



ST. MARY'S
hospital

305 South Fifth Street
Enid, Oklahoma 73701

March 3, 1981

License No. 35-17087-01

Dkn 30-12175

Glen D. Brown, Chief
Fuel Facility and Material Safety Branch
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 1000
Arlington, Texas 76011

Re: USNRC Safety Inspection

In response to your letter dated February 18, 1981, and attached Notice of Violation, Docket No. 30-12175, the following corrective steps have been taken and steps taken to avoid further violations:

- ✓ 1. Attached copies of calibration reports for (1) Victoreen Model CDV 700, Serial No. 75027 dated October 16, 1980, with identification added in compliance with License Condition No. 14 that portable survey meters be calibrated annually; (2) Nuclear Chicago Model 2650 Serial No. 1326 dated January 20, 1981, with identification added in compliance with License Condition No. 14.

To avoid further violations, a sticker is attached to each meter identifying date calibration is to be performed and a Radiation Survey Meter Calibration Report (see attached copy) filled out and filed in Nuclear Medicine Department.

Compliance achieved on February 26, 1981.

- ✓ 2. In compliance with License Condition No. 14 requiring quarterly linearity checks to be performed on the dose calibrator corrective action taken is as follows:

Corrective steps and results:

A calendar year form has been posted above the Nuclear Mediac Model No. 6372 dose calibrator with quarterly due dates, date performed and signed by the authorized person performing linearity check.

Corrective steps to avoid further violations:

The calibration form will be verified and signed by the Radiation Health Physicist and filed in the Equipment Calibration file in Nuclear Medicine Department.

Date of full compliance:

March 3, 1981

8104020 750

- ✓ 3. In compliance with License Condition No. 14, that requires contamination surveys be conducted after elution of the generator and radiopharmaceutical kit preparation with weekly radiation surveys of waste storage area the following corrective steps have been taken:

Corrective steps and results:

Surveys of the elutions and hands/body after radiopharmaceutical kits are being documented by the elution and kit tags in the log book as to activity, date and initials of authorized personnel preparing elutions and kits. Weekly waste storage area surveys are being recorded in the log book with the new generator identification tag with activity, date and initials of authorized personnel performing the survey.

Corrective steps to prevent further violations:

Radiation Health Physicist will document and sign a statement on a quarterly basis that contamination surveys are being performed and documented in the log book for elutions, radiopharmaceutical kits and waste storage area.

Date of full compliance:

April 21, 1981


- ✓ 4. In compliance with 10 CFR 20.407 and NRC Memo dated January 22, 1981, attached copies of personnel monitoring reports were mailed on February 18, 1981, with letter of explanation.

In accordance with provisions of 10 CFR 2.201, St. Mary's Hospital, License No. 35-17087-01, hereby submits documentation in response to Notice of Violation, Docket No. 30-12175 as required by authority of Section 182 of the Atomic Energy Act of 1954, as amended.

Prepared by:

Gene Watters, R.T.
Manager of Radiology Services

Date _____


John B. McMillen
President

Date 3-3-81

cc: NRC (2)
Administration
Radiology

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Medical Physicist

Addendum to: Nuclear Medicine Department
Radiation Survey Reports
Prepared by Max Kubik
April 1980 through March 1981
St. Mary's Hospital
Enid, OK 73701

"Probe" refers to Baird Atomic Model 530
Spectrometer Serial 15334 with Nuclear Chicago Model 821330
Scintillation detector Serial 400

"Camera" refers to the Searle Pho/Gamma LFOU Anger type camera and all
associated electronics

"Dose Calibrator" refers to the Nuclear Chicago Mediac Model dose calibrator
Serial 024343

"Survey Meter" refers to the Nuclear Chicago Model 2650 Survey Meter Serial
1326

"Secondary Survey Meter" refers to the Victoreen Model 6A Survey Meter Serial
75027

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NUCLEAR MEDICINE SURVEY REPORT

Location: St. Mary's Hospital, Enid, OK

Date: 7-16-80 (second quarter 1980 report)

Description: Nuclear Medicine department, Dose Calibrator, Anger camera, Uptake probe

Capsule Inventory vs. Log O.K.

Cow Inventory vs. Log O. K.

Disposal Held in storage at present

Wipe test records O.K.

Records of daily/weekly checks on:

Camera O.K.

Probe O.K.

Dose Calibrator O.K.

Problem Noted: None

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Medical Physicist

August 12, 1980

Sister Sylvana Schulte
Senior Vice President
St. Mary's Hospital
P.O. Box 232
Enid, Ok. 73701

Dear Sister Sylvana:

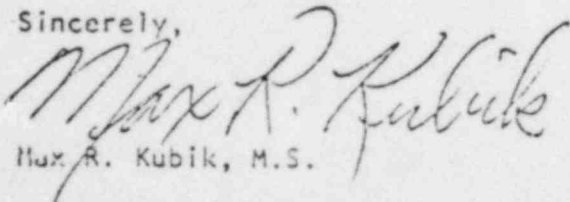
I was in your hospital on July 23rd and 25th to survey the x-ray units in rooms 1 and 4. The attached report giving the results of my measurements and inspection, including test films, will be enclosed with a copy of this letter to Gene Watters for filing. The evaluations and recommendations are for your consideration. If there are any questions concerning these reports, please contact me and I will explain further.

Also, on July 16, I was at your hospital to perform the preliminary survey of your Nuclear Medicine Department. All records appear to be in order and all procedures to be in compliance with the regulatory agencies. On July 25, however, Gene informed me that problems had been encountered in an amendment application to the NRC. At the writing of this report, no further word has been received by me.

A second Nuclear Medicine inspection was conducted on August 1. Still no technical problems noted, however, some procedural practices may not be in full compliance. The complete list is included in Gene's copy of this letter.

If I may be of further service, please contact me. I anticipate continuing to serve your hospital with its radiation physics needs.

Sincerely,



Max R. Kubik, M.S.

MRK:bp

encs.

cc: Gene Watters
Roger Rabold, M.D.

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January 20, 1981

Sister Sylvana Schulte
St. Mary's Hospital
Enid, Ok. 73701

Dear Sister Sylvana:

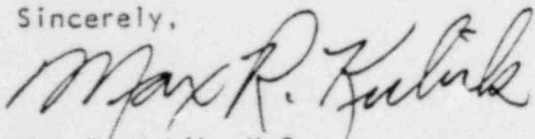
The October meeting was cancelled, therefore the October and January Nuclear Medicine reports, plus Radiation Safety evaluations for four x-ray tubes are included in this report.

The response for completion of the NRC amendment prepared by Mike Morris has been sent in, and the next amendment is ready to be submitted, however, an amendment was returned to another hospital asking for the ALARA statement before they would consider the rest of the amendment; so I have been waiting on an Isotope Committee Meeting to finalize it.

The survey reports have been sent to their respective departments with appropriate recommendations. Some adjustments were necessary in x-ray but no items of non-compliance were found in Nuclear Medicine. I would, however, suggest the alteration to the Nuclear Medicine department be carried out soon to meet the statements in the Xenon Amendment.

Thank you for allowing me to serve you. I look forward to continuing my service to you.

Sincerely,



Max R. Kubik, M.S.

MRK:bp

cc: Roger Rabold, M.D.
Gene Watters, R.T.
✓ Jo Whitlock,

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Medical Physicist

NUCLEAR MEDICINE SURVEY REPORT

Location: St. Mary's Hospital

Date: 8/01/80 (third quarter 1980 report)

Description: Nuclear Medicine Department, Dose Calibrator, Anger camera, Uptake probe

Capsule inventory vs. Log	<u>O.K.</u>
Cow Inventory vs. Log	<u>O.K.</u>
Disposal	<u>Held</u> in storage at present
Wipe test records	<u>O.K.</u>
Records of daily/weekly checks on:	
Camera	<u>O.K.</u>
Probe	<u>O.K.</u>
Dose Calibrator	<u>O.K.</u>

Problem Noted: No technical problems noted; however, some procedural practices may not be in full compliance. The use of gloves for all procedures, use of syringe shields for all injections, some placements of records, etc., may be considered to be in non-compliance by a rigid NRC inspection. It is my suggestion that the technician review past NRC non-compliance reports, responses to these reports, the license and amendment applications, and the regulations to familiarize herself with the types of items that the inspectors look for. I have informed her of the above items which I noticed on my last visit. Also, other institutions have been reprimanded by the NRC for disposal techniques of the I-131 capsules. Even though the capsules are placed in a box for decay, the number is not confirmed by a second person. It is my suggestion that the chief tech, assistant chief tech, or myself be present to confirm the number of unused capsules and that this number be recorded in the log book as being placed in the "store for disposal" box.

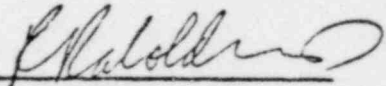
November 3, 1980

Radioisotope Committee
St. Mary's Hospital
Enid, Oklahoma

RE: Nuclear Medicine Survey Report Performed on August 1, 1980

So that St. Mary's Hospital will be in full compliance with NRC regulations, the following will be performed as suggested by Max Kubik during his quarterly survey conducted on August 1, 1980.

1. Gloves will be used at all times when radioactive materials are being handled.
2. Syringe shields will be used for all injections.
3. The number of ^{131}I capsules stored for decay will be confirmed by two people.
4. The placement of records will be as stated to the NRC, specifically, the posting of a record of the quarterly linearity checks done on the dose calibrator.



Director
Nuclear Medicine Dept.

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NUCLEAR MEDICINE SURVEY REPORT

Location: St. Mary's Hospital, Enid, OK

Date: 10-16-80 (third quarter 1980 report)

Description: Nuclear Medicine department, Dose Calibrator, Anger camera, Uptake probe

Receipt Logs Up to date and accurate

Utilization Logs Up to date and accurate

Disposal Logs (storage) Up to date and accurate

Wipe test of survey logs Up to date and accurate

Records of daily/weekly checks on

Camera Satisfactory

Probe Satisfactory

Dose Calibrator Satisfactory

Dose Calibrator linearity check Satisfactory
(See attachment)

Dose Calibrator Volumetric response check 3.5% Variation over usable range
(See attachment)

Problems Noted: None

Additional:

Nuclear Chicago Model 2650 Serial No. 1326

Survey Meter Calibration Checked

(See Attachment) Satisfactory-No adjustment done

ATTACHMENT #2

Nuclear Mediac Model No. 6372

Dose Calibrator Volumetric Response

<u>ml</u>	<u>mCi</u>	<u>Variation (%)</u>
.2	3.72	
.4	3.69	.8
.8	3.67	1.3
1.6	3.65	1.9
3.0	3.59	3.5

Variation less than 5%-correction not mandatory
but technician should be aware of this.

ATTCHMENT #3

Nuclear Chicago Model 2650 Serial No. 1326
 Survey Meter Calibration Check

<u>Exposure Field</u>	<u>Range</u>	<u>Measured Exposure</u>
70 mr/hr	100 mr/hr	71 mr/hr
30	100	30
30	30	30
7	30	8
7	10	6.8
3	10	3.0
3	3	2.9
.7	3	.69
.7	1	.7
.1	1	.12
.1	0.3	.11
.07	0.3	~ .07
.07	0.1	~ .07
.01	0.1	~ .011

Statistical Variation possible indicates no adjustment necessary on this meter.

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RADIATION SURVEY METER CALIBRATION REPORT

Facility: St. Mary's Hospital Date: 10-16-80 Calibrator: MRK

Instrument: Nuclear Chicago (manufacturer)

2650 (model number)

1326 (serial number)

The above instrument has been calibrated using Radium-226 sources whose activity is traceable to an accuracy within $\pm 5\%$ to the United States National Bureau of Standards. Various combinations of sources were used to insure the calibration of all scales at a minimum of two points per scale. Unless noted below, all scale readings are within 10% of full scale from the true exposure rate.

Calibration Incomplete--instrument requires repair by manufacturer or similar.

Calibration Complete and within 10% of full scale.

Calibration Complete--an appropriate calibration graph is attached to the instrument for use in determining true exposure rates.

ATTACHMENT #3

Survey Meter Calibration Check

<u>Exposure Field</u>	<u>Range</u>	<u>Measured Exposure</u>
70 mr/hr	100 mr/hr	71 mr/hr
30	100	36
30	30	30
7	30	8
7	10	6.8
3	10	3.0
3	3	2.9
.7	3	.69
.7	1	.7
.1	1	.12
.1	0.3	.11
.07	0.3	~ .07
.07	0.1	~ .07
.01	0.1	~ .011

Statistical Variation possible indicates no adjustment necessary on this meter.

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Medical Physicist

RADIATION SURVEY METER CALIBRATION REPORT

Facility: St Mary's Hospital Date: 1-20-81 Calibrator: MRK

Instrument: Victoreen (manufacturer)
6A (model number)
75027 (serial number)

The above instrument has been calibrated using Radium-226 sources whose activity is traceable to an accuracy within $\pm 5\%$ to the United States National Bureau of Standards. Various combinations of sources were used to insure the calibration of all scales at a minimum of two points per scale. Unless noted below, all scale readings are within 10% of full scale from the true exposure rate.

Calibration Incomplete--instrument requires repair by manufacturer or similar.

Calibration Complete and within 10% of full scale.

Calibration Complete--an appropriate calibration graph is attached to the instrument for use in determining true exposure rates.

Rate Expected	Rate Measured	% Difference	C.F.
.15 mR/hr	.15 } x1 scale	—	1.00
.35	.33 } x1 scale	6%	
1.5	2.0 } x10 scale	33%	.67
3.5	4.5 } x10 scale	29%	
15	20 } x100 scale	33%	.67
35	46 } x100 scale	31%	

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Medical Physicist

NUCLEAR MEDICINE SURVEY REPORT

Location: St. Mary's Hospital, Enid, Ok.

Date: 1/20/81 (final quarter 1980 report)

Description: Nuclear Medicine department, Dose Calibrator, Anger camera, Uptake probe

Receipt Logs	<u>Up to date and accurate</u>
Utilization Logs	<u>Up to date and accurate</u>
Disposal Logs (storage)	<u>Two entries missed - corrected</u>
Wipe test & survey logs	<u>Up to date and accurate</u>
Records of daily/weekly checks on	
Camera	<u>Satisfactory</u>
Probe	<u>Satisfactory</u>
Dose Calibrator	<u>Satisfactory</u>
Problems Noted:	<u>None</u>

Additional:

Victoreen Model CDV 700 Serial No. 75027

Secondary Survey Meter Calibrated

Satisfactory - see sticker on meter

Re-application for license should begin

ATTACHMENT #1

Dose Calibrator Linearity Check
 Nuclear Mediac Model No. 6372

Data:

<u>Date</u>	<u>Time</u>	<u>Expected</u>	<u>Measured</u>	<u>% Difference</u>
8-18-80	3:45 P.M.		242mCi	
3-19-80	7:30 A.M.	39.8	39.1mCi	1.3%
8-20-80	7:25 A.M.	2.50	2.47mCi	1.2%
3-20-80	5:05 P.M.	816	807uCi	1.1%
3-21-80	7:15 A.M.	159	158uCi	.7%

Difference Less than 5%-acceptable