

THE MEDICAL CENTER

OF DELAWARE

ADDRESS REPLY TO:

DEPARTMENT OF RADIATION THERAPY

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JOSEPH A. ROSE, B.S.E.E.

June 20, 1985

John E. Glenn, Ph.D., Chief
Nuclear Materials Safety Section
U. S. Nuclear Regulatory Commission
Region I
631 Park Avenue
King of Prussia, PA 19406

Re: License #07-12153-03

Dear Dr. Glenn:

The Eldorado-78 has mercury interlock switches which allow the primary beam to be directed no more than 37 degrees from the vertical position toward the exam room wall and no more than 102 degrees from the vertical toward the outside wall. We would like authorization to be able to rotate the head so that it can be rotated no more than 100 degrees from vertical towards the exam room wall and the outside wall, i.e., that is plus/minus 100 degrees from vertical.

ROOM PROTECTION SURVEY, BEAM "ON"

A radiation protection survey of the areas adjacent to the Eldorado-78 room was performed, using an Eberline-530 survey meter calibrated May 20, 1985. All readings were taken with the collimator fully opened and a plastic phantom placed in the primary beam. Average beam "ON" time for any span of 1 hour is estimated to be 20 minutes. Maximum beam "ON" time is estimated to be 10 hours per week with the beam directed vertically downward 90% of the time, and towards the outside wall the other 10% of the time. The average weekly exposure for each wall enclosing the unit are tabulated in Table I.

The weekly exposure values listed in Table I were calculated by multiplying the measured exposure rate for the vertical position by 9 hours per week and the other two beam orientations by 1 hour per week. The total exposure integrated for one hour was determined using the following method:

CHRISTIANA HOSPITAL
4755 OGLETOWN-STANTON ROAD
P.O. BOX 6001
NEWARK, DELAWARE 19718

8510290536 850920
REG1 LIC30
07-12153-03 PDR

A PRIVATE, NOT-FOR-PROFIT, NON-GOVERNMENT HOSPITAL, RECEIVING NO TAX SUPPORT FOR OPERATIONS

Dr. John Glenn (cont'd)

The measured exposure rate was divided by 0.33 for all beam orientations, i.e., beam on time 20 minutes in any one hour. The adjusted exposure rate for vertical position is multiplied by 0.9, the other beam orientations are multiplied by 0.1 and these results are added to obtain the exposure rate integrated over one hour for all three beam orientations.

Yours truly,

Edward Torvik, Sc.D., Physicist

ET/el

June 20, 1985

THE MEDICAL CENTER OF DELAWARE, INC.
CHRISTIANA HOSPITAL

Location	Primary Beam Directed Toward Floor		Primary Beam Directed Toward Outside Wall		Primary Beam Directed Toward Exam Wall		Total Exposure in one	
	A Hr.	D Weekly	B Hr.	E Weekly	C Hr.	F Weekly	Hr.	Weekly
Entrance Door	0.10	2.7	0.27	0.8	0.05	0.15	0.12	3.7
Control Wall	0.035	0.9	0.035	0.1	0.035	0.10	0.04	1.0
Exam Wall	0.017	0.45	0.017	0.05	0.02	0.6	0.02	1.1
High Energy Wall	-0-	-0-	-0-	-0-	-0-	-0-	-0-	-0-
Outside Wall Non-Primary	0.017	0.45	0.017	0.05	0.017	0.05	0.02	0.6
Outside Wall Primary	0.017	0.45	0.05	0.15	0.017	0.05	0.02	0.7
Roof	0.017	0.45	0.017	0.05	0.017	0.05	0.02	0.6

Total Exposure (hour) = $0.9 A + 0.1 B + 0.1 C$

Total Exposure (weekly) = $D + E + F$

A, B, C = Total exposure in any one hour

D, E, F = Total exposure integrated for 40 hours per week

BETWEEN: William O. Miller, Chief
License Fee Management Branch
Office of Administration -

John E. Glenn, Chief
Nuclear Materials Section B
Division of Engineering and
Technical Programs

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

Applicant/Licensee: The Medical Center of Delaware, Inc.

Application Dated: 6/28/85

Control No.: 04075

License No.: 07-12153-03

2. FEE ATTACHED

Amount: \$ 120.00

Check No.: 00042605

3. COMMENTS

Signed Brenda Platchek

Date 7/12/85

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 7A \$120 + \$110 6/85

2. Correct Fee Paid. Application may be processed for:

Amendment ☒

Renewal

License

Signed Anta Jacques

Date 9/13/85

"SECTION COPY"

THE MEDICAL CENTER OF DELAWARE, INC.
WILMINGTON, DELAWARE

62-9
311

PAY

DATE
07/05/85

CHECK NO.
00042605

AMOUNT
*****120.00

ONE HUNDRED TWENTY AND 00/100 DOLLARS

TO THE
ORDER
OF

NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C.

20555

INVALID AFTER 60 DAYS
THE MEDICAL CENTER OF DELAWARE, INC.
OPERATING ACCOUNT

Wilmington Trust Company
Wilmington, Delaware

W. J. [Signature]

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