

LICENSE NO. 06-00843-03  
DOCKET NO. 030-01245  
CONTROL NO. 120054

(203) 785-6147

NAME ST. VINCENT'S MEDICAL CTR.

ATTN: ~~ROBERT D. RUSSO, M.D.~~ William J. Riordan  
President / CEO

ADDRESS 2800 MAIN STREET  
BRIDGEPORT, CT 06606-

GENTLEMAN,

THIS IS TO CONFIRM OUR TELEPHONE CONVERSATION ON *July 22, 1987*  
WITH *Robert Lange, Ph.D.* IN WHICH WE DISCUSSED THE INFORMATION  
WE NEED TO CONTINUE REVIEW OF YOUR APPLICATION DATED *January 27, 1987*

THE ITEMS SPECIFIED BELOW ARE THOSE WE DISCUSSED.

1. *What instrument to detect 200 dpm on wipe test*  
*- May change to 2000 for Tc-99m and 200 for I-131 per*  
*35.315(a)(7)*
2. *Action levels and action for thyroid bioassay*  
*- May want to limit bioassay to 35.315(a)(8)*
- 3.

IF WE DO NOT RECEIVE A REPLY FROM YOU WITHIN 30 CALENDAR DAYS  
FROM THE DATE OF THIS LETTER, IT MAY BE NECESSARY TO DENY  
YOUR APPLICATION FOR LICENSE RENEWAL AND TO TERMINATE YOUR  
LICENSE. THIS ACTION WOULD REQUIRE YOU TO DIVEST YOURSELF  
OF ALL LICENSED MATERIAL IN YOUR POSSESSION.

8801280561 870821  
REG1 LIC30  
06-00843-03 PDR

SINCERELY,

*Josephine M. Piccone, Ph.D.*  
NUCLEAR MATERIALS SAFETY SECTION *B.*  
NUCLEAR MATERIALS SAFETY AND SAFEGUARDS BRANCH

CONCURRENCES:

*Piccone*-----



St. Vincent's  
Medical Center

2800 Main Street, Bridgeport, Connecticut 06606 / Phone (203) 576-4000

MS-16  
P2

March 24, 1987

John E. Glenn, Ph.D., Chief  
Nuclear Materials Safety Section B  
Division of Radiation Safety and Safeguards  
U. S. Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

Docket No. 030-01245

Dear Dr. Glenn:

This letter replies to your request for additional information regarding our request to renew Byproduct Material License #06-00843-03. The Control Number is 120054. The numbers of the paragraphs below correspond to the numbered paragraphs of your letter of March 6, 1987.

1. The Management member of the Radiation Safety Committee is Mr. Leonard Rosati. Mr. Rosati is the Administrative Director of the Department of Radiology and represents Administration.

2. Rather than the procedures described in the original request for renewal, the following procedures will be followed regarding calibration of survey meters:

Low-level Geiger-Muller survey meters will be calibrated at St. Vincent's Medical Center, using sources of Tc-99m calibrated against NBS-traceable standards. The calibrations will be performed in accordance with Section 1, Appendix D of Regulatory Guide 10.8, October, 1980 Revision.

High-range ionization chamber survey meters will be calibrated by a calibration service: K & S Associates, Inc., 1854 Airplane Drive, Nashville, Tennessee 37210. This company is licensed to possess and use radioactive materials by the state of Tennessee. Their License Number is R19075-C91.

3. The following long-lived radioactive sources are used for calibration of the dose calibrator:

| <u>RADIOISOTOPE</u> | <u>ACTIVITY AS OF 1/1/87 (NBS-traceable to +/- 5%)</u> |
|---------------------|--|
| Cobalt-57           | 1.237 millicurie*                                      |
| Cesium-137          | 0.187 millicurie                                       |
| Barium-135          | 0.208 millicurie                                       |

120054 ML10

31 MAR 1987

John E. Glenn, Ph.D., Chief  
U.S. Nuclear Regulatory Commission  
March 24, 1987

-2-

\*Will be replaced when activity falls below 1 mCi


4. A copy of our instructions to Carriers who deliver packages of radioactive materials during off-duty hours is enclosed.

5. A copy of our written procedures for handling therapeutic quantities of Iodine-131 is enclosed, along with bioassay procedures for evaluating the thyroid uptake of those personnel involved with handling and administering therapeutic quantities of Iodine-131.

6. A copy of our written procedure for monitoring the effluent from the Xenon-133 trap is enclosed.

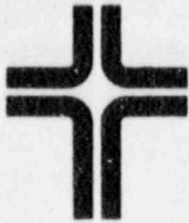
We trust you will find the information provided complete. We are looking forward to the prompt renewal of our NRC License.

Sincerely,



William J. Riordan  
President/Chief Executive Officer

WJR:mag  
enc. 3



St. Vincent's  
Medical Center

2800 Main Street, Bridgeport, Connecticut 06606 / Phone (203) 576-6000

January 2, 1987

MEMORANDUM

TO: Rocco Trungadi, Director, Security Department  
FROM: Leonard Rosati, Director, Radiology Department *LR*  
RE: RECEIPT OF PACKAGES CONTAINING RADIOACTIVE MATERIAL

Any packages containing radioactive material that arrive on off-duty hours shall be signed for by the Security guard on duty and taken immediately to the Nuclear Medicine Division of Radiology. Unlock the door, place the package in the container provided for radioactive isotopes, and relock the door.

If the package is wet or appears to be damaged immediately contact the hospital Radiation Safety Officer. Ask the carrier to remain at the hospital until it can be determined that neither he nor the delivery vehicle is contaminated.

RADIATION SAFETY OFFICER: Norman R. Vincent, M. D.  
OFFICE PHONE: 368-0277  
HOME PHONE: 227-0756

OR

SUPERVISOR OF NUCLEAR MEDICINE DIVISION: Mary Campbell, N.M.R.T.  
HOME PHONE: 929-5592

LR:mag

DEPARTMENT: NUCLEAR MEDICINE

DATE: May, 1986

SUBJECT:

REVIEWED

REVISED

5/86

I-131 Calculation and Treatment  
For Hyperthyroidism and TNG

## PROCEDURE:

1. All patients referred for I-131 treatment must have the diagnostic study available for confirmation of diagnosis and calculation of amount. If scan is done at outside facility they must be obtained before scheduling the treatment or book the treatment at least 48 hours in advance.
2. All cases for I-131 therapy are referred to Dr. Vincent for calculation of dose. He will notify the supervisor or her delegate of the material, form and amount to be used.
3. All female patients between the ages of 12 and 55 must have a pregnancy test the day before the treatment. The only exceptions are females with hysterectomies. All others must consent to pregnancy test or they will not be treated.

If the patient has had a hysterectomy obtain date and hospital-fill in on treatment form and have patient sign it before the treatment.

4. The supervisor will place a special order for the material once the pregnancy test and treatment have been scheduled.
5. When patient arrives fill out the necessary requests and log patient in.
6. Confirm with Laboratory, negative pregnancy test. If positive DO NOT TREAT.
7. Recalibrate dose in our calibrator, affix label to back of treatment form and have Dr. Vincent or resident verify amount, form, and setting in dose calibrator. All I-131 is opened in the Fume Hood.
8. Introduce patient to physician, the physician will discuss treatment with patient and answer all questions before the treatment

is given. If the patient is doubtful - DO NOT FORCE the patient to consent, refer them back to the physician that ordered the treatment.

9. After verifying amount and double checking label administer the capsule followed by water. Give capsule directly from container, do not allow the patient to hold capsule in their hands.
10. Let the patient leave, instructing the patient to return to their physician for follow up, they do not need to return to us unless additional treatment is necessary.



PROTOCOL FOR MEASURING THYROID  
UPTAKE OF PERSONNEL INVOLVED IN  
ADMINISTERING THERAPEUTIC AMOUNTS OF I-131

1. When a therapeutic dose of I-131 is ordered, also order a diagnostic doses of I-131, containing 5 to 10 microcuries of I-131. The vendor should specify the amount of activity in both doses.
2. Twenty-four hours after the therapeutic dose has been administered to the patient, all personnel who were involved in the administration (package receipt, opening, calibration, administering), measure the thyroidal uptake as follows:
  - a. Count the diagnostic capsule of known activity (Astd) for one minute in the thyroid phantom, using the thyroid probe set for I-131 gamma ray of 364 keV, at a thyroid-detector distance of 30 cm. This count is Cstd. Count background for one minute with capsule removed. This is Bstd.
  - b. Count the staff member's neck under the same conditions, also for one minute. This is Cthy.
  - c. Count a background at the staff member's thigh, under the same conditions. This is Bthy.
  - d. Calculate the thyroid activity as follows:

$$A_{thy} = \frac{(C_{thy} - B_{thy})}{(C_{std} - B_{std})} \times A_{std}$$

3. Record the data and store for two years.
4. Proposed Work Sheet:

Technologist's Name \_\_\_\_\_ Date of Count \_\_\_\_\_

Patient Name \_\_\_\_\_ Quantity of I-131 Administered \_\_\_\_\_

Date Administered \_\_\_\_\_ Form: Capsule \_\_\_ Liquid \_\_\_

Standard Activity on Date of Assay \_\_\_\_\_ uCi

Standard Activity Date of Count \_\_\_\_\_ uCi (Astd)

One-min count of standard in thyroid phantom \_\_\_\_\_ c/min (Cstd)

Background (with standard removed) \_\_\_\_\_ c/min (Bstd)

Neck Count \_\_\_\_\_ c/min (Cthy)

Thigh Count \_\_\_\_\_ c/min (Bthy)

Thyroid uptake (uCi) =  $\frac{(C_{thy} - B_{thy})}{(C_{std} - B_{std})} \times A_{std}$

9/17/85



DEPARTMENT: Nuclear Medicine

DATE: 12/22/86

SUBJECT: Monitoring of staff thyroid  
burden of I-131 from patients hospitalized  
with 30 or more mCi of I-131.

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Policy:

In accordance with NRC rules and regulations and St. Vincent's ALARA program all staff members involved in the administration and monitoring of patients containing 30 or more mCi of I-131 will have I-131 Thyroid uptake(s) 24 hours after their exposures.

The protocol for this uptake is outlined in a separate procedure- See "Protocol for Measuring Thyroid Uptake of Personnel Involved in Administering Therapeutic Amounts of I-131". dated 9/17/85.

The results of the uptake will be kept for two (2) years post administration.

DEPARTMENT: Nuclear Medicine

DATE: 2/10/87

SUBJECT: Procedure for testing Xe-133  
Trap for EFFLUENT Concentration of  
Xe-133

REVIEWED

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## Introduction:

The NRC license requires that the effluent from the Xe-133 trap be checked for Xe-133 content on a monthly basis. The trap effluent concentration of Xe-133 can be measured by collecting a known quantity of effluent air and measuring the Xe-133 using a gamma camera. A standard containing a known quantity (uCi) of Xe-133 is required to do the measurement. A breathing bag containing a known volume is available from the supervisor.

## Measurement Method: (Performed Monthly-morning after trap is used)

1. Connect the bag (in the collapsed state) to the effluent port on the back of the Xe-133 trap. Turn the trap on and fill the bag with air. Note the volume of the bag in milliliters (ml). This is the volume (V). Seal the bag.
2. Peak either of the large field of view camera for Xe-133. Count the bag for 60 seconds record counts, this is C. Remove the bag and count background for 60 seconds, this is B.
3. Obtain a vial of Xe-133, Measure the Xe-133 activity in the dose calibrator. Note the activity in microcuries, this is A. Count the vial on the same camera on Xe-133 setting. Record the counts, this is S.
4. Calculate the Xe-133 concentration in effluent with the following equation:

$$\text{Xe-133 (microcuries/ml)} = \frac{(C-B) \times A}{(S-B) \times V}$$

CONTINUED

Procedure for testing Xe-133 Trap for EFFLUENT Concentration of  
Xe-133 --- Continued

Where:

C=Bag counts / 60 seconds  
B=Background / 60 seconds  
A=Vial standard activity in microcuries  
S=Vial counts / 60 seconds  
V=volume of Bag in ml

5. Sample calculation:

C(Bag counts) = 6520 cts/min.  
B(Background) = 5577 cts/min.  
A(vial activity)=268520 cts/min.  
V(Bag volume) =4000 ml

$$\text{Xe-133 (uCi/ml)} = \frac{(6520-5577) \times 4520}{(268520-5577) \times 4000} =$$

$$\frac{943 \times 4520}{262943 \times 4000} = \frac{4262360}{1051772000} = .0040 =$$

$$4.0 \times 10^{-3} \text{ uCi/ml}$$

6. Record the results on the appropriate form.
7. Watch for month to month increases in the effluent. Show the monthly results to the radiation safety officer. Increased concentration may indicate trap failure.

Formulated from: R.C. Lange's Procedure dated  
2/87/MEC