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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.*

1.a. NAME AND MAILING ADDRESS OF APPLICANT *(institution, firm, clinic, physician, etc.)* INCLUDE ZIP CODE	1.b. STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED *(If different from 1.a.)* INCLUDE ZIP CODE
Veterans Administration Medical Center Northampton, MA. 01060 TELEPHONE NO.: AREA CODE (413) 584 4040	SAME
2. PERSON TO CONTACT REGARDING THIS APPLICATION Robert H. Ostberg, M.D., Chief, Radiology Svc. TELEPHONE NO.: AREA CODE (413) 584 4040	3. THIS IS AN APPLICATION FOR: *(Check appropriate item)* a. [X] 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.)* Robert H. Ostberg, M.D. Chief, Radiology Service	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 H. Ostberg, M.D. Chief, Radiology Service (See attached sheet for details)

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			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	2000	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					

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
Does not apply			

RECEIVED BY LFMB
Date 7/28/83
Log July 3 N.L.
By Brown
7/28/83

FEE EXEMPT 01565
Applicant Nuclear Safety Consultants
Check No. 7200
Amount/Fee Category $190
Check Returned 7/28/83 Brown

JUL 1 8 1983

9/20/83

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: _____

7. Radiation Safety ~~MEDICAL USE~~ COMMITTEE

X	Names and Specialties Attached; and
X	Duties as in Appendix B; or
	Equivalent Duties Attached

(Check One)

8. TRAINING AND EXPERIENCE See Attached Sheet

	Supplements A & B Attached for Each Individual User; and
	Supplement A Attached for RSO.

9. INSTRUMENTATION *(Check One)*

	Appendix C Form Attached; or
X	List by Name and Model Number

10. CALIBRATION OF INSTRUMENTS

X	Appendix D Procedures Followed for Survey Instruments; or
	Equivalent Procedures Attached; and
X	Appendix D Procedures Followed for Dose Calibrator; or
	Equivalent Procedures Attached

(Check One)

(Check One)

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)*

X	Appendix F Procedures Followed; or
	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)*

	Appendix H Procedures Followed; or
X	Equivalent Procedures Attached

17. AREA SURVEY PROCEDURES *(Check One)*

X	Appendix I Procedures Followed; or
	Equivalent Procedures Attached

18. WASTE DISPOSAL *(Check One)*

	Appendix J Form Attached; or
X	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
	Equivalent Procedures Attached

(Check One)

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	Siemens Gammasonics, Inc.	Monthly
		TLD		
		OTHER (Specify)		
b. FINGER		FILM	Siemens Gammasonics, Inc.	Monthly
		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

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 7B

(2) LICENSE FEE ENCLOSED $ 190.00

b. APPLICANT OR CERTIFYING OFFICIAL *(Signature)*

(1) NAME *(Type or Print)*
MICHAEL J. KANE

(2) TITLE
Medical Center Director

c. DATE
7/14/83

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.

Item #5 Radiation Safety Officer

Robert H. Ostberg, M.D., Chief, Radiology Service, is the Radiation Safety Officer for this facility. As such Dr. Ostberg will be responsible for the coordination of the radiation safety program throughout the hospital. He will be assisted in discharging such responsibilities by the hospital's consulting radiation health physicist, P.J. Rosenbaum, who will be available one half day per week routinely and on call as may be required. His responsibilities are concerned with the operation of all nuclear medicine activities in a manner consistent with NRC rules and regulations, conditions of the license under which the program operates and information supplied with herein license application and any future amendments that may be submitted. The consultant's specific duties include functioning as a quality assurance supervisor for imaging instrumentation function, calibration of survey meters, confirmation of dose calibrator operation, maintenance of records required by NRC regulations and assure compliance with an ALARA program.

Item #7 Membership of Radiation Safety Committee

A.

1. Authorized User Physician - Robert H. Ostberg, M.D., Chief, Radiology
2. Management - Steven Hochhauser, Adm. Assist. to Chief of Staff
3. Nursing Representative - Catherine Wimer, R.N.
4. Consultant - Paul Rosenbaum, Radiation Physicist

B. Responsibility of Committee shall be to confirm that persons who work with or in the vicinity of radioactive materials are sufficiently trained and experienced to enable them to perform their duties safely and in accordance with NRC regulations and conditions of the license and that same is implemented properly.

C. Duties of Committee shall be to:

1. Be familiar with pertinent NRC regulations, terms of the license, information supplied in this license application and future amendments.
2. Confirm adequacy of training and experience of all participants in the conduct of the nuclear medicine program.
3. Establish a teaching program to acquaint appropriate hospital personnel in the many aspects of radiation usage and safety.
4. Review and approve all requests for use of radioactive materials in the hospital.
5. Conduct a review of the radiation safety program at least annually to determine that all activities are being conducted safely and in accordance with NRC regulations and conditions of the license.

C. Duties of Committee (Cont.):

6. Recommend remedial action to correct any deficiencies.

7. Maintain written record of all committee meetings, actions and decisions.

8. Meet as often as necessary but not less than once in each calendar quarter.

Item #8 Training and Experience

The training and experience of R. H. Ostberg, M.D. in the use of radioactive materials in humans has been previously submitted to NRC as part of the application for license No. 20-03502-01, wherein Dr. Ostberg was a listed authorized user. Also included in Dr. Ostberg's training and experience were sufficient lectures and required readings to qualify him for radiation safety officer responsibilities. It is noted that he will be assisted in this latter function by the consultant radiation health physicist, P. J. Rosenbaum, who will aid him in the proper performance of the radiation safety program as required by the license. Any reports submitted by the consultant will be reviewed by Dr. Ostberg for completeness and compliance with NRC rules and regulations.

Additionally it is noted that Dr. Ostberg has been certified both by the American Board of Radiology in 1965 and the American Board of Nuclear Medicine in 1972.

Item #9 Instrumentation

A. Survey Meters

1. To perform contamination surveys; one beta-gamma survey meter, CDV-700 type, model 6B, manufactured by Victoreen Instrument Co., with 3 range switch providing a capability of measuring 0-0.5 mr./hr., 0-5 mr./hr., 0-50 mr./hr.

2. To measure radiation exposure rates in the vicinity of $^{99}Mo/^{99m}Tc$ generators; CDV-715 type, model 1A, manufactured by Victoreen Instrument Co., with 4 range switch providing a capability of measuring 0-0.5 r./hr., 0-5 r./hr., 0-50 r./hr., 0-500 r./hr.

B. Dose Calibrator

For assaying ^{99}Mo content in eluates; for determining ^{99m}Tc content of eluates; for measuring individual doses of a tagged radiopharmaceutical; one RAD/CAL II digital isotope calibrator manufactured for Nuclear Associates.

C. Gamma Camera

For obtaining nuclear images; one wide field of view instrument with 0.1" resolution at 140 kEv energy.

Item #10 Calibration of Instruments

A. Survey Meters

1. Calibrated at least annually and following repair.

2. Performed at 2 points on each scale.

3. Sample calibration procedure described in attachment which also represents a typical report with calibration certificate for attaching directly to instrument body.

B. Dose Calibrator

To confirm that all patient doses are assayed with an accuracy of ± 10% of the true value prior to being administered to patients, the instrument will be tested upon installation and periodically thereafter for:

1. Accuracy of response for the low and high energy nuclides to be used, i.e. 99mTc and 99Mo.

2. For geometrical variation of the radiation source.

3. For linearity of response over the entire range of activities to be used.

4. For constancy of operation each day of use.

The procedure to be followed includes the use of radiation standards whose radioactive content of 2mCi Co 57 and 20uCi Cs 137 will have an accuracy rated at ± 5% at 99% confidence level, traceable to National Bureau of Standards.

The step-by-step procedures to be implemented will conform to those described in Section 2, appendix D, pp. 10.8-27 of Regulatory Guide 10.8.

C. Gamma Camera

Instrument will be checked for operational accuracy prior to each day of use by performing the following tests:

1. Flood field study to confirm uniformity of response.

2. Bar study to confirm system resolution.

3. In lieu of 1 and 2 above a Smith orthoganal hole phantom may be used to obtain required confirmation of uniformity and resolution.

Item #12 Personnel Training Program

I. Nuclear medicine technical personnel will have received training in a formal teaching program and will have been certified by appropriate organizations. If not so certified in lieu of formal training, a

5. Radiation safety (Cont.)

   c. regulations

   d. compliance and corrective measures

II. Non-nuclear medicine personnel will receive appropriate information concerning the nature of radiation from radioactive materials and the magnitude of radiation hazards as a consequence of this institution's nuclear medicine program.

Item #13 Procedure for Ordering and Receiving Radioactive Material

1. All orders for radioactive materials will be placed by nuclear medicine personnel who will be aware that the requested materials and quantities are permitted by terms of the license and will confirm that the quantities are within the stated possession limits noted on the license.

2. With only one exception, 67 gallium, the entire program will involve the use of 99m technetium. All gamma imaging procedures will employ this nuclide; in the sodium pertechnetate form or as a tagged radio-pharmaceutical using the various commercially available kits, i.e. medronate, sulfur colloid, gluceptate, DTPA, HIDA, etc. Thus, once a blanket order for routine weekly shipments of a 99 molybdenum/99m technetium generator is placed, there will be a straight-forward pattern to account for the supplier, the nuclide, the pharmaceutical compound, quantity of radioactivity and date of assay. If a pharmaceutical end product is not produced directly on-site, it will be purchased already prepared and assayed from a manufacturer duly licensed to sell such product by NRC.

3. In addition to the written records detailing the above, records will also be maintained of the results obtained in following the procedure for receiving and safely opening packages containing the radioactive material noted.

4. Procedure for delivery of radioactive packages during normal working hours and off-duty hours are detailed in the memorandum supplied as part of this application.

Item #12 Personnel Training Program (Cont.)

technologist with on-the-job training and with a minimum of 5 years experience may function on a temporary basis. Should it be required, a training program will be made available which will follow the following outline:

1. Sources of radiation exposure
    a. radioactivity
    b. x-rays
    c. natural environment
2. Radiation dosimetry
    a. quantification units
    b. mathematics of radioactive decay
    c. external exposure
    d. internal absorption
3. Radiation detection and measurements
    a. basic principles
    b. survey instruments
    c. personnel monitoring devices
    d. imaging instruments
    e. radioisotope dose measurements
4. Biological effects of radiation
    a. external vs internal hazards
    b. acute vs chronic exposure
    c. MPD and LD50 concepts
    d. radiation shielding
    e. HTV, TTV uses
    f. concept of risk and reason
5. Radiation safety
    a. standards
    b. criteria

ML10

NUCLEAR RADIATION CONSULTANTS 163 Academy Dr., Longmeadow, MA 01106 Phone (413) 567-1235	REPORT OF RADIATION PHYSICS TESTING Performance, Measurements, Inspections, Compliance	File No. Test Date

FACILITY

Any Hospital
Any Town, USA

EQUIPMENT

Radiation survey meter- ionization chamber type
Model XYZ
Serial 123
Manufactured by ABC Company

PROCEDURE

Instrument calibration
Establish accuracy of readings

INSTRUMENTATION

Calibrated radiation source

RESULTS & INTERPRETATION

Dose Rate Range	Calculated Dose Rate	Measured Dose Rate	Difference	Acceptable
X 0.1				
X 1.0				
X 10				
X 100				

CONCLUSIONS & RECOMMENDATIONS

Instrument readings indicate operational status is (is not) in compliance with NRC regulations

Signature Date

CALIBRATION CERTIFICATION

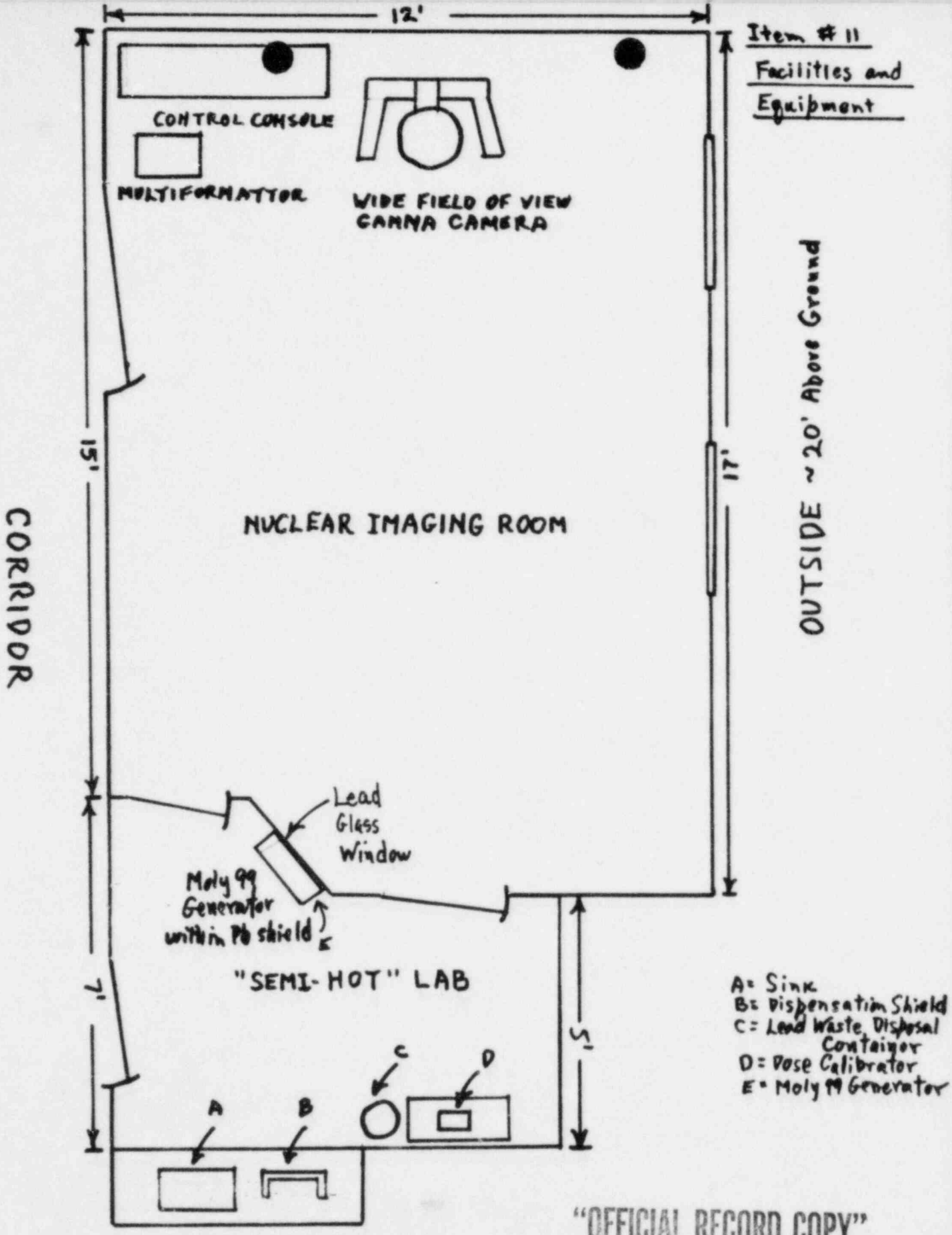
Da[illegible] Reference Source_____

Th[illegible] ± 2.0% for gamma radiation of
r[illegible] measuring radiation protection
eq[illegible] correction must be applied to measur
[illegible]

Re-Calibration Due Date _____

S A M P L E

Item # 11
Facilities and Equipment



"OFFICIAL RECORD COPY"

Proposed Nuclear Medicine Service
VA Medical Center, Northampton, Mass.

ML18

PJR 6/83

MEMORANDUM

TO: Medical Admissions Personnel

FROM: Steven Hochhauser, Administrative Assistant to Chief of Staff

SUBJECT: Instruction for the Receipt of Packages Containing Radioactive Material

As part of the nuclear medicine program at this VAMC there will be a package of radioactive material arriving routinely each week. The box will weigh about 25-35 pounds and might be about 20"x20"x20" in dimensions. It is not to be opened by anyone except authorized persons.

Normally the box will arrive during the night, or a Saturday or Sunday when the Radiology Service is not manned. The shipper will be instructed to deliver the box to the Medical Admissions Clerk at the Admissions and Disposition Desk in the Clinic.

The clerk will sign the shipping receipt. He will then notify the security guard. The guard will transport the box to Room E287 via a wheelchair or other device without delay. He will place the box in the middle of the room and will then lock the door.

Both Medical Admissions Clerk and security guard will examine the box. If it appears damaged or wet, Dr. Ostberg or his designate is to be notified. At the same time, the trucker should be asked to remain at the hospital pending instructions from Dr. Ostberg, until it is confirmed that neither the man or his truck is contaminated.

RADIOACTIVE SHIPMENT RECEIPT REPORT

1. P.O. #_____ Survey Date _____ Time_____

   Surveyor _____

2. Condition of Package:

   _____OK _____Punctured _____Stains _____Wet

   _____Crushed Other_____

3. Radiation Units of Label: _____ unit (mR./hr.)

4. Measured Radiation Levels: a. Package Surface _____mR./hr.

   b. 3' 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

   b. Final Source Container _____ CPM = _____DPM

   c. Counting Efficiency = _____%

7. Survey Results of Packing Material and Cartons _____mR./hr. CPM

8. Background _____mR./hr., CPM.

9. Disposition of Package after Inspection: _____

10. If NRC and Shipping Carrier notified of leakage, record date, time and person notified.

General Instructions for Nuclear Medicine Personnel

1. All personnel will have received sufficient training to satisfy the requirements of NRC and the authorized user listed on the NRC license.

2. All radioactive materials usage will require approval of the Radiation Safety Committee.

3. Appropriate equipment should be used as provided; including lab coats, disposable gloves, absorbent materials, shielding materials, syringe shields, handling tongs, etc.

4. All radioactive pharmaceuticals handling procedures to be performed behind lead "L" barrier.

5. All radioactive wastes to be stored in lead-lined container.

6. All radioactive vials to be kept in lead containers, properly labeled as to nuclide, amount, volume, concentration, date and time.

7. Personnel to wear, at all times, a whole body film badge and a finger badge, with exchanges to be made on a monthly basis.

8. Appropriate radiation survey should be performed at the conclusion of each work day; to include all areas in imaging room and "semi-hot" lab as well as hands, shoes, and clothing of technologists.

9. Smoking, eating or drinking fluids, by personnel in nuclear medicine facilities, is strictly forbidden.

10. Radioactive wastes will be stored for decay-in-storage in lead-lined container until radiation survey indicates no measurable radioactivity. Disposal in routine trash is then implemented.

11. Appropriate records of receipt, dispensation, and disposal must be maintained.

Item #16 Emergency Procedures

In the very unlikely event that a spill of a radioactive liquid occurs, it is important for all nuclear medicine personnel to observe two cardinal rules:

1. Do not panic and transmit a sense of danger to patients or personnel.

2. Primary objective is to prevent spread of and contain the radioactivity.

In accomplishing same, proceed as follows:

1. Quietly notify persons in the area that a spill has occurred requiring them to vacate the area.

2. Immediately cover the entire area of spill with absorbent material, i.e. pads or paper or towels.

3. Working as quickly as possible, use gloves and remote handling tongs to carefully pick up the absorbent objects and place in plastic bag. Transfer plastic bag to radioactive wastes storage container.

4. Using the low level CDV-700 radiation survey meter, perform a radiation survey of all persons who might have become contaminated. If survey indicates skin contamination, flush and wash thoroughly. If only clothing is contaminated, remove same and place in plastic bag for transfer to radioactive wastes storage container.

5. Perform a radiation survey of the area of spill. If any radiation level is noted, proceed to clean the area using a detergent solution and absorbent materials. Again place in plastic bag and store in radioactive wastes storage container. When instrument reading is equal to background, the area is considered free from radioactivity.

6. Notify Radiation Safety Officer as follows:

   Office Phone: 584-4040 Extension 454 (Radiology Service)

   Home Phone: 586-1004

   Alternate names and telephone numbers designated by the Radiation Safety Officer:

   P. Rosenbaum (413) 567-1235

   M. Bertrand (203) 749-3204

Item #18 Waste Disposal

1. Liquid waste will be disposed of by storing for decay to background levels or in the sanitary sewer system in accordance with 10CFR Part 20 paragraph 20.303.

Item #18 Waste Disposal (Cont.)

2. 99Mo/99mTc will be held for decay until radiation levels, as measured in a low background area with a low-level radiation survey meter and with all shielding removed, have reached background levels. All radiation labels will be removed or oblitered and the generators will be disposed of in the routine trash.

3. All radioactive waste will be stored until decayed to background levels. If any radioactive liquids, i.e. patient urine, is disposed of via the sanitary sewer, the volume will not be in excess of the radioactivity concentration and amount specified in 10CFR Part 20 paragraph 20.303.