

MERCY MEDICAL CENTER

4050 COON RAPIDS BOULEVARD • COON RAPIDS, MINNESOTA 55433 • (612) 427-2200

DIVISION
OF THE
HEALTH
CENTRAL
SYSTEM

September 21, 1981

NRC Lic. #: 22-17307-01

in compliance with:

10 CFR 2.201

Sec. 182 of the Atomic Energy
Act of 1954

Mr. D. G. Wiedeman
Acting Chief
Materials Radiation Protection
Section I
United States Nuclear Regulatory Commission
Region III
799 Roosevelt Road
Glen Ellen, Illinois 60137

Dear Mr. Wiedeman:

In response to your letter of September 1, 1981 in which you stated that during the routine safety inspection conducted by Mr. J. L. Lynch of your office on August 17, 1981, of activities authorized by NRC By-Product Material License Number 22-17307-01, certain of our activities appeared to be in non-compliance with NRC requirements as specified in Appendix A, which you enclosed, we submit this letter and these attachments for your consideration.

Upon thorough examination of Appendix A Notice of Violation, it is our contention that neither of the violations is applicable to our facility. With reference to Appendix A Notice of Violation, Item 1, Failure to Have an Operational High Level Survey Meter in the Nuclear Medicine Department:

In full compliance with the requirements of both high and low level survey meters for use in the radiation safety program and contrary to the notice of violation, the nuclear medicine department had a high level survey meter operational on the day of the inspection. It was provided to Mr. J. L. Lynch for his examination. Attached are Attachment Number 1, a photocopy of the page from the letter dated March 4, 1977, that specifies acquisition of Picker survey meter, Model Number 655-186 and Attachment Number 2, a photocopy of its certificate of calibration. As is evident from the letter and the calibration report, this survey meter has a minimum range of 0 m.r./hr. to 0.2 m.r./hr. and a maximum range of 0 m.r./hr. to 2,000 m.r./hr. Mr. Lynch may not have been aware of the letter of March 4, 1977 stating that Picker survey meter, Model Number 800 listed in the application dated November 16, 1976 had been subsequently replaced in compliance to the February 1, 1977 request of Mr. Michael Lamastra of the United States Nuclear Regulatory Commission. He may also have misread the range on the instrument, which has a face reading of 0 to 20 m.r./hr. but scales of times 0.01 times 0.1 times 1 times 10 and times 100.

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SEP 30 1981

TO: Mr. D. G. Wiedeman
U. S. Nuclear Regulatory Commission
September 21, 1981

In addition, although not required, the nuclear medicine department has available Victoreen survey meter Model 6A with a minimum range of 0 to 0.5 m.r./hr. and a maximum range of 0 to 50 m.r./hr., which was also operational on the day of the inspection and was provided to Mr. Lynch for his examination.

The nuclear medicine department also has Victoreen survey meter Model Number 1 aR and Victoreen survey meter Model Number 1 with minimum ranges of 0 to 500 m.r./hr. and maximum ranges of 0 to 500,000 m.r./hr. which were shown to Mr. Lynch when he suggested a need for a survey meter with a higher range. Neither of these survey meters had been calibrated as, due to the low levels of activity used in the department, no use had as yet been determined for them. Mr. Lynch suggested that both of these survey meters be calibrated. As a result calibration of Victoreen survey meter Model Number 1 aR has subsequently been performed by Dr. Thomas Payne of Midwest Radiation Consultants, Incorporated at a cost to the department of fifty dollars.

Attached is Attachment 3 a photocopy of this survey meter's certificate of calibration.

Calibration of Victoreen survey meter Model Number 1 will not be performed without documentation of the necessity of use of this instrument in our facility and justification for incurring an additional fifty dollar expense.

As is stated in the letter dated March 4, 1977 and in addition to the other quality control testing performed, the nuclear medicine department performs quarterly linearity checks on the dose calibrator. Records of the linearity checks performed are maintained in the department. Attached are photocopies of records of linearity tests performed as follows:

Attachment Number 4, March 10, 1980
Attachment Number 5, June 9, 1980
Attachment Number 6, September 15, 1980
Attachment Number 7, December 1, 1980
Attachment Number 8, March 2, 1981
Attachment Number 9, June 15, 1981

Mr. Lynch examined all of the quarterly linearity reports that we made available to him during his inspection. At issue was not failure to perform and maintain a record of a quarterly linearity check, only an inability to locate and provide for his examination, a record of quarterly linearity checks. This situation was secondary to the contributory factors of Mr. Lynch's unexpected arrival on a Monday morning during which we were functioning with half the usual staff which necessitated my performing patient studies concurrent with assisting Mr. Lynch, my recent return from vacation a week before, the files in the process of being reorganized, filing inconsistency caused by four people filing, and the complications of incompatible requirements for labelling of

TO: Mr. D. G. Wiedeman
U. S. Nuclear Regulatory Commission
September 21, 1981

records by the Joint Commission on the Accreditation of Hospitals and the United States Nuclear Regulatory Commission. As Mr. Lynch would no doubt attest, the severe filing and office space constraints, and presence of, and intermingling of his papers and records and the nuclear medicine department records were also not conducive to timely location of specific items.

In view of the apparent error in citing a failure to have an operational high-level survey meter in our nuclear medicine department and the subsequent location of and provision to you of the quarterly linearity check, unavailable to Mr. Lynch during his inspection, your further consideration of our activities that appeared to be in non-compliance with NRC requirements and revision of the inspection findings are requested. The inspection findings resulting from the NRC inspection of our facility conducted on June 23, 1978 were: no items of non-compliance or unsafe conditions were found. Activities conducted under License Number 22-17307-01 has been with strict adherence to the principles and practices of radiation safety and to compliance with the United States Nuclear Regulatory Commission's rules and regulations and with the conditions of our license. Conscientious effort has been expended in order to have the best possible nuclear medicine department, and it is our intention to continue to do so in the future. We will be glad to provide you with any additional information you request concerning this inspection.

Sincerely,

Brynn Hofstedt
Brynn Hofstedt,
Radiation Safety Coordinator/
Special Imaging Supervisor

Signed by Gary Alberts
Notary Public
9 Sept
Gary Alberts
GARY ALBERTS
NOTARY PUBLIC - MINNESOTA
ANOKA COUNTY
My Commission Expires Apr. 7, 1985

Enclosures 9: Attachment No. 1 Letter dated March 4, 1977
Attachment No. 2 Radiation Safety Meter Calibration Record
Picker 655-186
Attachment No. 3 Radiation Safety Meter Calibration Record
Victoreen 1aR
Attachment No. 4 Dose Calibrator Linearity Check March 10, 1980
Attachment No. 5 Dose Calibrator Linearity Check June 9, 1980
Attachment No. 6 Dose Calibrator Linearity Check September 15, 1980
Attachment No. 7 Dose Calibrator Linearity Check December 1, 1980
Attachment No. 8 Dose Calibrator Linearity Check March 2, 1981
Attachment No. 9 Dose Calibrator Linearity Check June 15, 1981

cc. D. M. B. Document Control Desk (RIDS)
Mr. Thomas Mattson
Mr. Leland Anderson
Dr. William Kinney
Mr. James Martineau
Dr. Ronald Villella
Dr. Joseph Cardamone



MERCY MEDICAL CENTER

Division of Health Control, Inc.
4050 COON RAPIDS BOULEVARD — COON RAPIDS, MINN. 55433

Thomas J. Mattson
Executive Vice President

(612) 427-2200

March 4, 1977

Michael A. Lamastra
Radioisotopes Licensing Branch
Division of Fuel Cycle and Material Safety
United States Nuclear Regulatory Commission
Washington, D.C. 20555

RE: CONTROL NUMBER 84761

Dear Mr. Lamastra:

In compliance to your request of February 1, 1977, we submit the following additional information:

1. We have acquired a Picker Model 655-186 portable Geiger survey meter, having five ranges and capable of detecting high level gamma radiation in a range of 0 to 2,000 milliroentgens per hour, and up to 200 milliroentgens per hour beta radiation. Enclosed is a certificate of calibration provided by the manufacturer.
2. In addition to annual calibration by Midwest Radiation Consultants, we will perform daily constancy checks on our dose calibrator using a Cesium 137 source in strengths of ten microcuries and one millicurie. We will also perform quarterly linearity checks by using a source of Technetium 99 m from the generator, measuring its activity in the dose calibrator periodically over a period of about 48 hours, plotting the indicated activity curve and comparing this with the standard Technetium 99 m decay curve.
3. Mr. David A. Johnson, Administrative Vice President, will be included as member of our medical isotope committee. Periodic audits of our nuclear medicine radiation safety program will be accomplished.
4. We have asked Midwest Radiation Consultants to recalibrate our Picker 800 survey meter. Current instrument calibration data is enclosed. According to Mr. Ponto the previous indication of 200 milliroentgens per hour may have been a theoretical exposure figure based on distance from the source, rather than

RADIATION SURVEY METER CALIBRATION

G.M

Instrument Picker 655-186 Facility Mercy Med Center
 Serial 306 Survey performed by JTP
 Date 9/18/80

Source used Ra-226, 10 to 50 milligrams (mCi) with an accuracy of $\pm 5\%$ (NBS traceable).

Survey instrument range 0-2000 mR/hr
 Scales .01, .1, 1, 10, 100
 Battery OK

Scale	Meter Reading (mR/hr)	Calculated Output (mR/hr)	% Difference
<u>.01</u>	<u>.1</u>	<u>.1</u>	<u>0</u>
	<u>.2</u>	<u>.2</u>	<u>0</u>
<u>.1</u>	<u>1</u>	<u>1</u>	<u>0</u>
	<u>2</u>	<u>2</u>	<u>0</u>
<u>1</u>	<u>10</u>	<u>10</u>	<u>0</u>
	<u>20</u>	<u>20</u>	<u>0</u>
<u>10</u>	<u>100</u>	<u>100</u>	<u>0</u>
	<u>190</u>	<u>200</u>	<u>5</u>
<u>100</u>	<u>~950</u>	<u>1000</u>	<u>5</u>

Survey meter is accurate to within $\pm 10\%$

Yes ☒
 No ☐

Remarks:

OK

J. Thomas Payne

J. THOMAS PAYNE Ph.D.
 Medical Physicist
 ABR Certified

RADIATION SURVEY METER CALIBRATION

Model 1aK
 Instrument OCD Survey Meter Facility Mersey Med Center
 Serial 41245 Survey performed by JTP
 Date 9/8/81

Source used Ra-226, 10 to 50 milligrams (mCi) with an accuracy of $\pm 5\%$ (NBS traceable).

Survey instrument range 0-500 R/hr
 Scales 10, 100
 Battery OK (replaced)

Scale	Meter Reading (mR/hr)	R [*] /hr	Calculated Output (mR/hr)	R [*] /hr	% Difference
<u>.1</u>	<u>200</u>	<u>.2</u>	<u>200</u>	<u>.2</u>	<u>0</u>
	<u>400</u>	<u>.4</u>	<u>400</u>	<u>.4</u>	<u>0</u>
<u>1</u>	<u>500</u>	<u>.5</u>	<u>500</u>	<u>.5</u>	<u>0</u>
	<u>1000</u>	<u>1</u>	<u>1000</u>	<u>1</u>	<u>0</u>
<u>10</u>	<u>1000</u>	<u>1</u>	<u>1000</u>	<u>1</u>	<u>0</u>
<u>100</u>	<u>NA</u>		<u>NA</u>		<u>X</u>

Survey meter is accurate to within $\pm 10\%$

Yes ☒
 No ☐

Remarks:

* Meter reads in R/hr
 so a reading of 1 on the
 .1 scale is .1 R/hr or
 100 mR/hr. This meter is only
 good for high level readings.

J. THOMAS PAYNE Ph.D.
 Medical Physicist
 ABR Certified

MIDWEST RADIATION CONSULTANTS, INC.

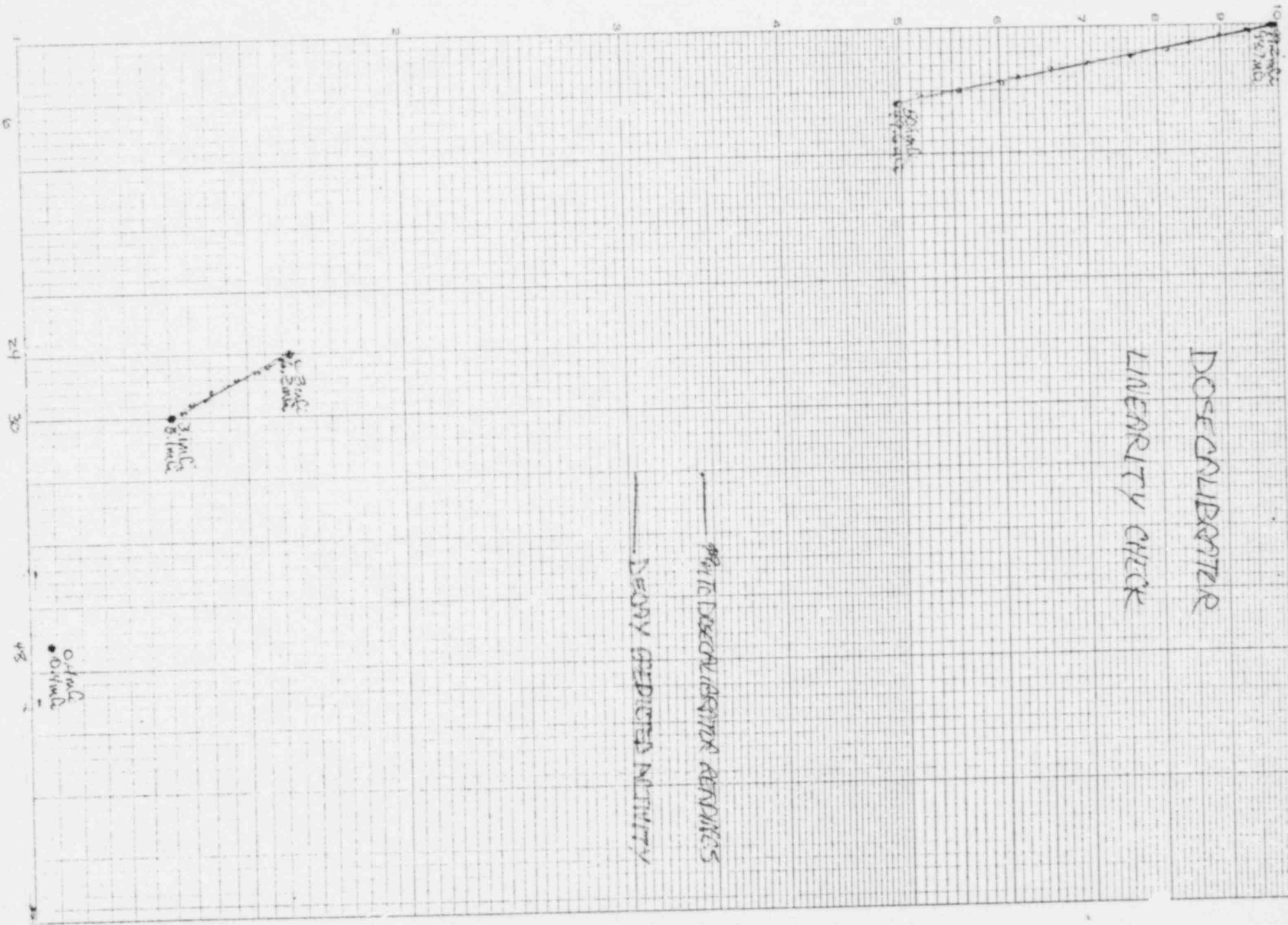
543 Tumbler Ave

St. Paul, MN 55111

612/874-400
 Res 483-179

DOSE CALIBRATION

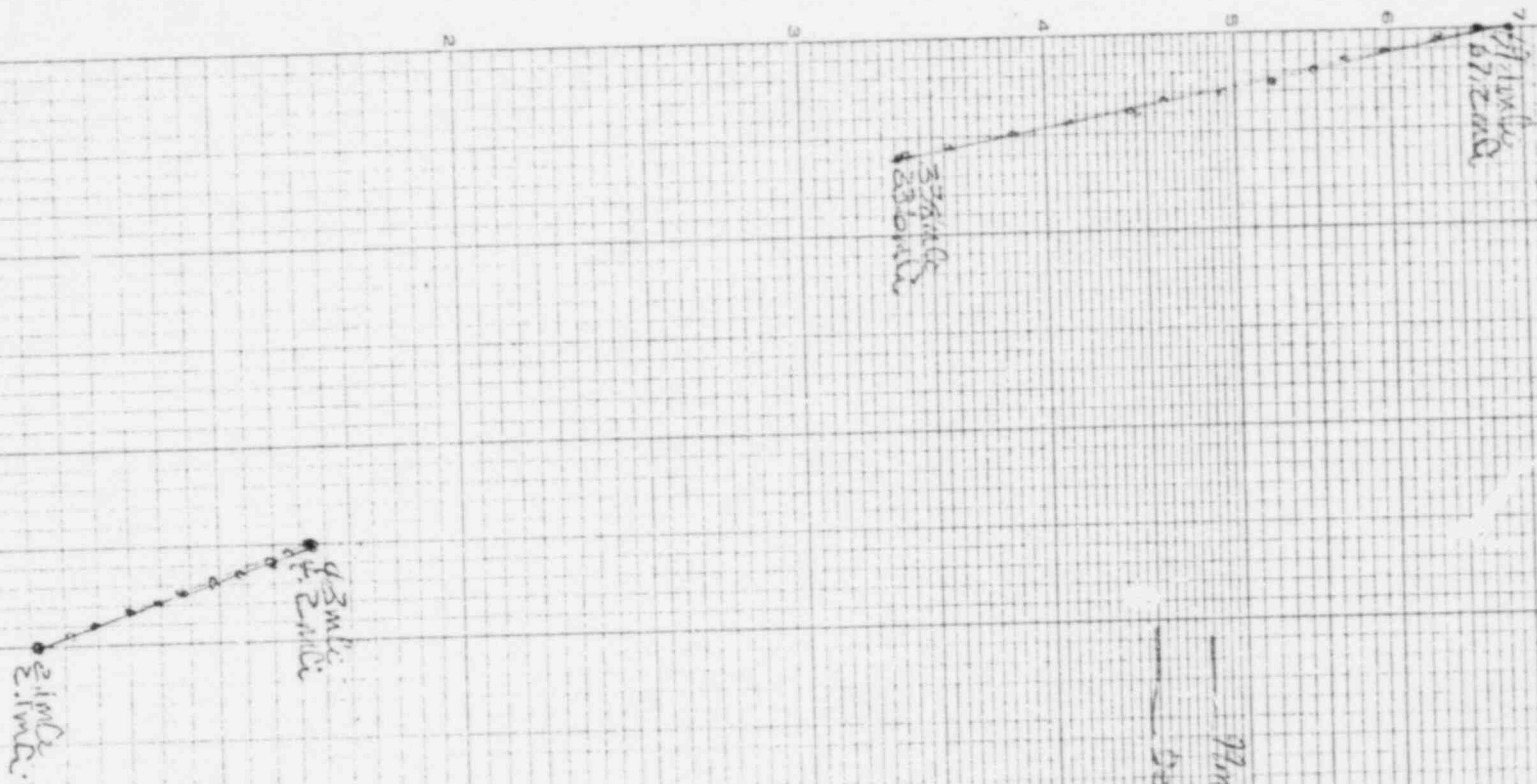
LINEARITY CHECK



Dose Calibration

Linearity Check

7177 Desalinator Readings
Dose Reactivity Relatively



0.3 mCi
0.3 mCi

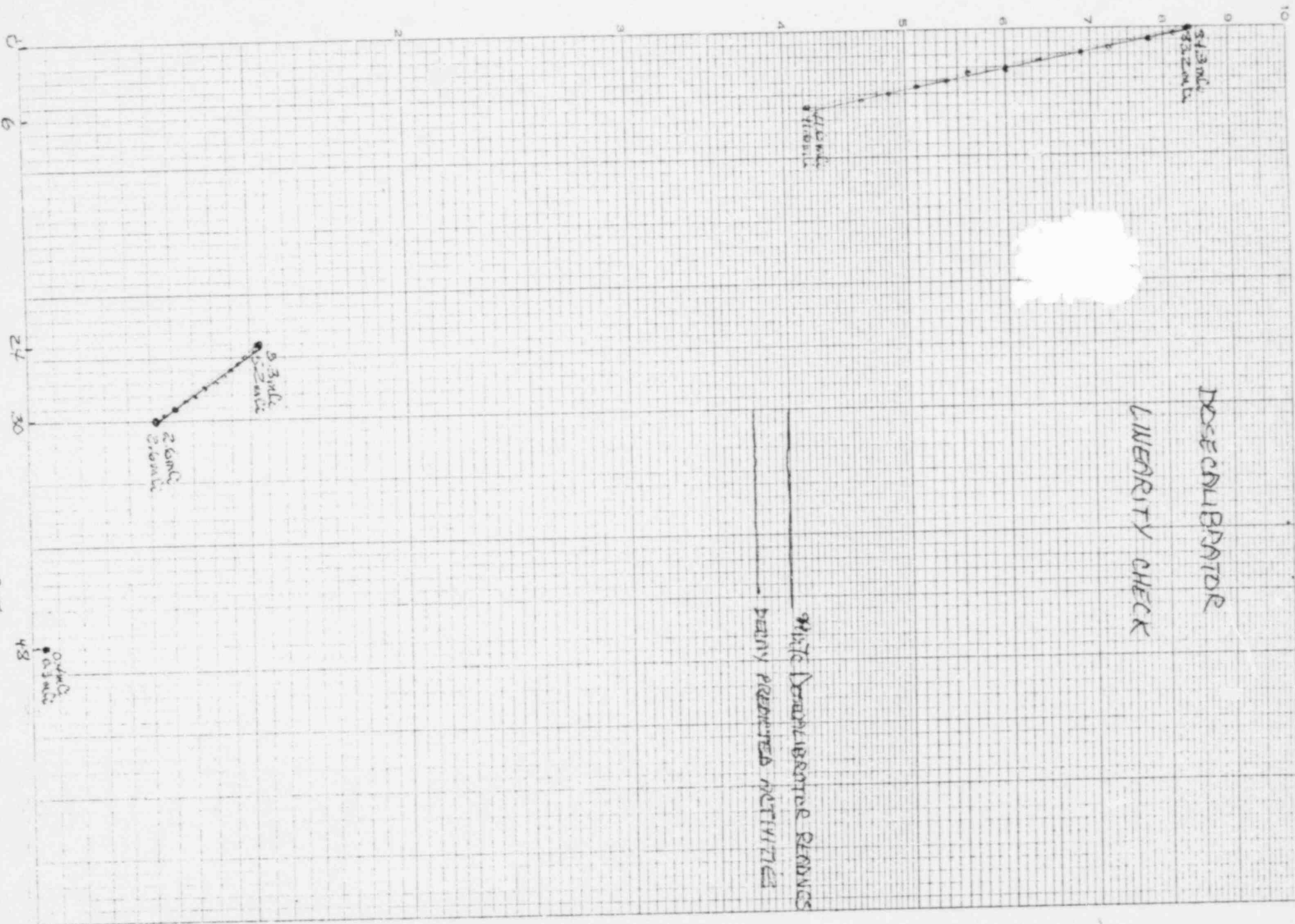
48

INCUBATOR

LIVERITY CHECK

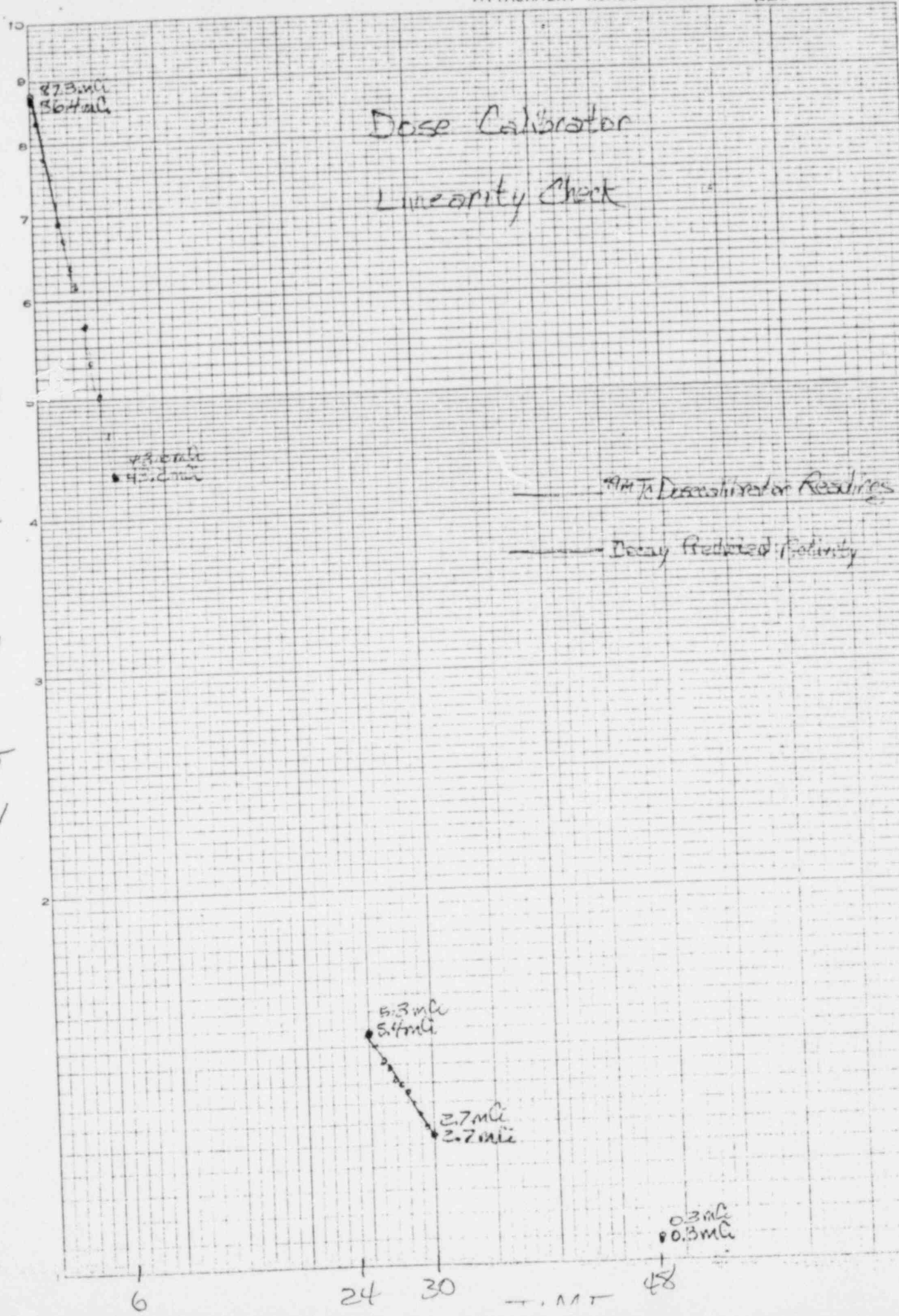
WHITE DEXAMPHETAMINE RESIDUES

BEING PREPARED ACTIVITIES



EUGENE DIETZGEN CO.
MADE IN U. S. A.
A
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V
NO. 340-L110 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
1 CYCLE X 10 DIVISIONS PER INCH

Dose Calibrator Linearity Check



Dose calibrator Linearity Check

99mTc Dose calibrator Readings
Dose calibrator Readings

75.1 mCi
75.6 mCi

37.1 mCi
38.4 mCi

49.1 mCi
49.1 mCi

24.4 mCi
24.4 mCi

0.8 mCi
0.8 mCi

EUGENE DIETZGEN CO.
MADE IN U. S. A.

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NO 340-1110 DIETZGEN GRAPH PAPER
SEMI-LOGARITHMIC
1 CYCLE X 10 DIVISIONS PER INCH

EUGENE DIETZEN CO.
MADE IN U. S. A.NO. 34D-1110 DIETZEN GRAPH PAPER
SEMI-LOGARITHMIC
1 CYCLE X 10 DIVISIONS PER INCHDISCALIBRATOR
LINEARITY CHECK

90% Direct Motor Readings

Direct Readings

324.6
523.2151.1
161.620.140
20.12010.140
10.120

1.200

1.120