

PROVIDENCE
HOSPITAL

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SERVING IN THE WEST SINCE 1856

U.S. Nuclear Regulatory Commission, Region V
Materials Radiation Protection Section
1450 Maria Lane, Suite 260
Walnut Creek, California 94596

September 9, 1982

Dear Mr. Thomas:

This letter is written in response to items of noncompliance referenced in Notice of Violations dated August 17, 1982. These items of noncompliance were identified during inspection of our license #50-17838-01 conducted on July 21 and 22, 1982.

- A. Item: Failure to calibrate survey instruments at required one-year frequency.

Corrective Steps: All survey instruments including Victoreen survey meter Model 491, serial #1862, were calibrated on July 26, 1982 by Mr. Ralph Baltzo of Seattle, Washington. Enclosed you will find a copy of Mr. Baltzo's report of calibration of the survey meter referenced above. See attachment A. Similar documents remain on file in our Radiation Safety office for all survey meters used in our safety program.

Steps Taken to Avoid Further Noncompliance:

1. A large 1983 calendar has been ordered through our purchasing department. Upon its arrival (1983 calendars are not available until mid-September, 1982) it will be posted in the Radiation Safety office. This calendar will be dedicated to Radiation Safety Program planning. This calendar will be plainly marked on the appropriate dates as a reminder to the Medical Physicist and the Department Manager of upcoming events and tasks that must be performed at specified frequencies to remain in full compliance with applicable regulations and license conditions. Examples of events and tasks that will be scheduled are: leak testing of sealed sources, calibration of survey instruments, and sealed source inventories.
2. The Cancer Therapy Center's 1983 daily scheduling book is already in use. Every member of this department, including the Medical Physicist, the Department Manager, and the hospital's acting RSO, Dr. Charles Sternhagen, receives a copy

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of the Department's scheduled daily activities. Important periodic Radiation Safety Program tasks have already been written into the schedule book in such a way as to inform in advance all who receive daily schedules of upcoming tasks and deadlines.

3. Survey meters have been individually labeled with date of calibration and date of next scheduled calibration as an ongoing reminder to all who use these meters of their calibration status.

- B. Item: Failure to leak test Strontium 90 eye applicator at required six-month frequency.

Corrective Steps: This sealed source as well as all other sealed sources in our possession requiring leak testing were leak tested on July 26, 1982 by Mr. Ralph Baltzo of Seattle, Washington. Enclosed you will find a copy of Mr. Baltzo's report of the results of the leak test of the Strontium 90 eye applicator. See attachment B. Similar documents remain on file in our Radiation Safety office for all sources requiring leak testing.

Steps Taken to Avoid Further Noncompliance:

1. The same calendar referenced in A 1 above will be used to schedule future leak tests.
2. The same daily scheduling book referenced in A 2 above has already been marked in order to remind Radiation Safety personnel of future leak test dates.

- C. Item: Failure to perform group VI sealed source quarterly inventories at required frequency.

Corrective Steps: Documentation of inventories of sources conducted between December 19, 1980 and July 20, 1982 have not been found as of this date.

Steps Taken to Avoid Further Noncompliance:

1. The same calendar referenced in A 1 and B 1 above will be utilized to schedule future source inventories.
2. The same daily scheduling book referenced in A 2 and B 2 above has already been marked in order to remind Radiation Safety personnel of future sealed source inventory due dates.
3. A typed list of our sealed source inventory will be posted in the Cancer Therapy Center "hot lab". This list will not only indicate the quantities and kinds and locations of

radioactive material, but will include the date of the last inventory and the date of the next scheduled routine sealed source inventory.

- D. Item: Failure to provide molybdenum-99 breakthrough training to nuclear medicine technologists who elute technetium-99m from molybdenum-99/technetium-99m generators.

Corrective Steps: We are currently using a technetium-99m generator from Mallinckrodt. We have arranged to have Mallinckrodt send a representative to Anchorage on October 14, 1982. He will present a molybdenum-99 breakthrough training program to the Radiation Safety Committee for their approval. With approval of the RSC, he will instruct and certify our two nuclear medicine technologists in molybdenum-99 breakthrough testing. Until October 14, 1982 we will maintain our present method of testing.

Steps Taken to Avoid Further Noncompliance:

1. Mallinckrodt will certify Norman Lind and David Hull in molybdenum-99 breakthrough testing.
2. Any future employees in Nuclear Medicine will be trained and certified by a qualified individual who has been approved by the RSC.

In addition to answering the specific items of noncompliance mentioned in your letter, we have already taken the following actions designed to improve the overall effectiveness of our Radiation Safety Program's management control system.

1. Centralized records

The recordkeeping function of our Radiation Safety Program has been improved through centralizing the major Radiation Safety Program records in the Radiation Safety office files. These include sealed source inventories, leak test records, accuracy tests of the Nuclear Medicine dose calibrator, and records of survey instrument calibration.

2. Improve quality of record keeping

Required records have been reorganized and placed in appropriate binders or ledgers so that these records may be easily audited and inspected.

3. License organization

Our radioactive materials licenses have been reorganized and placed in binders.

4. New personnel

On August 12, 1982, Darwin L. Zellmer joined the Providence Hospital as Medical Physicist. Mr. Zellmer's skills in the area of radiation biophysics will certainly strengthen our overall Radiation Safety Program. We anticipate applying for amendments to our licenses naming Mr. Zellmer as hospital Radiation Safety Officer. Until such time as he has been approved and an amendment issued to that effect, the hospital's Radiation Safety Officer will continue to be Dr. Charles Sternhagen, the Medical Director of the Cancer Therapy Center.

In addition to steps we have already taken to strengthen our program, we plan to implement the following steps to further improve the management of our Radiation Safety Program.

1. License renewal. An in-depth review of our licenses prompted by the inspection of July 21 and 22, 1982 has made it clear to us that our licenses may not reflect the current status of our radioactive materials program. Old procedures and commitments pervade both licenses to such an extent that it is difficult to determine just what our obligations are under these licenses. We feel that the best and, in fact, only way to make significant improvements in the operation of our program is to renew both licenses in their entirety. We will begin drafting a renewal document by the end of September. Barring unforeseen circumstances, we plan to make application for renewal of both licenses by the end of 1982, well in advance of our license expiration dates.
2. Audits. Planning is under way to develop a workable system for auditing all aspects of our Radiation Safety Program. We anticipate three levels of audit:
 - a. Department Managers Audit--The department managers of the Radiology Department and the Cancer Therapy Center will perform monthly audits of radiation safety activities that take place within their departments.
 - b. Radiation Safety Officer Audits--The hospital's Radiation Safety Officer will perform quarterly audits of various aspects of the hospital's Radiation Safety Program. It is anticipated that different aspects of the program will be looked at during each audit. Over a year's period of time these audits should cover all important aspects of the Radiation Safety Program.

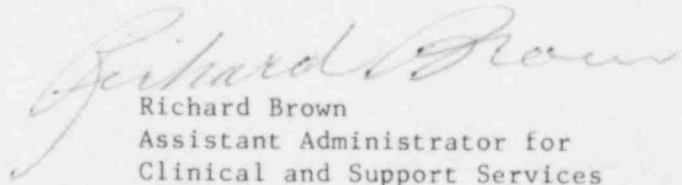
- c. Administration/Radiation Safety Committee Audits--The hospital administrator or his designee in conjunction with the hospital's Radiation Safety Committee will perform annual audits of the results of the Radiation Safety Program.

Detailed schedules and checklists for the purposes of auditing the Radiation Safety Program are being developed at this time.

3. Revised composition of the Radiation Safety Committee--Our hospital's policy on Radiation Safety establishes a Radiation Safety Committee. According to our policy, the chairman of the Radiation Safety Committee is to be the Medical and Health Physicist of the hospital. Pursuant to your concerns regarding the management of our Radiation Safety Program, we anticipate revising the composition of the Radiation Safety Committee so that the chairman of the committee is not in fact the Radiation Safety Officer. Changing the composition of the Radiation Safety committee requires a change in hospital policy. Proposals concerning the composition of the Radiation Safety Committee will be discussed at the next meeting of the Radiation Safety Committee.

We sincerely hope that the substance of this letter will prove sufficient to show us to be in full compliance with all applicable regulations and our license conditions. If you should have any further questions regarding this letter, do not hesitate to call or write.

Sincerely,


Richard Brown
Assistant Administrator for
Clinical and Support Services

RGB/cb
Enclosures

PROVIDENCE HOSPITAL
3200 PROVIDENCE DRIVE
ANCHORAGE, ALASKA
99504

SURVEY INSTRUMENT CALIBRATION

AUGUST 3, 1982

INSTRUMENT: VICTOREEN MODEL 491
TYPE OF PROBE: MODEL 489-4 WITH SIDE WINDOW
S/N: 1862
DATE OF CALIBRATION: JULY 26, 1982

TEST 1. ACCURACY AND LINEARITY

CESIUM-137

DISTANCE	MR/HR	RANGE	READING	VARIATION
.67'	80	X100	75	- 6
1'	36	X100	37	3
1.33'	20	X30	21	5
2'	9	X30	10	11
2'	9	X10	9	0
3'	4	X10	4.2	5
4'	2.25	X3	2.2	- 2
6'	1	X3	1.05	5
7'	.735	X1	.78	6
10'	.36	X1	.39	8
4'	.225	X.3	.21	- 7
6'	.1	X.3	.11	10
6'	.1	X.1	.11	10
7'	.073	X.1	.08	10

EVALUATION: THIS INSTRUMENT IS WITHIN USNRC REQUIREMENTS.
INSTRUMENT VARIATION IS 4.1%.

TEST 2. BETA EFFICIENCY

NUCLIDE	MEV	% EFFICIENCY
C-14	.155	0
TC-99	.292	.1
CS-137	.51	2.3
CL-36	.714	4.4
BI-210	1.17	3
SR90Y90	2.25	8.4

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JULY 26, 1982

RADIOACTIVE SEALED SOURCE LEAK TEST REPORT

IN ACCORDANCE WITH FEDERAL REGULATIONS AND THE CONDITIONS OF YOUR RADIOACTIVE MATERIALS LICENSE 3 STRONTIUM-90 SEALED SOURCES WERE TESTED ON JULY 26, 1982 FOR POSSIBLE LEAKAGE RESULTING IN BETA CONTAMINATION.

A TEST SAMPLE WAS OBTAINED BY WIPING THE CLOSEST ACCESSIBLE SURFACE TO THE SOURCE WITH A PAPER WIPE WHICH WAS COUNTED FOR BETA RADIOACTIVITY USING A BECKMAN LS-3000 LIQUID SCINTILLATION SYSTEM WITH AN EFFICIENCY OF 20%. THE CONTROL SAMPLE COUNT IS 21.5 CPM.

DATA:

SOURCE TYPE	S/N	SIZE	CPM	UCI
CAL. (FOIL)	1845	10 MCI	17.0	<3.7E-5
EYE	0294	100 MCI	21.5	<3.7E-5
CAL-2	1466	0.3 MCI	20.0	<3.7E-5

THE RESULTS ARE LESS THAN THE .005UCI (MICROCURIE) LIMIT. NO FURTHER ACTION IS REQUIRED.