



St Joseph's
HOSPITAL MILWAUKEE

5000 West Chambers Street Milwaukee, WI 53220-1688 (414) 447-2000

June 16, 1994

D. J. Holt, Chief
Nuclear Materials Inspection
Section I
U.S. Nuclear Regulatory Commission
Region III
801 Warrenville Road
Lisle, Illinois 60532-4351

Dear Ms. Holt:

As requested by you during our telephone conversation of May 27, 1994 I am submitting this report concerning a thyroid ablation using Iodine 131.

The enclosed report indicates that we were unable to determine who actually removed the trash from the patients room.

To reiterate, the average dose rate from contaminated trash from such a procedure is 0.46 mRad per hour at the surface of the plastic bag containing the removed items. After monitoring the autoclave, the shredder blades and the trash container, we could detect no radiation above background. The survey meter can detect radiation readings of less than 10 micro Rad/hr. The trash container was removed on May 31, 1994 and the contents taken to a landfill.

Our Radiation Safety Committee met on June 9, 1994 and discussed this incident. The decision was made to erect a physical barrier at the door of the room in which a patient has received an Iodine procedure. The barrier will be put in place when the patient leaves the room and will remain until the room is decontaminated.

If you need any further information, please contact me at the address below.

Sincerely,

William G. Artner
Radiation Safety Officer
St. Joseph's Hospital
5000 W. Chambers St.
Milwaukee, Wisconsin 53210

WGA/dlw

CAUTION

A thyroid ablation patient was discharged on Wednesday, May 25, 1994 at 1500 hours from Room W639A. The room, W639A, was scheduled for painting and redecorating on Tuesday, May 31, 1994 six days from the discharge date. Because of the scheduled redecorating and a low 6 West patient census, the room was put "on hold." "On hold" means that no patients would be assigned to that room until after the redecorating. When the Nuclear Medicine Supervisor (Richard L. Olson) learned that the room was "on hold," the decision was made not to use overtime to monitor and decontaminate the room, therefore the door was closed. NRC mandated signage remained posted on the door. That signage included a "CAUTION RADIOACTIVE MATERIALS," another sign that stated "NO HOUSEKEEPING, NO LABS" and finally, a sign that included the daily recorded radiation levels of the inside and at the door of W639A.

Sometime after discharge and approximately 0830 the next morning (Thursday, May 26, 1994) a person or persons unknown removed all contaminated trash, floor coverings, shelf coverings, bed linen, blankets, bathroom linens and food waste from the room. We must assume hospital protocol was followed for the disposal and laundering of these materials. All coverings were disposable as was the bed linen; therefore, placed in plastic bags.

The bagged disposables and food waste would be placed in the trash room across the hall from W639A. From there the disposables would be transported inside a trash cart to the autoclave room, autoclaved and sent to the shredding machine, and finally the shredding would enter the trash compactor. The blankets, towels, wash cloths and hospital gowns would be sent to the hospital laundry.

DISCOVERY

The Nuclear Medicine Supervisor and Nuclear Medicine Technologist (Heidi Bougie) discovered the stripped room on Friday, May 27, 1994 at approximately 0930. The signage was still posted on the door. The Nuclear Medicine Supervisor then notified the Radiation Safety Officer (Bill Artner). The Radiation Safety Officer notified the Hospital Administrator (Pat Banach) on call at approximately 1130.

INSPECTION

The Director of Housekeeping (Lou Yaeger) was informed and it was ascertained that the compacted trash from Wednesday, May 25, 1994 was still at the hospital because the trash compactor had not been emptied. The Radiation Safety Officer, Nuclear Medicine Supervisor, and Housekeeping Supervisor (Pat Luetke) monitored (GM survey meter model 3, LUDLUM S/N 75198, next calibration date February, 1995) the shredder blades and the compactor storage container. No radiation measurement above background was discovered.

To develop a model of typical stored trash from patients treated with this dosage of I-131, the Nuclear Medicine Supervisor reviewed radiation readings from eleven storage records of previous patients. The Radiation Safety Officer and the Nuclear Medicine Supervisor averaged the eleven records and ascertained a typical waste reading of 0.46 mR/hr.

<u>NRC NOTIFICATION</u>	<i>With the above information, the Radiation Safety Officer called the NRC District III Office at approximately 1140 on Friday, May 27, 1994. Orders from the NRC were to submit a written report within 30 days from the incident. Due to the low radiation readings, the NRC did not find it necessary to quarantine the trash containment vessel.</i>
<u>INVESTIGATION</u>	<p><i>Housekeeping personnel assigned to 6 West were interviewed by Pat Luetke. No housekeeper admitted any knowledge of the trash removal. Every housekeeper stated that they were aware of the room, they were aware of the meaning of the signs, and did not remove anything from Room W639A.</i></p> <p><i>Mary Wanzer, Nurse Manager 6 West, interviewed nursing personnel assigned to duty Wednesday, May 25, 1994 through Friday, May 27, 1994. No one acknowledged removing trash from Room W639A.</i></p>
<u>DECONTAMINATION</u>	<i>Nuclear Medicine Technologist (Heidi Bougie) removed all traces of removable contamination from Room W639A as documented by the Final Room Survey and wipe test report dated 5/31/94.</i>

A Report to the NRC is pending and due by June 25, 1994.

28 August 1996

MONITOR AND WIPE TEST ALL RADIOACTIVE SHIPMENTS WITH A DOT LABEL WITHIN THREE HOURS OF THE START OF BUSINESS.

Exception:

Shipments containing Xe-133 gas only shall be monitored, but a wipe test is not needed.

* COUNT ALL WIPE TESTS FOR ONE MINUTE ON THE LUDLUM WELL 2200.

* WIPE TESTS MAY NOT EXCEED 2200 DPM. IF THE WIPE TEST EXCEEDS 2200 DPM, CALL THE RADIATION SAFETY OFFICER AT EXTENSION 2221.

CONVERSIONS:

CPM TO DPM

$$\frac{\text{cpm} - \text{bkg}}{\text{efficiency factor (.811)}}$$

DPM TO CPM

$$\text{dpm} \times \text{efficiency factor} = \text{cpm}$$

example: $2200\text{dpm} \times 0.811 = 1784 \text{ net cpm}$
or net counts/minute should not exceed 1784.

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NUCLEAR MEDICINE DEPARTMENT
MILWAUKEE, WISCONSIN
Date: 11/18/96

LINEARITY TEST USING THE LINEATOR

10 CFR 35.50(b)(3) requires, in part, that a licensee test each dose calibrator quarterly for linearity over the range of its use between the highest dosage that will be administered to a patient and 30 microcuries.

Due to the fact that I-131 ablation patients will receive a dose that may exceed 150 millicuries, when performing a linearity test on the dose calibrator CRC-12, serial number 13056, order a Tc99m04 dose from Medi-Physics for at least 200 millicuries. Tell Medi-Physics that the dose is for linearity testing.

Materials Needed:

- 4 ea Dose Calibrator Linearity Test Forms
- 3 Tc99m04 source vials (>200 mCi, >100mCi, and >2mCi)
- 1 Lineator

1. Begin by removing the dipper and chamber shield from the dose calibrator.
2. Take the lineator and remove tubes A, B, and C.
3. Place tube 0 in the calibrator and record the background reading (be patient and let the dose calibrator settle down before recording readings, all recordings will be in millicuries).
4. Remove tube 0 from calibrator and replace tubes A, B, and C.
5. Stand behind the body shield and using tongs, slide the Tc99m04 source into the lineator, let the source slide to the bottom.

* COMPLETE THE REMAINDER OF THE TEST WITHIN 5 MINUTES.

6. Place the lineator in the calibrator and record the reading for
 - tubes 0+ABC,
 - then 0+BC,
 - then 0+AC,
 - then 0+C,
 - then 0+AB,
 - then 0+B,
 - then 0+A,
 - then 0 only.
7. You started with a source >200 millicuries you have measured a range between >200 millicuries and <180 microcuries in eight steps.
8. Repeat step 6 using the middle range source, and again using the lower range source. Enter these data into the NMIS data base.
9. Repeat all measurements that fail >30 microcuries.

*The dose range for CRC-7 serial # 71624 in CDU is >40 millicuries.

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10. Begin with step one.
 11. The eight testing steps should give you a range >40 millicuries and <30 microcuries.
 12. Enter these data into the NMIS data base.
 13. Repeat all measurements that fail >30 microcuries.
 14. Print out all reports.
 15. The Tech performing the test signs and the RSO signs the forms.
 16. File in the appropriate 3 ring binder for NRC inspection.



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ADMINISTRATION (Fax #414/874-4393)
FAX COVER SHEET

DATE: 11.20.96

TIME: 3:20

OF PAGES 10

TO: Jim Blanton

FAX # 301.415.6434

INSTITUTION NAME: Division of Nuclear Materials Safety

FROM: Rick Hart

TELEPHONE # 414/447.2223

Please call 447-2130 if you experience any problems with this FAX transmission. Thank you.

Please send to your control desk