



Veterans  
Administration

030-01789

February 23, 1989

In Reply Refer To: 512/114

Dr. John E. Glenn  
Chief, Nuclear Materials Safety Section B  
Division of Radiation Safety and Safeguards  
U.S. Nuclear Regulatory Commission  
Region 1  
475 Allendale Road  
King of Prussia, PA 19406

THRU: James W. Fletcher, M.D.  
Director, Nuclear Medicine Service (115)  
VA Medical Center  
St. Louis, MO 63106

SUBJ: Amendment to material license No. 19-01058-01

Dear Dr. Glenn:

We request the approval of the following individual as an authorized user for the materials and uses as indicated.

Philip A. Mackowiak, M.D. Licensed material of the types, quantities and forms specified in section 31.11(A) of 10 CFR 31 for use in accordance with the provisions of paragraphs (a), (c) and (d) of section 31.11, 10CFR31 in vitro use of hydrogen 3, carbon 14, and sulfur 35.

A completed NRC form 313m for Dr. Mackowiak is included.

Additionally, I would like Dr. Eliot Siegel approved for use of Group IV and Group V radiopharmaceuticals, especially the use of Iodine 131 for the treatment of thyroid cancer. Dr. Siegel is certified by the American Board of Radiology for Diagnostic Radiology with special competence in Nuclear Radiology. His credentials are on file with the NRC.

Enclosed find copies of the procedures for radiation safety, nursing instructions and a form for recording personnel exposure which will be used during all treatments.

Your assistance in expediting approval of this amendment will be greatly appreciated.

Sincerely yours,

FEE EXEMPT

BARBARA L. GALLAGHER  
Medical Center Director

JAMES W. FLETCHER, M.D.  
Director, Nuclear Medicine Service  
VA Department of Medicine & Surgery

Enclosures

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"America is #1—Thanks to our Veterans"  
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19-01058-01 PDR

## Procedure for Radiation Safety During Iodine Therapy Over 29 Millicuries.

In order to keep the exposure to workers and the public ALARA during radiopharmaceutical therapy, the following procedure must be strictly enforced.

1. All patients receiving greater than 29 millicuries of Iodine 131 will be hospitalized.

2. The patient's room will be as far away from the nursing station and heavy traffic hallways as is consistent with good medical care. It will be a private room with private sanitary facilities and should be without carpet.

3. Prepare the room for the procedure as follows:

a. Use leak-proof absorbent paper to cover large surfaces (the bed, chairs, and the floor around the toilet) that are likely to be contaminated. Small items (telephone, door knobs, bed remote control, television control, and nurse call cord) may be covered with absorbent paper or plastic bags.

b. Prepare separate boxes for linen, disposable waste, and nondisposable contaminated items. Place a single large reclosable plastic bag in each box, or supply several small plastic bags.

c. Determine whether urine will be discarded by release to the sanitary sewer or collected. If urine will be collected, prepare collection containers.

(1) Containers should be unbreakable and closable.

(2) If there is no need for assay or volumetric determination and urine will be decayed in storage, add to each container an absorbent such as vermiculite.

(3) To avoid room contamination in the case of a spill, place containers in a box or deep tray that has been lined with a plastic bag and absorbent paper or vermiculite.

(4) Supply a few half-value layers of shielding for each container. (For I-131, one half-value layer is approximately 3 mm of lead.)

(5) Supply a wide-mouth antispash funnel.

d. Stock additional disposable gloves, absorbent paper, and radioactive waste label in the room for use as necessary by nursing, nuclear medicine, and radiation safety personnel.

4. Order disposable table service for the duration of the patient's stay. Inform the Housekeeping Officer that personnel should stay out of the room until otherwise notified.

5. Supply the nurses with film badges, TLD's, or pocket ionization chambers.

6. Brief the nurses on radiation safety precautions.

7. Brief the patient on radiation safety procedures for the dosage administration, visitor control, urine collection, radioactive waste, and other items as applicable.

8. Only those persons needed for medical, safety, or training purposes should be present during the administration.

Procedure for Radiation Safety During Iodine Therapy Over 29 Millicuries Cont'd.

9. Mark a visitors' "safe line" on the floor with tape as far from the patient as possible.

10. Following administration of the dosage, measure the exposure rate in mR/hr at bedside, at 1 meter from bedside, at the visitors' "safe line," and in the surrounding hallways and rooms, exposure must not exceed 2 mR/hr. Record this and any other necessary information. Post the room with a "Radioactive Materials" sign.

11. All clothes and bed linen used by the patient should be placed in the laundry bag provided and left in the patient's room to be checked by the Radiation Safety Officer or designee for contamination.

12. All non-disposable items should be placed in a plastic bag and left in the patient's room to be checked by the Radiation Safety Officer or designee for contamination.

13. As the therapy proceeds, pick up waste, by the Radiation Safety Officer or designee, for transfer to a decay-in-storage or decontamination area.

14. Vomiting within 24 hours after oral administration, urinary incontinence, or excessive sweating within the first 48 hours may result in contamination of linen and/or floor. In any such situation or if radioactive urine and/or feces is spilled during collection, call the Radiation Safety Officer. Meanwhile, handle all contaminated material with disposable gloves and avoid spreading the contamination.

15. All vomiting must be kept in the patient's room for disposal by the Radiation Safety Officer. Feces need not be routinely saved, unless ordered on chart. The same toilet should be used by the patient at all times and it should be flushed (3 times).

16. Utmost precautions must be taken to see that no urine or vomitus is spilled on the floor or the bed. If any part of the patient's room is suspected of contamination, call the Radiation Safety Officer.

17. If a nurse, attendant or anyone else knows or suspects that his skin or clothing is contaminated, call the Radiation Safety Officer immediately. This person should remain in the patient's room and not walk around the medical center. If the hands become contaminated wash immediately with soap and water.

18. If a therapy patient should need emergency surgery or should die, notify the Radiation Safety Officer immediately.

19. Visitors should be limited to those 18 years and older.

20. Patients must remain in bed while visitors are in room and visitors should remain at least 3 feet from the patient.

21. No Nursing personnel or visitor who is pregnant shall be allowed in the patient's room until the patient no longer presents a radiation hazard.

22. Do not release any patient until either the exposure rate from the patient is less than 5 millirem per hour at 1 meter or the retained radioactivity is less than 30 millicuries. If you use the exposure rate standard as the release criterion, measure it with a radiation measurement survey meter at a distance of 1 meter from the umbilicus while the patient is standing or, if the patient is not ambulatory, 1 meter from the bedside with the patient supine.

Procedure for Radiation Safety During Iodine Therapy Over 29 Millicuries Cont'd

23. Before using the room for general occupancy, it must be decontaminated and released to Medical Administration Service.

- a. Remove all absorbent paper, and place it in the appropriate container.
- b. Transfer all containers to a decay-in-storage or decontamination area.
- c. Use a radiation detection survey meter to check for room contamination. Clean contaminated areas until removable contamination is less than 200 dpm/100 cm<sup>2</sup>.
- d. Call the Building Management Service to remove the cleaning restriction and call the Medical Administration Service to return the room to the vacant list.





**NURSING INSTRUCTIONS FOR PATIENTS TREATED WITH IODINE-131,  
PHOSPHORUS-32, OR GOLD-198**

Patient Name: \_\_\_\_\_ Patient Number: \_\_\_\_\_  
 Attending: \_\_\_\_\_ Phone: \_\_\_\_\_ Pager: \_\_\_\_\_ Patient Room: \_\_\_\_\_

Dose: \_\_\_\_\_ mCi of \_\_\_\_\_ as \_\_\_\_\_ was administered at \_\_\_\_:\_\_\_\_ <sup>PM</sup>  
 Signature: \_\_\_\_\_ Date: \_\_\_\_ - \_\_\_\_ - \_\_\_\_

**RADIATION EXPOSURE RATES**

Unrestricted areas: door- \_\_\_\_\_ mR/hr; rm \_\_\_\_\_ - \_\_\_\_\_ mR/hr; rm \_\_\_\_\_ - \_\_\_\_\_ mR/hr  
 Patient supine in bed or \_\_\_\_\_

Date	Time	Bedside	3 ft from bed	Door	_____
__-__-__	:__ <sup>am</sup>	_____ mR/hr	_____ mR/h	_____ mR/hr	_____ mR/hr
__-__-__	:__ <sup>pm</sup>	_____ mR/hr	_____ mR/h	_____ mR/hr	_____ mR/hr
__-__-__	:__ <sup>am</sup>	_____ mR/hr	_____ mR/h	_____ mR/hr	_____ mR/hr
__-__-__	:__ <sup>pm</sup>	_____ mR/hr	_____ mR/h	_____ mR/hr	_____ mR/hr
__-__-__	:__ <sup>am</sup>	_____ mR/hr	_____ mR/h	_____ mR/hr	_____ mR/hr
__-__-__	:__ <sup>pm</sup>	_____ mR/hr	_____ mR/h	_____ mR/hr	_____ mR/hr
__-__-__	:__ <sup>am</sup>	_____ mR/hr	_____ mR/h	_____ mR/hr	_____ mR/hr
__-__-__	:__ <sup>pm</sup>	_____ mR/hr	_____ mR/h	_____ mR/hr	_____ mR/hr

**INSTRUCTIONS**

**Visitor Restrictions:**

- No visitors.
- No visitors under 18 or pregnant.
- \_\_\_\_\_ minutes each day maximum for each visitor.
- Visitors must stay behind line on floor at all times.

**Nursing Restrictions:**

- Patient is restricted to room.
- No nurses who are pregnant may render care.
- \_\_\_\_\_ minutes each day per nurse in the room.

**Patient Care:**

- Wear disposable gloves. Wash your hands after caring for patient.
- Discard linen, bedclothes, plates, utensils, dressings, etc., in boxes in room.
- Collect urine in containers provided. Discard feces in toilet.
- Discard urine and feces in toilet. Flush three times.
- Housekeeping personnel are not permitted in the room.
- Only RSO may release room to admitting office.
- Wear your radiation monitor when caring for patient. Leave at nursing station at the end of your shift. You may use the same monitor on your next shift. Do not share. Call RSO for additional monitors if needed.

\_\_\_\_\_  
 \_\_\_\_\_

In case of emergency, or if you have a question, call:

RSO: \_\_\_\_\_ Work: \_\_\_\_\_ Home: \_\_\_\_ - \_\_\_\_ Pager: \_\_\_\_\_  
 MD: \_\_\_\_\_ Work: \_\_\_\_\_ Home: \_\_\_\_ - \_\_\_\_ Pager: \_\_\_\_\_

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

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER

PHILIP A. MACKOWIAK, M.D.

2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE

## 3. CERTIFICATION

SPECIALTY BOARD  
ACATEGORY  
BMONTH AND YEAR CERTIFIED  
C

## 4. TRAINING RECEIVED IN BASIC RADIODISOTOPE 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		10	10
b. RADIATION PROTECTION	"	1	20
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	"	1	20
d. RADIATION BIOLOGY	"	10	20
e. RADIOPHARMACEUTICAL CHEMISTRY			

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

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
$^3\text{H}$	10 mCi	U. TX Southwestern Medical School	5 years	in vitro
$^{14}\text{C}$	50 mCi	"	5 years	"
$^{35}\text{S}$	5 mCi	"	1 Year	"

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  
Philip A. Mackowiak, M.D.

STREET ADDRESS  
3900 Loch Raven Blvd.

CITY STATE ZIP CODE  
Baltimore MD 21218

KEY TO COLUMN C

PERSONAL PARTICIPATION SHOULD CONSIST OF:

1. Supervised examination of patients to determine the suitability for rad. isotope 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 sheet.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION		
	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		
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES		
OTHER			
Tc-99m	BRAIN IMAGING		
	CARDIAC IMAGING		
	THYROID IMAGING		
	SALIVARY GLAND IMAGING		
	BLOOD POOL IMAGING		
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING		
	LUNG IMAGING		
BONE IMAGING			
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		
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
	TELE THERAPY 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

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

a. NAME OF SUPERVISOR

Dr. James F. Luby

b. NAME OF INSTITUTION

University of Texas Southwestern Medical Center

c. MAILING ADDRESS

5323 Harry Hines Blvd.

d. CITY

Dallas, TX 75235-9030

5. MATERIALS LICENSE NUMBER(S)

6. PRECEPTOR'S SIGNATURE

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

8. DATE

APPENDIX A

ACCEPTABLE TRAINING AND EXPERIENCE FOR  
MEDICAL USES OF BYPRODUCT MATERIAL\*

1. General Criteria

Any human use of byproduct material (i.e., the internal or external administration of byproduct material, or the radiation therefrom, to human beings) must be carried out by or under the supervision of a physician. As defined in paragraph 35.3(b) of 10 CFR Part 35, a *physician* means an individual licensed by a State or territory of the United States, the District of Columbia, or the Commonwealth of Puerto Rico to dispense drugs in the practice of medicine.

Paragraph 35.11(d) of 10 CFR Part 35 provides that the Commission will approve a license application by an institution for medical use of byproduct material if it determines, among other things, that the physician designated as the individual user is adequately trained and experienced in (a) basic radioisotope handling techniques and (b) the clinical management of patients to whom radiopharmaceuticals have been administered. Similar criteria are established in paragraph 35.12(a)(4) of 10 CFR Part 35 for the approval of licenses for medical use of radiopharmaceuticals by individual physicians. Outlined below are training and experience criteria that the Commission, with the assistance of its Advisory Committee on the Medical Uses of Isotopes (ACMUI), has found acceptable for physicians who use radiopharmaceuticals.

This training and experience must have been obtained within a 5-year period preceding the date of the license application or must be supplemented by continuing education or experience. Also, the original training and experience should have been received in a formal residency program in an accredited medical institution. Each physician's training and experience are examined on a case-by-case basis. If a physician wishes to use radiopharmaceuticals but does not have the training and experience described, he may submit an application listing his specific qualifications and these will be reviewed by the Commission with the assistance of the ACMUI.

2. Training for Routine Diagnostic Procedures (Groups I-III)

To qualify as adequately trained to use or directly supervise the use of byproduct material listed in Groups I, II, and/or III in § 35.100 of 10 CFR Part 35, a physician should have:

a. Training in basic radioisotope handling techniques applicable to the use of unsealed sources. This training should consist of lectures, laboratory sessions, discussion groups, or supervised experience in a nuclear medicine laboratory (i.e., on-the-job training in a formalized training program) in the following areas:

- |  |             |
|--|-------------|
| (1) Radiation physics and instrumentation                              | (100 hours) |
| (2) Radiation protection   | (30 hours)  |
| (3) Mathematics pertaining to the use and measurement of radioactivity | (20 hours)  |
| (4) Radiation biology  | (20 hours)  |
| (5) Radiopharmaceutical chemistry                                      | (30 hours)  |

(The hours listed next to each of the five subjects above are suggested values and should not be interpreted as specific requirements.)

b. Experience with the types and quantities of byproduct material for which the application is being made, or equivalent (500 hours). For authorization for Group III (generators and reagent kits), this experience should include personal participation in five procedures to elute Tc-99m, including testing of eluate, and five procedures to prepare radiopharmaceuticals from Group III reagent kits.

c. Supervised clinical training in an institutional nuclear medicine program (500 hours). The clinical training should cover all appropriate types of diagnostic procedures and should include:

- (1) Supervised examination of patients to determine the suitability for radioisotope diagnosis and recommendation on dosage to be prescribed.
- (2) Collaboration in administration of the dose and the actual administration of the dose to the patient, including calculation of the radiation dose, related measurement, and monitoring data.

\* Changes in these requirements are anticipated in the near future (after publication of this guide) and will be published in a revision to this guide.

\*\* The hours are in terms of hours of class, laboratory, or clinical experience rather than semester hours.

- (3) Followup of patients when required.
- (4) Study and discussion with preceptor of case histories to establish most appropriate diagnostic procedures, limitations, contraindication, etc.

**Note A:**

The requirements specified in Sections 2a, b, and c may be satisfied concurrently in a 3-month training program IF all three areas are integrated into the program.

**Note B:**

For each physician named in Item 4 of Form NRC-313M, complete Supplements A (Training and Experience) and B (Preceptor Statement) of Form NRC-313M. For each subject covered in basic training, state where the training was obtained, the dates, total number of hours, and type of training. Hours of training should be broken down into lecture or laboratory hours or on-the-job training (OJT). OJT must have been obtained in a formalized training program. Be sure that individual hours of training can be traced to the institution where the training was received. Each hour of training should be listed under only one subject category (i.e., the most applicable subject category).

**Alternatives**

Certification by (a) the American Board of Nuclear Medicine, or (b) the American Board of Radiology in Diagnostic Radiology with Special Competence in Nuclear Radiology will be accepted as evidence that a physician has had adequate training and experience to use Groups I, II, and III.

**3. Training for Specific Diagnostic Procedures**

A physician who wishes to be authorized for only one or two specific diagnostic procedures should have training in basic radioisotope handling techniques and clinical procedures commensurate with the procedures and quantities of byproduct material being requested. Such requests will be examined on a case-by-case basis by the Commission with the assistance of the ACMU.

**4. Training for Therapy Procedures Involving Radiopharmaceuticals**

To qualify as adequately trained to use or directly supervise the use of byproduct material listed in Groups IV and/or V in § 35.100 of 10 CFR Part 35, a physician should have:

- a. Training in basic radioisotope handling techniques applicable to the use of unsealed sources for therapy procedures, including

- (1) Radiation physics and instrumentation (25 hours)
- (2) Radiation protection (25 hours)
- (3) Mathematics pertaining to the use and measurement of radioactivity (10 hours)
- (4) Radiation biology (20 hours)

(These requirements are in lieu of, not in addition to, those specified in Section 2a above.)

**b. Clinical training in specific therapy procedures:**

*For Group IV*

- (1) I-131 for treatment of hyperthyroidism and/or cardiac conditions:  
Clinical experience in the diagnosis of thyroid function and active participation in the treatment of ten patients.
- (2) Soluble P-32 for treatment of polycythemia vera, leukemia, and/or bone metastases:  
Active participation in the treatment of three patients with any combination of these three conditions.
- (3) Colloidal P-32 for intracavitary treatment:  
Active participation in the treatment of three patients.

*For Group V*

- (1) I-131 for treatment of thyroid carcinoma:  
Clinical experience in diagnosis of thyroid function, personal participation in the treatment of ten patients with hyperthyroidism and/or cardiac dysfunction, and active participation in the treatment of three patients with thyroid carcinoma.
- (2) Colloidal Au-198 for intracavitary treatment:  
Active participation in the treatment of three patients.

**5. Training for Therapy Procedures Involving Sealed Sources**

To qualify as adequately trained to use or directly supervise the use of byproduct material listed in Group VI in § 35.100 of 10 CFR Part 35, a physician should have:

- a. Training in basic radioisotope handling techniques applicable to the use of sealed sources

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to the use of sealed sources for therapy procedures, consisting of lectures, laboratory sessions, discussion groups, or supervised experience in the following areas:

- |  |             |
|--|-------------|
| (1) Radiation physics and instrumentation                              | (110 hours) |
| (2) Radiation protection   | (40 hours)  |
| (3) Mathematics pertaining to the use and measurement of radioactivity | (25 hours)  |
| (4) Radiation biology  | (25 hours)  |

(The hours listed next to each of the four subjects above are suggested values and should not be interpreted as specific requirements.)

- b. Experience with the types and quantities of radioactive material for which the application is made, or equivalent (500 hours).
- c. Clinical training in Group VI procedures:

Active practice in therapeutic radiology with a minimum of 3 years' experience of which at least 1 year should have been spent in a formal training program accredited by the Residency Review Committee of Radiology and the Liaison Committee on Graduate Medical Education.

As evidence of the foregoing training and experience, the applicant should complete Supplements A and B of Form NRC-313M. Supplement B should be completed and signed by each preceptor-physician under whom the applicant-physician gained experience or training. Submission of letters of evaluation from each preceptor-physician on behalf of the applicant-physician should be included with the application. These letters of evaluation should describe the scope and extent of the applicant-physician's training and experience and should include an appraisal of the applicant-physician's competency to use Group VI sources independently for therapy procedures.

**Note:**

Evidence of certification by the American Board of Radiology in Radiology or Therapeutic Radiology, certification as a British "Fellow of the Faculty of Radiology" (FFR) or "Fellow of the Royal College of Radiology" (FRCR) or Canadian certification from the Royal College of Physicians and Surgeons (RCPS) in therapeutic radiology may be submitted in lieu of the information requested in Sections 5a through 5

above. Physicians certified by the FFR or FRCR must also submit evidence of specialization in radiotherapy. Evidence of previous approval by the NRC or an Agreement State may also be submitted in lieu of the information requested above. In this case, the applicant should specify the number of the NRC license or submit a copy of the Agreement State license on which the applicant-physician was specifically listed as an authorized user.

**6. Training for Physicians Wishing to Use Sr-90 Ophthalmic Eye Applicators Only**

To qualify as adequately trained to use or supervise the use of an Sr-90 eye applicator only, a physician should submit:

- a. Evidence of certification by the American Board of Radiology in radiology or therapeutic radiology, or

- b. Evidence of:

- |  |            |
|--|------------|
| (1) Active practice in therapeutic radiology or ophthalmology, and     |            |
| (2) Training in basic radioisotope handling techniques, including      | (24 hours) |
| (a) Radiation physics and instrumentation                              | (6 hours)  |
| (b) Radiation protection   | (6 hours)  |
| (c) Mathematics pertaining to the use and measurement of radioactivity | (4 hours)  |
| (d) Radiation biology  | (8 hours)  |

This information may be submitted on Supplement A of Form NRC-313M. The hours listed next to each of the four subjects are suggested minimum values and should not be interpreted as specific requirements.

- (3) Evidence of active participation in the treatment of five patients (to be submitted on Supplement B (Preceptor Statement) of Form NRC-313M).

"Active participation" should include supervised examination of patients, collaboration and calculations concerning the dose to be used, administration of the dose to the patient, and follow-up and study of patient case histories.



(FOR LFMS USE)  
INFORMATION FROM LTS  
-----

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM  
AND  
REGIONAL LICENSING SECTIONS

: PROGRAM CODE: 02120  
: STATUS CODE: 0  
: FEE CATEGORY: EX 7C  
: EXP. DATE: 19900331  
: FEE COMMENTS: -----  
: .....

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: V. A. MEDICAL CTR.  
RECEIVED DATE: 890307  
DOCKET NO: 3001789  
CONTROL NO.: 110388  
LICENSE NO.: 19-01058-01  
ACTION TYPE: AMENDMENT

2. FEE ATTACHED

AMOUNT: \$ 00 -----  
CHECK NO.: 0 -----

3. COMMENTS

SIGNED R. J. Brown -----  
DATE 89-03-09 -----

8. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED /\_\_/) \_\_\_\_\_

1. FEE CATEGORY AND AMOUNT: -----

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:

AMENDMENT -----  
RENEWAL -----  
LICENSE -----

3. OTHER -----  
-----

SIGNED -----  
DATE -----