

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

FEDERAL AGENCIES FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS
WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS, IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIAL SECTION B
631 PARK AVENUE
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II
MATERIAL RADIATION PROTECTION SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30323

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III
MATERIALS LICENSING SECTION
799 ROOSEVELT ROAD
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
MATERIAL RADIATION PROTECTION SECTION
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
MATERIAL RADIATION PROTECTION SECTION
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1. THIS IS AN APPLICATION FOR (Check appropriate item)

- ☐ A. NEW LICENSE
☒ B. AMENDMENT TO LICENSE NUMBER 37-20695-01
☐ C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (Include Zip Code)

Walter D. Reese, M.D.
Suite 2, AMH Health Center
2701 Blair Mill Road
Willow Grove, PA 19090

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

see attachment A.

8510230352 851002
REG1 LIC30
37-20695-01 PDR

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Walter D. Reese, M.D.

TELEPHONE NUMBER

215-443-5239

SUBMIT ITEMS 5 THROUGH 11 ON 8 1/2 x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY

AMOUNT
ENCLOSED \$

13. CERTIFICATION: (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948, 62 STAT. 749 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

SIGNATURE—CERTIFYING OFFICER

TYPED/PRINTED NAME

Walter D. Reese, M.D.

TITLE

Radiation Safety
Officer

DATE

9/13/85

14. VOLUNTARY ECONOMIC DATA

A. ANNUAL RECEIPTS

<input checked="" type="checkbox"/> <\$250K	<input type="checkbox"/> \$1M-3.5M
<input type="checkbox"/> \$250K-500K	<input type="checkbox"/> \$3.5M-7M
<input type="checkbox"/> \$500K-750K	<input type="checkbox"/> \$7M-10M
<input type="checkbox"/> \$750K-1M	<input type="checkbox"/> >\$10M

B. NUMBER OF EMPLOYEES (Total for entire facility excluding outside contractors)

Three

C. NUMBER OF BEDS

None

D. WOULD YOU BE WILLING TO FURNISH COST INFORMATION (Dollar and/or staff hours) ON THE ECONOMIC IMPACT OF CURRENT NRC REGULATIONS OR ANY FUTURE PROPOSED NRC REGULATIONS THAT MAY AFFECT YOU? (NRC regulations permit it to protect confidential commercial or financial—proprietary—information furnished to the agency in confidence)

☒ YES

☐ NO

FOR NRC USE ONLY

TYPE OF FEE

FEE LOG

FEE CATEGORY

COMMENTS

104391

APPROVED BY

AMOUNT RECEIVED

CHECK NUMBER

"OFFICIAL RECORD COPY"

ML10

SEP 16 1985

DATE

ATTACHMENT A

Item 3:

Places of use will be as shown in Amendment 01, namely:

A. The licensee's facilities as follows:

Suite 2
AMH Health Center
2701 Blair Mill Road
Willow Grove, PA 19090

PLEASE DELETE
Suite 309
Holy Redeemer Hospital Office Building
1650 Huntingdon Pike
Meadowbrook, PA 19046

PLEASE DELETE
Suite 103
Saint Mary Hospital Medical Office Building
Langhorne-Newtown Road
Langhorne, PA

B. As specified in Amendment 01 to this license, we will continue with nursing homes in a fifty mile radius, and request an increased radius from 10 to 20 miles for hemodialysis units.

We are applying to add TWO ADDITIONAL FACILITIES, as follows:

Suite 118
Holy Redeemer Hospital Office Building
1650 Huntingdon Pike
Meadowbrook, PA 19046

The Mammography and Osteoporosis Diagnosis Center
283 Office Condo
283 Second Street Pike
Upper Southampton, PA 18966

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License number

37-20695-01

Docket or Reference number

030-20733

Amendment No. 01

Walter D. Reese, M.D.
Suite 2
AMH Health Center
2701 Blair Mill Road
Willow Grove, Pennsylvania 19090

In accordance with letters dated December 24, 1984, February 4, 1985 and February 5, 1985, License Number 37-20695-01 is amended as follows:

Item 2. (Address) is changed from 1245 Highland Avenue, Abington, Pennsylvania 19001 to Suite 2, AMH Health Center, 2701 Blair Mill Road, Willow Grove, Pennsylvania 19090.

Items 6., 7., 8., and 9. are amended to add:

- | | | |
|--|--|--|
| <p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Iodine 125</p> <p>B. Iodine 125</p> | <p>7. Chemical and/or physical form</p> <p>A. Sealed sources (AECL-CP Models C-235, C-236 or Amersham Models IMC-129, 4052, 4040, or AMC-D1)</p> <p>B. Sealed sources (AECL Model C-324)</p> | <p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. Two sources not to exceed 400 millicuries per source</p> <p>B. Two sources not to exceed 200 millicuries per source.</p> |
|--|--|--|
9. Authorized use
- A. For use on humans in a Norland Corporation Model No. 2780 Bone Densitometer for bone mineral analysis.
- B. For use on humans in a Nuclear Data Incorporated Model ND1100 Bone Densitometer for bone mineral analysis.

CONDITIONS

Conditions 10. and 15. are amended to read:

10. Licensed material shall be used only at the licensee's facilities, Suite 2, AMH Health Center, 2701 Blair Mill Road, Willow Grove, Pennsylvania; Suite 309, 1650 Huntingdon Pike, Meadowbrook, Pennsylvania; Suite 103, Saint Mary Hospital Medical Office Building, Langhorne-Newtown Road, Langhorne, Pennsylvania. The licensed material may also be used at any Nursing Home within a 50 mile radius or Hemodialysis Center within a 10 mile radius of 2701 Blair Hill Road, Willow Grove, Pennsylvania provided:

8543124365

24 pp.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License number

37-20695-01

Docket or Reference number

030-20733

Amendment No. 01

(10. continued)

CONDITIONS

- (a) The licensee has prior written permission from the Nursing Home's Administrator or Hemodialysis Center's Administrator, and
- (b) The licensee removes all byproduct material when he departs, and
- (c) The licensee does not perform source removal or replacement at the Nursing Home or Hemodialysis Center, and
- (d) The licensee maintains a list of all nursing homes or Hemodialysis Centers serviced and submits the list to the U.S. Nuclear Regulatory Commission, Region I, Nuclear Materials Safety Section B, 631 Park Avenue, King of Prussia, Pennsylvania 19406 by March 1 of each year.

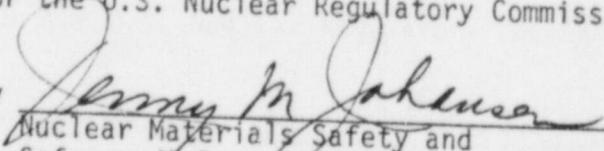
The licensee shall maintain for inspection by the Commission copies of the written permission specified in subitem (a) above at 2701 Blair Hill Road, Willow Grove, Pennsylvania.

15. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, and 8 of this license in accordance with statements, representations, and procedures contained in application dated April 11, 1984 and letters dated May 4, 1984, December 24, 1984, February 4, 1985 and February 5, 1985. The Nuclear Regulatory Commission's regulations shall govern the licensee's statements in applications or letters, unless the statements are more restrictive than the regulations.

For the U.S. Nuclear Regulatory Commission

Date FEB 28 1985

By


Nuclear Materials Safety and
Safeguards Branch, Region I
King of Prussia, Pennsylvania 19406

REQUIREMENTS FOR MATERIALS LICENSEES

As a holder of an NRC material license, you must:

1. Operate in accordance with NRC regulations contained in 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Possess radioactive material only in the quantity(ies) and form(s) indicated in your license.
3. Use radioactive material only for the purpose(s) indicated in your license.
4. Notify NRC in writing of any change in mailing address (no fee required if the location of radioactive material remains the same).
5. Request and obtain appropriate amendments if you plan to change the ownership of your organization, change locations of radioactive material, or make any other changes in your facility or program which are contrary to your license conditions or representations made in your license application and any supplemental correspondence with NRC. A license fee may be charged for the amendment as specified in 10 CFR Part 170.
6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date on your license. You should receive a reminder notice approximately 90 days before the expiration date. However, it is your responsibility to file a renewal application at the proper time. Possession of radioactive material after your license expires is a violation of NRC regulations.
7. Request termination of your license if you plan to permanently discontinue activities involving radioactive material.

LICENSED MATERIAL

Item 5 - Radioactive Material

Element and mass number: I-25

Chemical and/or physical form: sealed source (AECL C-235 source in AECL C-236 source holder), or any other equivalent NRC registered sealed source

Maximum amount which will be possessed: 3 sources at 800 mci per source

Item 6 - Purposes For Which Licensed Material Will Be Used

Use in Model SPSHAXXX bone mineral analyzer for performance (human use) testing and development, training and demonstration. The Model SPSHAXXX bone mineral analyzer has received custom device approval from the NRC.

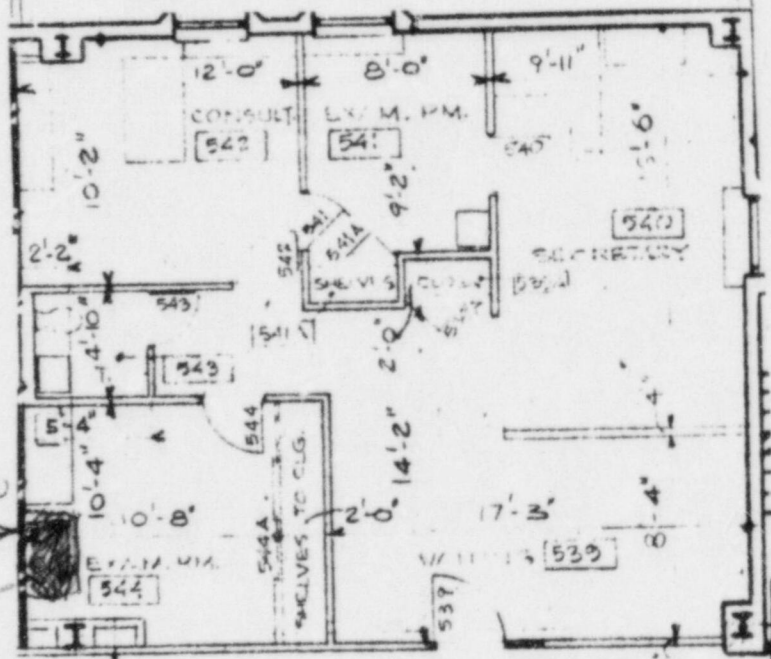
Note: Item 5

Please retain License for Byproduct source and special nuclear material and maximum amounts, previously approved in previously issued License (37-20695-01) amendment no. 01

Note: Item 6

Please retain License for Authorized Human Use in (A) Norland Corporation, model number 2780 Bone Densitometer for Bone Mineral Analysis, and in (B) Nuclear Data Incorporated, model number ND1100 Bone Densitometer for Bone Mineral Analysis.

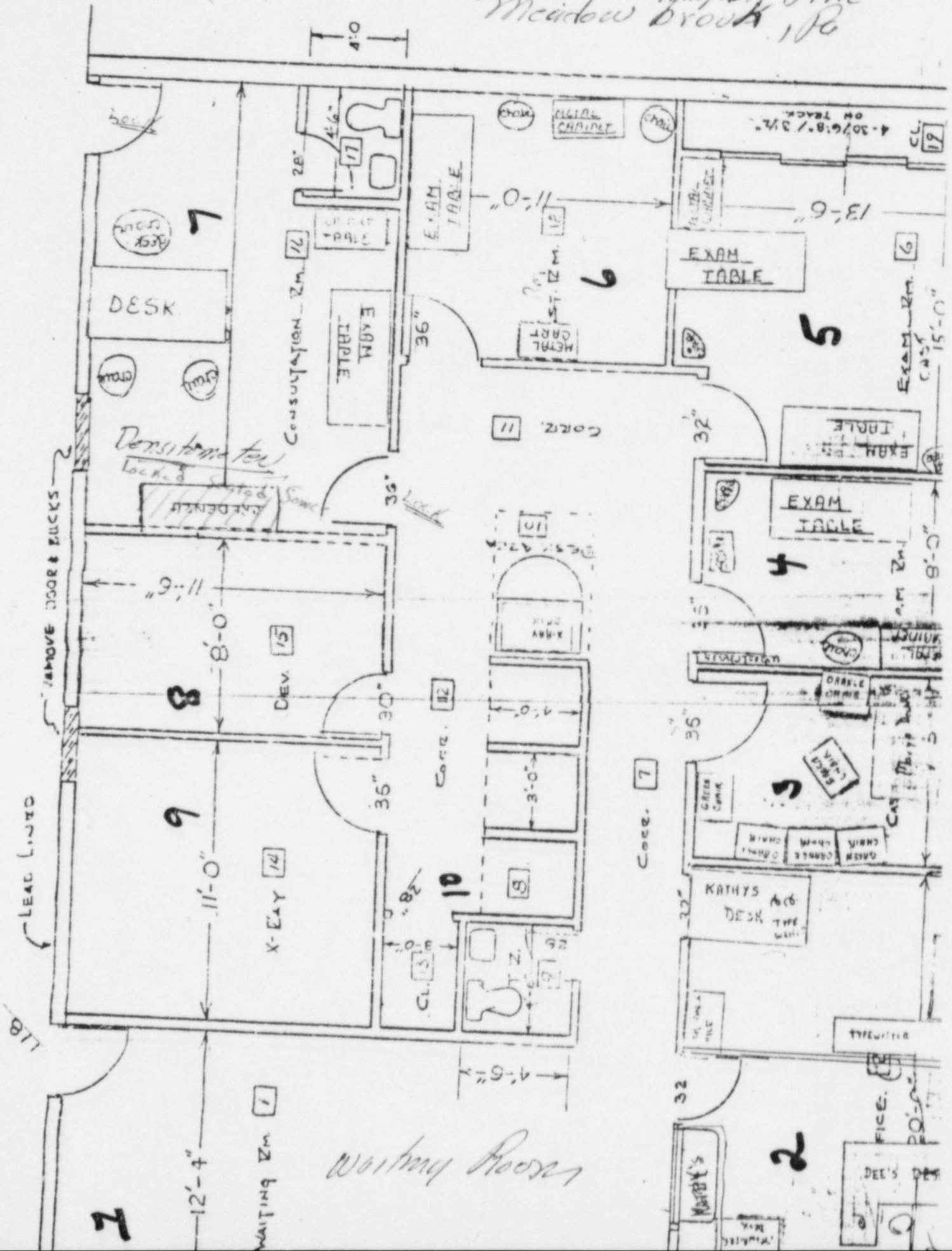
Mammography
Center



Densitometer
Room →
Locker
Sealed Source
Storage

283 Office Condo
Subject to Re-modelling

Hely Reg. med Office Bldg
1650 Huntington Pike
Meadow Brook, Pa



Item 7

Individuals responsible for Radiation Safety Program and their training and experience

Walter D. Reese, M.D.
licensed with three years experience

Henry G. DeVincent, M.D.
licensed, February 1985

TRAINING AND EXPERIENCE

Name of Authorized User

Physician's License #

CERTIFICATION

Specialty Board

Category

Month and Year Certified

TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

Field of Training

Location and Dates

Type and Length

Radiation Physics
and Instrumentation

Lecture - 2 hours
Supv. exp. - 1 hour

Radiation Protection

Lecture - 2 hours
Supv. exp. - 2 hours

Mathematics Pertaining
to the Use and Measure-
ment of Radioactivity

Lecture - 1 hour
Supv. exp. - 1 hour

Radiation Biology

Lecture - 3 hours

Radiopharmaceutical
Chemistry

n/a

EXPERIENCE WITH RADIATION

Isotope

Amount

Where Gained

Duration

Type of Use

I-125

800 mCi

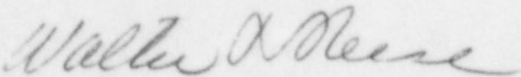
6 hrs

Radiation safety
aspects of sealed
sources & mechan-
ics of source re-
placement.

Item 8

Training and Experience

"I certify that I have read the source changing procedures as shown in Item 10, and that I understand them completely."

A handwritten signature in cursive script, appearing to read "Walter D. Reese".

Walter D. Reese, M.D.

9/13/85

INSTRUMENTATION

Survey Instrument

Type: A low-level survey meter capable of detecting 0.1 mR/hr to perform radiation surveys.

Model: Bicron Surveyor 50 or equivalent.

Diagnostic Instrument

Type: Bone mineral analyzer; also know as bone densitometer.

Model: OsteoAnalyzer Model SPSHA110 bone mineral analyzer for performing diagnostic studies.

Item 9 of NRC Form 313; FACILITIES AND EQUIPMENT

Except during Source exchanges, the I-125 Sources listed in Item 5 will be locked in the various densitometers. This I-125 Source is contained in Sourceholders. If necessary, the Source will be temporarily stored in a lead container within a locked area in the restricted room.

RADIATION SAFETY PROGRAM

ITEM 10 - Radiation Safety Program

1. SURVEY PROGRAM

1.1. The use of the sealed source in the bone mineral analyzer consists of placing the source in a fixed geometry position in the analyzer. Once it is in place, the shielding and beam direction cannot change unless the analyzer suffers some damage.

1.2. A detailed radiation survey has been performed with the source in an OsteoAnalyzer. The results of the survey are shown in Figures 1 to 3, normalized to a full strength 800 mCi source. A decay curve is also provided in Figure 4 so that the radiation levels for any source strength can be estimated from Figures 1 to 3.

2. RECORDS MANAGEMENT PROGRAM

2.1. Records of source receipt and transfer shall be kept for at least five years.

2.2. Records of leak tests of sealed sources shall be kept for at least five years.

2.3. Records of personnel exposure shall be kept indefinitely.

2.4. Records of source disposals shall be kept indefinitely.

2.5. Records shall be reviewed for completeness and accuracy semi-annually by the Radiation Safety Officer or his designate.

3. LEAK TEST PROCEDURES

3.1. Leak tests shall be performed on sources in use every six months. The leak tests shall be able to detect 0.005 uCi of activity. Results of the leak tests shall be documented. Leak tests shall be performed according to the following procedures:

3.1.1. Take a canvas wipe and wipe it around the joint between the source holder and source cap. Place the wipe in the folded paper envelope used to hold it.

3.1.2. Calibrate the laboratory counter with a mock iodine source. Count the mock iodine source for one minute.

3.1.3. Count background for one minute. Calculate the conversion factor for the detector as follows:

$$K = \text{uCi} / (C_s - C_b)$$

uCi = source activity

C_s = source cnts per min

C_b = bkgd cnts per min

3.1.4. Remove the source and take a one minute background count. Calculate the minimum detectable activity (MDA) and minimum detectable count rate (MDCR) according to the following formulas:

$$\text{MDCR} = 1.64 \times \sqrt{2 \times C_b}$$

$$\text{MDA} = K \times 1.64 \times \sqrt{2 \times C_b}$$

3.1.5. Count the wipe for 1 minute. If the measured count rate is less than MDCR, record the activity as <MDA. If the measured count rate is greater than MDCR, calculate and record the actual activity.

3.1.6. With typical counting equipment, this counting procedure will result in a MDA of less than 0.0005 uCi.

5. PACKAGE RECEIVING AND OPENING PROCEDURES

5.1. The I-125 sources are also less than Type A quantities of radioactive material. Consequently, no radiation surveys are required on receipt of the package. When shipped from the manufacturer, the packages carry a WHITE-I radioactive label, indicating that radiation levels on the surface are less than 0.5 mR/hr.

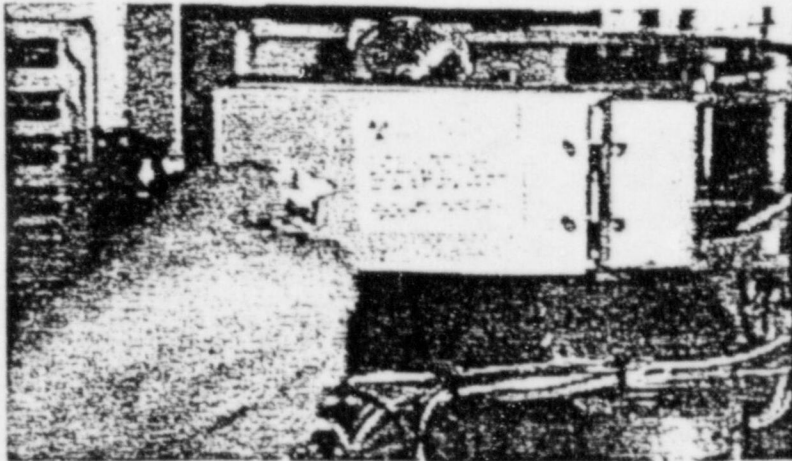
5.2. Open the outer shipping container. Open the inner shipping container with the brass source capsule. Take a canvas wipe and wipe the brass source capsule. Analyze the wipe to verify there is no removable contamination greater than 200 dpm/100 cm².

5.3. Verify the serial number on the source against the serial number on the shipping documents. Log the receipt of the source into the source receipt log.

5.4. Leave the source in the original shipping container until it is actually installed in the analyzer.

6. SOURCE REPLACEMENT PROCEDURES

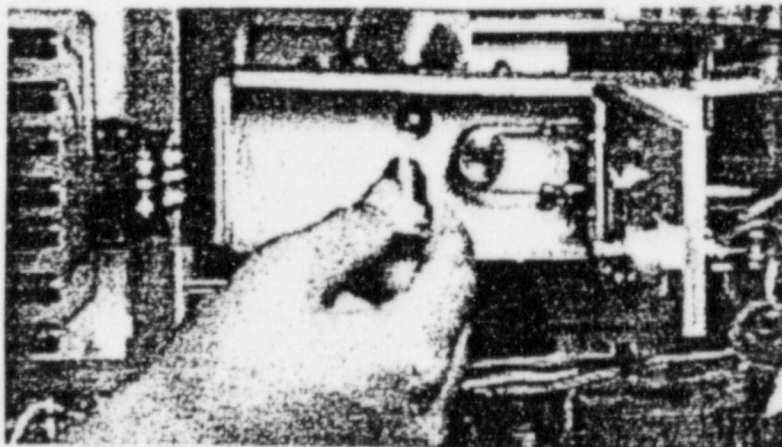
6.1. Remove the outer cover of the scanner unit. Using the key for the source compartment, unlock and remove the cover from the source compartment.



6.2. Unscrew the source from the receptacle in the source compartment. Immediately screw on the brass cap on the source. Make sure the end of the source capsule with the threads is always pointed away from you when the cap is not on.

6.3. Place the source in the shipping container to be returned to the manufacturer.

6.4. Remove the new brass source capsule with the brass cap attached from the shipping container. Unscrew the cap from the source and screw the source into the receptacle in the source compartment. Make sure the end of the source capsule with the threads is always pointed away from you when the cap is not on.



6.5. Using the key, lock the source compartment cover in place. Remove the key and store it in a secure location.

6.6. Replace the cover on the scanner unit.

7. SOURCE PACKAGING AND SHIPPING PROCEDURES

- 7.1. Place the source with the cap tightly screwed on in the foam insert from the original shipping container.
- 7.2. Place the foam insert in the original inner container (metal can) and tape the lid on the can with fabric-backed tape.
- 7.3. Place the metal can in the original outer shipping box and tape the box closed with security tape.
- 7.4. Remove old shipping labels, packing slips, and other old labels from the box. Make sure the words "RADIOACTIVE MATERIAL", "TYPE 'A' PACKAGE", "I.A.E.A. C.T.C-12B25", and the manufacturer's name and address are still clearly legible on the box.
- 7.5. Place two new RADIOACTIVE WHITE-I labels over the old ones on the box. Enter I-125 as the contents. Calculate and enter the activity of the source.
- 7.6. Place a shipping label on the box with the name and address of the facility shipped from and shipped to.
- 7.7. Write or stamp the words "RADIOACTIVE MATERIAL, N.O.S." and "UN2982" on the box in letters at least 1/2" high.
- 7.8. Fill out the shipping papers for the shipment. The proper shipping name for the source is "Radioactive Material, N.O.S. (Iodine-125)" and the proper classification is "UN2982".

8. INVENTORY REQUIREMENTS

- 8.1. An inventory of all sources in use and in storage shall be made every six months. Records of the semi-annual inventories shall be kept.

9. EMERGENCY PROCEDURES

- 9.1. The low energy gamma and x-rays emitted from the I-125 source are completely absorbed by the brass source holder.
- 9.2. If for any reason the source is dropped when the cap is off, pick up the source by the end opposite the threaded end, being careful not to point the hole from the source window towards you. Pick up the brass source holder cap in your other hand and screw it on the source holder. This will totally shield any radiation coming from the source.

10. DUTIES AND RESPONSIBILITIES

10.1. The authorized users will be responsible for:

10.1.1. Receipt of sources and logging in the source receipt log.

10.1.2. Storage of sources received in the radioactive materials storage area.

10.1.3. Source replacement in the OsteoAnalyzer.

10.1.4. Packaging of sources for shipping and delivering to a carrier for shipment to the manufacturer.

10.1.5. Leak testing of sources in use over six months.

10.2. The Radiation Safety Officer will be responsible for the following:

10.2.1. Assuring that byproduct materials possessed under the license conform to the materials listed on the license.

10.2.2. Assuring that use of the device is only by individuals authorized by the license.

10.2.3. Assuring that all users wear personnel monitoring equipment when required.

10.2.4. Assuring that the sources are properly secured against unauthorized removal at all times when not in use.

10.2.5. Serving as a point of contact to give assistance in case of an emergency, and assuring that proper authorities are notified in case of an emergency.

10.2.6. Assuring that the terms and conditions of the license are met and that required records are periodically reviewed for compliance with NRC regulations and license conditions.

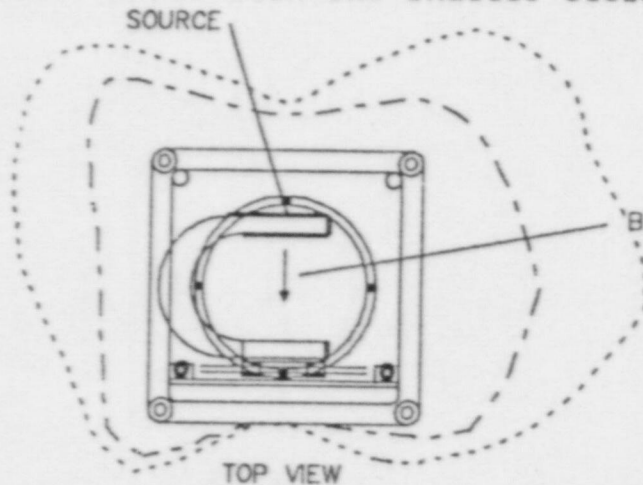
WASTE MANAGEMENT

1. Sources that have decayed below an acceptable level will be removed from the bone mineral analyzer and stored in a locked storage area.
2. The storage area will be posted with a "CAUTION - RADIOACTIVE MATERIALS" sign.
3. When sources are transferred to the source manufacturer for final disposal, the disposal shall be noted on the receipt/disposal log.
4. Sources will be returned to the manufacturer in the original shipping containers they were shipped in. The requirements of 10 CFR 49 shall be followed with regards to packing, labelling, marking, and surveying of the package and filling out the shipping documents.

Isodose lines for Osteon, Inc. Model SPSHAXXX bone mineral Analyzer (OsteoAnalyzer).

Readings shown for shutter open and 800 mCi I-125 source in place. Readings taken with Victoreen 490 survey meterf and 489-110 pancake probe. Survey meterc calibrated specifically for I-125, using two separate sources and source activity data supplied by AECL. Calibration factor of 0.00009 mR/hr per cpm was used, based on gamma factor of 0.7 R-sq.cm./hr-mCi for I-125.

Readings on all surfaces of the analyzer were less than 0.001 mR/hr with the shutter closed.



Performed by: *Philip Manly*
 Title: Certified Health Physicist

DATE: 23 Nov 84

LEGEND

..... 0.1 mr/hr contour
 - - - - - 0.2 mr/hr contour
 - . - . - 1.0 mr/hr contour
 Data corrected to 800 mCi source

Scale: 1" = 6"

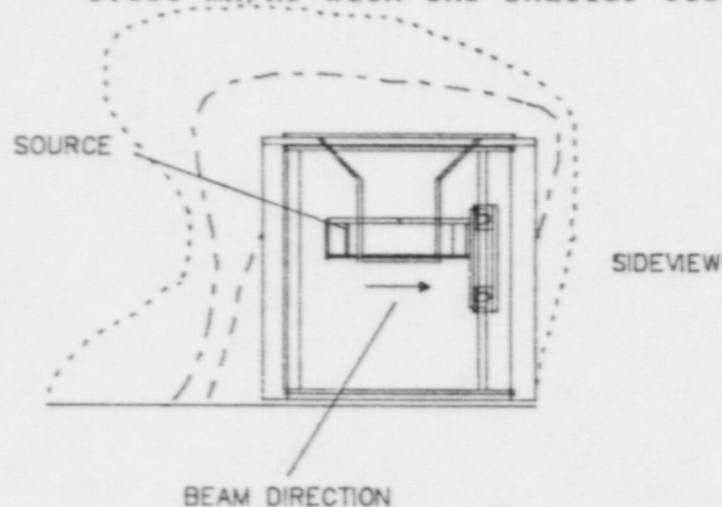
MATERIAL		Osteon, Inc.		
FINISH		TITLE		
DESIGNED BY UNLESS SPECIFIED FRACTIONAL 1/8 DECIMAL 0.03125 ANGLES 1/4 DEG		DRAWN BY CHECKED BY APPROVED BY <i>PM</i>	ISODOSE PLOT	
NEXT ASSY DRAWING		DRAWING NUMBER		REV
MODEL NUMBER SPSHAXXX				

Figure 1

Isodose lines for Osteon, Inc. Model SPSHAXXX bone mineral Analyzer (OsteoAnalyzer).

Readings shown for shutter open and 800 mCi I-125 source in place. Readings taken with Victoreen 490 survey meterf and 489-110 pancake probe. Survey meterc calibrated specifically for I-125, using two separate sources and source activity data supplied by AECL. Calibration factor of 0.00009 mR/hr per cpm was used, based on gamma factor of 0.7 R-sq.cm./hr-mCi for I-125.

Readings on all surfaces of the analyzer were less than 0.001 mR/hr with the shutter closed.



Performed by: *Philip J Manly*
 Title: Certified Health Physicist
 Date: 23 Nov 84

LEGEND	
.....	0.1 mr/hr contour
-----	0.2 mr/hr contour
-----	1.0 mr/hr contour
Data corrected to 800 mCi source	
Scale: 1" = 6"	

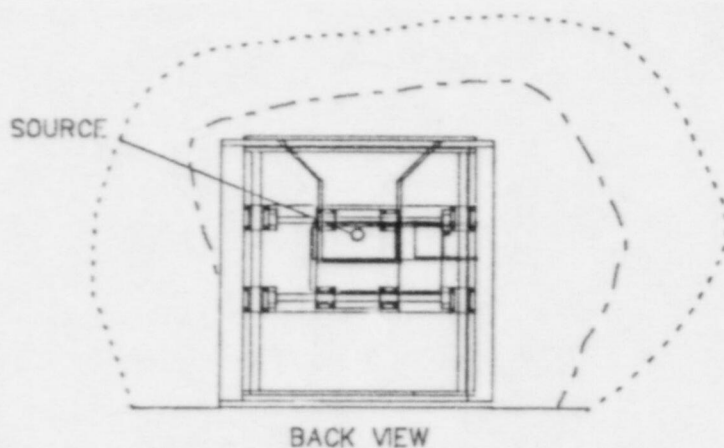
WATERL		Osteon, Inc.			
FINISH					
DESIGNED BY UNLESS SPECIFIED	DRAWN BY	TITLE ISODOSE PLOT			
	CHECKED BY				
	APPROVED BY <i>PM</i>				
FRACTIONAL $\frac{1}{16}$ / 1/4 ANGLES $\frac{1}{4}$ / 1/2				NEXT ASSY DRAWING	
MODEL NUMBER SPSHAXXX				DRAWING NUMBER	
		REV			

Figure 2

Isodose lines for Osteon, Inc. Model SPSHAXXX bone mineral Analyzer (OsteoAnalyzer).

Readings shown for shutter open and 800 mCi I-125 source in place. Readings taken with Victoreen 490 survey meterf and 489-110 pancake probe. Survey meterc calibrated specifically for I-125, using two separate sources and source activity data supplied by AECL. Calibration factor of 0.00009 mR/hr per cpm was used, based on gamma factor of 0.7 R-sq.cm./hr-mCi for I-125.

Readings on all surfaces of the analyzer were less than 0.001 mR/hr with the shutter closed.



Performed by: *Philip Manly*
 Title: Certified Health Physicist
 Date: 23 Nov 84

LEGEND	
.....	0.1 mr/hr contour
-----	0.2 mr/hr contour
-----	1.0 mr/hr contour
Data corrected to 800 mCi source	
Scale: 1" = 6"	

MATERIAL		Osteon, Inc.	
FINISH		TITLE	
FINISHED TO MATCH UNLESS SPECIFIED FRACTIONAL 1/64 DECIMAL 1/32 ANGLES 1/4 DEG		DRAWN BY CHECKED BY APPROVED BY <i>PM</i>	ISODOSE PLOT
NEXT ASSY DRAWING		DRAWING NUMBER	
MODEL NUMBER SPSHAXXX		REV	

Figure 3

I-125 Decay Curve

% Activity (Dose Rate) Remaining

