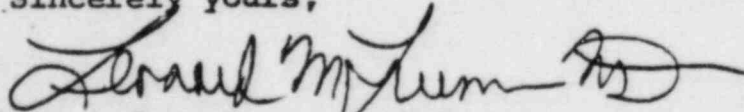
Telephone: (212) 920-6060

Donald A. Taylor, M.D.  
25 Boylston Street  
Chestnut Hill, MA 02167

Dear Dr. Taylor:

This is to verify that Montefiore Medical Center Nuclear Medicine records show that you spent a full three months (500 hours) in radioisotope training (methodology and clinical experience) in the time period from January to June 1963, inclusive.

Sincerely yours,



Leonard M. Freeman, M.D.

LMF:ec

DIVISIONS OF NUCLEAR MEDICINE

Montefiore Hospital &  
Medical Center

Hospital of the Albert Einstein  
College of Medicine

Bronx Municipal Hospital  
Center

"OFFICIAL RECORD COPY"

ML10



DEC 29 1982

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 12392

Medical Imaging Corporation  
ATTN: William Guimond  
Director of Marketing  
500 New Boston Park  
10 V Roessler Road  
Woburn, Massachusetts 01801

SUBJECT: APPLICATION FOR MATERIAL LICENSE AMENDMENT DATED AUGUST 20, 1982,  
AND OUR REQUEST FOR ADDITIONAL INFORMATION DATED OCTOBER 7, 1982

Gentlemen:

This concerns the subject application for material license amendment and our letter in which we notified you that the application was deficient and that certain additional information was required.

You are hereby notified that unless within thirty (30) days from the date of this notice we receive the additional information requested, we will consider that you have abandoned your application. This action is without prejudice to the resubmission of an application.

Sincerely,

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

Enclosure: Letter dated October 7, 1982

~~83-4010088~~ 18

MLIP

ICE	RI:DETP	RI:DETP				
AME	Varela/ib	Glenn				
ATE	12/28/82	12/28/82				

FORM 318 (10-80) NRCM 0240

OFFICIAL RECORD COPY

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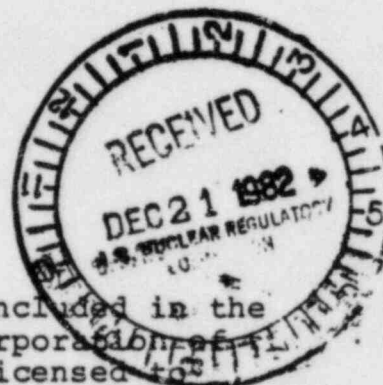
**CENTRAL HOSPITAL**

Incorporated

Twenty-six Central Street  
Somerville, Massachusetts, 02143  
Telephone 625-8900

December 15, 1982

Director  
Office of Nuclear Materials Safety  
and Safeguards  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555



Gentlemen:

This is to request that our hospital be included in the list of facilities at which Medical Imaging Corporation of 10V Roessler Road, Woburn, Massachusetts, is licensed to perform Nuclear Medicine services. Ours is a general hospital facility with 99 beds. Adequate facilities are available for housing and operating the Medical Imaging Corporation equipment while it is in this hospital, and for performance of whatever procedures may be necessary by Medical Imaging Corporation personnel.

Nuclear Imaging procedures will be requested by any member of the medical staff, but will be coordinated through the Radiology Department under the general supervision of Dr. Philip J. Andrews whose training and experience is described on the enclosure. Dr. Andrews will work closely with Medical Imaging Corporation personnel throughout this program.

Yours truly,

Edmund H. Stone  
Vice President/Treasurer

EHS:lc

Enclosure: 1

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INSPECTION AND ENFORCEMENT

puPE

28

~~83346-1572~~

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MLIX

JAN 11 1983

1992  
Central Hospital  
26 Central Street  
Somerville, Massachusetts  
Philip J. Andrews, M.D.  
Applicant

CF AEC form 313, sections 8 and 9

Curriculum Vitae

Medical School

Boston University School of Medicine 1957-1961

Internship

Beverly Hospital, Beverly, Massachusetts 1961-1962

Radiology Residency

Boston V.A. Hospital 1968-1970

Applied Isotope Courses

Massachusetts General Hospital "Radiation Physics"  
by T. Webster, Phd. 1968-1970

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ML10

OCT 7 1982

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 12392

Medical Imaging Corporation  
ATTN: William Guilmond  
Director of Marketing  
500 New Boston Park  
10 V Roessler Road  
Woburn, Massachusetts 01801

Gentlemen:

This is to acknowledge receipt of your amendment request dated August 20, 1982. In order to continue our review, we need the following additional information:

1. Section 3 of the preceptor statement for Dr. Taylor does not show adequate clinical radioisotope training to authorize him for Groups I, II and III. Section 2 of Regulatory Guide 10.8, Appendix A, shows the acceptable training is 500 hours or more, and only 300 hours is shown. It is suggested that an additional preceptor statement showing at least 200 hours be submitted from one of the other medical institutions where training was received.
2. Please confirm that Dr. Taylor has participated in one additional Mo-99/Tc-99m generator elutions, including the testing, so that he has participated in five such cases as indicated by Section 2.b of Appendix A.

We will continue our review of your application upon receipt of this information. Please reply in duplicate and refer to Control No. 12392.

Sincerely,

Original Signed By:  
Phillip C. Jerman

Phillip C. Jerman  
Materials Program Section No. 2  
Division of Engineering and Technical  
Programs

Enclosure: Regulatory Guide 10.8

832404092 18 ML18

OFFICE	RI:FCMLB	RI:FCMLB			
IRNAME	Jerman/jtm	Glenn			
DATE	9/25/82	9/28/82			"OFFICIAL RECORD COPY"



MEDICAL IMAGING CORPORATION  
10 V ROESSLER ROAD  
WOBURN, MASSACHUSETTS 01801

(617) 938-0232

August 20, 1982



United States  
Nuclear Regulatory Commission  
Attention: Mr. William Walker  
Material Licensing Branch  
Division of Fuel Cycle &  
Material Safety  
Washington, DC 20555

Gentlemen:

Please add the name of Donald A. Taylor, M. D. to the list of authorized physicians on the Medical Imaging Corporation's NRC license #20-18449-01. As indicated in the enclosed data, Dr. Taylor has fulfilled the necessary hours of training to be added to MIC's Nuclear license.

A check for forty dollars (\$40.00) to cover this admendment is enclosed.

Should there be any questions, please do not hesitate to call me at 617/928-0232.

Sincerely,

1544
#40/78
Amendment
Date Check Rec'd 9/2/82
Received by Brown

William Guimond  
Director of Marketing

WG/hgo

Enclosure

COPIES SENT TO GEN OF  
INSPECTION AND ENFORCEMENT

Rec I

RECEIVED BY LFMB	
Date	9/2/82
Log	Sept Pg 1
By	Brown
Orig To	
Action Compl.	9/3/82

48  
~~6304040092~~  
"OFFICIAL RECORD COPY"

12392

MLP

## PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS			KEY TO COLUMN C
FULL NAME  Donald A. Taylor, M.D.			PERSONAL PARTICIPATION SHOULD CONSIST OF:  1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.  2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.  3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.
STREET ADDRESS 25 Boylston Street			
CITY Chestnut Hill,	STATE Mass.	ZIP CODE 02154	

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION	73	Blood pool imaging (a) liver, brain, thyroid flow studies (b) testicular scanning (c) upper lower GI bleeding.  Cardiac studies (about 80 cases) (a) Thallium 201 gated studies  Red cell mass (Cr-51 RBC) - 17 cases. Renal (Tc-99m) - 40 cases
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME		
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES	48	
	IN VITRO STUDIES	22	
OTHER	Schilling (Co57)	41	
I-125	DETECTION OF THROMBOSIS		
I-131	THYROID IMAGING	53	
P-32	EYE TUMOR LOCALIZATION		
Se-75	PANCREAS IMAGING	3	
<del>Y-90</del>	CISTERNOGRAPHY (In 111)	21	
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	127	
OTHER			
Tc-99m	BRAIN IMAGING	77	
	CARDIAC IMAGING	339	
	THYROID IMAGING	120	
	SALIVARY GLAND IMAGING	98	
	BLOOD POOL IMAGING	61	
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING	400	
	LUNG IMAGING	170	
	BONE IMAGING	425	
OTHER	Gall bladder (Tc-99m)	65	

ML 18  
12392

# PRECEPTOR STATEMENT (Continued)

## 2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES	7	
P-32 (Colloidal)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA	10	
	TREATMENT OF HYPERTHYROIDISM	25	
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
Co-60 or Cs-137	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR	4	
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS	5	
Other			

## 3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

June 1977 300 hrs - reading papers, etc.  
 then 100 hrs. lectures - clinical case material, etc.  
 Dec 1980

## 4. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR  
 Leonard M. Freeman M.D.  
 b. NAME OF INSTITUTION  
 Montefiore Medical Center  
 c. MAILING ADDRESS  
 111 E. 210 ST  
 d. CITY  
 Bx., N.Y. 10467  
 5. MATERIALS LICENSE NUMBER(S)  
 NYC 188-7

## 6. PRECEPTOR'S SIGNATURE

*Leonard M. Freeman M.D.*

## 7. PRECEPTOR'S NAME (Please type or print)

LEONARD M. FREEMAN M.D.  
 CURRENT DIRECTOR, DEPT OF Nuclear Medicine

## 8. DATE

7/21/82

(8-78)

# TRAINING AND EXPERIENCE AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

Donald A. Taylor, M.D.

2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE

Ma., NY, NJ, Ca., Fla.

## 3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
Radiology		June 1963

## 4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	Scattered over 17 yrs at Montefiore Hospital, Columbia Presbyterian Hospital, Boston University School of Medicine (University Hospital) 1962, 1963, 1977, 1979, 1980 Montefiore Hospital, Columbia Presb. Med. Ctr., University Hospital	150	50
b. RADIATION PROTECTION	Same	100	25
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	Same	150	25
d. RADIATION BIOLOGY	Same	80	10
e. RADIOPHARMACEUTICAL CHEMISTRY	Same	50	10

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
I 123	200 $\mu$ ci	Montefiore Hosp., Columbia Presb. Med. Ctr., University Hospital	4-6 months	Clinical
I 131	200 $\mu$ ci			
Tc 99m	20 mCi			
In 111	500 $\mu$ ci			
Ga 67	8 mCi			
Co 57	200 $\mu$ ci			
Cr 51	200 $\mu$ ci			

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12302

MLIP



JUN 22 1982

License No. 20-18449-01  
Docket No. 030-15104  
Control No. 11441

Medical Imaging Corporation  
ATTN: William Guimond  
Director  
500 New Boston Park  
10 V Roessler Road  
Woburn, MA 01801

Gentlemen:

Enclosed is Amendment No. 07 to License No. 20-18449-01. You should review this amendment for correctness and to assure that any changes in procedures required by the conditions are implemented.

We wish you continued success with your nuclear medicine service.

Sincerely,

Original Signed By  
John E. Glenn, Ph.D.

John E. Glenn, Ph.D.  
Materials Program Section No. 2  
Division of Engineering and  
Technical Programs

Enclosures:

1. Amendment No. 07
2. Form NRC-313M
3. Form NRC-3

6304040103 18

OFFICE	RI:FCMLB	RI:FCMLB					
IRNAME	Varela/pja	Glenn				"OFFICIAL RECORD COPY"	
DATE	6/14/82	6/14/82					MLIP

MAY 25 1982

License No. 20-18449-01  
Docket No. 030-15104

Charles River Medical Center  
ATTN: John C. Athans, M.D.  
Director  
25 Walnut Street  
Wellesley Hills, Massachusetts 02181

Gentlemen:

This is in reference to your letter dated March 29, 1982 requesting that your facilities be listed as a place of use on the license of the Medical Imaging Corporation. In order to amend License No. 20-18449-01, we will need to receive an application with fee from the Medical Imaging Corporation.

A copy of this letter is being sent to the Medical Imaging Corporation. Your letter will be kept on file pending the receipt of an amendment request. If you have any questions, please contact me at (215) 337-5260.

Sincerely,

Original Signed By:  
Phillip C. Jerman

John E. Glenn, Ph.D.  
Region I Licensing Section

cc: Medical Imaging Corporation  
ATTN: William Guimond  
Director  
500 New Boston Park  
10 V Roesler Road  
Woburn, Massachusetts 01801

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NMS LIC30  
20-18449-01 PDR

OFFICE	RI:FCMLB						
USERNAME	Glenn/pja						
DATE	5/24/82						

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MAR 5 1982

FCMLB:MAV  
030-15104  
(10221)

Medical Imaging Corporation  
ATTN: William Guimond  
Director  
500 New Boston Park  
10 V Roesler Road  
Woburn, Massachusetts 01801

Gentlemen:

Enclosed is Amendment No. 06 to License No. 20-18449-01. You should review this amendment for correctness.

We wish you continued success with your nuclear medicine service.

Sincerely,

Original Signed By  
John E. Glenn, Ph.D.

John E. Glenn, Ph.D.  
Material Licensing Branch  
Division of Fuel Cycle and  
Material Safety

Enclosures:

1. Amendment No. 06
2. Form NRC-313M
3. Form NRC-3

~~8409210129~~ 840523  
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20-18449-01 PDR

OFFICE	RI:DETP	RI:DETP				
IRNAME	Varela/dmg	Glenn				
DATE	3/3/82	3/4/82				

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MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

20-18449-01

Docket or Reference number

030-15104

Amendment No. 15

Medical Imaging Corporation  
500 New Boston Park  
10 V Roessler Road  
Woburn, Massachusetts 01801

**"OFFICIAL RECORD COPY"**

In accordance with letter dated May 31, 1984, License Number 20-18449-01 is amended as follows:

Conditions 10., 12., and 16. are amended to read:

10. Licensed material shall be used only at Medical Imaging Corporation, 500 New Boston Park, 10 V Roessler Road, Woburn, Massachusetts. Licensed material listed in Subitem A may also be used at Amesbury Hospital, Amesbury, Massachusetts; Hubbard Regional Hospital, Webster, Massachusetts; Doctor's Hospital, Worcester, Massachusetts; Huntington General and Longwood Hospitals, New Bedford, Massachusetts; Clinton Hospital, Clinton Massachusetts; Union Hospital, New Bedford, Massachusetts; Youville Hospital, Cambridge, Massachusetts; Charels River Medical Center, 24 Walnut Street, Wellesley Hills, Massachusetts; Mary Lane Hospital Association, 85 South Street, Ware, Massachusetts; Central Hospital Inc., 26 Central Street, Somerville, Massachusetts; USAF Hospital, Pease (SAC), Pease Air Force Base, New Hampshire; Medical Associates, 199 Chelmsford Street, Chelmsford, Massachusetts; The Boston and Imaging Group P.C., 830 Boylston Street, Chestnut Hill, Massachusetts, and 422 Worcester Street, Wellesley Hills, Massachusetts.
12. Licensed material shall be used by Kirwan T. MacMillan, M.D., Dennis J. Carlson, M.D., J. V. Carroll, M.D., Francis A. White, M.D., Stephen G. Gerzof, M.D., Arthur D. Burke, M.D., George Evans, M.D., David S. Tamaren, M.D. Donald A. Taylor, M.D., Thomas O'Connor, M.D., Phillip Andrews, M.D., Stephen M. Lindsey, M.D., Herman Haimovici, M.D., James Simmons, M.D., Paul E. Corley, M.D., Emery D. Lewis, M.D., Walter F. Barnes, M.D., Robert F. Gilday, D.O., Shameen Menon, M.D., Steven Wetzner, M.D., or Alan Robbins, M.D. Licensed material for any diagnostic procedure listed in Group II, and radiopharmaceuticals for any diagnostic procedure listed in Group III, may be prepared and/or used by Anthony H. deBarros, M.D.
16. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated February 17, 1979, March 30, 1984, and letters dated January 22, 1980, September 10, 1980, and May 31, 1984. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.

For the U.S. Nuclear Regulatory Commission

Original Signed By:  
John E. Glenn

By

Nuclear Materials and Safeguards Branch  
Region I  
King of Prussia, Pennsylvania 19406

SEP 07 1984

Date

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NMS LIC30  
20-18449-01 PDR

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## MATERIALS LICENSE

Amendment No. 14  
"OFFICIAL RECORD COPY"

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 40 and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s); and to import such byproduct and source material. This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee		In accordance with application dated March 30, 1984, 3. License number 20-18449-01 is amended in its entirety to read as follows:	
1. Medical Imaging Corporation  2. 500 New Boston Park 10 V Roessler Road Woburn, Massachusetts 01801		4. Expiration date May 31, 1989  5. Docket or Reference No. 030-15104	
6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	
A. Any byproduct material listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35 B. Any byproduct material listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	A. Any radiopharmaceutical listed in Groups I and II of Schedule A, Section 35.100 of 10 CFR 35 B. Any form listed in Group III of Schedule A, Section 35.100 of 10 CFR 35	A. As necessary for uses authorized in Subitem 9.A. B. 3 curies of each byproduct material authorized in Subitem 6.B.	
9. Authorized use			
A. Any diagnostic procedure listed in Groups I and II of Schedule A, Section 35.100 Title 10, Code of Federal Regulations. B. Preparation and use of radiopharmaceuticals for any diagnostic procedure listed in Group III of Schedule A, Section 35.100 of Title 10, Code of Federal Regulations.			

## CONDITIONS

10. Licensed material shall be used only at Medical Imaging Corporation, 500 New Boston Park, 10 V Roessler Road, Woburn, Massachusetts. Licensed material listed in Subitem A may also be used at Amesbury Hospital, Amesbury, Massachusetts; Hubbard Regional Hospital, Webster, Massachusetts; Doctor's Hospital, Worcester, Massachusetts; Huntington General and Longwood Hospitals, Boston, Massachusetts; Clinton Hospital, Clinton, Massachusetts; Union Hospital, New Bedford, Massachusetts; Youville Hospital, Cambridge Massachusetts; Charles River Medical Center, 24 Walnut Street, Wellesley Hills, Massachusetts; Mary Lane Hospital Association, 85 South Street, Ware, Massachusetts; Central Hospital Inc., 26 Central Street, Somerville, Massachusetts; USAF Hospital, Pease (SAC), Pease Air Force Base, New Hampshire; and Medical Associates, 199 Chelmsford Street, Chelmsford, Massachusetts.
11. The licensee shall comply with the provisions of Title 10, Chapter 1, Code of Federal Regulations, Part 19, "Notices, Instructions, and Reports to Workers; Inspections" and Part 20, "Standards for Protection Against Radiation."

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NMS LIC30  
20-18449-01 PDR

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MATERIALS LICENSE  
SUPPLEMENTARY SHEET

License number

20-18449-01

Docket or Reference number

030-15104

Amendment No. 14

(Continued)

## CONDITIONS

12. Licensed material shall be used by Kirwan T. MacMillan, M.D., Dennis J. Carlson, M.D., J. V. Carroll, M.D., Francis A. White, M.D., Stephen G. Gerzof, M.D., Arthur D. Burke, M.D., George Evans, M.D., David S. Tamaren, M.D., Donald A. Taylor, M.D., Thomas O'Connor, M.D., Phillip Andrews, M.D., Stephen M. Lindsey, M.D., Herman Haimovici, M.D., James Simmons, M.D., Paul E. Corley, M.D., Emery D. Lewis, M.D., Walter F. Barnes, M.D., Robert F. Gilday, D.O., or Shameen Menon, M.D. Licensed material for any diagnostic procedure listed in Group II, and radiopharmaceuticals for any diagnostic procedure listed in Group III, may be prepared and/or used by Anthony H. deBarros, M.D.
13. Licensed material shall be used in accordance with the provisions of Section 35.14(b)(c)(e) and (f) of Title 10, Code of Federal Regulations.
14. The licensee may transport licensed material or deliver licensed material to a carrier for transport in accordance with the provisions of Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions."
15. The licensee is authorized to hold radioactive material with a physical half-life of less than 65 days for decay-in-storage before disposal in ordinary trash provided:
- A. Radioactive waste to be disposed of in this manner shall be held for decay a minimum of ten (10) half-lives.
  - B. Prior to disposal as normal waste, radioactive waste shall be monitored to determine that its radioactivity cannot be distinguished from background with typical low-level laboratory survey instruments. All radiation labels will be removed or obliterated.
  - C. Generator columns shall be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.
16. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated February 17, 1979, March 30, 1984 and letters dated January 22, 1980, September 10, 1980. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.

For the U.S. Nuclear Regulatory Commission

Original Signed By

Laurence F. Friedman, Ph.D.

By

Nuclear Materials and Safeguards Branch  
Region I

King of Prussia, Pennsylvania 19406

Date MAY 23 1984