



THE CHARLOTTE HUNGERFORD HOSPITAL

P. O. Box 988

Torrington, Connecticut 06790

May 22, 1985

John E. Glenn, Ph.D.
U. S. Nuclear Regulatory Commission
Division of Materials Licensing
631 Park Avenue
King of Prussia, PA. 19406

Re: Cobalt-60 License No. 06-08349-03

Dear Mr. Glenn:

Our Hospital is presently expanding it's facilities, which includes new construction on three sides of the Cobalt-60 Room. As part of this construction, additional shielding was added to the south wall of the Cobalt Room. This consisted of 14 inch thick, 13 foot wide normal density (147#/Cu.Ft.) concrete, extending from the basement floor below to the roof of the Cobalt Room located on the first floor.

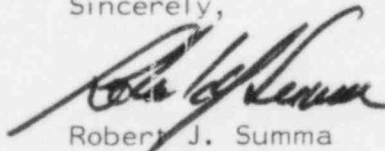
The completion of this construction phase is not expected for another year. However, as soon as the pouring of the concrete was completed, and these areas were accessible, a radiation safety survey was conducted by our physicist, Mr. Randall. The results of his findings and construction diagrams are attached.

The machine remains interlocked as previously described so that the beam may only be aimed at the floor or south wall when not directed at the beam stopper.

Based on the above, we wish to amend our license to eliminate Condition 24 of Amendment 5, and eliminate the log procedures as specified in our letter dated January 7, 1980, signed by G. J. Randall. We also wish to clarify that there should be no restriction on field size utilized, since all measurements were performed at the maximum of

Applicant	33 x 33 CM
Check No.	060089
Amount/Fee Category	2230.74
Type of Fee	Amendment
Date Check Rec'd	6/15/85
Received By	Jacques
Enclosure	

Sincerely,


Robert J. Summa
President

"OFFICIAL RECORD COPY"

ML10

cc: G. J. Randall

8508130136 850725
REQ1 LIC30
06-08349-03 PDR

RECEIVED BY LFMB	
Date	6/15/85
Log	June 8 - I
By	Jacques
Orig. To	
Action Compl.	6/12/85

RECEIVED-NEW
MAY 28 PM 3:40

03866

MAY 28 1985

INST CHARLOTTE HUNGERFORD HOSPITAL TORRINGTON, CT DATE 03/14/85
UNIT AECL THERATRON-80 SN 385 ACTIVITY 5794 Ci ON 9/19/85

BEAM ORIENTATION -- 0 DEGREES = BEAM DIRECTED TOWARD FLOOR;
90 DEG -> SOUTH WALL; 180 DEG -> CEILING; & 270 DEG -> NORTH WALL.
NO BEAM RESTRICTION WHEN BEAM DIRECTED TOWARD BEAM ABSORBER.
BEAM ON RESTRICTED TO FLOOR & SOUTH WALL WHEN OFF BEAM STOPPER.

RHM(R/hr @ 1M) & DATE 2658 ON 3/14/85 W(R/WK @ 1M) 30000
ON TIMES -- (hr/hr)=W/RHM/35HR/WK 0.33 (hr/WK)=W/RHM 11.3
RX DIST(CM) 80 SAD FLD SIZES(CM)= MAX 33 X 33 TESTED 33 X 33
SURVEY METER VICTOREEN PANORAMIC MODEL 470A CALIB. 3/19/84
EXPOSURE MEASUREMENTS WERE MADE IN THE AREAS SURROUNDING THE CO-
BALT ROOM AS SHOWN. PRIMARY BARRIERS TESTED WITH NO PHANTOM IN
BEAM. SECONDARIES TESTED WITH AT LEAST 20CM THICK SCATTERING
PHANTOM INTERSECTING THE ENTIRE BEAM AREA, AND BEAM ORIENTED TO
MEASURE THE MAXIMUM EXPOSURE RATES (USUALLY 30 DEG. SCATTER).

ALL MEASUREMENTS WITH PRIMARY BEAM INTERCEPTED BY BEAM STOPPER.

SHLD	DESCRIPTION	P/S C/N	BEAM DIRECTED TOWARD	MEAS mR per hr	U	T	MAX mR * per hr	MAX mR * per WEEK
1A	APPROX 90 DEG SCATTER	S C	150 DEG.	<0.1	1	1	<0.1	<1.1
1B	APPROX 90 DEG SCATTER	S C	150 DEG.	<0.1	1	1	<0.1	<1.1
1C	APPROX 90 DEG SCATTER	S C	300 DEG.	0.1	1	1	<0.1	1.1
1D	APPROX 45 DEG SCATTER	S C	300 DEG.	<0.1	1	1	<0.1	<1.1
1E	APPROX 45 DEG SCATTER	S C	300 DEG.	0.15	1	1	<0.1	1.7
2A	APPROX 45 DEG SCATTER	S C	300 DEG.	0.2	1	1	<0.1	2.3
2B	APPROX 30 DEG SCATTER	S C	300 DEG.	2.7	1	1	< 1	31
3A	APPROX 30 DEG (@ WALL)	S C	300 DEG.	4.5	1	1	1.5	51
3B	APRX 30DEG (@ CNTR)	S C	300 DEG.	2.5	1	1	< 1	28
3C	APRX 30DEG (@ WINDOW)	S C	300 DEG.	0.8	1	1	< 1	9
3D	APRX 30DEG (@ DOOR)	S C	300 DEG.	0.6	1	1	< 1	7
3E	APRX 30DEG SCATTER	S C	300 DEG.	1	1	1	<1	11
4	APRX 45DEG SCATTER	S C	300 DEG.	0.1	1	1	<0.1	1.1
5	APRX 90DEG SCATTER	S N	300 & 0	0.1	1	1/4	<0.1	1.1
6A&C	APRX 30 DEG SCATTER	S N	60 DEG.	0.1	1	1	<0.1	1.1
6B	APRX 30 DEG SCATTER	S N	60 DEG.	<0.1	1	1	<0.1	<1.1
ROOF	APRX 30 DEG SCATTER	S N	210 DEG.	4	1	1/16	1.3	45

P = PRIMARY BARRIER C = CONTROLLED AREA U = USE FACTOR
S = SECONDARY BARRIER N = NONCONTROLLED T = OCCUPANCY FACTOR
* LEVEL = MEASURED MR/hr X ON TIME. ALLOWABLE LIMIT IS 2MR IN
ANY ONE HOUR & 100 MR IN ANY 7 CONSECUTIVE DAYS FOR NONCON-
TROLLED AREAS; AND 100 mR/WEEK FOR CONTROLLED AREAS. HOWEVER,
EXPOSURES SHOULD BE KEPT AS LOW AS REASONABLY ACHIEVABLE.
NO OCCUPANCY DIRECTLY BELOW COBALT ROOM. ALL ACCESSIBLE AREAS
BELOW SURROUNDING ROOM MEASURED <0.1MR/HR UNDER WORST CONDITION.

RESULTS

ALL LEVELS ARE WITHIN ACCEPTABLE LIMITS.
REALISTIC SCATTER CONDITIONS, AND T FACTORS FOR NONCONTROLLED
AREAS, WOULD REDUCE THESE WEEKLY LEVELS TO WELL UNDER 10 MR/WK.

G. J. RANDALL MS(ABR)

G. J. Randall

INST CHARLOTTE HUNGERFORD HOSPITAL TORRINGTON, CT DATE 03/14/85
 UNIT AECL THERATRON-80 SN 385 ACTIVITY 5794 Ci ON 9/19/85

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 BEAM ON RESTRICTED TO FLOOR & SOUTH WALL WHEN OFF BEAM STOPPER.

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 RX DIST(CM) 80 SAD FLD SIZES(CM)= MAX 33 X 33 TESTED 33 X 33
 SURVEY METER VICTOREEN PANORAMIC MODEL 470A CALIB 3/19/84
 EXPOSURE MEASUREMENTS WERE MADE IN THE AREAS SURROUNDING THE CO-
 BALT ROOM AS SHOWN. PRIMARY BARRIERS TESTED WITH NO PHANTOM IN
 BEAM. SECONDARIES TESTED WITH AT LEAST 20CM THICK SCATTERING
 PHANTOM INTERSECTING THE ENTIRE BEAM AREA, AND BEAM ORIENTED TO
 MEASURE THE MAXIMUM EXPOSURE RATES (USUALLY 30 DEG. SCATTER).

ALL MEASUREMENTS WITH PRIMARY BEAM OFF BEAM STOPPER. INTERLOCKS
 RESTRICT BEAM TOWARD FLOOR AND SOUTH WALL ONLY IN THIS MODE.

SHLD	DESCRIPTION	P/S C/N	BEAM DIRECTED TOWARD	MEAS mR per hr	U	T	MAX mR * per hr	MAX mR * per WEEK
6B	SO. WALL 1ST FLOOR (COBALT ROOM LEVEL)	P N	90 DEG.	4.5	1/4	1/4	1.5	51
6B	SO. WALL BASEMENT (FLOOR BELOW & ADJA- CENT TO COBALT ROOM) (GANTRY ANGLE = 285, HEAD SWIVEL = -60, BEAM TOWARD FLOOR & WALL BELOW)	P N	225 DEG	<0.1	1/4	1	<0.1	<1.1
6A&C	APRX 30DEG SCATTER	S N	60 DEG.	0.1	1	1	<0.1	1.1

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 S = SECONDARY BARRIER N = NONCONTROLLED T = OCCUPANCY FACTOR
 * LEVEL = MEASURED MR/hr X ON TIME. ALLOWABLE LIMIT IS 2MR IN
 ANY ONE HOUR & 100 MR IN ANY 7 CONSECUTIVE DAYS FOR NONCON-
 TROLLED AREAS; AND 100 mR/WEEK FOR CONTROLLED AREAS. HOWEVER,
 EXPOSURES SHOULD BE KEPT AS LOW AS REASONABLY ACHIEVABLE.
 NO OCCUPANCY DIRECTLY BELOW COBALT ROOM. ALL ACCESSIBLE AREAS
 BELOW SURROUNDING ROOM MEASURED <0.1MR/HR UNDER WORST CONDITION.

RESULTS

ALL LEVELS ARE WITHIN ACCEPTABLE LIMITS.

THE USE OF U AND T FACTORS WOULD REDUCE ALL WEEKLY LEVELS TO
 WELL BELOW 10 MR/WK.

G. J. RANDALL MS(ABR)

G. J. Randall

CHARLOTTE HUNGERFORD HOSP.

TORRINGTON CT.

3/14/85

COBALT-60 NRC LIC. NO. 06-08349-03

NORTH
→

$\frac{1}{8}" \approx 1 \text{ Ft.}$

XRAY CORRIDOR
ALL WALLS
FLOOR + ROOF
OF COBALT ROOM
CONCRETE 147# / ft³

4E 4D 4C 4B 4A

COBALT
FLOOR TO ROOF
HEIGHT $\approx 11 \text{ Ft.}$

ADDED
CONCRETE
14" X 13 FT.
(147# / ft³)

Floor = 30"
Roof = 18"

R.T.
DEPT.

HOSPITAL CORRIDOR

CHARLOTTE HUNGERFORD HOSP.
TORRINGTON, CT.
3/14/85
GROUND
FLOOR

NORTH
→

EXPOSED AREA

$\frac{1}{8}" \approx 1 \text{ ft.}$

ALL WALLS UNDER
COBALT ROOM CONG. 147# / 5x3

25"

20"

20"

EXISTING
INACCESSIBLE
AREA
DIRECTLY
BELOW
COBALT
ROOM.

20"

ADDED
CONCRETE
14" x 13 ft.
(147# / 5x3)

(6)

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 Charlotte Hungerford Hospital

Application Dated: 5/22/85

Control No.: 03866

License No.: 06-08349-03

2. FEE ATTACHED

Amount: \$230.00

Check No.: 060089

3. COMMENTS

Signed Brandi Pilatchek

Date 5/29/85

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 7A - \$230

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

Amendment /

Renewal

License

Signed Jo Jackson

Date 6/17/85