

NRC FORM 313M

(9-81)

10 CFR 35

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR MATERIALS LICENSE - MEDICAL

Approved by OMB

3150-0041

Expires 9-30-86

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

Northern Cumberland Memorial Hospital
South High Street
Bridgton, ME. 04009

TELEPHONE NO.: AREA CODE (207) 647-8841

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

SAME

30 - 11325

2. PERSON TO CONTACT REGARDING THIS APPLICATION

Brian G. Brock D.O.

TELEPHONE NO.: AREA CODE (207) 647-8841

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

a. ☐ NEW LICENSE

b. ☐ AMENDMENT TO LICENSE NO. _____

c. ☒ RENEWAL OF LICENSE NO. 188-16610-01

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

Brian G. Brock D.O.

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.)

Brian G. Brock, D.O.

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	200C	GOLD-198 AS COLLOID FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.		
10 CFR 35.100, SCHEDULE A, GROUP IV	X	AS NEEDED	IODINE-131 AS IODIDE FOR TREATMENT OF THYROID CARCINOMA		
10 CFR 35.100, SCHEDULE A, GROUP V	X	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
<div>Log Aug 6 I Remitter Check No. 5956 Amount \$ 580 Fee Category 7 Type of Fee Rem. 12 Date Check Rec'd. 8/6/86 Date Completed 8/9/86 By: J. Amstutz</div> <div>U.S. NRC FEE NIGHT BRANCH 26 AUG -6 P2 27 RECEIVED ML10 11 9820</div>			

NRC FORM 313M
(9-81)

"OFFICIAL RECORD COPY"

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18-16610-01
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: _____

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

24. PERSONNEL MONITORING DEVICES

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

d. OTHER (Specify)

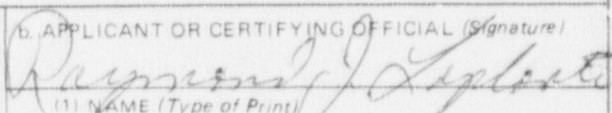
25. FOR PRIVATE PRACTICE APPLICANTS ONLY

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

26. CERTIFICATE

(This item must be completed by applicant)

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

a. LICENSE FEE REQUIRED <small>(See Section 170.31, 10 CFR 170)</small>	b. APPLICANT OR CERTIFYING OFFICIAL (Signature)  (1) NAME (Type of Print) Raymond LaPlante
(1) LICENSE FEE CATEGORY 7C	(2) TITLE Administrator
(2) LICENSE FEE ENCLOSED: \$ 580.00	c. DATE July 29, 1986

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 7

RADIATION SAFETY COMMITTEE

Northern Cumberland Memorial Hospital- Bridgton, Me.

Brian G. Brock, D.O. - Radiologist - RADIATION SAFETY OFFICER

Marion Dover, R.N. - Administration - Director of Nurses

Richard Bennett, - Laboratory

Diane Groves, L.P.N. - Emergency room

Thomas Petrone, M.D. - Internal medicine

Haban Sochi, M.D. - Pathologist

Linda Converse, R.T.N. - Nuclear Medicine Technologist

ITEM 8

Please refer to the preceptor statement for Brian G. Brock D.O. which has been previously filed with the commission under the license application for the Osteopathic Hospital of Maine, Brighton Avenue, Portland, Maine.

APPENDIX C
INSTRUMENTATION

1. Survey meters

- a. Manufacturer's name: Victoreen
 Manufacturer's model number: 6B
 Number of instruments available: 1
 Minimum range: 0 mR/hr to 0.5 mR/hr
 Maximum range: 0 mR/hr to 50 mR/hr
- b. Manufacturer's name: Ludlum Instruments
 Manufacturer's model number: Model 3 Probe 44-7
 Number of instruments available: 1
 Minimum range: 0 mR/hr to 0.2 mR/hr
 Maximum range: 0 mR/hr to 200 mR/hr

2. Dose calibrator

Manufacturer's name: SQUIBB
 Manufacturer's model number: Model 6A
 Number of instruments available: 1

3. Instruments used for diagnostic procedures

Type of Instrument	Manufacturer's Name	Model No.
Gamma Camera	Ohio Nuclear/Technicare	410

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

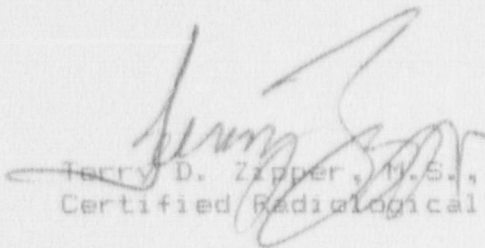
Survey meter (range 0-500R/hr.) Victoreen 1A

Item 10

CALIBRATION OF SURVEY METERS

Survey meters will be calibrated at Central Maine Medical Center, License No. 18-03278-02, by or under the supervision of Terry D. Zipper, M.S., D.A.B.R. A 100 mCi Cs-137 source contained in a J.L. Sheperd and Associates Model 28-5A calibrator is used for calibration. The calibration procedure is outlined below.

1. Survey meters are calibrated at least annually and after repairs.
2. Each scale of the instrument is calibrated at two points when possible such that one point is in each half of the scale and two points are separated by 35-50% full scale.
3. The exposure rate measured by the instrument shall differ from the true exposure rate by less than 10% full scale. Readings within 20% will be considered acceptable if a calibration factor is calculated and attached to the instrument.



Terry D. Zipper, M.S., D.A.B.R.
Certified Radiological Physicist

Item 10 7/86

ITEM 10 CALIBRATION OF INSTRUMENTS

All calibration of instruments will be performed by or under the supervision of Physics Consultants Incorporated. A sample copy of their methods and results is included with this application.

We would like to reserve the option to use the "calicheck device" in the future for determining instrument linearity, should our institution purchase this system in the future. If this method is employed, we will follow the manufacturer's instructions as supplied with the system.

Radiation Physics Services
Physics Consultants, Inc.
Radiologic Facility Planning

P.O. Box 272
Auburn, ME 04210
207-795-2459

P.O. Box 4175, Station A
Portland, ME 04101
207-929-5867

NORTHERN CUMBERLAND MEMORIAL HOSPITAL

Dose Calibrator Linearity Check

On 10/30/85 through 11/1/85 a linearity check was performed on the dose calibrator. The data and results are presented below;

DATE	TIME	MEASURED ACT.	CALCULATED ACT.	%ERROR
10/30	8:00	130.2 mCi	129.44mCi	.6 %
10/30	14:10	62.8 mCi	63.49 mCi	-1.1 %
10/31	8:00	8.09 mCi	8.09 mCi	0 %
10/31	15:10	3.48 mCi	3.53 mCi	-1.6 %
11/1	8:00	.498 mCi	.51 mCi	-1.5 %

Regulatory Guide 10.8, Rev.1, App.D, Sec.2 recommends that the percent error be within +/-5%. The dose calibrator meets this this recommendation.

The next linearity check is due 1/86 .

Data Collected by,
NCMH

Calculated by,

Chet Bradbury
Chet Bradbury, B.S., R.T.N.M.
Radiation Safety Specialist

Item 10 7/86

Radiation Physics Services
Physics Consultants, Inc.
 Radiologic Facility Planning

P.O. Box 272
 Auburn, ME 04210
 207-795-2459

P.O. Box 4175, Station A
 Portland, ME 04101

NORTHERN CUMBERLAND MEMORIAL HOSPITAL 207-929-5867

SUBJECT: Yearly Accuracy Check of Dose Calibrator
 UNIT: CAPINTEC S/N

On 12/17/85 a yearly accuracy check was performed on the dose calibrator. The following radionuclides, traceable to the NBS, were used.

RADIONUCLIDE	SERIAL#	CALIBRATION DATE	ACTIVITY
Co-57	143953	2/27/84	5 mCi
Cs-137	90171179A-32	3/11/80	97.8 uCi
Co-60	3540685A-17	6/4/85	49 uCi

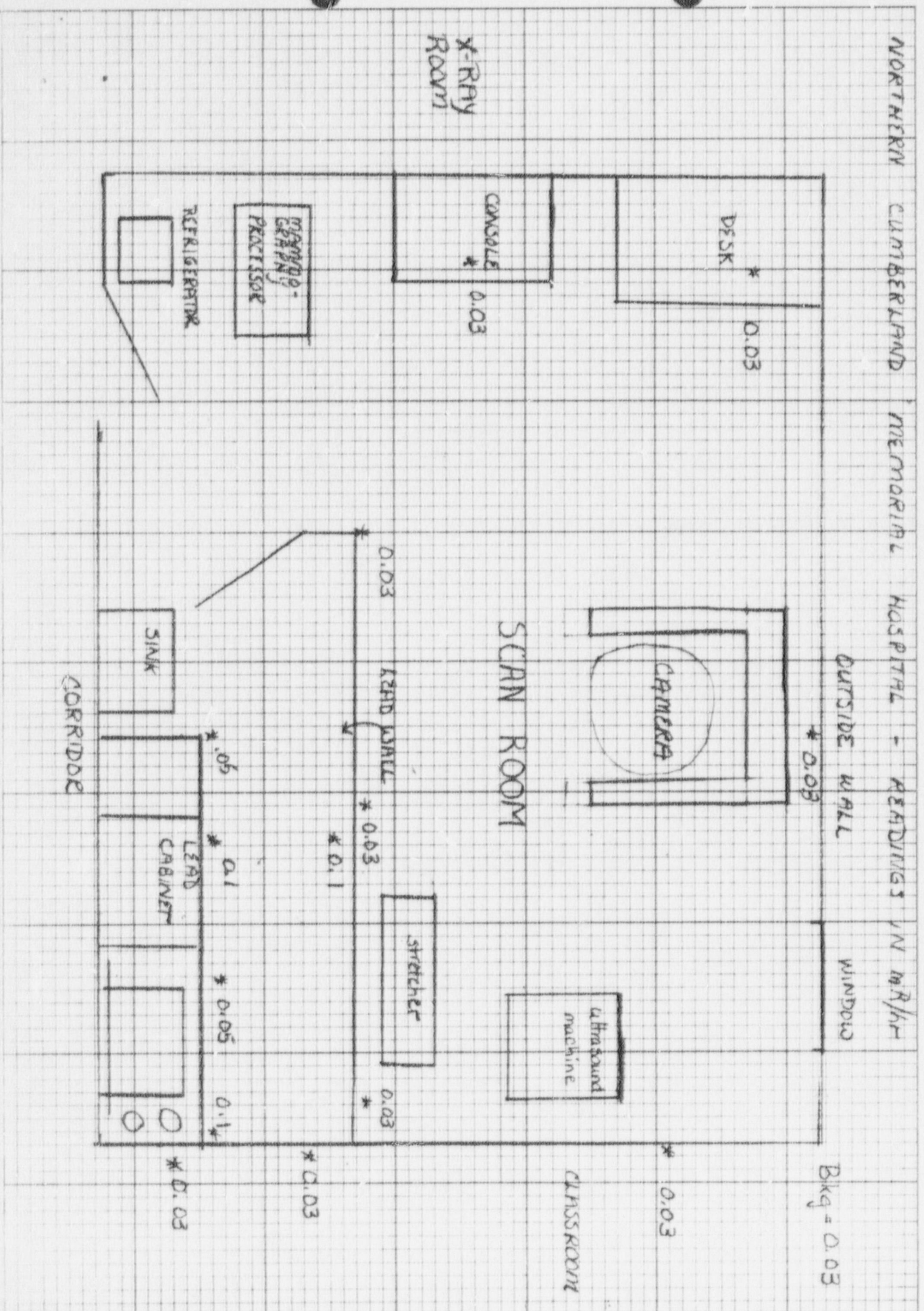
The results of the check are listed below:

RADIONUCLIDE	CALIBRATED ACT.	MEASURED ACT.	%ERROR
Co-57	.92 mCi	.948 mCi	3.04%
Cs-137	85.72 uCi	89 uCi	3.83%
Co-60	45.66 uCi	47.4 uCi	3.81%

NRC Regulatory Guide 10.8, Appendix D, Section 2, recommends that the average measured activity be within +/-5% of the calibrated activity. The dose calibrator accuracy does meet the NRC limits. Your next accuracy check is scheduled for 12/86.

Chet Bradbury
 Chet Bradbury, B.S., R.T.N.M.
 Radiation Safety Specialist

Item 10 7/86



Northern Cumberland Memorial Hospital

Item 12

Personnel Training Program

I. All personnel who work within the vicinity of radioactive materials will receive appropriate training in the following areas:

1. Areas where radioactive material is used or stored.
2. Potential hazards associated with radioactive material.
3. Radiological safety procedures appropriate to their respective duties.
4. Pertinent NRC regulations.
5. Rules and regulations specific to the NRC license.
6. Pertinent terms of the license.
7. Workers obligation to report unsafe conditions.
8. Appropriate response to emergencies or unsafe conditions.
9. Workers rights to be informed of their radiation exposure bioassay results.
10. Locations where the licensee has posted or made available notices, copies of pertinent regulations, and licence conditions as required by 10CFR 19.

II. Training and annual refresher courses will be given to the following hospital workers:

1. Security Department
2. Nursing Service
3. Housekeeping Department
4. Maintenance Department.

III. The technologists working in the Nuclear Medicine Department will be a Certified or Registered Nuclear Medicine Technologist, licensed by the State of Maine.

Item 12, 7/86



NORTHERN CUMBERLAND MEMORIAL HOSPITAL
P.O. Box 230 • South High Street • Bangor, Maine 04409-0230 • Tel. 207-647-8841

NORTHERN CUMBERLAND MEMORIAL HOSPITAL

Item 13

Procedures for Ordering and Receiving Radioactive Materials

- I. During normal working hours, radioactive materials will be delivered directly to the nuclear medicine technologist. The technologist will check to determine whether the receipt of package will cause institution to exceed possession limits.
- II. During off-duty hours and on weekends, the following procedures will be followed:
 1. All radioactive materials will be received by the Hospital Security Department.
 2. An officer will visually inspect the package for signs of damage or leakage.
 3. If the package appears to be damaged, the Security Officer will place it in a plastic bag in the Nuclear Medicine Hot Lab and prevent access to the room. The carrier will be detained for contamination monitoring.
 4. If any damage to the package is suspected, the Radiation Safety Officer, Brian Brock, D.O., or the Nuclear Medicine Technologist (in case where the RSO cannot be contacted) will be contacted immediately.
 5. If the package is not damaged, it shall be taken by the Security Officer and immediately placed in the Hot Lab and the door closed and locked.

Item 17
AREA SURVEY PROCEDURES

1. All elution, preparation, and injection areas will be surveyed on each day of use with an appropriately low range survey meter and decontaminated if necessary.*
2. Laboratory areas where only small quantities of radioactive material are used (less than 200 uCi) will be surveyed monthly.
3. Waste storage areas and all other laboratory areas will be surveyed weekly.
4. The weekly and monthly surveys will consist of:
 - a. A measurement of radiation levels with a survey meter sufficiently sensitive to detect 0.1 mR/hr.
 - b. A series of wipe tests to measure contamination levels. The method for performing wipe tests will be sufficiently sensitive to detect 200 dpm per cm^2 for the contaminant involved. Wipes of elution and preparation areas or other "high background" areas will be removed to a low background area for measurement.
5. A permanent record will be kept of all survey results, including negative results. The record will include:
 - a. Location, date, and identification of equipment used, including the serial number and pertinent counting efficiencies.
 - b. Name of person conducting the survey.
 - c. Drawing of area surveyed, identifying relevant features such as active storage areas, active waste areas, etc.
 - d. Measured exposure rates, keyed to location on the drawing (point out rates that require corrective action).
 - e. Detected contamination levels, keyed to locations on drawing.
 - f. Corrective action taken in the case of contamination or excessive exposure rates, reduced contamination levels or exposure rates after corrective action, and any appropriate comments.
6. Area will be cleaned if the contamination level exceeds 200dpm/ cm^2 .

* For daily surveys where no abnormal exposures are found, only the date, the identification of the person performing the survey, and the survey results will be recorded.

Item 17 7/86



NORTHERN CUMBERLAND MEMORIAL HOSPITAL
P.O. Box 230 • South High Street • Bridgton, Maine 04009-0230 • Tel: 207-647-8941

NORTHERN CUMBERLAND MEMORIAL HOSPITAL

Item 18
Waste Disposal

1. Liquid waste will be disposed of:
In the sanitary sewer system in accordance with paragraph 20.303 of 10 CFR Part 20.

2. Mo99/Tc99m generators will be:
Returned to the manufacturer for disposal,

or

Held for decay until radiation levels, as measured with all shielding removed have reached background levels. All radiation labels will be removed or obliterated and the generators disposed of as normal trash.

3. Other solid waste will be:
Held for decay until radiation levels, as measured 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.

Item 18 7/86





UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

03 011 325
02120
S/H

BETWEEN: William O. Miller, Chief
License Fee Management Branch
Office of Administration

Regional License Section
Material Licensing Branch
FCMS, Office of Nuclear Material
Safety & Safeguards

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

Applicant/Licensee: Northern Cumberland Mem. Hosp.
Application Dated: 7/29/86
Control No.: 119820
License No.: 18-16610-01

2. FEE ATTACHED

Amount: \$580.00

Check No.: 5956

3. COMMENTS

Signed _____

Date _____

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 7C \$580

2. Correct Fee Paid. Application may be processed for:

Amendment _____

Renewal ✓ _____

License _____

Signed S. Kimberley

Date 8/7/86