

OCT 24 1989

In Reply Refer To:
License: 35-10669-01
Docket: 30-00444

Southwestern Medical Center
ATTN: Tom Pine, Executive Officer
5602 S.W. Lee Blvd.
Lawton, Oklahoma 73505

Gentlemen:

Thank you for your letter of September 20, 1989, in response to our letter and attached Notice of Violation both dated September 6, 1989. We have reviewed your reply and find it responsive to the concerns raised in our Notice of Violation. We will review the implementation of your corrective actions during a future inspection to determine whether full compliance has been achieved and will be maintained.

Sincerely,

A. Bill Beach

for A. Bill Beach, Director
Division of Radiation Safety
and Safeguards

cc:
Oklahoma Radiation Control Program Director

bcc w/copy of licensee letter:
DMB - Original (IE-07)
RDMartin
ABBeach
LAYandell
LShea, RM/ALF (AR-2015)
CLCain
RJEverett
SRajendran
NMSB
MIS System
RIV Files (2)
RSTS Operator

RIV:NMIS
SRajendran:cd
10/23/89

C:NMIS
CLCain
10/23/89

D:DRSS
ABBeach
10/23/89

IF-07
11

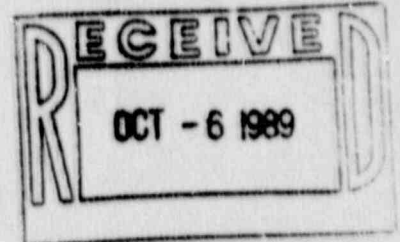
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REG4 LIC30 PNU
35-10669-01

Southwestern Medical Center

5602 S.W. Lee Blvd.
Lawton, Oklahoma 73505

405 531-4700

TO: Nuclear Regulatory Commission
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011



FROM: Southwestern Medical Center
Department of Radiology
Lawton, Oklahoma 73505

SUBJECT: Response to Violation Notice

September 20, 1989

Gentlemen:

36-66444
35-1669-01

This refers to the recent letter of notice concerning violations as result of the inspection of our facility. Those explanations concerning the violations are as follows. Each explanation required for the provisions, follows 10 CFR 2.201 guidelines described in your memorandum.

VIOLATION (A): 10 CFR 35.632(b)(1) Calibration measurements of teletherapy units must include determination of output is within plus or minus 3 percent for the range of field sizes and for the distance or range of distances used for medical use.

EXPLANATION: (1) Over the last three years the calibration of the the teletherapy unit has always been within plus or minus 1 percent. The consulting physicist does not make it routine procedure to document that peculiar statement. In order to be in compliance with this requirement, he will begin immediately to document as required. Compliance began effective Septmeber 18, 1989.

VIOLATION (B): Condition 21 "Calibration of survey instruments" states that survey instruments will be calibrated at least annually and following repair.

EXPLANATION: (2) The survey instruments are calibrated by the consulting physicist and/or manufacturer on an annual basis. After the annual inspection of the survey meters in 1988 the date of calibration label was not applied. In order to correct those actions the following steps have been taken.

- (1) The Victoreen Model #450, Serial#440 was sented to the manufacturer for calibration on Sept 5, 1989.
- (2) Ludlum Measurements, Inc Model#300, Serial#26116 was calibrated on September 5, 1989 by the consulting phyicist.
- (3) The Victoreen Model #495-5, Serial#756 was calibrated on September 12, 1989 by the consulting physicist.

The annual survey survey meter calibration for each respective meter is attached for your inspection. A calendar of requirements has been established in order to determine the time periods for evaluating the survey meters and other components that are required by the Nuclear Regulatory Commission.

Respectfully,

Kenneth Lyon, BSRT (R)
Director of Radiology

A MEMBER OF
EPIC HEALTHCARE GROUP

IE07

IC-89-648

8910180126 7pp.

ANNUAL SURVEY METER CALIBRATION

RADIATION SAFETY OFFICE

Radiological Physics Services

Instrument Type GM Monitor Date 9/12/89
 Manufacturer Stroeen 11495-5 Signature R. W. Anderson
 Identification S 756 Source Ident. Cs-137, 16501, 507073
 Laboratory Rad Therapy SMC Source Strength (SS) 27.0 mCi
 Response Setting NA Press NA Temp NA
 Shield } Position ON Decay Factor (DF) 0.97
 Cap } Exposure Rate = SS (DF) 3226
 = 84490 mR/h@1cm

Scale (mR/hr)	CPM x1 0.2	0.2	x1 1.0	2.0	x10 1.0	3.0	2.0	3.0	x10 1.0	20
Distance (cm)	1170	750	500	450	350	275	235	200	150	110
mR/hr	0.062		0.34		0.69				3.8	
Background	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
Reading	40		230		400				2400	
Cal. Factor	0.0016		0.0017		0.0017				0.0016	

mR/hr per CPM

Remarks: 400 on any scale turns the flasher on (0.8 of full scale)
speaker works well
red light okay, rest okay when CPM down

Cal Factor 0.00165 ± 0.00005 mR/hr per CPM
 $\pm 4\%$

ANNUAL SURVEY METER CALIBRATION
RADIATION SAFETY OFFICE

Instrument Type GM Monitor
 Manufacturer Victoreen M495-S
 Identification S756
 Laboratory Radiation Therapy 504K
 Response Setting NA
 Shield } Position 09
 Cap }

Date 7/12/79
 Signature RW Anderson
 Source Ident. Cs-137, M6505, 500548
 Source Strength (SS) 78.9mCi
 Press NA Temp NA
 Decay Factor (DF) 0.97
 Exposure Rate = SS (DF) 3226
 = 246,900 mR/h@1cm

Scale (mR/hr)	^{x100} 10	25-30	20	25-30	^{x100} 100	200	^{x100} 100	²⁵⁰ 300	200	1000
Distance (cm)	190	190	135	110	110	60	60	50	45	30
mR/hr	6.8				20.4		68.6			
Background	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.04
Reading	3600				12000		37000			
Cal. Factor	0.00184				0.0017		0.0018			

mR/hr per CPM

Remarks:

mR/hr per CPM 0.0017 ± 0.0001 Cal Factor
 ± 670

ANNUAL SURVEY METER CALIBRATION
RADIATION SAFETY OFFICE

Radiological Physics Services

Instrument Type GM Monitor
 Manufacturer Ludlum M300/4
 Identification PRO16088
 Laboratory Rad Therapy SWM
 Response Setting 64, S
 Shield } Position NA
 Cap }

Date 9/5/89
 Signature DW Anderson
 Source Ident. Cs-137, M6501, 507073
 Source Strength (SS) 27.0 mCi
 Press NA Temp NA
 Decay Factor (DF) 0.97
 Exposure Rate = SS (DF) 3226
 = 84,490 mR/h@1cm

Scale (mR/hr)	0.2	0.2	1.0	2.0	1.0	3.0	2.0	3.0	10	20
Distance (cm)	1170	750	500	450	350	275	235	200	150	110
mR/hr			0.34		0.69				3.8	
Background	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02
Reading			0.4		0.8				4.5	
Cal. Factor			0.85		0.86				0.84	

Remarks:

all readings are within $\pm 20\%$ of the actual values.

ANNUAL SURVEY METER CALIBRATION

RADIATION SAFETY OFFICE

Radiological Physics Services

Instrument Type GM Monitor
 Manufacturer Ludlum M300/4
 Identification PR016088
 Laboratory Rad. Therapy SWMC
 Response Setting 64, S
 Shield } Position NA
 Cap }

Date 9/5/89
 Signature FW Anderson
 Source Ident. Cs-137, M6505, 500548
 Source Strength (SS) 78.9mCi
 Press NA Temp NA
 Decay Factor (DF) 0.97
 Exposure Rate = SS (DF) 3226
 = 246,900 mR/h@1cm

Scale (mR/hr)	10	25-30	20	25-30	100	200	100	²⁵⁰ / ₋₃₀₀	200	1000
Distance (cm)	190	190	135	110	110	60	60	50	45	30
mR/hr	6.8				20.4		68.6			
Background	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	0.04
Reading	8				22		70			
Cal. Factor	0.85				0.93		0.98			

↑
no light

↑
red light
on

Remarks:

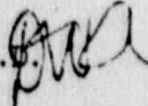
All readings within ±20% of the actual values.

RADIOLOGICAL PHYSICS SERVICES
David W. Anderson, Ph.D., FACR

Physics of:
Radiation Therapy
Diagnostic X-Ray
Nuclear Medicine
Radiation Safety
Magnetic Resonance Imaging

September 26, 1989

TO: Whom it may concern

FROM: David W. Anderson, Ph.D.
Consulting Physicist 

SUBJECT: Full Calibration Measurements of Picker ^{60}Co Unit at Southwestern Medical Center, Lawton, OK

I always have measured the absolute value of the ^{60}Co exposure rate or dose rate at standard field size and distance to 1% or less during each full calibration. I always have compared the measured value to the calculated value from initial measurements using the exponential decay law. If the measured and the calculated values do not agree to within +2% I have always investigated further to determine the cause of the disagreement. As appropriate I'll correct the table of dose rates to be used by the licensee in months to follow after the full calibration to the most accurate value within +1%. Furthermore field size and distance factors etc. are always measured to within +1%. Thus my practices always have been more stringent than the USNRC requirement (+3%).

I can find no specific requirement to explicitly mention accuracy limits in my copy of 10 CFR 35. Nonetheless it is very easy to state that all dose rates and factors as indicated are well within +3% required by USNR. I will do so conspicuously on succeeding reports.

DWA:lt

7419 S. Maplewood
Tulsa, OK 74136
(918) 493-8016 daytime
(918) 492-6136 evenings

SEP 6 1989

In Reply Refer To:

License: 35-10669-01

35-10669-02

Docket: 030-00444/89-01

030-09552/89-01

Southwestern Medical Center
ATTN: Tom Pine, Executive Officer
5602 S.W. Lee Blvd.
Lawton, Oklahoma 73505

Gentlemen:

This refers to the routine, unannounced radiation safety inspection conducted by Mr. S. Rajendran of this office on August 22, 1989, of the activities authorized by NRC Byproduct Material Licenses 35-10669-01 and 35-10669-02 and to the discussion of our findings held by the inspector with members of your staff at the conclusion of the inspection.

The inspection was an examination of the activities conducted under the license as they relate to radiation safety and to compliance with the Commission's rules and regulations, and the conditions of the license. The inspection consisted of selective examinations of procedures and representative records, interviews of personnel, independent measurements, and observations by the inspector.

No violations of NRC requirements were found during this inspection for License 35-10669-02.

For License 35-10669-01, certain of your activities were found not to be conducted in full compliance with NRC requirements. Consequently, you are required to respond to this matter in writing in accordance with the provisions of Section 2.201 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations. Your response should be based on the specifics contained in the Notice of Violation enclosed with this letter.

Mr. Rajendran also reviewed the actions you had taken with respect to four violations observed during our previous inspection of License 35-10669-02, which was conducted on June 6, 1986. He verified that the corrective actions, with respect to these items, was implemented as stated in your replies of August 28 and October 2, 1986, to our letter dated July 24, 1986. He also reviewed the actions you had taken with respect to two violations observed during our previous inspection of License 35-10669-01, which was conducted on April 20, 1988. One of these violations was determined to have recurred since the previous inspection. This item is identified as Violation A in the attached Notice.

RIV:NMIS
SRajendran:lm
9/7/89

C:NMIS
CLCain
9/5/89

C:NMSB
WLFisher
9/6/89

~~8909130202~~

2pp.

IE-07

The response directed by this letter and accompanying Notice is not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Should you have any questions concerning this letter, we will be pleased to discuss them with you.

Sincerely,

Original Signed By

William L. Fisher, Chief
Nuclear Materials Safety Branch

Enclosure:
Appendix - Notice of Violation

cc:
Oklahoma Radiation Control Program Director

bcc:
DMB - Original (IE-07)
RDMartin
ABBeach
LAYandell
WLFisher
LShea, RM/ALF (AR-2015)
*CLCain
*RJEverett
*SRajendran
*NMSB ?
*MIS System
*RIV Files (2)
*RSTS Operator

*W/766

APPENDIX
NOTICE OF VIOLATION

Southwestern Medical Center
Lawton, Oklahoma

Docket: 030-00444/89-01
License: 10669-01

During an NRC inspection conducted on August 22, 1989, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1989) (Enforcement Policy), the violations are listed below:

- A. 10 CFR 35.632(b)(1) requires that full calibration measurements of a teletherapy unit must include determination that the output is within ± 3 percent for the range of field sizes and for the distance or range of distances used for medical use.

Contrary to the above, as of August 22, 1989, this determination had not been made.

This is a repeat violation.

This is a Severity Level IV violation. (Supplement VI)

- B. Condition 21 requires that licensed material be possessed and used in accordance with statements, representations, and procedures contained in or enclosed with the letter dated June 27, 1986.

The enclosure to the letter entitled "Calibration of Survey Instruments" states that survey instruments will be calibrated at least annually and following repair.

Contrary to the above, on August 22, 1989, a Victoreen Model 450, Serial No. 440 and Ludlum Measurements, Inc., Model 300, Serial No. 26116, had not been calibrated since July 28, 1986, and July 22, 1987, respectively, a period of more than 1 year.

This is a Severity Level IV violation. (Supplement VI)

Pursuant to the provisions of 10 CFR 2.201, Southwestern Medical Center is hereby required to submit to this office, within 30 days of the date of the letter transmitting this Notice, a written statement or explanation in reply, including for each violation: (1) the reason for the violation if admitted, (2) the corrective steps which have been taken and the results achieved, (3) the corrective steps which will be taken to avoid further violations, and (4) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending the response time.

Dated at Arlington, Texas,
this day of

1989

~~8909130206~~ LP.

INSPECTOR REPORT
Office of Inspection and Enforcement

NO. 100-111111-111111
REV. 020

INSPECTOR'S

LICENSEE/VENDOR	TRANSACTION TYPE	DOCKET NO. (0000) OR LICENSE NO. (BY PRODUCT) (113 0000)	REPORT		NEXT INSP. DATE	
			NO	SEQ	MO	YR
Southwestern Clinic Hospital	X I - INSERT	03000444	8901	A	08	90
	M - MODIFY	03009552	8901	B	08	92
	D - DELETE			C		
	R - REPLACE			D		

PERIOD OF INVESTIGATION INSPECTION						INSPECTION PERFORMED BY		ORGANIZATION CODE OF REGION/HQ CONDUCTING ACTIVITY (See 45 CFR 25.30 "Member Report" and "Member Appraisal Reporting" for code)		
FROM			TO			X - REGIONAL OFFICE STAFF		OTHER		
MO	DAY	YR	MO	DAY	YR	C - RESIDENT INSPECTOR				
08	22	89	08	22	89	D - PERFORMANCE APPRAISAL TEAM				
								REGION	DIVISION	BRANCH
								4	3	4
								33	34	35

REGIONAL ACTION (Check one box only)		TYPE OF ACTIVITY CONDUCTED (Check one box only)			
1 - NRC FORM 801		X 02 - SAFETY		06 - MGMT VISIT	
X 2 - REGIONAL OFFICE LETTER		03 - INCIDENT		07 - SPECIAL	
		04 - ENFORCEMENT		08 - VENDOR	
		05 - MGMT AUDIT		09 - MAT ACCT.	
				10 - PLANT SEC	
				11 - INVENT VER	
				12 - SHIPMENT/EXPORT	
				13 - IMPORT	
				14 - INQUIRY	
				15 - INVESTIGATION	

INSPECTION RESULTS BY PROVINCE (NRC FORM 801 ONLY)				TOTAL NUMBER OF VIOLATIONS AND DEVIATIONS				ENFORCEMENT CONFERENCE HELD				REPORT CONTAIN 2700 INFORMATION				LETTER OR REPORT TRANSMITTAL DATE					
A	B	C	D	A	B	C	D	A	B	C	D	A	B	C	D	NRC FORM 801 OR REG LETTER ISSUED			REPORT SENT TO HQ FOR ACTION		
X				0	2	0	0									MO DAY YR			MO DAY YR		
																09 06 89					

MODULE INFORMATION												MODULE INFORMATION																							
REC. OAD	MODULE NUMBER INSP				PRIORITY	DIRECT INSPEC. TIME EFFORT BY STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	MODULE REG FOLLOWUP				REC. OAD	MODULE NUMBER INSP				PRIORITY	DIRECT INSPEC. TIME EFFORT BY STAFF HOURS EXPENDED THIS INSPECTION	PERCENTAGE COMPLETED TO DATE	STATUS	MODULE REG FOLLOWUP													
TYPE	PHASE	MANUAL	CHAPTER	PROCEDURE NUMBER					LEVEL	PHASE	MANUAL	CHAPTER	PROCEDURE NUMBER	LEVEL	TYPE	PHASE	MANUAL					CHAPTER	PROCEDURE NUMBER	LEVEL	PHASE	MANUAL	CHAPTER	PROCEDURE NUMBER	LEVEL						
0	1	5	3	0	7	0	3	A	0	0	0							B	0	0	0														
Exit/Entrance Interview (No 100C)																																			
0	1	5	8	3	8	2	2	A	0	0	2	1	0	0	C							B	0	0	2	1	0	0	C						
Radiation Protection (100C Required)												Transportation Review (100C Required)																							
0	1	5	8	7	1	0	0	A	0	0	1	1	0	0	C							A	0	0	0	1	0	0	C						
Materials Programs (100C Required)												Corrective Actions (100C Required)																							
0	1	5	3	0	8	0	0	A														A													
												INITIAL (100C Required)																							

INSPECTOR'S REPORT
 (Continuation)
 Office of Inspection and Enforcement

DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)		ORT		MODULE NUMBER	VIOLATION SEVERITY OR DEVIATION	SITE RELATED
03000444		NO	SEQ	5181711010		
			A			
			B	1 2 3 4 5 6		
			C			
			D			

VIOLATION OR DEVIATION (Enter up to 2400 characters for each item. If the text exceeds this number, it will be necessary to paraphrase. Limit lines to 80 characters each.)

A. 10 CFR 35.632(b)(1) requires that full calibration measurements of a teletherapy unit must include determination that the output is within ± 3 percent for the range of field sizes and for the distance or range of distances used for medical use.

Contrary to the above, as of August 22, 1989, this determination had not been made.

This is a repeat violation.

This is a Severity Level IV violation. (Supplement VI)

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INSPECTOR'S REPORT
 (Continuation)
 Office of Inspection and Enforcement

DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)				REPORT		MODULE NUMBER		VIOLATION SEVERITY OR DEVIATION		SITE RELATED	
030100444				NO.	SEQ.	5700		1 2 3 4 5 6		A C B D	

VIOLATION OR DEVIATION (Enter up to 2400 characters for each item. If the text exceeds this number, it will be necessary to paraphrase. Limit lines to 50 characters each.)

B. Condition 21 requires that licensed material be possessed and used in accordance with statements, representations, and procedures contained in or enclosed with the letter dated June 27, 1986.

The enclosure to the letter entitled "Calibration of Survey Instruments" states that survey instruments will be calibrated at least annually and following repair.

Contrary to the above, on August 22, 1989, a Victoreen Model 450, Serial No. 440 and Ludlum Measurements, Inc., Model 300, Serial No. 26116, had not been calibrated since July 28, 1986, and July 22, 1987, respectively, a period of more than 1 year.

This is a Severity Level IV violation. (Supplement VI)

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