MGH
McLAREN GENERAL HOSPITAL, INC.

Gary R. Peterson
President

Applicant aug 13
Check No. 016132
Amount/Fee Category $120
Type of Fee 70 group
Date Check Rec'd 8/13/85
Received By

July 26, 1985

Materials Licensing Section
U.S. Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

Reference: License No. 21-04171-04

Gentlemen:

We wish to amend our Radioactive Materials license for the approved use of additional medical groups by the physicians listed below:

Name	Previous Training And Experience	Additional Medical Group Applied For
Paul R. Lauber, M.D.	NRC License Nos. 21-11475-01 21-04171-04	IV and V for I-131 therapy of hyperthyroidism and cardiac dysfunction and thyroid carcinoma, respectively
Douglas M. Dacko, M.D.	NRC License Nos. 21-11475-01 21-04171-04	V for I-131 therapy of thyroid carcinoma
Julio E. Badin, M.D.	See attached C.V.	In-Vitro Studies

Preceptor statements for Drs. Lauber and Dacko are attached.

RECEIVED
AUG 5 1985
REGION III
CONTROL NO. 79497

AUG 5 1985

MGH
McLAREN GENERAL HOSPITAL

We wish to amend our Materials License for the relocation of our Nuclear Medicine Department to its final site. Construction changes in the floor plan have been made to the previously submitted materials for the final site of the Nuclear Medicine Department, thereby making this amendment request necessary. Relocation of the department is tentatively planned for August 1985. Diagrams and a description of the final site, indicating the construction changes, are attached. To reduce paperwork and time, we wish to have the authority to release the temporary Nuclear Medicine Department site for unrestricted use only if the close-out surveys meet the requirements indicated in the attached close-out survey procedures.

Any questions about this amendment application may be directed to Lawrence Irish, M.D., R.S.O. at (313) 762-2000 or Gerald Wicks, Consulting Health Physicist, at (312) 564-3330.

Sincerely,

Gary Peterson

Gary Peterson
President

GP:ml
Enclosures

C U R R I C U L U M V I T A E

Julio E. Badin, M.D.

BIRTH DATE — June 28, 1933, Cartagena, Colombia, South America.

UNDERGRADUATE EDUCATION — Colegio Fernandez Baena, Cartagena, Colombia, Bachelor of Science, 1956.

MEDICAL EDUCATION — University of Cartagena, Colombia, 1963
Rotating Internship 1963-64, Santa Clara University Hospital, University of Cartagena, Colombia.
Residency in Pathology 1964-67 (30 months), Residency in Anatomic Pathology, Santa Clara University Hospital University of Cartagena, Colombia.
Mixed Internship (8 months in Anatomic Pathology and 4 months in Internal Medicine), Hurley Hospital, Flint, Michigan.
Residency in Anatomic and Clinical Pathology, 1967-72, Hurley Hospital, Flint, Michigan.

LINCENSURE — Licensed in Michigan, September 1970.

BOARD CERTIFICATION — Board Certified in Anatomic and Clinical Pathology.

PROFESSIONAL SOCIETIES — Michigan Society of Pathologists. Michigan State Medi Society, College of American Pathologists, Fellow. American Medical Socitey, American Society of Clinical Pathologists, Fellow. Genesee County Medical Society.

PUBLICATIONS — "Benign and Malignant Lesions of the Mammary Gland" presented at the Annual Intern and Resident Meeting, Hurley Hospital, Flint, Michigan, May 1968.

"Idiopathic Pulmonary Hemosiderosis. A Case report-Use of Gastric Washing in Diagnosis", presented at the Annual Intern and Resident Meeting, Hurley Hospital, Flint, Michigan, May 1970. Published, Michigan Medici Vol 71, March 1972.

"Intracranial Aneurysms", presented at the Interim Meeting of the American Society of Clinical Pathologis Las Vegas, Nevada, February 25, 1971.

Partial Absence of the Right Ventricular Musculature (Uhl's Anomaly)", presented at the annual Intern and Resident Meeting, Hurley, Hospital, Flint, MIchigan, May 1971.

PRACTICE — Associate Pathologist, Genesee Memorial Hospital, Flint Michigan, May, 1972 to 1974.
Director of Laboratories, Genesee Memorial Hospital. Flint, Michigan, 1974 to present.

Radioisotope Experience — Involved with the use of prepackaged in-vitro kits during residency from1967-1972 at Hurley Hospital, at the Elms Medical Laboratory from 1980-1984 in Flint, Michigan, and at McLaren General Hospital for 1985 to present in Flint. Michigan.

FORM NRC-313M-SUPPLEMENT B
(8-78)

U. S. NUCLEAR REGULATORY COMMISSION

PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME: DOUGLAS M. DACKO, M.D.

STREET ADDRESS: McLaren General Hospital, Dept Radiology
401 Ballenger Highway

CITY: Flint | STATE: MI | ZIP CODE: 48502

KEY TO COLUMN C

PERSONAL PARTICIPATION SHOULD CONSIST OF:

1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.

2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.

3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION		I am already on the license for basic nuclear medicine exams and interpretations. This is for qualification for isotope treatment of hyperthyroidism and thyroid carcinoma. Don Dacko, M.D.
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME		
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES		
	IN VITRO STUDIES		
OTHER			
I-125	DETECTION OF THROMBOSIS		
I-131	THYROID IMAGING		
P-32	EYE TUMOR LOCALIZATION		
Se-75	PANCREAS IMAGING		
Yb-169	CISTERNOGRAPHY		
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES		
OTHER			
Tc-99m	BRAIN IMAGING		
	CARDIAC IMAGING		
	THYROID IMAGING		
	SALIVARY GLAND IMAGING		
	BLOOD POOL IMAGING		
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING		
	LUNG IMAGING		
	BONE IMAGING		
OTHER			

CONTROL NO. 7 9 4 9 7

PRECEPTOR STATEMENT *(Continued)*

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN *(Continued)*

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS *(Additional information or comments may be submitted in duplicate on separate sheets.)* D
P-32 *(Soluble)*	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		She participated in these cases over the last 2-3 yrs at McLaren General Hospital
P-32 *(Colloidal)*	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA	3	
	TREATMENT OF HYPERTHYROIDISM	10	
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
Co-60 or Cs-137	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR		
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS		
Other			

3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

Already filed under the original license. Complete residency training listed there.

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

a. NAME OF SUPERVISOR: LAWRENCE R. IRISH, M.D

b. NAME OF INSTITUTION: McLAREN GENERAL HOSPITAL

c. MAILING ADDRESS: 401 BALLENGER HIGHWAY

d. CITY: FLINT, MICH. 48502

5. MATERIALS LICENSE NUMBER(S): 21-04171-04

6. PRECEPTOR'S SIGNATURE: Lawrence R. Irish, M.D

7. PRECEPTOR'S NAME *(Please type or print)*: LAWRENCE R. IRISH, M.D

8. DATE: 7-19-85

FORM NRC 313M SUPPLEMENT B (8-78)

CONTROL NO. 79497

FORM NRC-313M-SUPPLEMENT B
(5-78)

U. S. NUCLEAR REGULATORY COMMISSION

PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME

Paul B. Lauber, M.D.

STREET ADDRESS

McLaren General Hospital, Dept Radiology
401 Ballenger Highway

CITY	STATE	ZIP CODE
Flint	MI	48502

KEY TO COLUMN C

PERSONAL PARTICIPATION SHOULD CONSIST OF:

1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.

2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.

3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION		All the diagnostic exams are covered by my being on the resident already for them. All this application is for is to allow me to treat thyroid CA & hyperthyroidism if it is appropriate. B. Lauber
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME		
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES		
	IN VITRO STUDIES		
OTHER			
I-125	DETECTION OF THROMBOSIS		
I-131	THYROID IMAGING		
P-32	EYE TUMOR LOCALIZATION		
Se-75	PANCREAS IMAGING		
Yb-169	CISTERNOGRAPHY		
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES		
OTHER			
Tc-99m	BRAIN IMAGING		
	CARDIAC IMAGING		
	THYROID IMAGING		
	SALIVARY GLAND IMAGING		
	BLOOD POOL IMAGING		
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING		
	LUNG IMAGING		
	BONE IMAGING		
OTHER			

PRECEPTOR STATEMENT (Continued)

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES		This application is to allow me to treat thyroid CA's & hyperthyroidism with Isotopes. I am on the licence for all the diagnostic tests already. The cases mentioned in column C reflect the last 2 years at McLaren Hosp. I received my Isotope training at Wayne State University, which was all forwarded to this office four years ago when I was put on the licence. J. Irish
P-32 (Colloidal)	INTRACAVITARY TREATMENT		
I-131	TREATMENT OF THYROID CARCINOMA	3	
	TREATMENT OF HYPERTHYROIDISM	10	
Au-198	INTRACAVITARY TREATMENT		
Co-60 or Cs-137	INTERSTITIAL TREATMENT		
	INTRACAVITARY TREATMENT		
I-125 or Ir-192	INTERSTITIAL TREATMENT		
Co-60 or Cs-137	TELETHERAPY TREATMENT		
Sr-90	TREATMENT OF EYE DISEASE		
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR		
Sn-113/ In-113m	GENERATOR		
Tc-99m	REAGENT KITS		
Other			

3. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING

See initial application for licencure.

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

a. NAME OF SUPERVISOR
LAWRENCE R. IRISH, MD

b. NAME OF INSTITUTION
McLAREN GENERAL HOSPITAL

c. MAILING ADDRESS
401 BALLENGER HIGHWAY

d. CITY
FLINT, MICH. 48502

5. MATERIALS LICENSE NUMBER(S)
21-04171-04

6. PRECEPTOR'S SIGNATURE
Lawrence R. Irish, M.D.

7. PRECEPTOR'S NAME (Please type or print)
LAWRENCE R. IRISH, M.D.

8. DATE
7-19-85

MC LAREN GENERAL HOSPITAL, Flint, Michigan
License No. 21-04171-04

Attachment No. 1

DESCRIPTION OF FACILITIES - FINAL SITE

The final site diagram follows, indicating equipment locations and shielding used for radioactive materials. Sufficient shielding will be used so that radiation levels are in compliance with those specified in 10 CFR 20.105.

Radioactive packages will be received in the "hot lab".

Radioactive material will be used/stored in the "hot lab" and rooms 1, 2 and 3.

Radioactive waste will be stored in storage areas indicated in the diagram.

McLaren General Hospital

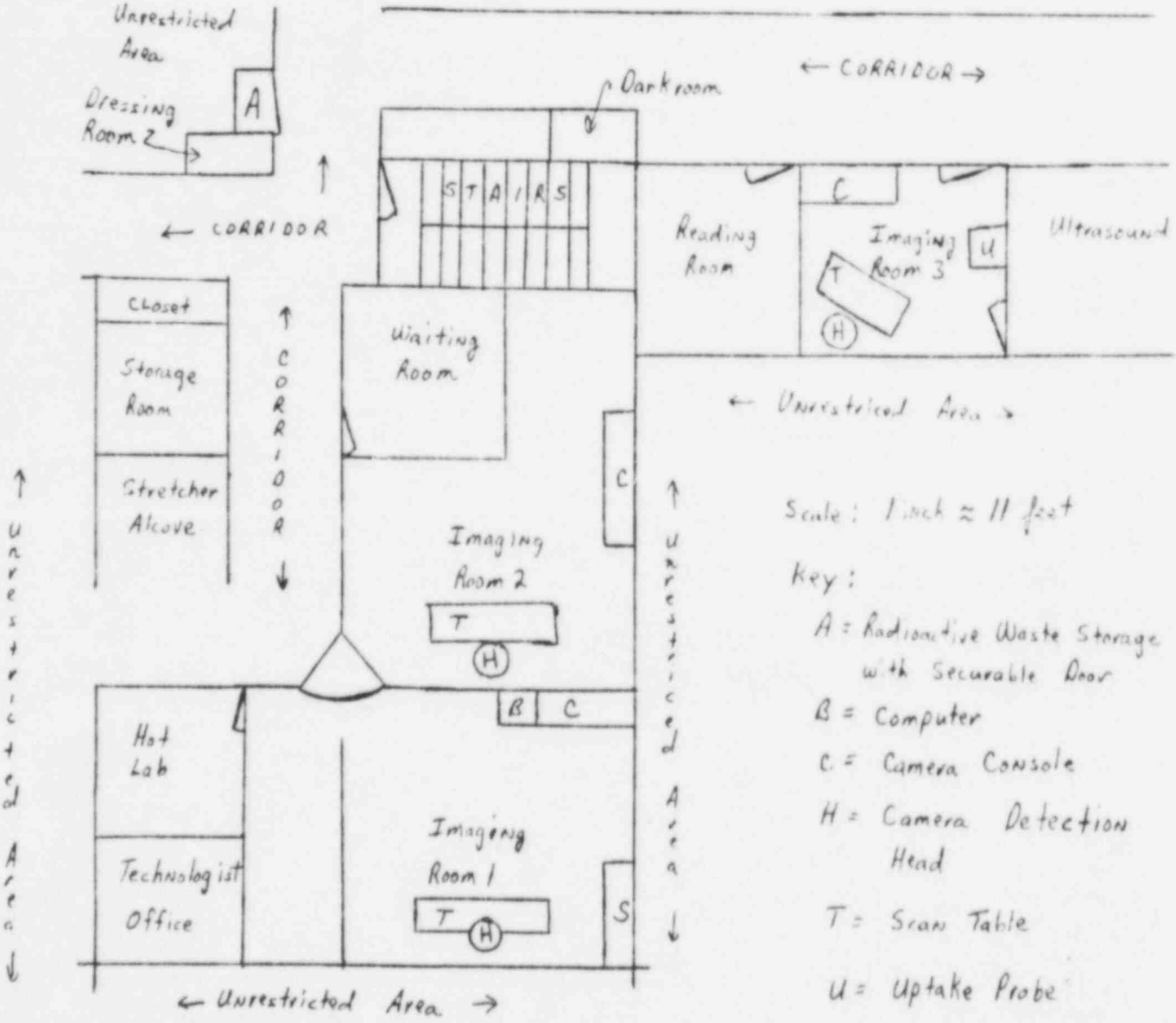
Flint, Michigan

NRC License No 21-04171-04

Attachment No. 1

Final Nuclear Medicine Dept.

Site Floor Plan



Scale: 1 inch ≈ 11 feet

Key:

A = Radioactive Waste Storage with Securable Door

B = Computer

C = Camera Console

H = Camera Detection Head

T = Scan Table

U = Uptake Probe

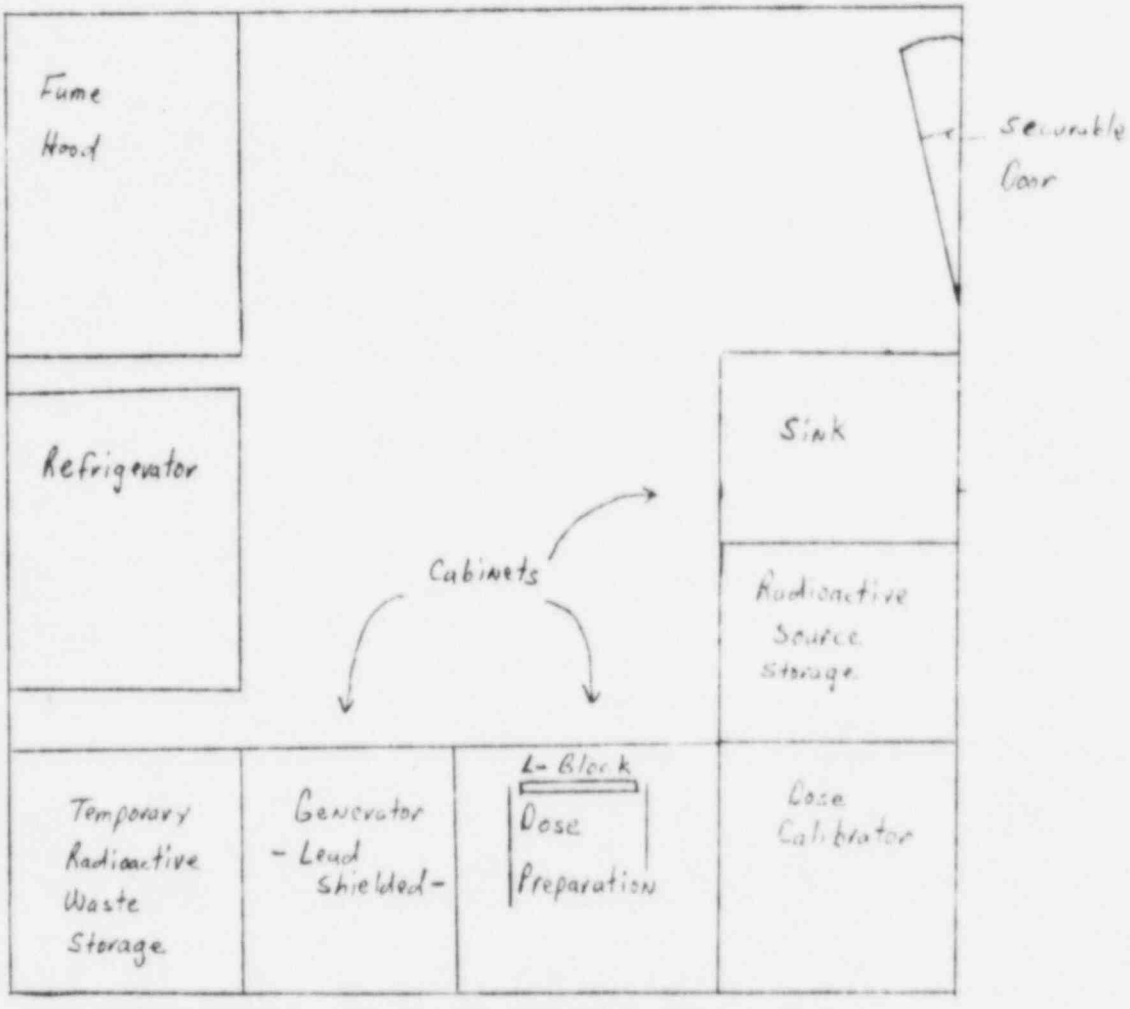
Item 11

(7/85)

McLaren General Hospital
Flint, Michigan
Attachment No. 1

NRC License No. 21-04171-0

Final Nuclear Medicine Dept.
Hot Lab Floor Plan



Scale: 1 inch = 2 feet

CONTROL NO. 7 9497

Item 11
(7/85)

Attachment No. 2

CLOSE-OUT SURVEY PROCEDURES

A. Areas to be surveyed and wipe tested will include the following:

1. Generator storage area
2. Dose preparation area
3. Radioactive waste storage area
4. Sealed source storage area
5. Hot lab counter tops
6. Hot lab floor
7. Imaging room 1 floor, counter tops and walls
8. Imaging room 2 floor, counter tops and walls
9. Injection site locations
10. Technologist office and corridor (neighboring unrestricted areas).

B. Equipment used for radiation survey will include a Victoreen Model No. 498 open window low level GM survey meter. Equipment used to analyze the wipes will include a windowless gas flow proportional counter and a NaI scintilation well counter (Units 1 and 3 on the attached equipment list) available at Health Physics Associates, Ltd., Northbrook, Illinois, NRC license No. 12-09160-01. The wipes will be mailed to Health Physics Associates for analysis. Wipe test instructions are attached.

C. Wipe test analyes will include assaying for alpha and beta activity with the windowless gas flow proportional counter and for gamma radiation with the NaI scintillation well counter. Radiation surveys will be made with the low level GM survey meter with the window open and held in close proximity to surface where radioactive contamination may exist.

D. Radiation survey and wipe test results will be reviewed by Lawrence Irish, M.D., R.S.O. and Gerald Wicks, M.S.(Radiologic Sciences). All areas listed in Part A above will be at background radiation exposure rates (0.05 mR/hr) prior to release of the temporary site for unrestricted use. All areas listed in Part A above will meet the wipe test criteria listed below, prior to release of the temporary site for unrestricted use.

*Removable alpha surface contamination - 20 dpm/100 cm^2 or less
*Removable beta-gamma surface contamination - 1000 dpm/100 cm^2 or less

It should be noted that radioactive gases are not used and sewer dilution of radioactive materials has not occurred in the temporary site of the Nuclear Medicine Department, therefore, surveys and wipe tests of ductwork and pipes are not necessary.

* **Note:** As given in Table I of "Guidelines For Decontamination of Facilities and Equipment Prior to Release For Unrestricted Use or Termination of License for Byproduct, Source, or Special Nuclear Material", July, 1982, pub. by U.S.N.R.C.

(7/85)

1 a & b - Equipment list and uses

UNIT	EQUIPMENT	MANUFACTURER	MODEL No.	RADIATION TYPE DETECTED	RANGE OF RADIATION ENERGY DETECTED
①	Windowless Gas Flow Proportional Counter	G. D. Searle (Nuclear-Chgo)	480	Alpha Beta	All Alpha Particles Above 6 KeV
2	Window Gas Flow Proportional Counter	G. D. Searle (Nuclear-Chgo)		Alpha Beta	Above 4 MeV Above 50 KeV
③	Scintillation Well Counter	G. D. Searle	4216	Gamma	Above 25 KeV
4	Scintillation Well Counter	Picker	2804	Gamma	Above 25 KeV

1 c & d -

UNIT	RADIOACTIVE MATERIAL	RADIATION TYPE	*RADIATION ENERGY	**EFFICIENCY	**MINIMUM SENSITIVITY
①	Am-241	Alpha	5.4 MeV	46%	9.3×10^{-7} µCi
①	Ni-63	Beta	0.067	12%	1.8×10^{-5} µCi
	C-14	Beta	0.156	35%	6.1×10^{-6} µCi
	Pm-147	Beta	0.225	46%	4.6×10^{-6} µCi
	Tc-99	Beta	0.292	42%	5.1×10^{-6} µCi
	Cs-137	Beta	0.514	43%	5.0×10^{-6} µCi
	Co-60	Beta	0.314	31%	6.9×10^{-6} µCi
	Cl-36	Beta	0.714	47%	4.5×10^{-6} µCi
	Bi-210	Beta	1.16	42%	5.1×10^{-6} µCi
	Sr-90/Y-90	Beta	0.546 / 2.27	44%	4.8×10^{-6} µCi

Unit 2 is in the process of being recalibrated. Data will be submitted as soon as available.

* NOTE: Maximum beta energies are listed

** NOTE: Sample calculations follow

c) Efficiency Calculations.

Efficiency = cpm / dpm

Sample Calculations

Am-241 efficiency = $\frac{30{,}000 \text{ cpm}}{65{,}400 \text{ dpm}}$ = 0.46

Cs-137 efficiency = $\frac{66{,}700 \text{ cpm}}{155{,}600 \text{ cpm}}$ = 0.43

Co-60 efficiency = $\frac{66{,}500 \text{ cpm}}{156{,}000 \text{ dpm}}$ = 0.43

d) Minimun Sensitivity Calculations:

Sensitivity of Instrument 1 at alpha voltage for Am-241

Alpha energy is calculated as follows:

Background count rate = 1 cpm
Background counted for 10 minutes
Background standard deviation (S.D.) = ±3.16 counts
3 S.D. confidence interval = ±9.49 counts

Minimun sensitivity for 10 minute counts of Am-241 alpha

$$\frac{9.49 \text{ counts}}{10 \text{ minutes}} \times \frac{1 \text{ disentegration}}{0.46 \text{ counts}} \times \frac{1 \text{ µCi}}{2.22 \times 10^6 \text{ dpm}}$$

$$= 9.3 \times 10^{-7} \text{ µCi}$$

Sensitivity of Instrument 2 at beta voltage

Background count rate = 25 cpm
Ten minute background count = 250 counts
One S.D. = ± 5.0 counts
3 S.D.Confidence Interval = ± 15.0 counts

Minimun sensitivity for 10 minute count of Cs-137 betas

$$\frac{15.0 \text{ counts}}{10 \text{ minutes}} \times \frac{1 \text{ d}}{0.43 \text{ counts}} \times \frac{1 \text{ µCi}}{2.22 \times 10^6 \text{ dpm}}$$

$$= 1.6 \times 10^{-6} \text{ µCi}$$

Sensitivity of Instrument 3 for Co-60 gammas

Background count rate = 120 cpm
Ten minute background count = 1200 counts
One S.D. = 34.6 counts
3 S.D. = 104 counts

Minimum sensitivity for 10 minute count of 1.2 - 1.3 MeV gammas

$$\frac{104 \text{ counts}}{10 \text{ minutes}} \times \frac{1 \text{ d}}{0.43 \text{ counts}} \times \frac{1 \text{ µCi}}{2.22 \times 10^6 \text{ dpm}}$$

$$= 1.1 \times 10^{-5} \text{ µCi}$$

CONTROL NO. 7 9 1 9

Similar calculations were performed for other intruments and radionuclides

7/85

UNIT	RADIOACTIVE MATERIAL	RADIATION ENERGY (MeV)	**EFFICIENCY	**MINIMUM SENSITIVITY
③	I-129	0.040	42%	1.1×10^{-5} µCi
	Cd-109	0.088	22%	2.1×10^{-5} µCi
	Co-57	0.122	70%	6.7×10^{-6} µCi
	Ra-226	0.186	85%	5.5×10^{-6} µCi
	Ba-133	0.356	80%	5.8×10^{-6} µCi
	Na-22	0.511/1.28	63%	7.4×10^{-6} µCi
	Cs-137	0.662	30%	1.6×10^{-5} µCi
	Mn-54	0.840	27%	1.7×10^{-5} µCi
	Co-60	1.17 /1.33	43%	1.1×10^{-5} µCi
4	Ra-226	0.186	9.9%	9.6×10^{-5} µCi

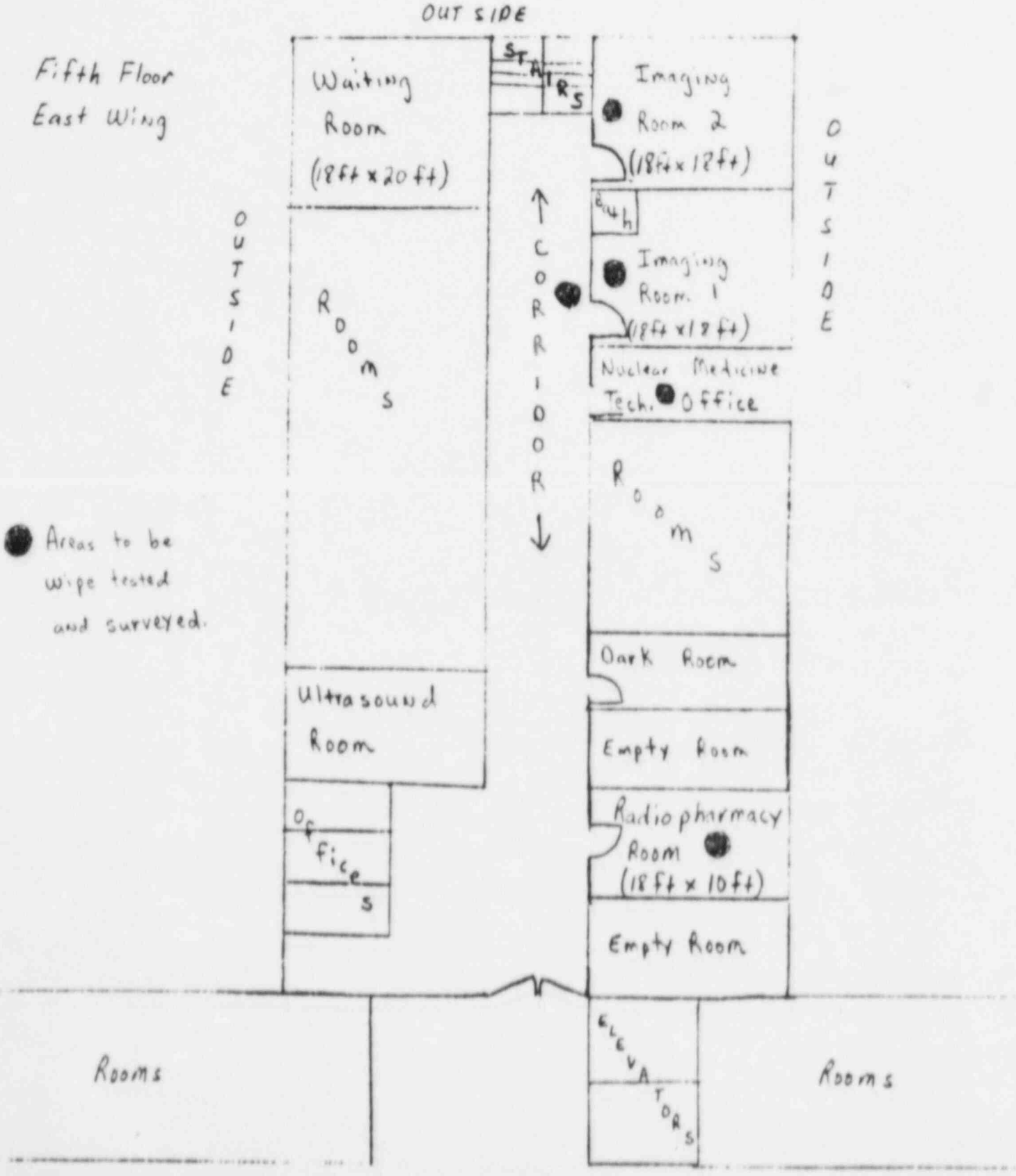
** NOTE: Sample calculations follow

McLaren General Hosp.
Flint, MI

(12/84)

#21-04171-04

Nuclear Medicine Dept.
Temporary Site



Item 11 (7/85)

HEALTH PHYSICS ASSOCIATES LTD. CONSULTANTS IN RADIATION SAFETY

3304 COMMERCIAL AVENUE / NORTHBROOK, IL 60062 / PHONE 312/564-3330

GUIDE FOR LEAK/WIPE TESTING

MATERIALS:

1 Pair Polyethylene gloves in bag
15 Sets filter papers in tins
1 Set wipe test instructions and information sheet
1 Returnable shipping container

RADIATION SAFETY PRECAUTIONS

Operator should wear the disposable gloves provided while taking the wipes. They are removed after the wipes are placed into the tubes by a sterile technique (by grasping inner surface at wrist). The goves are placed in the bag provided and returned to Health Physics Associates.

WIPE PROCEDURE

These instructions are depended upon the wipe testing to be performed in two stages - The first stage is done in the field by the user with the kit furnished, and the second stage done in the laboratory of Health Physics Associates. The attached information sheet should be completed in duplicate and returned with the wipes.

Moisten filter papers with one or two drops of water, or other suitable solvent.

Wipe test all areas where radioactive materials are used and/or stored.

Wear gloves and a personal dosimetry device while conducting the wipe tests.

Use survey meter to determine that level of radiation on external surface of shipping containers is less than 0.4 mR/hr. If survey meter is unavailable, contact Health Physics Associates. If reading is greater, do not send wipes, and phone Health Physics Associates immediately for further instructions.

(7/85)

CERTIFICATE OF RADIOACTIVITY LEAK TEST

HEALTH PHYSICS ASSOCIATES LTD. CONSULTANTS IN RADIATION SAFETY

3304 COMMERCIAL AVENUE / NORTHBROOK, IL 60062 / PHONES: 312/564-3330

DATE	LOCATION	TIN #	ISOTOPE	(NET) CPM	DPM	MICROC
	STANDARD					

CPM — Counts Per Minute Detected

DPM — Disintegrations Per Minute

APPROVED FOR HEALTH PHYSICS ASSOCIATES DATE

CONTROL NO. 79497

(7/85)