FORM NRC-313M (8-78) 10 CFR 35	U.S. NUCLEAR REGULATORY COMMISSION 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

St. Mary's Hospital
P.O. Box 232
305 S. Fifth Street
Enid, Oklahoma 73701

TELEPHONE NO.: AREA CODE (405) 233 6100

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

Fred Long, M.D.
Director, Nuclear Medicine Department

TELEPHONE NO.: AREA CODE (405) 233 7102

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

a. ☐ NEW LICENSE
b. ☐ AMENDMENT TO LICENSE NO.
c. ☒ RENEWAL OF LICENSE NO. 35-17087-01

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

(See Attachment #1)

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.)*

Max R. Kubik, M.S.
(See Attachment #1)

6.a. RADIOACTIVE MATERIAL FOR MEDICAL USE

RADIOACTIVE MATERIAL LISTED IN:	ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS *(In millicuries)*
10 CFR 31.11 FOR IN VITRO STUDIES		
10 CFR 35.100, SCHEDULE A, GROUP I	X	AS NEEDED
10 CFR 35.100, SCHEDULE A, GROUP II	X	AS NEEDED
10 CFR 35.100, SCHEDULE A, GROUP III	X	2000 each
10 CFR 35.100, SCHEDULE A, GROUP IV	X	AS NEEDED
10 CFR 35.100, SCHEDULE A, GROUP V	X	AS NEEDED
10 CFR 35.100, SCHEDULE A, GROUP VI	X	100 I-125 only

ADDITIONAL ITEMS:	MARK ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS *(In millicuries)*
IODINE-131 AS IODIDE FOR TREATMENT OF HYPERTHYROIDISM	X	50
PHOSPHORUS-32 AS SOLUBLE PHOSPHATE FOR TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA AND BONE METASTASES	X	10
PHOSPHORUS-32 AS COLLOIDAL CHROMIC PHOSPHATE FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
GOLD-198 AS COLLOID FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
IODINE-131 AS IODIDE FOR TREATMENT OF THYROID CARCINOMA	X	100
XENON-133 AS GAS OR GAS IN SALINE FOR BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES	X	300

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

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: October 1980

7. MEDICAL ISOTOPES COMMITTEE	
X	Names and Specialties Attached; and
X	Duties as in Appendix B; or *(Check One)*
	Equivalent Duties Attached
8. TRAINING AND EXPERIENCE	
	Supplements A & B Attached for Each Individual User; and See Attachment #1
	See Attachment #1 Supplement A Attached for RSO.
9. INSTRUMENTATION *(Check One)*	
X	Appendix C Form Attached; or
	List by Name and Model Number
10. CALIBRATION OF INSTRUMENTS	
	Appendix D Procedures Followed for Survey Instruments; or *(Check One)*
X	Equivalent Procedures Attached; and
X	Appendix D Procedures Followed for Dose Calibrator; or *(Check One)*
	Equivalent Procedures Attached
11. FACILITIES AND EQUIPMENT	
X	Description and Diagram Attached
12. PERSONNEL TRAINING PROGRAM	
X	Description of Training Attached
13. PROCEDURES FOR ORDERING AND RECEIVING RADIOACTIVE MATERIAL	
X	Detailed Information Attached
14. PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS *(Check One)*	
	Appendix F Procedures Followed; or
X	Equivalent Procedures Attached

15. GENERAL RULES FOR THE SAFE USE OF RADIOACTIVE MATERIAL *(Check One)*	
X	Appendix G Rules Followed; or
	Equivalent Rules Attached
16. EMERGENCY PROCEDURES *(Check One)*	
X	Appendix H Procedures Followed; or
	Equivalent Procedures Attached
17. AREA SURVEY PROCEDURES *(Check One)*	
X	Appendix I Procedures Followed; or
	Equivalent Procedures Attached
18. WASTE DISPOSAL *(Check One)*	
X	Appendix J Form Attached; or
	Equivalent Information Attached
19. THERAPEUTIC USE OF RADIOPHARMACEUTICALS *(Check One)*	
X	Appendix K Procedures Followed; or
	Equivalent Procedures Attached
20. THERAPEUTIC USE OF SEALED SOURCES	
X	Detailed Information Attached; and
	Appendix L Procedures Followed; or *(Check One)*
X	Equivalent Procedures Attached
21. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE GASES (e.g., Xenon – 133)	
X	Detailed Information Attached
22. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL IN ANIMALS	
	Detailed Information Attached
23. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL SPECIFIED IN ITEM 6.b	
	Detailed Information Attached

24. PERSONNEL MONITORING DEVICES

TYPE (Check appropriate box)			SUPPLIER	EXCHANGE FREQUENCY
a. WHOLE BODY	X	FILM	R.S. Landauer,Jr.,&Co.	Monthly
		TLD		
		OTHER (Specify)		
b. FINGER		FILM		
		TLD	R.S. Landauer,Jr.,&Co.	Monthly
		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

MAILING ADDRESS

CITY | STATE | ZIP CODE

b. ATTACH A COPY OF THE AGREEMENT LETTER SIGNED BY THE HOSPITAL ADMINISTRATOR.

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 [illegible]ty official executing this certificate on behalf of the applicant named in Item 1a certify that this application is prepared in conformity with [illegible]tle 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.

a. LICENSE FEE REQUIRED *(See Section 170.31, 10 CFR 170)*

(1) LICENSE FEE CATEGORY 7 b.) Renewal

(2) LICENSE FEE ENCLOSED $ 150.00

b. APPLICANT OR CERTIFYING OFFICIAL (Signature) George W. Posey for John McMillan

(1) NAME (Type or Print) George W. Posey for John McMillan

(2) TITLE V.P. FINANCE

c. DATE 9-17-81

FORM NRC-313M (8-78)

ATTACHMENT #1
Items 4, 5, & 8

INDIVIDUAL USER	MATERIALS AND USES
John H. Walsh,M.D.	Groups I,II,& III; Xenon 133
Roger A. Rabold,M.D.	"
David S. Russell,M.D.	"
John D. Fisher,M.D.	"
Fred M. Long,M.D.	Groups I,II,III,& IV; Xenon 133
Dan Mitchell,Jr.,M.D.	All licensed materials and uses
Greer H. Ricketson,M.D.	Groups IV,V,& VI

The above physicians, except Greer H. Ricketson, are listed both on the license being renewed and 35-13821-02. Greer H. Ricketson is listed as an authorized user on 35-13821-02.

Max R. Kubik,M.S., is currently listed as Radiation Safety Officer on license 35-13821-01 and 35-13821-02.

ITEM 7

MEDICAL ISOTOPES COMMITTEE

Fred M. Long, M. D.	Radiology
John Fisher, M. D.	"
John Walsh, M. D.	"
David Russell, M. D.	"
Roger Rabold, M. D.	"
Dan Mitchell, M. D.	"
Greer H. Ricketson, M. D.	Therapeutic Radiology
Max Kubik, M. S.	Medical Health Physics, Radiation Safety Officer
Paul Leap, M. D.	Pathology
Mark Hopping, M. D.	Internal and Pulmonary Medicine
Sister Sylvana Schulte	~~Administration~~ Senior Vice President
Jo Whitlock	Nuclear Medicine Technologist
Gene Watters	~~Chief Technologist~~ Asst. of Radiology Services
Wayne Straw	~~Assistant Chief Technologist~~ Educational Coordinator

NOTE: Our current chairman is Dr. Long and that annually the chairmanship is passed in reverse alphabetical order among the first six radiologists.

APPENDIX C

INSTRUMENTATION

1. Survey meters

   a. Manufacturer's name: Nuclear Chicago

   Manufacturer's model number: 2650

   Number of instruments available: 1

   Minimum range: 0 mR/hr to 0.1 mR/hr

   Maximum range: 0 mR/hr to 100 mR/hr

   b. Manufacturer's name: Victoreen

   Manufacturer's model number: 6A

   Number of instruments available: 1

   Minimum range: 0 mR/hr to 0.5 mR/hr

   Maximum range: 0 mR/hr to 50 mR/hr

2. Dose calibrator

   Manufacturer's name: Nuclear Chicago

   Manufacturer's model number: Mediac

   Number of instruments available: 1

3. Instruments used for diagnostic procedures

Type of Instrument	Manufacturer's Name	Model No.
Anger Camera	Searle	Pho/Gamma LFOV
Thyroid Probe	Nuclear Chicago	821330
Single Channel Analyzer	Baird Atomic	530
Air Monitor	Atomic Products	Xenogard 136-751

4. Other (e.g., liquid scintillation counter, area monitor, velometer)

ITEM 10

CALIBRATION PROCEDURES AND SOURCES

FOR SURVEY INSTRUMENTS

SOURCES

An array of Ra-226 tubes shall be arranged as a plaque with an active area not to exceed 1.5 cm X 1.5 cm(a maximum of four tubes side by side) and no measurement will be made closer than 20 cm source to chamber distance.

The source description is as follows:

TUBE NO.	ASSAY (mg)	DECAY (JAN.'81)	EXPOSURE RATE*(1 meter)
20-272	20.03	19.99	0.0148 R/hr
20-273	20.05	20.01	0.0149 R/hr
20-308	19.98	19.95	0.0148 R/hr
20-309	20.11	20.08	0.0149 R/hr

All tubes were manufactured by Radium Chemical Company,Inc., and are NBS calibrates to + or - 5%.

*Exposure rate is calculated from data obtained from the following references:

Attix,F.H. and Ritz,".H.:Adetermination of the gamma ray emission of radium. J Res NBS, 59:293,1957.

Johns,H.E. and Cunningham,J.R..:The Physics of Radiology.3rd Ed.,p.480,1969.

Radiological Health Handbook,p.131,1970.

PREPARATION

The exposure rate from each tube is measured with the tube and chamber suspended in open air. Each tube is assigned a slot in a camera and each is separately placed in the camera and the exposure rate measured again. These measurements are then used to determine what tube/distance combinations shall be used to obtain the required exposure rates. Below 0.5mR/hr a shield of one tenth value layer(approximate-actual shielding quality will be made by direct measurement during set-up) shall be necessary.

PROCEDURE

The camera and sources will be taken to a shielded/isolated room and set up at the appropriate tube/distance combination to measure 1mR/hr for all single adjustment units and the appropriate adjustment made. Readings will then be taden at two points on each scale and recorded. If any reading differs by more than 10%, a calibration braph will be generated and attached to the instrument. For multiple adjustment instruments, each adjustment will be made at the higer point and checked at the lover. For borderline 10% difference readings, the scale will be adjusted for a mean deviation at mid-scale.

REPORT

A report form is attached.

SPRINGS RADIOLOGY ASSOC., INC.

615 E. Oklahoma -- Suite 204
P.O. Box 5677
ENID, OKLAHOMA 73701

(405) 233-7102

Dan Mitchell, Jr., M.D.
David S. Russell, M.D.
Fred M. Long, M.D.
Diplomates American Board of Radiology

Max R. Kubik, M.S.
Medical Physicist

RADIATION SURVEY METER CALIBRATION REPORT

Facility:_____ Date:_____ Calibrator:_____

Instrument:_____(manufacturer)

_____(model number)

_____(serial number)

The above instrument has been calibrated using Radium-226 sources whose activity is traceable to an accuracy within ± 5 % to the United States National Bureau of Standards. Various combinations of sources were used to insure the calibration of all scales at a minimum of two points per scale. Unless noted below, all scale readings are within 10 % of full scale from the true exposure rate.

_____ Calibration Incomplete--instrument requires repair by manufacturer or similar.

_____ Calibration Complete and within 10 % of full scale.

_____ Calibration Complete--an appropriate calibration graph is attached to the instrument for use in determining true exposure rates.

ITEM 11

No change in equipment or facilities has occurred since our letters of April 29 and December 8, 1980 (Xenon amendment application and followup response).

ITEM 12

PERSONNEL TRAINING PROGRAM

New technologists and any ancillary personnel frequenting any area where radioactive materials are normally present shall be instructed: a) prior to working in that area and b) once per year thereafter. Also, instruction shall be given when c) significant changes occur in duties, regulations, or license terms. Included in the instruction shall be:

1. pertinent license terms
2. use and storage areas
3. potential hazards
4. appropriate radiological safety procedures
5. pertinent NRC regulations
6. license rules and regulations
7. obligation to report unsafe conditions to the Radiation Safety Officer
8. appropriate response to emergencies or unsafe conditions
9. right to be informed of radiation exposure and bioassay results
10. posting locations of pertinent material

ITEM 13

APPENDIX E

PROCEDURES FOR ORDERING AND ACCEPTING DELIVERY OF RADIOACTIVE MATERIAL

1. The Supervisory Nuclear Medicine Technologist will place all orders for radioactive materials and will ensure that the requested materials and quantities are authorized by the license and that possession limits are not exceeded.

2. A system for ordering and receiving radioactive materials will be established and maintained. The system will consist minimally of the following:

   a. Ordering of routinely used materials

      (1) Written records that identify the isotope, compound, activity levels, and supplier, etc., will be used.

      (2) The written records will be referenced when opening or storing radioactive shipment.

   b. Ordering of specially used materials (e.g., therapeutic uses)

      (1) A written request* will be obtained from the physician who will perform the procedure.

      (2) Persons ordering the materials will reference the physician's written request when placing the order. The physician's request will indicate isotope, compound, activity level, etc.,

      (3) The physician's written request will be referenced when receiving, opening, or storing the radioactive material.

   c. It is essential that written records* be maintained for all ordering and receipt procedures.

3. During normal working hours carriers will be instructed to deliver radioactive packages directly to the Nuclear Medicine Department.

4. During off duty hours (3p.m. to 7 a.m.), security personnel or other designated individuals will accept delivery of radioactive packages in accordance with the procedures outlined in the sample memorandum below.

*In the case of special orders, the physician's written request and appropriate shipping/receipt records will be referenced and the dose assayed prior to its administration.

SAMPLE MEMORANDUM

MEMORANDUM FOR: Security Personnel/X-ray Technicians

FROM: Sister Sylvana Schulte, Administration

SUBJECT: RECEIPT OF PACKAGES CONTAINING RADIOACTIVE MATERIAL

Any packages containing radioactive material that arrive between 3 p. m. and 7 a. m. or on Sundays shall be signed for by the Security guard on duty and taken immediately to the Nuclear Medicine Department. Unlock the door, place the package in the designated receiving area, and relock the door.

If the package is wet or appears to be damaged, IMMEDIATELY contact the hospital Radiation Safety Officer or designated assistant to the Radiation Safety Officer. Ask the carrier to remain at the hospital until it can be determined that neither he nor the delivery vehicle is contaminated.

RADIATION SAFETY OFFICER: Mr. Max Kubik

OFFICE PHONE: (405) 233-2300 Extension 404

HOME PHONE: (405) 233-4904

ITEM 14

PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIAL

1. Special requirements will be followed for packages containing quantities of radioactive material in excess of the Type A quantity limits as specified in paragraphs 20.205(a)(1) and (c)(1) of 10 CFR Part 20 (more than 20 Ci for Mo-99 and Tc-99m). They will be monitored for surface contamination and external radiation levels within 3 hours after receipt if received during working hours or within 18 hours if received after working hours, in accordance with the requirements of paragraphs 20.205(a) through (c). All shipments of liquids greater than exempt quantities will be tested for leakage. The NRC Regional Office will be notified in accordance with the regulations if removable contamination exceeds 0.01 μCi/100 cm^2 or if external radiation levels exceed 200 mR/hr at the package surface or 10 mR/hr at 3 feet (or 1 m).

2. For all packages, the following additional procedures for opening packages will be carried out:

   a. Put on gloves to prevent hand contamination.

   b. Visually inspect package for any sign of damage (e.g., wetness, crushed). If damage is noted, stop procedure and notify Radiation Safety Officer.

   c. Measure exposure rate at 3 feet (or 1 m) from package surface and record. If >10 mR/hr, stop procedure and notify Radiation Safety Officer.

   d. Measure surface exposure rate and record. If >200 mR/hr, stop procedure and notify Radiation Safety Officer.

   e. Open the package with the following precautionary steps:

      (1) Open the outer package (following manufacturer's directions, if supplied) and remove packing slip.

      (2) Open inner package and verify that contents agree with those on packing slip. Compare requisition,* packing slip, and label on bottle.

      (3) Check integrity of final source container (i.e., inspect for breakage of seals or vials, loss of liquid, and discoloration of packaging material).

      (4) Check also that shipment does not exceed possession limits.

   f. When final source container integrity is questionable, wipe external surface of final source container and remove wipe to low background area. Assay the wipe and record amount of removable radioactivity (e.g., μCi/100 cm^2, etc.). Check wipes with a thin-end-window G-M survey meter, and take precautions against the spread of contamination as necessary.

   g. Monitor the packing material and packages for contamination before discarding.

      (1) If contaminated, treat as radioactive waste.

      (2) If not contaminated, obliterate radiation labels before discarding in regular trash.

3. Maintain records of the results of checking each package, using "Radioactive Shipment Receipt Record" (see next page) or a form containing the same information.

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*In the case of special orders (e.g., therapy doses), also compare with physician's written request.

RADIOACTIVE SHIPMENT RECEIPT REPORT

1. P.O. No.: _____ Survey Date _____ Time _____

   Surveyor _____ _____

2. CONDITION OF PACKAGE:

   _____ O.K. _____ Punctured _____ Status _____ Wet

   _____ Crushed _____ Other

3. RADIATION UNITS OF LABEL: _____ Units (mR/hr)

4. MEASURED RADIATION LEVELS:

   a. Package surface _____ mR/hr

   b. 3 feet or 1 meter from surface _____ mR/hr

5. DO PACKING SLIP AND VIAL CONTENTS AGREE?

   a. Radionuclide _____ yes _____ no, difference _____

   b. Amount _____ yes _____ no, difference _____

   c. Chem Form _____ yes _____ no, difference _____

6. WIPE RESULTS FROM:

   a. Outer _____ CPM = _____ DPM

      eff = ( )

   b. Final source container _____ CPM = _____ DPM

      eff = ( )

8. SURVEY RESULTS OF PACKING MATERIAL AND CARTONS _____ mR/hr, CPM

9. DISPOSITION OF PACKAGE AFTER INSPECTION _____

10. IF NRC/CARRIER NOTIFICATION REQUIRED, GIVE TIME, DATE, AND PERSONS NOTIFIED.

_____

Signature Date

APPENDIX J

WASTE DISPOSAL

Note: In view of the recent problems with shallow-land burial sites used by commercial waste disposal firms, NRC is encouraging its licensees to reduce the volume of wastes sent to these facilities. Important steps in volume reduction are to segregate radioactive from nonradioactive waste, to hold short-lived radioactive waste for decay in storage, and to release certain materials in the sanitary sewer in accordance with § 20.303 of 10 CFR Part 20.

1. Liquid waste will be disposed of (check as appropriate)

X In the sanitary sewer system in accordance with § 20.303 of 10 CFR Part 20.

_____ By commercial waste disposal service (see also Item 4 below).

_____ Other (specify): _____

_____

2. Mo-99/Tc-99m generators will be (check as appropriate)

_____ Returned to the manufacturer for disposal.

X Held for decay* until radiation levels, as measured in a low background area with a low-level survey meter and with all shielding removed, have reached background levels. All radiation labels will be removed or obliterated, and the generators will be disposed of as normal trash.**

_____ Disposed of by commercial waste disposal service (see also Item 4 below).

_____ Other (specify): _____

_____

3. Other solid waste will be (check as appropriate)

X Held for decay* until radiation levels, as measured in a low background area with a low-level survey meter and with all shielding removed, have reached background levels. All radiation labels will be removed or obliterated, and the waste will be disposed of in normal trash.

_____ Disposed of by commercial waste disposal service (see also Item 4 below).

_____ Other (specify): _____

_____

4. The commercial waste disposal service used will be

_____
(Name) (City, State)

NRC/Agreement State License No. _____

* Be sure that waste storage areas were described in Item 11 and that they are surveyed periodically (Item 17).

** These generators may contain long-lived radioisotopic contaminants. Therefore, the generator columns will be segregated so that they may be monitored separately to ensure decay to background levels prior to disposal.

The only sealed sources used shall be I-125 for interstitial treatment of cancer. The sources will be loaded into cartridges and kept in a stainless steel block until used. The block will be taken to surgery and sterilized the morning of use. All unused sources will be returned to the original container. No unnecessary equipment or materials will be taken from the surgical room until all sources have verified. Any material leaving will be adequately surveyed with a G-M survey meter. Following recovery, a series of localization films will be taken and sources counted. When all sources are accounted for, the surgical room will be released for cleaning.

All linen, dressings, excreta, etc., will be kept and monitored daily before disposal. No vacuuming will be done in the patient's room unless overseen by the Radiation Safety Officer or his appointee, and then only after a thorough survey of the room has been conducted.

Pre-dismissal films will be taken to verify that no sources have been lost without detection. All recovered sources will be placed in the original container with the unused sources, labeled as to the date of use and activity, and placed in the radioactive materials storage area for decay.

All pertinent sections of the following procedures will be followed.

ITEM 20b

THERAPEUTIC USE OF SEALED SOURCES

1. All patients treated with brachytherapy sources will be placed in a private room with toilet.

2. The patient's room will be properly posted in accordance with §20.203 of 10 CFR Part 20.

3. Surveys of the patient's room and surrounding areas will be conducted as soon as practicable after sources are implanted. Exposure rate measurements will be taken at the patient's bedside, 3 feet (or 1 meter) from the patient, 3 feet (or 1 meter) from the bed, and at the entrance to the room. The Radiation Safety Officer or his designee will then determine how long a person may remain at these positions and will post these times and the exposure rate at 3 feet (or 1 meter) from the patient on the patient's chart.

4. Immediately after sources are implanted, the form "Nursing Instructions for Patients Treated with Brachytherapy Sources" will be completed and placed on the patient's chart.

5. Radiation levels in unrestricted areas will be maintained less than the limits specified in paragraph 20.105(b) of 10 CFR Part 20.

6. As the need arises as determined by the Radiation Safety Officer, nurses caring for brachytherapy patients will be assigned film badges. TLD finger badges may also be assigned to nurses who must provide extended personal care to the patient.

7. At the conclusion of treatment, a survey will be performed to ensure that all temporary implant sources have been removed from the patient and that no sources remain in the patient's room or any other area occupied by the patient. At the same time, all radiation signs will be removed and all film and TLD badges assigned to nurses will be collected.

8. Instructions to Nurses

   a. Special restrictions may be noted on the precaution sheet on the patient's chart. Nurses should read these instructions before administering to the patient. Call the Radiation Safety Office or his designee with any questions about the care of these patients in regard to radiation safety precautions.

   b. Nurses should spend only the minimum time necessary near a patient for routine nursing care.

   c. When a nurse receives an assignment to a therapy patient, and if it is determined necessary by the Radiation Safety Officer, a film or TLD badge should be obtained immediately from the Radiation Safety Officer or his designee. The badge shall be worn only by the nurse to whom it is issued and shall not be exchanged between nurses.

   d. Pregnant nurses should not be assigned to the personal care of these patients.

e. Never touch needles, capsules, or containers holding brachytherapy sources. If a source becomes dislodged, use long forceps and put it in the corner of the room or in the shielded container provided; contact the physician, the Radiation Safety Officer, or the Nuclear Medicine Department at once.

f. Bed bath given by the nurse should be omitted while the sources are in place.

g. Perineal care is not given during gynecologic treatment; the perineal pad may be changed when necessary unless orders to the contrary have been written.

h. Surgical dressings and bandages used to cover the area of needle insertion may be changed only by the attending physician or radiologist, and may NOT BE DISCARDED until directed by the radiologist. Dressings should be kept in a basin until checked by the Radiation Safety Officer or his designee.

Special orders will be written for oral hygiene for patients with oral implants.

i. No special precautions are needed for sputum, urine, vomitus, stools, dishes, instruments, or utensils unless specifically ordered, but these items should be saved for a check with a radiation survey meter to ensure that no sources have been inadvertently displaced into these items.

j. All bed linens must be checked with a radiation survey meter before being removed from the patient's room to ensure that no dislodged sources are inadvertently removed.

k. These patients must stay in bed unless orders to the contrary are written. In any event, patients will remain in their assigned rooms during the treatment period.

l. Visitors will be limited to those 18 years of age or over, unless other instructions are noted on the precaution sheet on the patient's chart.

m. Visitors should sit at least 3 feet (or 1 meter) from the patient and should remain no longer than the time specified on the form posted on the patient's door and on his chart.

n. No nurse, visitor, or attendant who is pregnant should be permitted in the room of a patient while brachytherapy sources are implanted in the patient. Female visitors should be asked whether they are pregnant.

o. Emergency Procedures

(1) If an implanted source becomes loose or separated from the patient, or

(2) If the patient dies, or

(3) If the patient requires emergency surgery, <u>immediately</u> call_____

Telephone No. (days)_____
(nights)_____

p. At the conclusion of treatment, call the Radiation Safety Officer to (1) survey the patient and room and (2) count the radiation sources to be sure that all temporary implants have been removed prior to discharging the patient.

ITEM 21

These items were adequately presented April 29 and December 8, 1980.

No changes have occurred since.