Medical Center

5th and Fort Streets
Boise, ID 83702

Veterans Administration
September 27, 1985

Chief, Radiological and Safeguards Programs Branch
United States Nuclear Regulatory Commission, Region 4
Parkway Central Plaza Building
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Ref: VA Medical Center, Boise, Idaho, Docket Number 30-14825/85-01
License #18311-01

11-18311-01

This is in reply to your letter of September 12, 1985 enumerating the violations identified during the NRC inspection of our facility on August 12 and 13, 1985. The attached schedule and the supporting documents deal with the violations as enumerated in your letter. As noted at the time of inspection, our recent consolidation of records and review responsibilities within a single radiation safety office should assist in avoiding future violations.

If your resources permit, we would welcome an on-site re-inspection within the next year. This would not only serve to confirm correction of our previous violations, but would also be of considerable consultative assistance to us in dealing with the expanded responsibilities of our new NRC licensure.

Sincerely,

For and in absence of JAMES A. GOFF
Medical Center Director

enc. (7)

cc: VACO (115)

IC-170/85

In Reply Refer To: 531/113

IE04

ITEMS	REASON FOR VIOLATION	CORRECTIVE STEPS TAKEN	CORRECTIVE STEPS PLANNED	DATE OF COMPLETION	REFERENCE
1A Area Surveys	Technologist mistakenly placed these on a weekly schedule, in conjunction with wipe testing.	Requirements were reviewed with chief technologist, Nuclear Medicine. A daily area monitor check list has been included in the survey log.	Confirmation by monthly review by assistant radiation safety officer.	October 1, 1985	Attachment #1
1B Dose Calibrator checks	Technologist tested daily for instrument constancy. Additional requirements were overlooked or delayed because of lack of reference standards.	Standards have been obtained and method for linearity, geometrical variation, and accuracy testing completed.	Confirmation by monthly review by assistant radiation safety officer.	November 1, 1985 linearity check has been completed geometric and accuracy checks are scheduled for October, 1985	Attachment #2, 3
1C Survey meter calibrations	Records were not centrally and readily available for review.	Central radiation safety office has been established.	None further. Will continue calibration at required intervals.	October 1, 1985. Copies of previous calibration reports are attached.	Attachment #4
1D Survey of solid waste	TC-99m generators and injection equipment were routinely held for 10 half lives prior to disposal. Technologist mistakenly assumed that no survey was necessary under these circumstances.	Requirements were reviewed with the technical staff. Methodology for recording surveys on generator records and daily survey sheets has been established.	Confirmation by monthly review by assistant radiation safety officer.	October 1, 1985	Attachment #5
2 Leak tests, seal sources	Records not centralized available for review.	Central radiation safety office established.	Testing interval has been changed from one year to six months. Completion of testing will be monitored by assistant radiation officer monthly.	October 1, 1985 copies of prior leak tests are attached.	Attachment #6

DAILY DEPARTMENTAL MONITOR . Note all surveys of solid waste prior to disposal.

DATE: 9 23 85

LOCATION:

1) .02 mr/hr
3) .02 mr/hr
7) .02 mr/hr
10) .02 mr/hr.
Bkg.) .02 mr/hr.

DATE: 9 24 85

LOCATION:

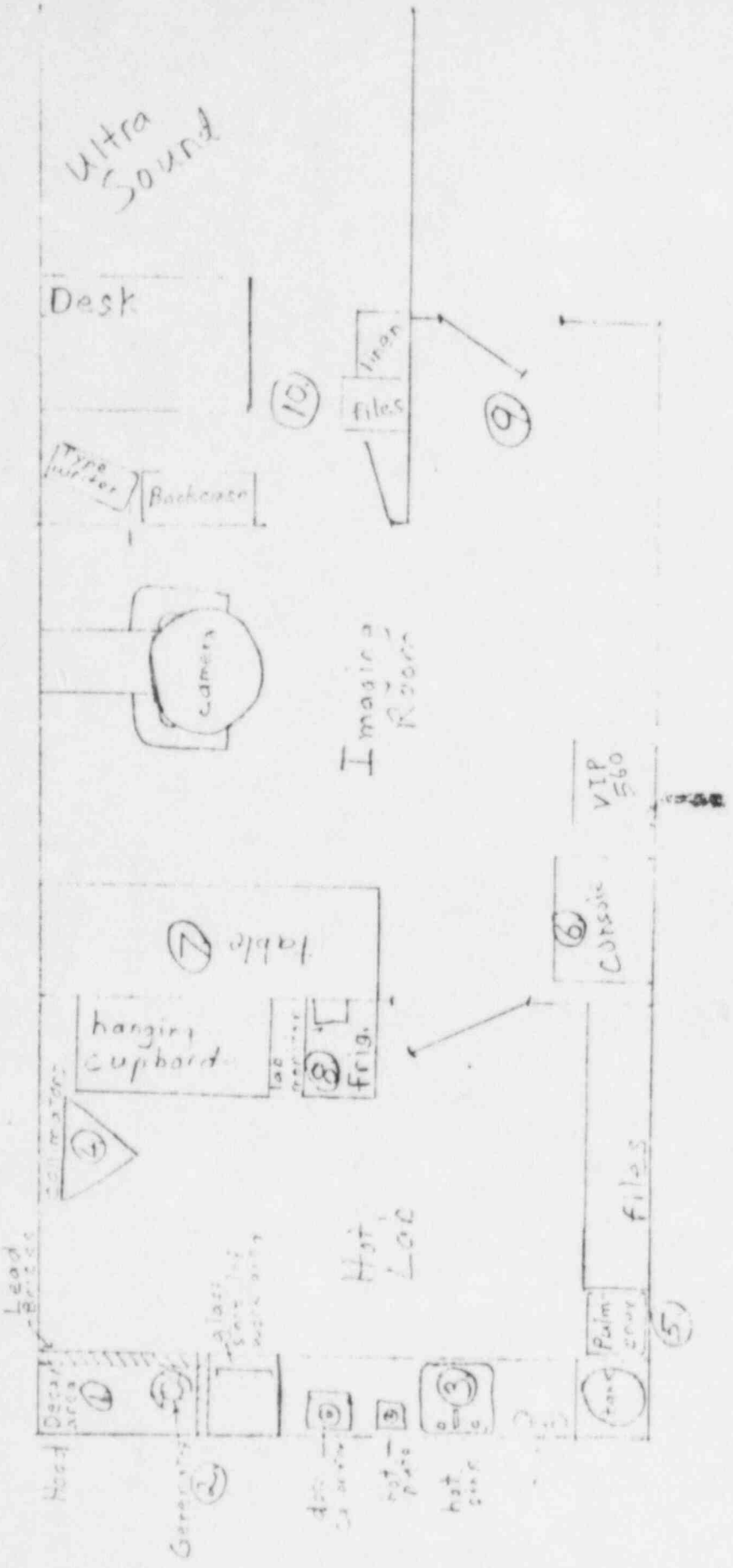
1) 1 mr/hr.
3) .03 mr/hr.
7) .02 mr/hr.
10) .02 mr/hr.
Bkg.) .02 mr/hr.

DATE: 9-25-85

LOCATION:

1) .5 mr/hr
3) .03 mr/hr
7) .06 mr/hr
10) .02 mr/hr
Bkg.) 102 mr/hr

Attachment #1
Boise WATER



Maximum allowable survey levels: Hood (Decay Bin and Generator Lid)=15 mR/hr.
Lab (All other survey points)=0.1 mR/hr.
Packages=10 mR @ 3 ft.
200 mR @ surface

DOSE CALIBRATION

Calibration Procedure

A. Accuracy Test

1. Sources used ^{57}Co, ^{133}Ba, ^{137}Cs. These are all NBS calibrated standards that are $\pm$ 5% documented.

2. Place each standard in the dose calibrator, on the bottom of the vial holder and set the appropriate setting on the dial. Measure background at each dial setting and subtract this level from the measured level to obtain the net activity. (Do this for each of the standards.)

3. The measured activity obtained in the above procedure should agree with the NBS certified activity within $\pm$ 5% when corrected for source decay.

4. A ^{137}Cs long lived source will be placed in the dose calibrator at the various radionuclide settings used in the clinical N.M. lab. These results will be logged and subsequent readings kept for comparison.

5. A log book noting these results will be located in the RSO office.

6. Repair will be indicated when the calibration charts do not agree with $\pm$ 5% of the certified standards. Call the Bio Med shop at ext. 7066.

Attachment #2
Boise VAMC

B. Linearity Test

1. Obtain the first elution from a new MO-99/Tc-99m generator and assay the vial in the dose calibrator using the correct dial setting of TC 99m button. Obtain the background level at the same setting. Record the results in the log book.

2. Repeat the assay procedure of the Tc99m vial in step 1 at time intervals of 6, 24, 30, and 48 hours after initial assay.

3. Using the 30 hour activity measurement as a starting point, calculate the predicted activities at 0, 6, 24, and 48 hours using the following time table.

Assay Time (Hrs.)	Correction Factor
0	31.633
6	15.853
24	1.995
30	1
48	0.126

(Correction Factors from $e^{-\lambda t}$ and $T_{\frac{1}{2}}$ for Tc-99M = 6.02 hrs.)

4. Plot on log-log graph paper the measured net activity (for each time internal) versus the calculated activity (for the same time interval).

5. The net measured activities plotted should be within ± 5% of the calculated activities if the instrument is linear and functioning correctly. A difference greater than ± 5% is used to indicate that repair or adjustment is necessary.

C. Geometrical Variation

The geometrical variation that may be seen with different volumes, will be measured with a 30 cc vial containing 2 mCi of Tc 99-m in a volume of 1 ml.

1. Assay the vial on the Tc 99-m setting and subtract the background level to obtain net activity.

2. The volume of liquid in the vial will then be increased to 2, 4, 8, 10, 20, and 25 ml by adding water in the appropriate amount. After each addition, gentle shaking of the vial will mix the contents and repeat the assay in step 1.

3. Select $_{A}^{20}$ ml as the standard volume and calculate the ratio of measured activities for each volume to the reference volume activity. This is then the volume correction factor.

4. A plot of the correction factor vs. the volume (linear graph paper) will be used to select the proper volume correction factor for the routine assay of that radionuclide.

RS:rb
Tu/b

Boise VAMC
Nuclear Medicine
10/9/85

Dose Calibrator - Tuberculin
Net Activity (mCi)

Hours	Actual	Calculated
0	518	515.6
6	261	258.4
24	33	32.5
30	16.3	16.3
48	2.05	2.05

mCi

100
90
80
70
60
50
40
30
20
10
7
6
5
4
3
2
1

0 8 16 24 Hrs. 32 40 48

OK - identical curves

Attachment #3
Boise VAMC

TREASURE VALLEY MEDICAL PHYSICS, INC.
2475 Parkside Dr.
Boise, Idaho 83702
(208) 345-7490

May 21, 1985

V.A. Medical Center
5th and Fort Streets
Boise, ID 83702

Dear Sirs:

Please find enclosed the results of calibration on three survey meters. All meters were adjusted to read the scales directly. The X1000 was not adjusted on the ion chamber, because it is not used for routine radiation surveys.

If you have any questions, please feel free to call.

Sincerely,

R Stano

Roger G. Stano, M.S.
Medical Physicist
TVMP, INC.

RGS/ce

Attachment #4
Boise VAMC

CERTIFICATE OF INSTRUMENT CALIBRATION

For: V.A. Medical Center
Boise, ID.

Instrument:

Manufacturer Tracer Nuclear

Type G-M,

Model No. —

Serial No. 1770

Calibration Data:

Scale	Exposure rate (mR/hr)	Instrument reading (mR/hr)	Exposure rate (mR/hr)	Instrument reading (mR/hr)	Exposure rate (mR/hr)	Instrument reading (mR/hr)
log ~~scale~~	5.23	5.25	1.29	1.25		
	62.2	63				

Comments: chamber factor = 1.00

Calibration Source:	Nuclide	Activity or Exposure Rate at Specified Distance	Calibration Accuracy
	Cs-137	100 mR/hr.	5%

Calibrated by R Stone Date 5-16-85

CERTIFICATE OF INSTRUMENT CALIBRATION

For: V.A. Medical Center
Boise, Id.

Instrument:

Manufacturer: Victoreen

Type: Ion Chamber

Model No.: 740-7

Serial No.: 2709

Calibration Data:

Scale	Exposure rate (mR/hr)	Instrument reading (mR/hr)	Exposure rate (mR/hr)	Instrument reading (mR/hr)	Exposure rate (mR/hr)	Instrument reading (mR/hr)
X 1	5.23	5.2	1.29	1.1		
X 10	60.2	63				
X 100	531	550				

Comments: X 1000 scale not calibrated because not used for surveys.

instrument chamber factor = 1.00

	Nuclide	Activity or Exposure Rate at Specified Distance	Calibration Accuracy
Calibration Source	Cs-137	100 mCi.	5%

Calibrated by: R Stano Date: 5-16-85

CERTIFICATE OF INSTRUMENT CALIBRATION

For: V.A. Medical Center
Boise, Id.

Instrument:

Manufacturer: Victoreen

Type: GM

Model No.: 491

Serial No.: 6791

Calibration Data:

Scale	Exposure rate (mR/hr)	Instrument reading (mR/hr)	Exposure rate (mR/hr)	Instrument reading (mR/hr)	Exposure rate (mR/hr)	Instrument reading (mR/hr)
x10, 1	5.23	5.0	1.24	1.5		
x100	60.2	60				

Comments: instrument chamber factor = 1.0

Calibration Source:	Nuclide	Activity or Exposure Rate at Specified Distance	Calibration Accuracy
	Cs-137	100 mCi.	5%

Calibrated by: Roger Stand Date: 5-16-85

November 29, 1984

Mr. Bill Franke
V.A. Hospital
5th and Fort Streets
Boise, ID 83702

Dear Bill:

I calibrated three survey meters against a standard source. The results are as follows:

Nuclear Medicine:

1. G-M survey meter - all scales read correct.
2. Ionization Chamber - all scales read correct.

RIA Lab:

1. GM survey meter - all scales read correct.

If you have any questions, please feel free to call.

Sincerely,

Roger G. Stano, M.S.
Medical Physicist

RGS/ac
Th898806

May 15, 1984

V.A. Hospital
5th and Fort Streets
Boise, ID 83702

Dear Sirs:

I calibrated three survey meters against a standard source.

Nuclear Medicine

1. G-M survey meter - all scales read exactly correct.
2. Ionization chamber - all scales read exactly correct.

RIA Lab

1. G-M survey meter - all scales read exactly correct.

If you have any questions, please feel free to call.

Sincerely,

Roger G. Stano, M.S.
Medical Physicist

RGS/ac
T801841

November 3, 1983

V.A. Hospital
5th and Fort Streets
Boise, ID 83702

Dear Sirs:

I calibrated three survey meters against a standard source. The results are as follows:

Nuclear Medicine

1. G-M Survey meter - all scales read exactly correct.
2. Ionization chamber - all scales read exactly correct.

RIA Lab

1. G-M survey meter - all scales read exactly correct.

If you have any questions, please feel free to call.

Sincerely,

Roger G. Stano, M.S.
Medical Physicist

RGS/ac
Th835396

TREASURE VALLEY MEDICAL PHYSICS
2475 Parkside Dr.
Boise, Idaho 83702
(208) 345-7490

June 14, 1983

V.A. Hospital
5th and Fort Streets
Boise, ID 83702

Dear Sirs:

I calibrated 2 survey meters against a standard source.

The results are as follows:

Nuclear Medicine

1. G-M survey meter: all scales read exactly correct.
2. Ionization chamber: all scales read exactly correct.

If you have any questions, please feel free to call.

Sincerely,

Roger Stano, M.S.
Medical Physicist

RS/ac
M2070

TREASURE VALLEY BIOCAL
2475 Parkside Dr.
Boise, Idaho 83702
(208) 386-2778

NOV 23

November 22, 1982

V.A. Hospital
5th and Fort Streets
Boise, ID 83702

Dear Sirs:

On November 16, 1982, I calibrated three survey meters against a standard source.

The results are as follows:

A. Nuclear Medicine

1. G-M survey meter: all seales read exactly correct.

2. Ionization chamber: all seales read exactly correct.

B. RIA Lab

1. G-M survey meter: all seales read exactly correct.

If you have any questions, please feel free to call.

Sincerely,

Roger Stano

Roger Stano, M.S.
Medical Physicist

RS/sl

DAILY DEPARTMENTAL MONITOR

DATE: 9-30-85

LOCATION:

1) .2 mR/hr.
3) .02 mR/hr.
7) .04 mR/hr.
10) .02 mR/hr
Bkg.) .02 mR/hr.

DATE: 10-1-85

LOCATION:

1) .4 mR/hr
3) .03 "
7) .06 "
10) .02 "
Bkg.) .02 "

Vials & Syringes
Disposed of
.02 mR/hr.
@ surface

DATE: 10-2-85

LOCATION:

1) .2 mR/hr
3) .02 mR/hr.
7) .05 mR/hr
10) .02 mR/hr.
Bkg.) .02 mR/hr.

Attachment #5
Boise VA MC

WIPE LEAK TESTS FOR GAMMA REFERENCE SOURCES

DATE	NES-358 Barium-133	NES-356 Cesium-137	#2660B5B44 NES-206 ~~7940-1~~ Cobalt-57	CORRECTION
XXXXX	5x10 -4 uCi 7-9-79	1-22-80 5x10 -4 uCi	7-11-80 5x10 -4 uCi	
1-22-82	44 cpm/Bkg 51cpm	42 cpm/Bkg 51	348 cpm / Bkg 65	disposed of
4-25-83	26 cpm/ Bkg = 40 cpm	35 cpm/ Bkg = 40 cpm		
1-6-84	31 cpm/ Bkg = 35 cpm	30 cpm/ Bkg = 35 cpm		
2-25-85	28 cpm / Bkg = 26 cpm	31 cpm / Bkg = 26 cpm		
4-25-85	SN - 3580794 -07	SN 3560804 -34		
8-22-85			$< 5 \times 10^{-4}$ uCi	

Attachment #6
Boise VAMC

TREASURE VA[illegible] MEDICAL PHYSICS, INC.
2475 Parkside Dr.
Boise, Idaho 83712
(208) 345-7490

July 26, 1985

Veterans Administration Hospital
5th and Fort Streets
Boise, ID 83702

Dear Sirs:

On Thursday, July 25, 1985, I performed leak checks on the sealed radioacti sources in the nuclear medicine department. I compared the wipes against a 5% stand.rd Cs-137 source that was adjusted for decay. Background readin were subtracted from all measurements.

The following sources were checked with no detectable activity greater than 0.005 μ Ci.

A. Ba-133 S/N 3580779A-07

B. Cs-137 S/N 3560180A-34

Thank you for letting me be of service.

Sincerely,

Roger G. Stano, M.S.
Medical Physicist

RGS/ms

F/g