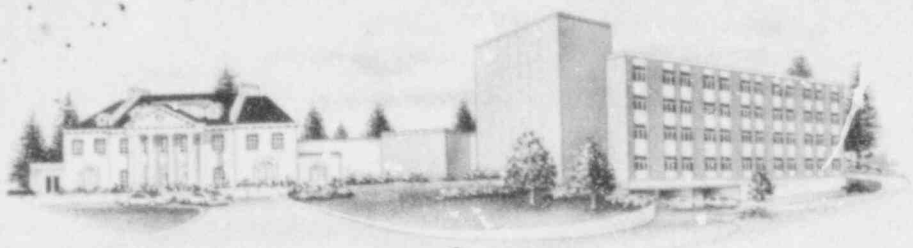


165 TOR COURT
TELEPHONE 413-443-4761

HILLCREST HOSPITAL
PITTSFIELD, MASSACHUSETTS 01201

Docket No. 30-08788
License No. 20-15240-01

August 4, 1981

John D. Kinneman, Chief, Materials
Radiological Protection Section,
Technical Inspection Branch
United States Nuclear Regulatory Commission
Region 1
631 Park Avenue
King of Prussia, Pennsylvania 19406

Dear Mr. Kinneman:

This is in reference to your letter dated 15 July 1981 concerning the routine safety inspection conducted by your office on 18 June 1981.

Pursuant to the provisions of 10 CFR 2.201 and in accordance with the Interim Enforcement Policy, 45 FR 66754 (October 7, 1980), the following identified violations are submitted as outlined in your letter with the corrective steps taken.

A. In regards to our failure to evaluate the radiation dose to the hand and fingers of our nuclear medicine physicians, who occasionally inject millicurie amounts of technetium-99m, a ring badge was ordered and received on 7-01-81. These badges will now be received monthly, as are the body badges, and the proper documentation maintained. (See attachment #1).

B. The calibration of the ionization chamber was completed on 7-14-81. (See attachment #2).

Paragraph 2 of Section B required that packages be surveyed for radiation levels at three feet and the surface of the package with results recorded. In compliance of this requirement this survey and documentation was initiated on 6-22-81. (See attachment #3).

C. Section C of your letter states that we had failed to leak test our 224 microcuries sealed cesium-137 reference source since October 1978. We believe that the reference date of October 1978 was an oversight-incorrect recorded date. The leak test results shown to the inspector was dated October 9, 1979. (See attachment #4). In addition, the leak tests for 1980 which could not be produced at the time of inspection, due to the absence of the Chief Technologist, are enclosed. (See attachment #5). Also the just completed mandatory six month inspection is enclosed. (See attachment #6).

Respectively submitted,

Joseph A. Moriarty, M.D.
Chief of Radiology

cc: Eugene A. Dellea, Administrator
Thomas G. Martin, III, Physicist

ACCT. NO	SERIES	EXPOSURE PERIOD	BADGE DATE
57045		1 MONTH M	70181

HILLCREST HOSPITAL
ATT C L GABRIEL RT
X-RAY DEPT
165 TOR COURT
PITTSFIELD MA 01201

19343

R. S. Landauer, Jr. & Co.
Division of Technical Operations, Incorporated

Glenwood Science Park
Glenwood, Illinois 60425
Telephone (31 755-7000

ACCT. NO	SERIES	EXPOSURE PERIOD	BADGE DATE
57045		1 MONTH M	70181

HILLCREST HOSPITAL
ATT C L GABRIEL RT
X-RAY DEPT
165 TOR COURT
PITTSFIELD MA 01201

19343

USE REVERSE SIDE FOR ADDITIONS AND OTHER CHANGES

SERVICE CHANGE ORDER

PACKING LIST

R. S. LANDAUER, JR. & CO. DIVISION OF TECHNICAL OPERATIONS, INC. GLENWOOD SCIENCE PARK • GLENWOOD, ILLINOIS 60425

PARTICIPANT NUMBER	BADGE TYPE	NAME	DELETE (D)	CHANGE SERIES FROM	CHANGE SERIES TO	PARTICIPANT NUMBER	BADGE TYPE	NAME (LIMIT OF 16 CHARACTERS OR SPACES)	SOCIAL SECURITY NO.	SEX	BIRTH DATE MO.	DAY	YEAR
00000		TLD CONTROL				00000		TLD CONTROL					
00042	03	MORIARTY J MD				00042	03	MORIARTY J MD					
00058	03	GOLD H M MD				00058	03	GOLD H M MD					

IMPORTANT: WHEN REQUESTING ANY CHANGES, ADDITIONS, OR DELETIONS, PLEASE MAKE THEM ON THIS FORM. CHANGES TO BE EFFECTIVE FOR YOUR NEXT WEAR DATE MUST REACH THE GLENWOOD OFFICE NO LATER THAN

PLEASE DO NOT DUPLICATE CHANGES REQUESTED DURING PRECEDING 20 DAYS

DO NOT RETURN CHANGE REQUESTS WITH YOUR DOSIMETERS SINCE THIS DELAYS HANDLING. SEND ALL CHANGES UNDER SEPARATE COVER BY FIRST CLASS MAIL ATTENTION: ORDER DEPARTMENT. A BADGE NUMBER IS ASSIGNED PERMANENTLY AND CANNOT BE ASSIGNED TO A NEW PERSON. NAME CHANGES MAY BE MADE ONLY TO CORRECT SPELLING OR DUE TO MARRIAGE. DOSIMETERS MAY BE RETURNED IN ORIGINAL SHIPPING CONTAINER BUT OLD LABELS AND POSTMARKS MUST BE COVERED AND PROPER POSTAGE AFFIXED.

FOR ADDRESS CHANG

PLEASE TYPE OR PRINT

SHIPPING ADDRESS (MAXIMUM 5 LINES

1.
2.
3.
4. CITY
5.

BILLING ADDRESS (MAXIMUM 5 LINES OF

1.
2.
3.
4. CITY
5.

REPORTING ADDRESS (MAX

1.
2.
3.
4. CITY
5.

ONE HOLDER IS LOANED AT NO CHARGE FOR EACH FILM IN SE... AT TERMINATION OF CONTRACT. EXTRA HOLDERS MAY B... WITH THIS SHIPMENT OUR RECORDS INDICATE THE FOLLO... IN YOUR POSSESSION

G (REGULAR)	H (THERMAL)	D (NEUTRAK 10
37		

ATTACHMENT #1

NUCLEAR INSTRUMENT CO.

Calibration Certificate

Customer: Hillcrest Hospital
Instrument Model: CS-40A
Serial No.: 73-1904
Probe Type: ________
Serial No.: ________
Calibration Date: 7-14-81

Calibration source(s)	Radium 226 [A]	Radium 226 [B]	Radium 226 [C]	Cesium 137 [D]	Cesium 137 [E]
Quantity	25.02 mg.	4.98 mg.	1.03 mg.	130 curies	100 mCi
Mfgs. No.	11880	1582	1-738	Model 69	28-5
NBS Traceable No.	TPX 33822	11005	11005	C-396	30214
Date	8-20-70	11-5-75	9-22-77	9-14-68	10-8-79

Calculated Exposure Rate	Meter Reading	Range Maximum	Calibration Source(s)
4	3.9 - 4	5 MR/hr	E
2.5	2.4 - 2.5	R/hr	
1	1 - 1.1		
40	39 - 40	50 MR/hr	E
25	24 - 25	R/hr	
10	9.5 - 10		
400	405 - 410	500 MR/hr	E
250	250 - 255	R/hr	
100	100		
500	450	5000 MR/hr	E
1000	950 - 1000	R/hr	
1500	1450 - 1500		
		MR/hr	
		R/hr	

Integrate Calculated Dose

Beta Shield Open ☐ Closed ☐
Detector center axis parallel ☐ perpendicular ☐ to radiation field
Electronic Alignment ☐ Temperature ____ °C Barometric Pressure ____ mm(Hg) Elevation ____
Instrument check source. Scale: ____ Reading: ____

Remarks: Allow sufficient warm up time to zero and when switching ranges. Rezero instrument on X1 range before taking readings.

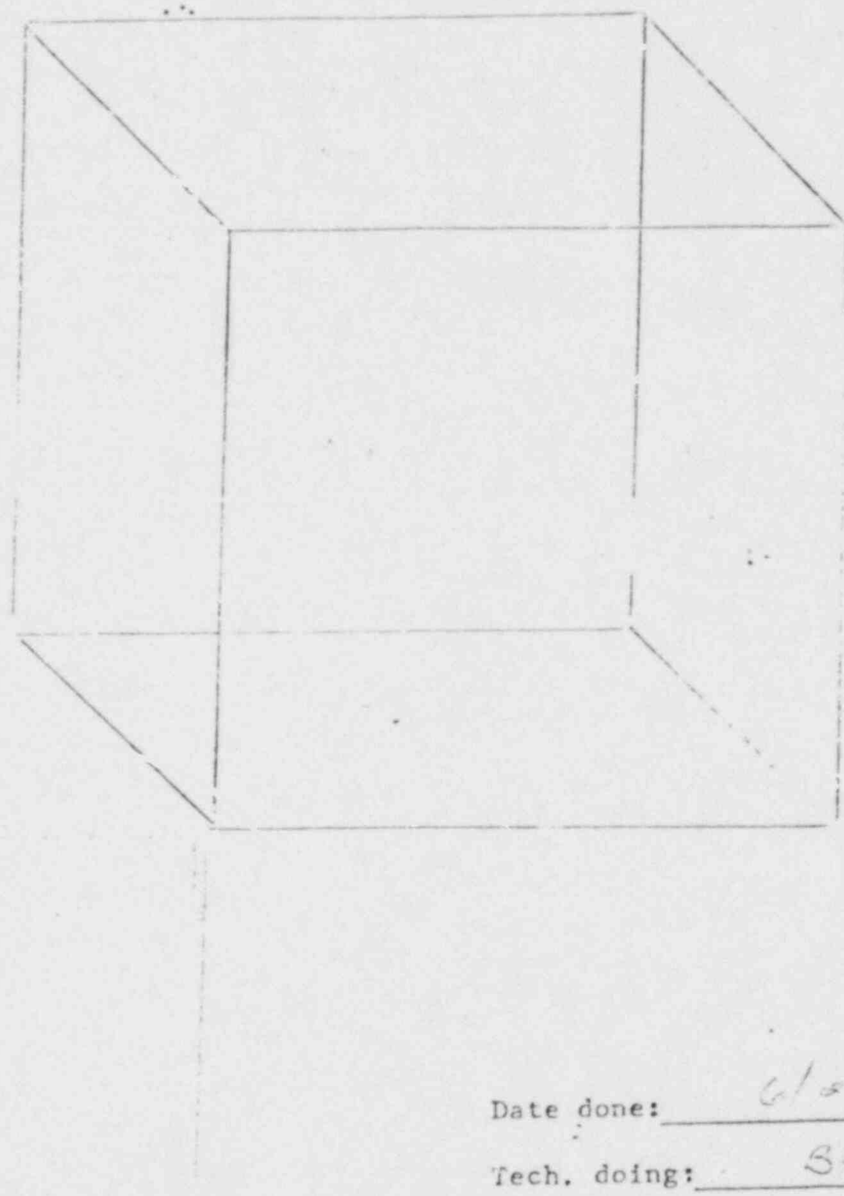
This instrument has been calibrated using procedures recommended by the A.E.C., Atomic Energy Commission.

Calibrated by ____

65 Grove Street — P.O. Box 178 — Rockland, MA. 02370 — Tel. Area Code 617 - 878-6878

ATTACHMENT #2

Radionuclide WIPE RESULTS



Date done: 6/30/[illegible]

Tech. doing: B[illegible]

Instrument used: Victoreen

Reading .1 mr/hr [illegible]

Isotope [illegible] Generator

Surface 30

3 ft. away 4 mr/hr

ATTACHMENT #3

Associated with
Russell F. Cowing

THOMAS G. MARTIN, III
Consultant in Radiological Physics
588 WINTER STREET FRAMINGHAM, MASS. 01701 (617) 872-0502 (617) 653-1000 X2146

October 9, 1979

Joseph Moriarty, M.D.
Department of Radiology
Hillcrest Hospital
165 Tor Court
Pittsfield, MA 01201

Dear Dr. Moriarty:

On October 1 and 2, 1979 a radiological survey was conducted in the Radiology and Nuclear Medicine Department.

All measurements of stray radiation were made using a Baird-Atomic, Model 414, portable ionization chamber survey meter calibrated against cobalt-60 gamma rays. Table top dose rate measurements were made using a Victoreen "r" meter, Model 70, and a 25R chamber.

Enclosed are copies of the worksheets completed during survey. Equipment is in compliance with the recommendations presented in the National Council on Radiation Protection and Measurements NCRP Report Nos. 33, Medical X-Ray and Gamma-Ray Protection for Energies Up to 10 MeV and No. 49, Structural Shielding Design and Evaluation for Medical Use of X-Ray and Gamma Rays of Energies Up to 10 MeV except as indicated on the worksheets.

I reviewed the last year of film badge records and at least two questions arose. In February it appears that a correction was made without notifying Mr. Gabriel, resulting in an error in the ring badge cumulative total for badge number 00046 U3 (ring). By May it was corrected without notification. I will write to the contractor for an explanation. At the same time I will tell them to add the radiation histories of Dr. Gold and Ms. Farrell.

I noted also that Ms. Demick had not yet signed that she had read the information in Guide 8.12. I suggest that she do this.

In addition, I reviewed the Nuclear Medicine Department facilities and have the following comments:

a. Records of incoming, use, and disposal of radionuclides are being properly maintained.

ATTACHMENT #4

b. As temporary storage location the drawer in the supply storage room is suitable however the security of the location (i.e. not under control of the Nuclear Medicine Department) should be considered while looking for a permanent site. Drawer and room were placarded properly however I had Ms. Farrell put the description of the material stored on the drawer caution sign.

c. The number of meetings of the Radioisotope Committee has diminished to only one this year (July). . I recommend the four per year or a change in the Procedures Manual to reflect the planned frequency.

d. Wipe tests were made at several locations in the laboratory with the following results:

AREA	Dpm/100 cm^2 ± 1.96σ
Bench by Generator	0.0 ± 2.6
Floor in Prep Area	-1.1 ± 2.6
Sink	1.0 ± 2.6
Floor by Camera	-2.0 ± 2.6
Floor by Entrance	0.9 ± 2.6

These data do not indicate contamination.

The three calibration sources were also wipe tested and the results of the radioassay are as follows:

SOURCE	Dpm/Surface Wipe
^{60}Co	0.9 ± 2.6
^{137}Cs	1.1 ± 2.6
^{57}Co	-1.8 ± 2.6

These data do not indicate leakage of any of the sources.

As we discussed during my visit, I feel that in order to maintain the high level of compliance with changing federal and state regulations as well as effective quality control in both the Radiology and Nuclear Medicine Departments, there is a need for increased availability of physics consultation. The present once per year does not permit problems to be met and solved without long delays. I will prepare a proposal for the minimum coverage that I feel will perform the job in an adequate manner. I will send it to you as soon as it is ready.

If you have any questions concerning this report, please contact me.

Sincerely yours,

THOMAS G. MARTIN, III
Certified Health Physicist

December 8,1980

I can't emphasize too much the importance of a properly calibrated and functioning dose calibrator.

On the use of the Techne Scan PYP Kit for cardiac imaging, there will be no need for an amendment to your license provided you use the same route of adminestration and the same dose range that you use for skeletal imaging.

The three calibration sources were wipe tested and the results of the radioassay are as follows:

SOURCE	dpm/Wipe
^{60}Co	1.0 ± 2.6
^{57}Co	0.7 ± 2.6
^{137}Cs	-0.9 ± 2.6

These data do not indicate leakage.

During my next visit, we should schedule a meeting of the Radiation Safety Committee and I will bring a draft of the new decontamination/emergency procedures. If you have any questions, please cantact me.

Sincerely,

THOMAS G. MARTIN,III
Certified Health Physicist

ATTACHMENT #5

July 30, 1981

The results of wipe tests of the calibration sources made during this visit are as follows:

SOURCE	dpm	
^{60}Co	1.0	2.6
^{137}Cs	-1.4	2.6
^{57}Co	0.0	2.6

These data do not indicate any leakage.

I have examined the radiographs of the gloves and the aprons. Of the two pair of gloves and nineteen aprons, only the green apron showed evidence of loss of of shielding integrity. The apron identified as x-ray blue, I think is not sufficient for general use. These two aprons should be taken out of service. I will bring the radiographs back with me on my next visit.

Also during my next visit we can discuss the emergency decontamination procedures that I gave you and see if an In-service class should be set up for it.

If you have any questions concerning this report please call me.

Sincerely,

THOMAS G. MARTIN, III
Certified Health Physicist

AMENDMENT #6