NRC FORM 313M (9-81) 10 CFR 35	U.S. NUCLEAR REGULATORY COMMISSION APPLICATION FOR MATERIALS LICENSE – MEDICAL	Approved by OMB 3150-0041 Expires 9-30-83

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.*

RECEIVED BY
Date 8/14/84
Log dy 13
By CB
Orig. To
Action Comm

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

Mercy Hospital
Nuclear Medicine Department
400 Hobart Street
Cadillac, Michigan 49601

TELEPHONE NO.: AREA CODE (616) 775 1331

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

SAME

2. PERSON TO CONTACT REGARDING THIS APPLICATION

David M. Leahy, M.S.

TELEPHONE NO.: AREA CODE (313) 353 6256

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

a. ☐ NEW LICENSE
b. ☐ AMENDMENT TO LICENSE NO.
c. ☒ RENEWAL OF LICENSE NO. 21-10717-01

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

Robert F. Barnett, M.D.

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.)*

Robert F. Barnett, M.D.

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	X	3
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	
10 CFR 35.100, SCHEDULE A, GROUP IV		AS NEEDED
10 CFR 35.100, SCHEDULE A, GROUP V		AS NEEDED
10 CFR 35.100, SCHEDULE A, GROUP VI		

ADDITIONAL ITEMS:	MARK ITEMS DESIRED "X"	MAXIMUM POSSESSION LIMITS *(In millicuries)*
IODINE-131 AS IODIDE FOR TREATMENT OF HYPERTHYROIDISM		
PHOSPHORUS-32 AS SOLUBLE PHOSPHATE FOR TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA AND BONE METASTASES		
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		
XENON-133 AS GAS OR GAS IN SALINE FOR BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES.		

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

Applicant
Check No. 32676
Amount Fee Category 150.00
Initials TC Rec
Date Rec'd 8/14/84
Received by CB

Control No. 77282

RECEIVED
AUG 13 1984
REGION III

8506050542 850514
REG3 LIC30
21-10717-01 PDR

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: _____

SEE APPENDED SHEET

7. MEDICAL ISOTOPES COMMITTEE	
☐ Names and Specialties Attached; and	
☐ Duties as in Appendix B; or *(Check One)*	
☐ Equivalent Duties Attached	
8. TRAINING AND EXPERIENCE	
☐ Supplements A & B Attached for Each Individual User; and	
☐ Supplement A Attached for RSO.	
9. INSTRUMENTATION *(Check One)*	
☐ 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)*	
☐ Equivalent Procedures Attached; and	
☐ Appendix D Procedures Followed for Dose Calibrator; or *(Check One)*	
☐ Equivalent Procedures Attached	
11. FACILITIES AND EQUIPMENT	
☐ Description and Diagram Attached	
12. PERSONNEL TRAINING PROGRAM	
☐ Description of Training Attached	
13. PROCEDURES FOR ORDERING AND RECEIVING RADIOACTIVE MATERIAL	
☐ Detailed Information Attached	
14. PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS *(Check One)*	
☐ Appendix F Procedures Followed; or	
☐ Equivalent Procedures Attached	
15. GENERAL RULES FOR THE SAFE USE OF RADIOACTIVE MATERIAL *(Check One)*	
☐ Appendix G Rules Followed; or	
☐ Equivalent Rules Attached	
16. EMERGENCY PROCEDURES *(Check One)*	
☐ Appendix H Procedures Followed; or	
☐ Equivalent Procedures Attached	
17. AREA SURVEY PROCEDURES *(Check One)*	
☐ Appendix I Procedures Followed; or	
☐ Equivalent Procedures Attached	
18. WASTE DISPOSAL *(Check One)*	
☐ Appendix J Form Attached; or	
☐ Equivalent Information Attached	
19. THERAPEUTIC USE OF RADIOPHARMACEUTICALS *(Check One)*	
☐ Appendix K Procedures Followed; or	
☐ Equivalent Procedures Attached	
20. THERAPEUTIC USE OF SEALED SOURCES	
☐ Detailed Information Attached; and	
☐ Appendix L Procedures Followed; or *(Check One)*	
☐ Equivalent Procedures Attached	
21. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE GASES (e.g., Xenon – 133)	
☐ 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		FILM	R.S. Landauer, Jr. and Company	Monthly
		TLD		
		OTHER (Specify)		
b. FINGER		FILM		
		TLD	R.S. Landauer, Jr. and Company	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 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.

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

(1) LICENSE FEE CATEGORY: 7 B

(2) LICENSE FEE ENCLOSED: $ 580.00

b. APPLICANT OR CERTIFYING OFFICIAL *(Signature)*

Sister Mary Juliana Gust, RSM

(1) NAME *(Type or Print)*
Sister Mary Juliana Gust

(2) TITLE
Chief Executive Officer

c. DATE
August 1, 1984

Control No. 77282

PRIVACY ACT STATEMENT

Pursuant to 5 U.S.C. 552a(e)(3), enacted into law by section 3 of the Privacy Act of 1974 (Public Law 93-579), the following statement is furnished to individuals who supply information to the Nuclear Regulatory Commission on NRC Form 313M. This information is maintained in a system of records designated as NRC-3 and described at 40 Federal Register 45334 (October 1, 1975).

1. **AUTHORITY** Sections 81 and 161(b) of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2111 and 2201(b)).

2. **PRINCIPAL PURPOSE(S)** The information is evaluated by the NRC staff pursuant to the criteria set forth in 10 CFR Parts 30-36 to determine whether the application meets the requirements of the Atomic Energy Act of 1954, as amended, and the Commission's regulations, for the issuance of a radioactive material license or amendment thereof.

3. **ROUTINE USES** The information may be used: (a) to provide records to State health departments for their information and use; and (b) to provide information to Federal, State, and local health officials and other persons in the event of incident or exposure, for their information, investigation, and protection of the public health and safety. The information may also be disclosed to appropriate Federal, State, and local agencies in the event that the information indicates a violation or potential violation of law and in the course of an administrative or judicial proceeding. In addition, this information may be transferred to an appropriate Federal, State, or local agency to the extent relevant and necessary for a NRC decision or to an appropriate Federal agency to the extent relevant and necessary for that agency's decision about you. A copy of the license issued will routinely be placed in the NRC's Public Document Room, 1717 H Street, N.W., Washington, D.C.

4. **WHETHER DISCLOSURE IS MANDATORY OR VOLUNTARY AND EFFECT ON INDIVIDUAL OF NOT PROVIDING INFORMATION** Disclosure of the requested information is voluntary. If the requested information is not furnished, however, the application for radioactive material license, or amendment thereof, will not be processed.

5. **SYSTEM MANAGER(S) AND ADDRESS** Director, Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

NRC FORM 313M SUPPLEMENT A (9-81) U.S. NUCLEAR REGULATORY COMMISSION

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER	2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE
Robert F. Barnett, M.D.	Michigan

3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
Previously submitted for license #21-10717-01		

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	Previously submitted for license #21-10717-01		
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
	Previously submitted for license #21-10717-01			

Control No. 7 2 8 2

APPENDED SHEET A

NRC 313 m. p. 2 Items 7 through 23

Item 7. Superceded by this Item 7 attached.

Item 8. Previously submitted, application dated January 25, 1979.

Item 9. Superceded by this Item 9 attached.

Item 10. Superceded by this Item 10 attached.

Item 11. Previously submitted, application dated January 25, 1979.

Item 12. Previously submitted, application dated January 25, 1979.

Item 13. Superceded by this Item 13 attached.

Item 14. Superceded by this Item 14 attached.

Item 15. Superceded by this Item 15 attached.

Item 16. Superceded by this Item 16 attached.

Item 17. Previously submitted, application dated January 25, 1979.

Item 18. Previously submitted, application dated January 25, 1979.

Model ALARA Program as contained in Appendix O of Regulatory Guide 10.8, October, 1980 - incorporated in this submission.

On items previously submitted, current program represented, and licensee shall continue to operate in accordance with those documents, applicable NRC regulations, and license conditions.

RADIATION SAFETY COMMITTEE

RESPONSIBILITY

The committee is responsible for:

1. Coordinating and supervising the Institution's radiation safety program.

2. Ensuring that all individuals who work with or in the vicinity of radioactive material have sufficient training and experience to enable them to perform their duties safely and in accordance with NRC Regulations and the conditions of the license.

3. Ensuring that use of radioactive material is conducted in a safe manner and in accordance with NRC Regulations and the conditions of the license.

DUTIES

The committee shall:

1. Be familiar with all pertinent NRC Regulations, the terms of the license, and information submitted in support of the request for the license and its amendments.

2. Review the training and experience of all individuals who use radioactive material (including physicians, technologists, physicists, and pharmacists) and determine that their qualifications are sufficient to enable them to perform their duties safely and in accordance with NRC Regulations and the conditions of the license.

3. Establish a program to ensure that all individuals whose duties may require them to work in the vicinity of radioactive material (e.g. nursing, security, housekeeping personnel) are properly instructed as required by 10.12 of 10 CFR Part 19.

4. Review and approve all requests for use of radioactive material within the institution.

5. Prescribe special conditions that will be required during a proposed use of radioactive material such as requirements for bioassays, physical examinations of users, and special monitoring procedures.

6. Review the entire radiation safety program at least annually to determine that all activities are being conducted safely and in accordance with NRC Regulations and the conditions of the license. The review shall include an examination of all records, reports from the radiation safety officer, results of NRC inspection, written safety procedures, and the adequacy of the instruction's management control system.

7. Recommend remedial action to correct any deficiencies identified in the radiation safety program.

8. Maintain written records of all committee meetings, actions, recommendations, and decisions.

9. Ensure that the byproduct material license is amended, when necessary, prior to any changes in facilities, equipment, policies, procedures, and personnel, as specified in the license.

MEETING FREQUENCY

The Radiation Safety Committee shall meet as often as necessary to conduct its business but not less than once in each calendar quarter.

RADIATION SAFETY COMMITTEE, 1984-'85

1. Robert F. Barnett, M.D.
   Specialty: Radiologist; Radiation Safety Officer

2. Elmer Johnson, R.T.
   Specialty: Director Radiologic Technology; Chairman

3. Robert Pierce, M.D.
   Specialty: Pathologist

4. Barry Mintzer
   Specialty: Vice-President, Ancillary Services

5. Marilyn Ulander, R.N.
   Specialty: Surgery Supervisor

INSTRUMENTATION

1. SURVEY METERS

a.) Victoreen
Model 740 F
Range: 1-25,000 mR

b.) Eon
Model CDV-700
Range: .01-50 mR

2. DOSE CALIBRATOR

Picker Digital
Model: 632507

3. DIAGNOSTIC INSTRUMENTS

Type	MANUFACTURER	Model #
Scintillation Camera	Picker	Dyna camera 4
Auto Gamma System	Picker	Compac 120

CALIBRATION OF INSTRUMENTS

To assure proper performance, instrument calibration is performed on a regular basis. Specific frequency and type of calibration is enumerated below:

A. Scintillation Camera

Field flood for uniformity - daily;
Camera Analyzer settings - daily;
Resolution Check (extrinsic)-daily.

B. Auto Gamma System

E-dial - daily;
Cesium-137 - daily;
Background count - daily;
Chi-square - annually.

C. Dose Calibrator

Zero check - daily;
Constancy of operation (Co-57) - daily;
Accuracy of response - bimonthly;
Linearity of response - quarterly.

a. Sources used for linearity test:
-- first elution from new Mo^{99}/Tc^{99m} generator or the highest activity of Tc^{99m} received.

b. Sources used for instrument accuracy and constancy tests:

Co^{57}	5.0mC	New England Nuclear/	Certified Reference Sources
Cs^{137}	180uCi	New England Nuclear/	

c. The procedures described in Appendix D, Section 2, of NRC Regulatory Guide 10.8, Revision 1, October, 1980, will be followed in calibration of the dose calibrator.

D. Survey Meters

Survey instruments will be calibrated at least annually and following repair.

Calibration will be performed at two points on each scale. The two points will be approximately 1/3 and 2/3 or full scale. A survey instrument may be considered properly calibrated when the instrument readings are within ± 10% of the calculated or known values for each point checked.

Survey meters will be calibrated by the manufacturer or an outside firm, specifically Test Equipment Distributors, Detroit, Michigan, NRC license #21-18220-01.

Hospital shall verify that the calibration procedures followed shall be those as stated in Appendix D, Section 1, or NRC Regulatory Guide 10.8, Revision 1, October, 1980.

Results of the calibration shall be submitted to the hospital on a "Certificate of Instrument Calibration," with format similar to that presented on page 26, Appendix D, 10.8.

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

   b. The written records will be referenced when opening or storing radioactive shipment.

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

4. During off-duty hours, security personnel or other designated individuals will accept delivery of radioactive packages in accordance with the procedures outlined in the memorandum attached.

Item No.13
August 1, 1984

MERCY HOSPITAL
400 HOBART STREET . 616-775-1331 . CADILLAC, MICHIGAN 49601

TO: Security Personnel

FROM: Robert F. Barnett, M.D.

DATE: July 15, 1984

SUBJECT: RECEIPT OF PACKAGES CONTAINING RADIOACTIVE MATERIAL AFTER HOURS

Any packages containing radioactive material that arrive between 5:00 p.m. and 7:00 a.m. or on weekends or holidays shall be signed for by the Security guard on duty. Security shall then immediately escort the courier delivering the package to the Nuclear Medicine Department. After unlocking the door, the package shall be placed on the counter in the hot laboratory, relocking the door upon leaving.

If the package is wet or appears to be damaged, immediately contact the Radiation Safety Officer, or his alternate. (Consult the Emergency telephone listing.) Ask the carrier to remain on site until it can be determined that neither he nor the delivery vehicle is contaminated.

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. They will be monitored for surface contamination and external radiation levels within three hours after receipt if received during working hours or within eighteen 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 uCi/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) Although 20.205 of 10 CFR 20 exempts certain packages from immediate monitoring, monitoring shall be performed as soon as practicable after receipt of the package of radioactive material.

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. 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., uCi/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.

GENERAL RULES FOR SAFE USE OF RADIOACTIVE MATERIAL

1. Wear laboratory coats or other protective clothing at all times in areas where radioactive materials are used.

2. Wear disposable gloves at all times while handling radioactive materials.

3. Monitor hands and clothing for contamination after each procedure or before leaving the area.

4. Always use syringe shields for routine preparation of patient doses and administration to patients, except in circumstances such as pediatric cases where their use would compromise the patient's well-being. In these exceptional cases, use other protective methods such as remote delivery of the dose (e.g., through use of a butterfly valve.)

5. a. Do not eat, drink, smoke or apply cosmetics in any area where radioactive material is stored or used.

   b. Do not store food, drink, or personal effects with radioactive material.

6. a. Assay each patient dose in the dose calibrator prior to administration. Do not use any doses that differ from the prescribed dose by more than 10 percent.

   b. For therapeutic doses, also check the patient's name, the radionuclide, the chemical form, and the activity vs. the order written by the physician who will perform the procedure.

7. Wear personnel monitoring devices (film badge or TLD) at all times while in the areas where radioactive materials are used or stored. These devices should be worn at chest or waist level. Personnel monitoring devices when not being worn to monitor occupational exposures should be stored in a designated low background area.

8. Wear TLD finger badges during elution of generator and preparation, assay, and injection fo radiopharmaceuticals.

9. Dispose of radioactive waste only in specially designated and properly shielded receptacles.

10. Never pipette by mouth.

11. Survey generator, kit preparation, and injection areas for contamination after each procedure or at the end of the day. Decontaminate if necessary.

12. Confine radioactive solutions in covered containers plainly identified and labeled with name of compound, radionuclide, date, activity and radiation level, if applicable.

13. Always transport radioactive material in shielded containers.

EMERGENCY PROCEDURES

MINOR SPILLS

1. NOTIFY: Notify persons in the area that a spill has occurred.

2. PREVENT THE SPREAD: Cover the spill with absorbent paper.

3. CLEAN UP: Use disposable gloves and remote handling tongs. Carefully, fold the absorbent paper and pad. Insert into a plastic bag and dispose of in the radioactive waste container. Also insert into the plastic bag all other contaminated materials such as disposable gloves.

4. SURVEY: With a low-range, thin-window G-M survey meter, check the area around the spill, hands, and clothing for contamination.

5. REPORT: 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: Cover the spill with absorbent pads, but do not attempt to clean it up. Confine the movement of all personnel potentially contaminated to prevent the spread.

3. SHIELD THE SOURCE: If possible, the spill should be shielded, but only if it can be done without further contamination or without significantly increasing your radiation exposure.

4. CLOSE THE ROOM: Leave the room and lock the door(s) to prevent entry.

5. CALL FOR HELP: 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.

RADIATION SAFETY OFFICER: Robert F. Barnett, M.D.
OFFICE PHONE: 775-1331
HOME PHONE: 775-9647

ALTERNATE NAMES AND TELEPHONE NUMBERS
DESIGNATED BY RADIATION SAFETY OFFICER:

Elmer Johnson
775-5230

Pat Jones
779-8099

Control No. 77282

Item No. 16
August 1, 1984