

NRC FORM 313M (8-86) 10 CFR 35	U.S. NUCLEAR REGULATORY COMMISSION APPLICATION FOR MATERIALS LICENSE – MEDICAL	Approved by OMB 3150-0041 Expires 6-30-89
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INSTRUCTIONS - Complete items 1 through 26 if this is an initial application or an application for renewal of a license. Use supplemental sheets where necessary. Item 26 must be completed on all applications and signed. Retain one copy. Submit original and one copy of entire application to: Director, Office of Nuclear Materials Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Upon approval of this application, the applicant will receive a Materials License. An NRC Materials License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30, and the Licensee is subject to Title 10, Code of Federal Regulations, Parts 19, 20 and 35 and the license fee provision of Title 10, Code of Federal Regulations, Part 170. The license fee category should be stated in Item 26 and the appropriate fee enclosed.

1.a. NAME AND MAILING ADDRESS OF APPLICANT (institution, firm, clinic, physician, etc.) INCLUDE ZIP CODE St. James Community Hospital 400 South Clark or P. O. Box 3300 Butte, Montana 59701 TELEPHONE NO.: AREA CODE <u>406</u> , <u>782-8361</u>	1.b. STREET ADDRESS(ES) AT WHICH RADIOACTIVE MATERIAL WILL BE USED (If different from 1.a.) INCLUDE ZIP CODE
2. PERSON TO CONTACT REGARDING THIS APPLICATION Sister Loretto Marie Colwell TELEPHONE NO.: AREA CODE <u>(406)</u> <u>782-8361</u>	3. THIS IS AN APPLICATION FOR: (Check appropriate item) a. <input type="checkbox"/> NEW LICENSE b. <input type="checkbox"/> AMENDMENT TO LICENSE NO. _____ c. <input checked="" type="checkbox"/> RENEWAL OF LICENSE NO. <u>25-13173-02</u>
4. INDIVIDUAL USERS (Name individuals who will use or directly supervise use of radioactive material. Complete Supplements A and B for each individual.) See Attached	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.) E. F. Hughes, Jr., M.D.

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	X	10	IODINE-131 AS IODIDE FOR TREATMENT OF HYPERTHYROIDISM	X	100
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	X	100
10 CFR 35.100, SCHEDULE A, GROUP II	X	AS NEEDED	PHOSPHORUS-32 AS COLLOIDAL CHROMIC PHOSPHATE FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.	X	100
10 CFR 35.100, SCHEDULE A, GROUP III	X	2000	GOLD-198 AS COLLOID FOR INTRACAVITARY TREATMENT OF MALIGNANT EFFUSIONS.	X	200
10 CFR 35.100, SCHEDULE A, GROUP IV		AS NEEDED	IODINE-131 AS IODIDE FOR TREATMENT OF THYROID CARCINOMA	X	300
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.	X	200
10 CFR 35.100, SCHEDULE A, GROUP VI	X	2000			

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
8801250430 870806 REG 4 LIC 30 25-13173-02 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 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)	<input type="checkbox"/>	Equivalent Rules Attached
<input type="checkbox"/>	Equivalent Duties Attached	16. EMERGENCY PROCEDURES (Check One)	
8. TRAINING AND EXPERIENCE		<input checked="" type="checkbox"/>	Appendix H Procedures Followed; or
<input type="checkbox"/>	Supplements A & B Attached for Each Individual User; and Refer to License 25-13173-02	<input type="checkbox"/>	Equivalent Procedures Attached
<input type="checkbox"/>	Supplement A Attached for RSO.	17. AREA SURVEY PROCEDURES (Check One)	
9. INSTRUMENTATION (Check One)		<input checked="" type="checkbox"/>	Appendix I Procedures Followed; or
<input type="checkbox"/>	Appendix C Form Attached; or	<input type="checkbox"/>	Equivalent Procedures Attached
<input checked="" type="checkbox"/>	List by Name and Model Number	18. WASTE DISPOSAL (Check One)	
10. CALIBRATION OF INSTRUMENTS		<input checked="" type="checkbox"/>	Appendix J Form Attached; or
<input checked="" type="checkbox"/>	Appendix D Procedures Followed for Survey Instruments; or _____ (Check One)	<input type="checkbox"/>	Equivalent Information Attached
<input type="checkbox"/>	Equivalent Procedures Attached; and	19. THERAPEUTIC USE OF RADIOPHARMACEUTICALS (Check One)	
<input checked="" type="checkbox"/>	Appendix D Procedures Followed for Dose Calibrator; or _____ (Check One)	<input checked="" type="checkbox"/>	Appendix K Procedures Followed; or
<input type="checkbox"/>	Equivalent Procedures Attached	<input type="checkbox"/>	Equivalent Procedures Attached
11. FACILITIES AND EQUIPMENT		20. THERAPEUTIC USE OF SEALED SOURCES	
<input checked="" type="checkbox"/>	Description and Diagram Attached Attachment 1	<input type="checkbox"/>	Detailed Information Attached; and
12. PERSONNEL TRAINING PROGRAM		<input checked="" type="checkbox"/>	Appendix L Procedures Followed; or _____ (Check One)
<input checked="" type="checkbox"/>	Description of Training Attached	<input type="checkbox"/>	Equivalent Procedures Attached
13. PROCEDURES FOR ORDERING AND RECEIVING RADIOACTIVE MATERIAL		21. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE GASES (e.g., Xenon - 133)	
<input checked="" type="checkbox"/>	Detailed Information Attached	<input checked="" type="checkbox"/>	Detailed Information Attached Attachment II
14. PROCEDURES FOR SAFELY OPENING PACKAGES CONTAINING RADIOACTIVE MATERIALS (Check One)		22. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL IN ANIMALS	
<input checked="" type="checkbox"/>	Appendix F Procedures Followed; or	<input type="checkbox"/>	Detailed Information Attached N/A
<input type="checkbox"/>	Equivalent Procedures Attached	23. PROCEDURES AND PRECAUTIONS FOR USE OF RADIOACTIVE MATERIAL SPECIFIED IN ITEM 6.b	
<input checked="" type="checkbox"/>	Detailed Information Attached	None Specified	

24. PERSONNEL MONITORING DEVICES			
TYPE (Check appropriate box)		SUPPLIER	EXCHANGE FREQUENCY
a. WHOLE BODY	<input checked="" type="checkbox"/> FILM	Siemens	
	<input type="checkbox"/> TLD	P. O. Box 1367 Oakton Street Station	1/month
	<input type="checkbox"/> OTHER (Specify)	Des Plaines, Illinois 60018	
b. FINGER	<input checked="" type="checkbox"/> FILM	" " "	
	<input type="checkbox"/> TLD		
	<input type="checkbox"/> OTHER (Specify)		
c. WRIST	<input type="checkbox"/> FILM		
	<input type="checkbox"/> TLD		
	<input type="checkbox"/> OTHER (Specify)		

d. OTHER (Specify)

Item - 4 - IV
71785-96034
\$700 - \$120 refunded
7C
Renewal
5/31/87
5/31/87
Missouri

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		c. WHEN REQUESTING THERAPY PROCEDURES, ATTACH A COPY OF RADIATION SAFETY PRECAUTIONS TO BE TAKEN AND LIST AVAILABLE RADIATION DETECTION INSTRUMENTS.	
CITY	STATE	ZIP CODE	

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)	b. APPLICANT OR CERTIFYING OFFICIAL (Signature) <i>Sister Loretto Marie Colwell</i>
(1) LICENSE FEE CATEGORY: 7C	(1) NAME (Type of Print) Sister Loretto Marie Colwell
	(2) TITLE President
(2) LICENSE FEE ENCLOSED: \$ 700.00	c. DATE 3/17/87

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

Approved by OMB
3150-0041
Expires 6-30-89

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER	2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE
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3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C

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			
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

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		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.
FULL NAME		
STREET ADDRESS		
CITY	STATE	

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		
	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			

4) Individual Users:

Dennis O. Wright, M.D.
Alan R. Belknap, M.D.
J. Michael Driscoll, M.D.
David Allen Repola, M.D.
Robert Krause, M.D.
E. F. Hughes, M.D.
Raymond D. Grondahl, M.D.
Neil F. Thomas, M.D.

5) Radiation Safety Officer

E. F. Hughes, Jr., M.D.
See license number 25-13173-C2 and amendment #18 docket number
030-1243 for training and experience

6) Radioactive Material for Medical Uses:

Dennis O. Wright, M.D.	Groups I, II, III, IV In-Vitro Studies Xenon-133, Iodine-133 for treatment of Hyperthyroidism and thyroid carcinoma.
Alan R. Belknap, M.D.	Groups I, II, III, IV and V, In-Vitro studies, Xenon-133
J. Michael Driscoll, M.D.	Groups I, II, III, IV and V, In-Vitro studies, Xenon-133
E. F. Hughes, Jr., M.D.	Group VI Colloidal phosphorus-32 for intracavity treatment of malignant effusions.
Raymond D. Grondahl, M.D.	Group I, II, and III In-Vitro studies, Xenon-133
David A. Repola	Licensed material of the types, quantities and forms in Section 35.31 (a) of 10CFR 35 31.11 (a) of 10CFR 31 to be used in accordance with provisions of paragraphs (a) and (c) of Section 35.31, 10CFR 35 and paragraphs (a), (c) and (d) of Section 31.11, 10CFR 31
Robert Krause, M.D.	Licensed material of the types, quantities and forms in Section 35.31 (a) of 10CFR 35 31.11 (a) of 10CFR 31 to be used in accordance with provisions of paragraphs (a) and (c) of Section 35.31, 10CFR 35 and paragraphs (a), (c) and (d) of Section 31.11, 10CFR 31.
Neil F. Thomas, M.D.	Group VI

7) Radiation Safety Committee:

E. F. Hughes, Jr., M.D. RSO
Representative of Radiology
Rod Wimmer, Physicist
Nuclear Medicine Manager
Representative of Administration

8) Please refer to previous NCR license, 25-13173-02 for each individual user and for the Radiation Safety Officers.

9) Instrumentation:

Picker 4C/61 Dynacamera, model #251522
Isotope Calibrator Rad-Cal Corporation, model #4045
Survey Meter Vicotoreen #491
Scales: 0-.3, 0-1, 0-3, 0-10, 0-30, 0-100 Mr/hr
Survey Meter Victoreen "Cutie Pie" model #749-F
Scales: 0-25, 0-250, 0-2,500, 0-250,000 Mr/hr
Thyrocount Kembles model #450

10) Calibration of Instruments:

Appendix D - followed

Survey meters calibrated from an outside source.

11) See Attachment II for diagram.

All radiation workers and ancillary personnel shall be instructed in radiation safety. Specifically, all employees will be instructed as to the contents of Section 10, Part 19, of the regulations. Briefly, employees shall be cognizant of the way radioactive material is being stored, handled and otherwise manipulated. Relevant radioactive and radiation warning signs shall be identified. Additionally, the workers shall be made aware of the health and protection problems associated with exposure, personal protection methods and their responsibility of reporting hazardous practices that may exist.

The workers shall also be made aware of radiation measurements and data that is being kept on their behalf and their annual cumulative dose.

The workers shall be made aware that he or she has the right to present to the commission on a confidential basis, any information he may consider appropriate in regards to the license of activities with radiation.

14) Appendix F followed.

15) Appendix G followed.

16) Appendix H followed.

17) Appendix I followed.

18) Appendix J followed.

19) Appendix K followed.

Private room for therapeutic I-131 patients will no longer be Rooms 309 and 609, due to the recent remodeling of the facility. Patients will be monitored prior to their discharge by the RSO or his designee.

20) Appendix L followed.

21) See Attachment II.

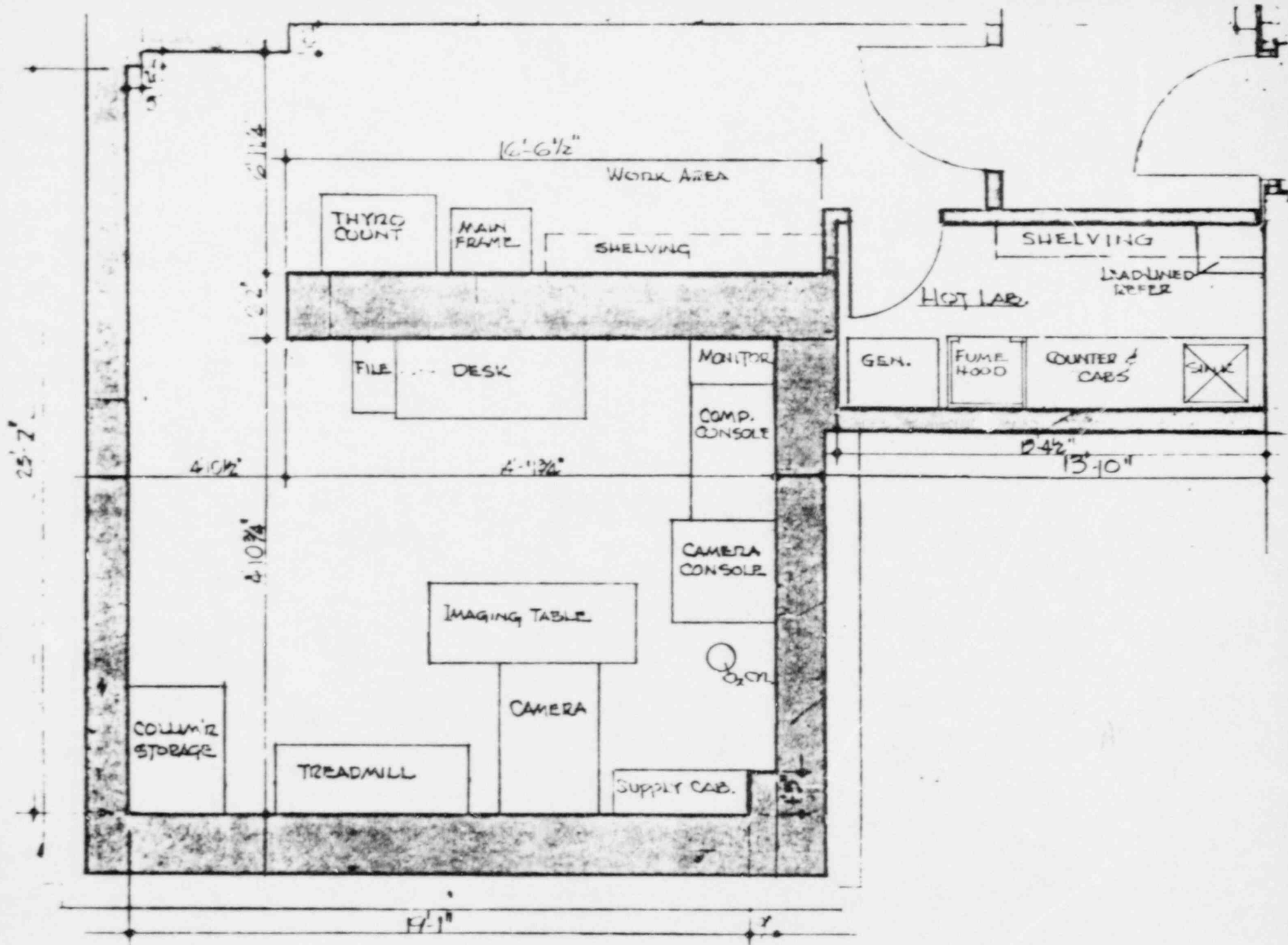
22) N/A.

23) None specified.

24) Film badge:

Siemens
P. O. Box 1367 Oakton Street Station
Des Plaines, Illinois 60018

The hospital ALARA program is still in effect as per NRC license - 25-13173-02.



NUCLEAR MEDICINE SUITE

1/4" = 1'-0"

Supporting documentation for Xenon-133 concentration in the proposed area of the new Nuclear Medicine Department.

Air Concentration of Xenon-133 in restricted areas.
200 mCi's maximum / week: 25% leakage rate assumed

$$\frac{10 \text{ mCi}}{\text{pt}} \times \frac{15 \text{ pts}}{\text{wk}} \times \frac{1 \times 10^3 \text{ uCi}}{\text{mCi}} = 1.5 \times 10^5 \text{ uCi/wk}$$

$$\frac{1.5 \times 10^5 \text{ uCi/wk} \times 0.25}{1 \times 10^{-5} \text{ uCi/ml}} = \frac{4.0 \times 10^4 \text{ uCi/wk}}{1 \times 10^{-5} \text{ uCi/ml}} = \frac{4.0 \times 10^9 \text{ ml/wk}}{40 \text{ hr/wk}} = \frac{1 \text{ CFM}}{1.7 \times 10^6 \text{ ml/hr}} = 59.0 \text{ CFM}$$

Required minimum ventilation will be 59 CFM

Outside wall at new addition (note)

175 pounds

EXISTING STEAM RADIATION
V TO BE REMOVED

Outside wall (note)

EX 5'x13' 1/2" HZU ROOF
TO NEW EF-6

236

6-9

16" x 8" SOUND
ATT. BOOT

EXISTING 2" LPS

10' x 9'

1" CWS
8 CWR

X-RAY R

264 broken cement

Transphosphat
Area

1" HWS 4 HWR
DOWN TO 1st FLOOR

253

1" x 8" ROUND TO 10" SQ.
TRANSITION IN VERTICAL

FUME HOOD (P.O.I.C.)
RELOCATED SINK

EXISTING STEAM
RADIATION TO
BE REMOVED

Dentist's
Bedding Room

CONNECT NEW 1/2" LPS
TO EXISTING 2" LPS
outside
wall
(note)

EXISTING 2" LPS
4" - 10' Sept

CONNECT NEW 3/4" LPS
TO EXISTING 2" LPS
& outside wall (cont.)

TEMPERATURE
CONTROL PANEL

NUCLEAR MEDICINE SUITE

94" x 8" GRC
DOWN TO

OUTSIDE AIR

WEST OUTSIDE
WALL

13' x 20' SOUND
ATT. BOOT

28" x 18" 500P

12" DEPTH

34"

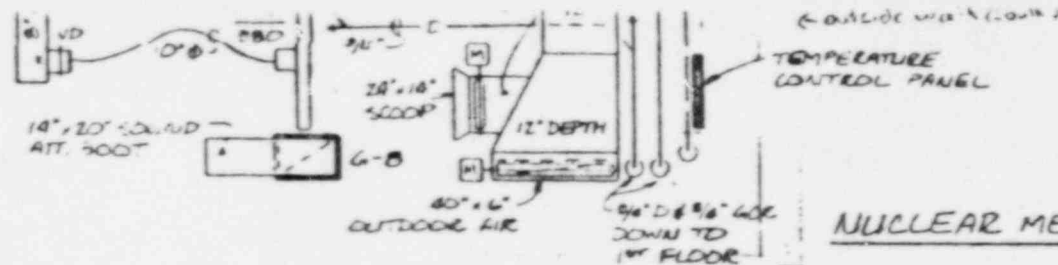
18" x 10"

28" x 12"

11/4"

1/4" x 1/4"

(note)
outside
wall

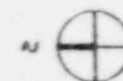


NUCLEAR MEDICINE SUITE

14' x 11'-0"

NOTES:

1. REMOVE EXISTING UNIT VENTILATOR IN VICINITY OF NEW 40" x 6" OUTDOOR AIR DUCT.
2. CONNECT NEW 40" x 6" OUTDOOR AIR DUCT TO EXISTING 40" x 6" DUCT AT FLOOR. PROVIDE INSULATED SHUT-OFF FOR UNUSED PORTION OF EXISTING DUCT.
3. REMOVE EXISTING UPS BRANCH LINES TO STEAM RADIATION BEING REMOVED. CAP BRANCHES AT EXISTING 2" MAIN.
4. PROVIDE DOMESTIC HOT AND COLD WATER, WASTE AND VENT CONNECTIONS TO EXISTING SINK BEING RELOCATED TO ROOM #233. EXTEND WATER LINES, INCLUDING HOT WATER RECL., FROM THE 2ND FLOOR OF THE ONCOLOGY ADDITION. ROUTE VENT THRU ROOF ABOVE ROOM #233. ROUTE WASTE LINE AS SHOWN ON THIS SHEET.
5. PROVIDE FIRE SPRINKLERS IN X-RAY RECORDS, ROOM #232. EXTEND SPRINKLER LINE FROM THE 2ND FLOOR OF THE ONCOLOGY ADDITION.
6. PROVIDE OXYGEN ZONE VALVE IN LINE TO THE ONCOLOGY ADDITION. LOCATE AS SHOWN IN ROOM #231A.
7. RELOCATE EXISTING T-STATS AS REQUIRED IN 1ST FLOOR NORTH ROOMS.
8. HUMIDIFIER H-2 SHALL HAVE A CAPACITY OF 25 LBS/HR AT AN INLET PRESSURE OF 8 PSIG.



SECOND FLOOR

14' x 11'-0"