

1a. NAME AND ADDRESS:

Foster G. McGaw Hospital
Loyola University Medical Center
2160 S. First Avenue
Maywood, IL 60153

1b. LOCATION OF TELETHERAPY UNIT:

Foster G. McGaw Hospital building
Lower Level, Room 0040

2. PERSON TO CONTACT REGARDING APPLICATION:

Kevin W. Corrigan, Ph.D.
312-531-3239

3. THIS IS APPLICATION FOR RENEWAL OF:

License No. 12-11355-03

4. AUTHORIZED USERS:

Ruheri A. Perez-Tamayo, M.D.
Devdas M. Sheth, M.D.

5. RADIATION SAFETY OFFICER:

Kevin W. Corrigan, Ph.D. (Same as RSO in January 22, 1979
renewal request).

6. SOURCE DESCRIPTION:

Maximum of two Cobalt-60 sources, 9000 curies per source,
source model AECL C-146 CO-60 C.

7. TELETHERAPY UNIT:

AECL Theratron 80

8. USE:

Primarily teletherapy on human subjects. Occasional use of
source for equipment calibration, blood sample irradiation,
etc., will take place under supervision of physicians named
on this license or under that of Dr. Stephen Wang or Dr.
Kevin Corrigan.

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12-11355-03 PDR

9. PERSONNEL MONITORING:

All Radiation Therapy workers will receive film badge monitoring through R.S. Landauer Jr. Co., Glenwood, Illinois. Monitors will be exchanged on a monthly basis.

10. MEDICAL ISOTOPE COMMITTEE:

An updated list of Radiation Control Committee members is attached.

11. TRAINING, EXPERIENCE:

The training and experience of Dr. Ruheri Perez-Tamayo and Dr. Devdas Sheth have been previously submitted.

12. INSTRUMENTATION:

Radiation instruments relevant to the teletherapy program and available on the premises are as follows:

- A. Victoreen Model 491 GM Survey Meter (Radiation Therapy Department), 0-.1 mR/hr low scale, 0-100 mR/hr highest scale.
- B. Eberline Model E-520 GM Survey Meter (Radiation Control) 0-.2 mR/hr lowest scale to 0-200 mR/hr highest.
- C. Victoreen Model 666 portable ion chambers survey meter (Radiation Therapy Department) 0-3 mR/hr low scale, 0-3 R/hr highest calibrated scale.
- D. Technical Associates Model CP6M portable ion chamber survey meter (Radiation Control) 0-1 mR/hr low scale, 0-1 R/hr highest calibrated scale.
- E. Ludlum Model 300 ("beam-on") alarm meter with emergency backup Ni Cd power supply.
- F. Beckman Model 310 autogamma scintillation well counter.
- G. Victoreen Model 570 Condensor R-meter with model 621 chamber (100R).
- H. Capintec Model 192 Exposure/Exposure rate meter with a .06 cc Farmer chamber.
- I. Ludlum GM meter with alpha detector probe.

RADIATION CONTROL COMMITTEE MEMBERS

HENKIN, Robert E., M.D. (Chairman)
Nuclear Medicine
Room 0720 LUMC
X3777

CORRIGAN, Kevin, Ph.D.
Radiation Control
20-116S LUMC
X3239

BADRINATH, Ketty, M.D.
Section of Oncology
050-54 LUMC
X3321

MANTEUFFEL, Mary D., Ph.D.
Biochemistry
Rm 6661 LUMC
X3370

BARBATO, Anthony, M.D.
Bldg 117, Room 13
LUMC
X3238

SHETH, Devdas N., M.D.
Radiation Therapy
Room 0036 LUMC
X3931

BUCKHOY, Leroy
Electronics
Room 0385 LUMC
X3051

SWARTWOUT, John
Hospital Administration
Room 1381 LUMC
X3800

CHURCHILL, Robert, M.D.
CT - Radiology
Room 0031A
X3724

WORTEL, John D.D.S.
Dental Center Room 3823
LUMC
X3570

KLEKAMP, Nancy, R.N.
Nuclear Medicine
Room 0720 LUMC
X3777

13. CALIBRATION PROCEDURES:

- a. GM, ION-CHAMBER SURVEY METERS - The meters will be calibrated at two points on each scale - approximately 1/3 and 2/3 of the scales - by placing them at distances ranging from 40 cm to 275 cm from a 1 mg radium standard (Bureau of Standard Cert. #46767) or from a 25 mg radium source (3 needles, calibrated using the standard). The radiation fields are determined from the inverse square law and specific exposure constant for Ra-226.

Instruments in error by more than $\pm 20\%$ of full scale will be taken out of use for repair and recalibrated after repair. Instruments in error by 10 - 20% of scale will have calibration factors attached. Instruments in error by less than $\pm 10\%$ of scale will be considered calibrated.

A sticker with calibration date will be placed on the instruments and records of readings on all scales will be maintained by the Radiation Control Office.

The highest ranges of the ion chamber meters will not be checked by the above method as required levels are considered unsafe. Instead, readings will be viewed with a TV monitor as these chambers are irradiated with scatter (and leakage) radiation from a Co-60 teletherapy unit. A precalibrated (with Radium) Victoreen Mod 130 integrating dosimeter (177 cc chamber volume) will be used to establish the radiation levels to which the ion chamber detectors were exposed in this process.

Survey meters will be calibrated at least annually.

Quarterly check source readings will be taken for GM counters and recorded as per NRC recommendations.

- b. The Victoreen Model 570 Condenser R-meter system will receive a full calibration, at least once every two years, by an AAPM accredited group (e.g. K and S Associates, Nashville, Tenn.).

The backup Capintec 192 system will be checked for accuracy against the Victoreen system at least twice per year.

- c. Well Counter - In addition to daily operation checks and monthly photopeak measurements, the counting efficiency of the Beckman 310 will be verified at the time of teletherapy source wipe testing by counting a Co-60 standard source.

- d. Alarm Rate Meter - The alarm rate meter will be checked at least once per week following the procedure outlined in the attached "Safety Device Checks" page.

- e. Alpha Scintillation Detector - Prior to each use of the Alpha detector, operation will be checked by placing the probe 1 cm from a 0.17 microcurie Pu-239 source and observing approximately a 1/3 scale deflection on the least sensitive meter scale.

14b. PATIENT VIEWING SYSTEM:

The patients will be viewed with a Setchell-Carlson Model 12M918 closed circuit TV system. If this system fails, a Setchell-Carlson Model 10M915 system is available as a backup.

A two-way intercom ("Talk-A-Phone") is used for aural communication with the patient.

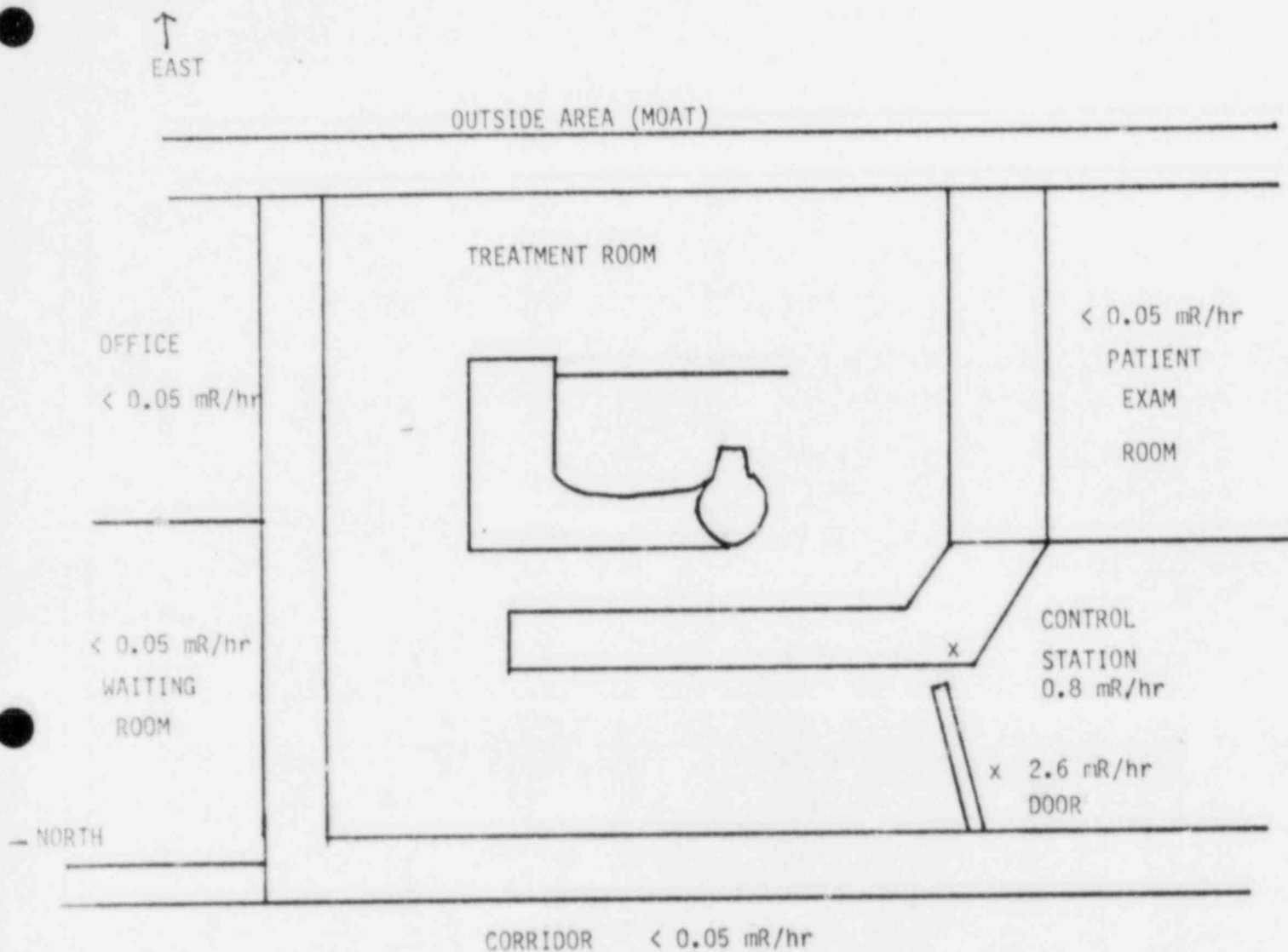
14a &

15. FACILITY DESCRIPTION, INTERLOCKS:

The facility description is unchanged from that given in the November 16, 1982 survey report to NRC. Floor plans for the treatment vault (lower level) and areas one floor above are attached. An interlock prevents exposure when the door separating Control Station and Treatment Room is opened.

Interlocks prevent operation without the beamstop in place unless the beam is directed horizontally to the east and is intercepted by an unoccupiable, dirt filled moat. This allows for total body irradiations.

There are no occupiable points beneath the treatment room.



Maximum levels from all beam orientations are shown. Beam stop in place except for eastward direction of beam as allowed by interlock. 30x30x30 cm lucite phantom in beam - collimators fully opened (SPD = 80 cm or phantom against east wall for "whole body" survey). Maximum level at control station obtained with beam directed horizontal and pointed to the west. The use factor for this beam configuration is 1/4 and beam on time per week is about 10 hrs/week. Therefore considerably less than 2 mR during any hour is expected at the control station, which is itself a controlled area.

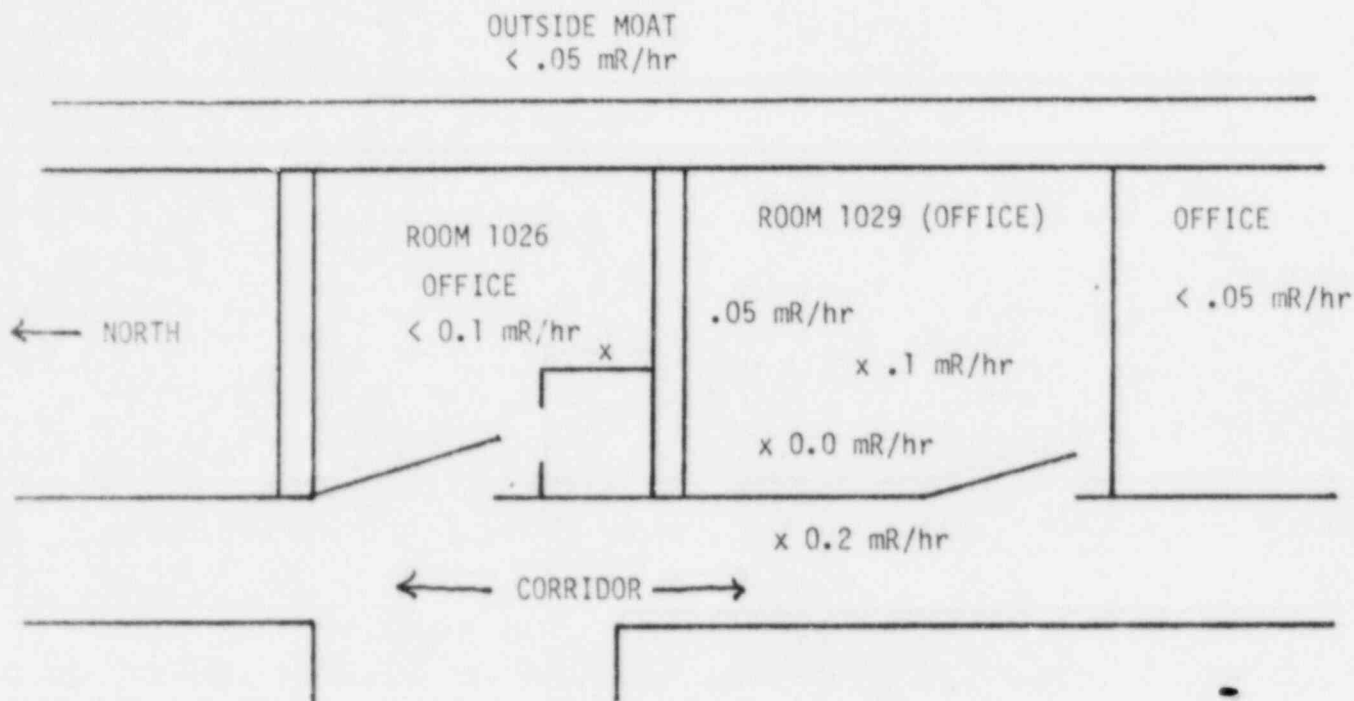
Florigan 10-22-82

1ST FLOOR

↑
EAST

ROOM SURVEY - OFFICES ABOVE THERATRON 80

10-22-82



Maximum readings obtained are shown. Readings in office obtained with beam directed upward and 30° away from vertical. Maximum reading in corridor obtained with beam directed vertically upward. Outside moat reading taken without beam stop in place and with beam directed horizontally and to east. No readings > 0.05 mR/hr were found for operation without beam stop, in any adjacent areas.

All measurements were taken with beam collimators opened to their fullest extent and a $30 \times 30 \times 30$ cm lucite phantom in beam.

H. Corrigan 10-22-82

17. OPERATING PROCEDURES:

Operating procedures will be in conformity with the requirements of 10 CFR, Chapter 1, Part 35.

Attached are procedures that will be followed in the case of emergencies involving the Cobalt source as well as weekly safety check procedures, protocols for monthly output checks and the annual calibration.

18. TRAINING PROCEDURES:

Incoming personnel will be briefed on departmental policies for source operation. Technologists will receive an annual refresher lecture using items in Appendix H of the NRC regulatory guide as an outline.

19. LEAK TESTING:

The Co-60 unit will be leak tested at intervals not exceeding six months by the Radiation Protection Supervisor (Kevin Corrigan, Ph.D.) or the Radiation Therapy Physicist (Stephen Wang, Ph.D.).

A piece of filter paper will be moistened with alcohol and, with long tongs, will be used to wipe the inside of the source channel.

The wipe will be placed in a test tube and counted in a Beckman 310 autogamma well scintillation counter (energy window 0.2 - 1.5 MEV) whose Co-60 counting efficiency is determined - during each leak test procedure - using a small Co-60 standard.

The interior and exterior uranium collimators will be wiped and samples counted in the above fashion. These wipes will also be checked for removable alpha contamination using an alpha detector.

EMERGENCY PROCEDURES

EMERGENCY PROCEDURES IN CASE BEAM CONTROL FAILS OR MALFUNCTIONS

If the room radiation monitor (Ludlum Model 300 Alarm Meter) indicates that the beam control mechanism has failed to terminate the exposure at the end of the preset time (i.e. the red dome light remains ON after pushing reset button at the end of a preset time), the following steps are to be carried out promptly and in a calm manner.

For the Radiation Therapy Technologist

- a. Open the door to the treatment room.
 - b. If the patient is ambulatory, direct him to get off the table and leave the room.
 - c. If the patient is not ambulatory:

Enter the treatment room but avoid exposure to the direct beam. Pull the treatment table as far away from the direct beam as possible. Transfer the patient to a stretcher and remove the patient from the room.
 - d. Close the door and secure the area by locking the door to the treatment room or posting a guard at the entrance.
 - e. Turn off the main switch at the control panel.
 - f. Notify the radiation therapist and radiation safety officer at once.
 - g. Conspicuously post a sign in the area to warn others of the problem.
1. Radiation Therapist: Dr. Perez-Tamayo (or radiation therapist on duty).
Work Phone No.: Ext. 3930 Home: 428-0207
 2. Radiation Safety Officer: Kevin Corrigan, Ph.D.
Work Phone No.: Ext. 3239 Home: 668-6697
 3. AECL Midwest Service - Phone No.: 593-3242
 4. AECL Quality Assurance Division, Ottawa, Canada - Phone No.: 613-592-2790
 5. Radiation Therapy Physicist: Stephen Wang, Ph.D.
Work Phone No.: Ext. 3930 Home: 832-6198

SAFETY DEVICE CHECKS - Co-60 TELETHERAPY UNIT

(To be done weekly)

1. TIMER - Check with stop watch or electronic timer.
Timer set at: _____ min. Stop watch reading: _____ min.
2. DOOR INTERLOCK - During irradiation open door. The source should return to the OFF position. _____
3. RESET - Verify function of RESET button (i.e. ensure that source cannot be returned to the ON position until the timer is reset). _____
4. ROOM MONITOR - Evacuate treatment area, turn on beam, observe operation of the Ludlum 300 room radiation monitor. _____
5. WARNING LIGHTS-DOOR - As in #4 above, observe operation of ON-OFF lights at entrance of treatment area. _____
6. ON-OFF LIGHTS - Observe, on the TV monitor, operation of the beam ON-OFF lights on the Cobalt unit gantry. _____
7. EMERGENCY BUTTON - Verify that EMERGENCY buttons on couch and on console function properly. Test couch button with beam OFF. Test console emergency button with beam ON. _____
8. BEAM-STOP INTERLOCK - Direct beam toward the east and 15° below horizontal. Verify that the beam cannot be turned ON when the beam stop is removed.

If malfunction is discovered during tests 1, 2, 7 or 8 use of the Cobalt unit is forbidden. Contact the Radiation Therapy Physicist immediately.

If malfunction is discovered during tests 4, 5 or 6 a portable survey meter or audible alarm personal dosimeter shall be used when entering the treatment room. Contact the Radiation Therapy Physicist immediately.

Date: _____

L.U.M.C.

AECL Theratron-80 Teletherapy Unit (Serial No. 213)

Machine Output and Performance Checks

(MONTHLY SPOT CHECKS)

1. Check optical distance indicator against mechanical distance indicator at 80 SSD:
Optical distance indicator reads: _____ cm
Remarks: _____
2. Check dial setting with light field: Set dial 10x10, 80 SSD to table top.
Read width of light field: _____ cm
Read length of light field: _____ cm
Remarks: _____
3. Expose film to check light field and radiation field congruence (set 10x10 F.S. and 80 SSD to film)
Remarks: _____
4. Check optical distance indicator @ ± 5 cm, ± 10 cm, ± 15 cm and ± 20 cm from isocenter (Rotational scale @ 0°)
Remarks: _____
5. Check laser alignment against the tip of the mechanical distance indicator:
(a) Lasers on side walls: _____
(b) "Sagittal" laser: _____
6. Output checks
*** Measuring instrument used: Victoreen 570 Condenser R-Meter (Serial # 2375) and # 621 100-R Ion Chamber (Serial # 516).
*** Ion chamber set-up conditions: Chamber placed in air @ center of 10x10 field, 80 SAD, 0° rotation scale and 0° collimator. Penumbra trimmers fully retracted and shadow tray box off.
*** Chamber factor = 1.01 (at 50 % of full scale), calibrated by K & S Associates, Inc., 1854 Airline Drive, Nashville, Tennessee 37210, (615) 883-9760; calibration report dated 4/22/83.

V. 570 CALIBRATION 2375			
DATE 4-23-83		BY KL	
% f.s.	CORRECTION FACTOR	% f.s.	CORRECTION FACTOR
20	1.006	60	0.999
30	0.999	70	0.999
40	1.000	80	0.999
50	1.000	90	0.997

K & S ASSOCIATES, INC.
ACCREDITED DOSIMETRY CALIBRATION LABORATORY

- (a) T/P correction factor: T = _____ $^\circ$ C, P = _____ inches of Hg
(Cobalt Room) (Cobalt Room)
Independent (station) pressure reading from O'Hare: _____ in. of Hg

$$C(T,P) = \frac{273 + T}{P \times 25.4} \times \frac{760}{295} = \frac{273 + ()}{() \times 25.4} \times \frac{760}{295} = \underline{\hspace{2cm}}$$

- (b) Output readings (in R) for a timer setting of 0.5 minute (30 seconds):

Average = _____ (R_i)

17414

- (c) Timer error determination ("5d"): Chamber readings for 5 x .1 minute exposures:

Average = _____ (R₂)

$$\frac{R_1}{.5 + d} = \frac{R_2}{.5 + 5d}, \quad \frac{(\quad)}{.5 + d} = \frac{(\quad)}{.5 + 5d}, \quad d = \text{_____ min}$$

- (d) "Standard" Dose Rate (In-Air Dose Rate)*

$$= \frac{R_1}{.5 \text{ min} + \text{Timer Error}} \times \text{Chamber Factor} \times \text{T/P Correction Factor} \times \text{Attenuation Factor} \times \text{Rad/Roentgen Conversion Factor}$$

$$= \frac{(\quad)}{.5 + (\quad)} \times (\quad) \times (\quad) \times .985 \times .957$$

$$= \text{_____ rad/min}$$

* "Standard" Dose Rate is defined as the absorbed dose rate in air delivered to a small mass of tissue large enough to establish electronic equilibrium, in a field of 10x10 and at 80 SAD.

- (e) Clinically used dose rate for the month of _____ is _____ rad/min
The deviation is _____ percent.
Remarks: _____

7. Check Room Monitor (Ludlum-300) and door light:
Remarks: _____
8. Check door interlock:
Remarks: _____
9. Check Beam On/ Beam Off indicating light:
Remarks: _____
10. Check isocenter: Check cross-hair alignment @ 0° and 180° and at 90° and 270°
Remarks: _____
11. Check Backpointer-light alignment:
Remarks: _____
12. Check the accuracy of the caliper which is used to measure patient's thickness:
Remarks: _____
13. _____
14. Person performing above checks:
(Initial) _____

*** New source S-3401 contains 5395 Ci of cobalt 60 as of 8/13/82 and installed in the Theratron 80 unit (Serial # 213) on 10/22/82. The initial in-air dose rate (10x10 F.S., 80 SAD) was measured to be 136.86 rad/min on 10/24/82 (137.31 rad/min for 10/15/82).

CALIBRATION - 1

FULL CALIBRATION PROCEDURE:

1. Determination of Dose Rate

Chamber Used: _____

Chamber Factor: _____

Chamber calibrated by NBS/ADCL

Date _____

Standard Depth Stick Provided by:

Manufacturer:

Institution:

Nominal SSD / SAD	cm
100 / 100	100
100 / 120	120
100 / 140	140
100 / 160	160
100 / 180	180
100 / 200	200
100 / 220	220
100 / 240	240
100 / 260	260
100 / 280	280
100 / 300	300
100 / 320	320
100 / 340	340
100 / 360	360
100 / 380	380
100 / 400	400
100 / 420	420
100 / 440	440
100 / 460	460
100 / 480	480
100 / 500	500
100 / 520	520
100 / 540	540
100 / 560	560
100 / 580	580
100 / 600	600
100 / 620	620
100 / 640	640
100 / 660	660
100 / 680	680
100 / 700	700
100 / 720	720
100 / 740	740
100 / 760	760
100 / 780	780
100 / 800	800
100 / 820	820
100 / 840	840
100 / 860	860
100 / 880	880
100 / 900	900
100 / 920	920
100 / 940	940
100 / 960	960
100 / 980	980
100 / 1000	1000

In Air Measurements

[illegible]

CALLIBRATION - 2

Corrections:

A. Temp. = _____

Pressure = _____

T/P Correction Factor = $\frac{760}{P} \frac{273 + t}{295} =$ _____

B. Chamber Factor = _____

C. Conversion Factor from R to rad = 0.957

D. Attenuation Factor = 0.985

E. Timer Error Correction, α , using equal long and multiple short exposures

$$\frac{R_1}{t + \alpha} = \frac{R_2}{t + n\alpha}$$

Effects of correction factor used on Page 1 to determine the absorbed dose rate.

2. Light Field and Dial Setting

Dial Setting

Light Field Measured

5 x 5 cm

10 x 10 cm

20 x 20 cm

30 x 30 cm

3. Light field and radiation field congruence for a 10 x 10 cm² field using film.

4. Edge of the field in relation to 50% of the central axis dose from Densitometer Readings and Beam Profile.

CALLIBRATION - 3

- Uniformity of the Radiation Field in relation to the orientation of the beam:

Field Size 10 cm x 10 cm

Nominal SSD/SAD: _____ cm

<u>Gantry Position</u>	<u>Orientation of the Beam</u>	<u>Dose Rate Measured</u>
0	Vertically Down	
180	Vertically Up	
90	Horizontal	
270	Horizontal	

- Off Axis Factor for 30 x 30 cm along the axis longitudinal/
transverse.

<u>Distance from Center</u>	<u>Dose Rate Along the</u>		<u>PFF Axis Factor</u>
	<u>Long. Axis</u>	<u>Transverse Axis</u>	
-15			
-12			
-10			
- 5			
0			
5			
10			
12			
15			

CALLIBRATION - 4

7. Accuracy of Timer

Mechanical Accuracy checked with stop watch

Timer Checked for _____ min.

Reading of Stop Watch _____ min.

8. Accuracy of Distance Measuring Devices

Agreement between light scale and mechanical distance indicator such as depth stick:

Nominal SSD _____

Nominal SSD + 15 cm _____

Nominal SSD - 15 cm _____

9. Accuracy of the Isocenter

10. Applicability of Inverse Square Law.

Dial Setting 10 x 10 cm

Distance (d)	Exposure/Dose Rate (E)	$E d^2 \times 10^{-5}$
60 cm		
70 cm		
80 cm		
90 cm		
100 cm		

19. LEAK TESTING (continued):

If greater than 0.05 microcuries of contamination is discovered, the unit will be taken out of operation and steps taken to prevent spread of contamination. The Nuclear Regulatory Commission, Inspection Branch (Glen Ellyn, Illinois) will be notified in writing within 5 days of discovery of the leak.

20. QUALIFICATIONS - QUALIFIED EXPERT:

The teletherapy source calibrations will be carried out by the Radiation Therapy Physicist, Stephen Wang, Ph.D.

A summary of his training and experience, which meets the requirements of 10 CFR 35.24, is attached.

21. ALARA PROGRAM:

The Loyola University Medical Center ALARA program has been submitted to NRC as part of a May 4, 1982 amendment request for license 12-11355-04.

It is worth noting the ALARA program calls for investigation and reporting to the Radiation Control Committee of any exposures to teletherapy unit operators exceeding 125 millirems per quarter.

22. CERTIFICATE:

This application is prepared in conformity with Title 10, Code of Federal Regulations, Parts 30 and 35 and all information contained herein, including supplements attached hereto, is true and correct to the best of our knowledge and belief.

By Robert S. Condry Date April 30, 1984
Robert S. Condry, Acting Hospital Director
Loyola University Medical Center
Foster G. McGaw Hospital

Curriculum Vitae

Stephen Wang, Ph.D. S.S.N. 556-64-2614

Date and Place of Birth: 12/25/38, China. Naturalized U.S. Citizen.

Marital: Married. Two children.

Academic Degrees:

- 1964 M.S. Physics, University of California, Los Angeles, California
- 1968 M.S. Planetary and Space Physics, University of California, Los Angeles, California
- 1975 Ph.D., Experimental Atomic Physics, University of Oregon, Eugene, Oregon

Medical Physics Education and Professional Experience:

- 1977-78 Post-doctoral Fellow, Medical Physics Program, University of Health Sciences/Chicago Medical School, Chicago, Illinois
- 1978-79 Post-doctoral Fellow, Medical Physics Program, Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois
- 1979-81 Radiation Physicist, Assistant Professor, Rush-Presbyterian-St. Luke's Medical Center, Chicago, Illinois
- 1981-Present Senior Medical Physicist, Radiation Therapy Department, Loyola University Medical Center, Maywood, Illinois

Have obtained Radiation Therapy Physics training and/or work experience in the following hospitals:

V.A. Hines Hospital, Hines, IL; St. Francis Hospital, Evanston, IL; Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL; St. James Hospital, Chicago Heights, IL; Mercy Hospital, Chicago, IL; Mercy Hospital, Urbana, IL; Swedish Covenant Hospital, Chicago, IL; Copley Memorial Hospital, Aurora, IL; St. Mary's Hospital, Kankakee, IL.

Memberships: American Association of Physicists in Medicine

Publications:

- "Pressure Effects of Argon on Sr4607" Acta Physica A54, 721(1978)
- "Pressure Effects of He and Xe on the Resonance Line of Strontium" J. Quant. Spectrosc. Radiat. Transfer, Vol. 22, pp. 87-91(1978)

Co-investigator in the following studies:

- "Therapeutic Radiological Physics Quality Assurance in a National Cooperative Study: A Two-Year Assessment", RSNA-AAPM Annual Meeting, 1977
- "Multi-layer Beam Generation for Irregular Fields in Computerized Treatment Planning", RSNA-AAPM Annual Meeting, 1977
- "Fast vs. Slow CT Scans -- Performance and Dosage", Mid-west Chapter AAPM Symposium, 1977



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
799 ROOSEVELT ROAD
GLEN ELLYN, ILLINOIS 60137

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

Regional License Section,
Material Licensing Branch
FCMS, Office of Nuclear Material
Safety & Safeguards

*VO. dead -
combined
w/ renewal*

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee:

Loyola University of Chicago

Application Dated:

4-9-85

Control No.:

CONTROL NO. 7 920 3

License No.:

12-11355-03

2. FEE ATTACHED

Amount:

-0-

Check No.:

-

3. COMMENTS

*2300 and
fee due
02300*

Chief -

*Originally this action was
combined w/ the renewal
C/N 17414. However, they need
the license amended by July.
The fee will follow.*

Signed

P. Atchiff

Date

6-21-85

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount:

7A

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

Amendment

Renewal

License

Signed

Date

5/84



FOSTER G. McGAW HOSPITAL
LOYOLA UNIVERSITY OF CHICAGO

2160 South First Avenue, Maywood, Illinois 60153

312 531-3777

DEPARTMENT OF NUCLEAR MEDICINE

April 9, 1985

Ms. Pat Detloff
Material Licensing Section, Reg. III
U.S. Nuclear Regulatory Commission
799 Roosevelt Road
Glen Ellyn, IL 60137

RE: License No. 12-11355-03
Control No. 17414

Dear Ms. Detloff:

This is a follow-up to your Tuesday, April 9th phone conversation with Dr. Kevin Corrigan regarding the addition of a name of one physician to the Loyola University Medical Center teletherapy license renewal application.

We request that James E. Marks, M.D. be included among those physicians named on the license and authorized to use our Cobalt-60 unit for patient treatment. Attached is biographical information on Dr. Marks and a summary of his training. You will note he received board certification in 1972.

Should you require additional information, please contact Dr. Corrigan at 531-3239.

Thank you for considering this last-minute addition to our license renewal application.

Sincerely,

Richard Matre

Richard Matre, Ph.D.
Provost

RM/KWC/dlg

enclosures

RECEIVED

APR 10 1985

REGION III

Applicant *June 24*
Check No.
Amount Fee Category
Type of Fee
Date Check Rec'd
Received By

LOYOLA UNIVERSITY MEDICAL CENTER

CONTROL NO. 7 920 3

8509160051

CURRICULUM VITAE

James E. Marks, M.D.

PERSONAL:

BIRTHDATE: December 10, 1939
BIRTHPLACE: Galesburg, Illinois
SOCIAL SECURITY NO.: 323-32-9514

EDUCATION:

1957 - 1961 Knox College - A.B.
Galesburg, Illinois

1961 - 1965 Washington University School of Medicine - M.D.
St. Louis, Missouri

1965 - 1966 Internship
Jewish Hospital of St. Louis

1966 - 1967 Residency - Surgery
Jewish Hospital of St. Louis

1967 - 1968 Residency - Surgery
University of Chicago
Chicago, Illinois

1968 - 1972 Residency - Radiology
University of Chicago
Chicago, Illinois

1970 - 1975 Fellowship
American Cancer Society Clinical Fellow

POSITIONS:

1972 - 1974 Assistant Professor, University of Chicago
(Therapeutic Radiology)
Chicago, Illinois

1974 - 1977 Assistant Professor of Radiation Oncology
Washington University School of Medicine
St. Louis, Missouri

1977 - 1982 Associate Professor of Radiation Oncology
Washington University School of Medicine
St. Louis, Missouri

1982 - 1985

Professor of Radiation Oncology
Washington University School of Medicine
St. Louis, Missouri

1985-

Director
Loyola-Hines Department of Radiation Therapy
Strich School of Medicine
Chicago, Illinois

LICENSURE:

Missouri, 1966 ----- #30258
Illinois, 1968 ----- #36-41134
National Board, 1967 ----- #84245

CERTIFICATION:

American Board of Radiology - Therapeutic 1972

SOCIETIES:

Metropolitan Association of Radiation Therapists,
Chicago, Illinois
American Radium Society
American Society of Therapeutic Radiology
and Oncology
American College of Radiology
Missouri Radiological Society
Radiologic Society of North America
American Association for Cancer Education
St. Louis Radiological Society

EDITORIAL BOARD:

Journal of Neuro-Oncology
Laryngoscope

TRAINING AND EXPERIENCE
AUTHORIZED USER OR RADIATION SAFETY OFFICER

1. NAME OF AUTHORIZED USER OR RADIATION SAFETY OFFICER James E. Marks, M.D.	2. STATE OR TERRITORY IN WHICH LICENSED TO PRACTICE MEDICINE Missouri, Illinois
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3. CERTIFICATION

SPECIALTY BOARD A	CATEGORY B	MONTH AND YEAR CERTIFIED C
Radiation Oncology - American Board of Radiology		June, 1972

4. TRAINING RECEIVED IN BASIC RADIOISOTOPE HANDLING TECHNIQUES

FIELD OF TRAINING A	LOCATION AND DATE(S) OF TRAINING B	TYPE AND LENGTH OF TRAINING	
		LECTURE/ LABORATORY COURSES (Hours) C	SUPERVISED LABORATORY EXPERIENCE (Hours) D
a. RADIATION PHYSICS AND INSTRUMENTATION	Univ. of Chicago Hosp. & Clinics- Argonne Cancer Research Hosp. April, 1969 to June, 1972	2 courses on basic physics 40 hours	10 hours
b. RADIATION PROTECTION	Univ. of Chicago Hosp. & Clinics- Argonne Cancer Research Hosp. April, 1969 to June, 1972	3 hours	1 hour
c. MATHEMATICS PERTAINING TO THE USE AND MEASUREMENT OF RADIOACTIVITY	Univ. of Chicago Hosp. & Clinics- Argonne Cancer Research Hosp. April, 1969 to June, 1972	3 hours	none
d. RADIATION BIOLOGY	Univ. of Chicago Hosp. & Clinics- Argonne Cancer Research Hosp. April, 1969 to June, 1972	20 hours	none
e. RADIOPHARMACEUTICAL CHEMISTRY			

5. EXPERIENCE WITH RADIATION. (Actual use of Radioisotopes or Equivalent Experience)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
Radium	30-40 mg	Univ. of Chicago	5 years	intracavitary and interstitial.
Gold 198	150 millicuries	Univ. of Chicago	5 years	intracavitary.
Radon	5 millicuries	Univ. of Chicago	5 years	interstitial.
Chromium 51	5 millicuries	Univ. of Chicago	5 years	interstitial.
Iridium 192	10 millicuries	Mallinckrodt Inst. of Radiology	11 years	interstitial.
I 131	100 millicuries	Mallinckrodt Inst. of Radiology	11 years	oral

PRECEPTOR STATEMENT

Supplement B must be completed by the applicant physician's preceptor. If more than one preceptor is necessary to document experience, obtain a separate statement from each.

1. APPLICANT PHYSICIAN'S NAME AND ADDRESS

FULL NAME

James E. Marks, M.D.

STREET ADDRESS

510 S. Kingshighway

CITY

STATE

ZIP CODE

St. Louis

MO

63110

KEY TO COLUMN C

PERSONAL PARTICIPATION SHOULD CONSIST OF:

1-Supervised examination of patients to determine the suitability for radioisotope diagnosis and/or treatment and recommendation for prescribed dosage.

2-Collaboration in dose calibration and actual administration of dose to the patient including calculation of the radiation dose, related measurements and plotting of data.

3-Adequate period of training to enable physician to manage radioactive patients and follow patients through diagnosis and/or course of treatment.

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN

ISOTOPE A	CONDITIONS DIAGNOSED OR TREATED B	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION C	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.) D
I-131 or I-125	DIAGNOSIS OF THYROID FUNCTION		I had 3 months training in Nuclear Medicine as a resident and am not qualified in the diagnostic use of isotopes.
	DETERMINATION OF BLOOD AND BLOOD PLASMA VOLUME		
	LIVER FUNCTION STUDIES		
	FAT ABSORPTION STUDIES		
	KIDNEY FUNCTION STUDIES		
	IN VITRO STUDIES		
OTHER			
I-125	DETECTION OF THROMBOSIS		
I-131	THYROID IMAGING		
P-32	EYE TUMOR LOCALIZATION		
Se-75	PANCREAS IMAGING		
Yb-169	CISTERNOGRAPHY		
Xe-133	BLOOD FLOW STUDIES AND PULMONARY FUNCTION STUDIES		
OTHER			
Tc-99m	BRAIN IMAGING		
	CARDIAC IMAGING		
	THYROID IMAGING		
	SALIVARY GLAND IMAGING		
	BLOOD POOL IMAGING		
	PLACENTA LOCALIZATION		
	LIVER AND SPLEEN IMAGING		
	LUNG IMAGING		
	BONE IMAGING		
OTHER			

PRECEPTOR STATEMENT (Continued)

2. CLINICAL TRAINING AND EXPERIENCE OF ABOVE NAMED PHYSICIAN (Continued)

ISOTOPE	CONDITIONS DIAGNOSED OR TREATED	NUMBER OF CASES INVOLVING PERSONAL PARTICIPATION	COMMENTS (Additional information or comments may be submitted in duplicate on separate sheets.)
A	B	C	D
P-32 (Soluble)	TREATMENT OF POLYCYTHEMIA VERA, LEUKEMIA, AND BONE METASTASES	0 -	() Number of cases treated during 11 years at Mallinckrodt Institute of Radiology July, 1974 to July, 1985.
P-32 (Colloidal)	INTRACAVITARY TREATMENT	5 (2)	
I-131	TREATMENT OF THYROID CARCINOMA	25 (42)	
	TREATMENT OF HYPERTHYROIDISM	0	
Au-198	INTRACAVITARY TREATMENT	10	
Co-60 or Cs-137	INTERSTITIAL TREATMENT	0	
	INTRACAVITARY TREATMENT	0 (1)	
I-125 or Ir-192	INTERSTITIAL TREATMENT	80 (177)	
Co-60 or Cs-137	TELETHERAPY TREATMENT	600	
Sr-90	TREATMENT OF EYE DISEASE	2 (11)	
	RADIOPHARMACEUTICAL PREPARATION		
Mo-99/ Tc-99m	GENERATOR	10	
Sn-113/ In-113m	GENERATOR	0	
Tc-99m	REAGENT KITS	0	
I-125 seeds in Vicryl suture		0 (4)	

4. DATES AND TOTAL NUMBER OF HOURS RECEIVED IN CLINICAL RADIOISOTOPE TRAINING
1969 to 1974 total number of hours 100.

5. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OF:

a. NAME OF SUPERVISOR

Melvin L. Griem, M.D.

b. NAME OF INSTITUTION

University of Chicago

c. MAILING ADDRESS

950 East 59th Street

d. CITY

Chicago, IL 60637

e. PHYSICIAN LICENSE NUMBER(S)

6. PRECEPTOR'S SIGNATURE

7. PRECEPTOR'S NAME (Please type or print)

8. DATE

**WASHINGTON
UNIVERSITY
SCHOOL OF
MEDICINE**

AT WASHINGTON UNIVERSITY MEDICAL CENTER

DIVISION OF
RADIATION SAFETY

April 2, 1985

James E. Marks, M.D.
Radiation Oncology

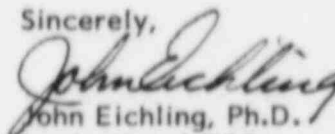
Dear Dr. Marks:

You have been authorized to use US Nuclear Regulatory Commission licensed materials in 2 different clinical activities while at Washington University School of Medicine. The 2 categories are as follows:

- (1) You have been approved by our institutional radioisotope committee, the Radiation Safety Committee, to use USNRC-licensed materials for Groups IV, V & VI applications under the institutional medical broad scope license - USNRC 24-00167-11. In addition, statements specifying your training and experience were submitted to the NRC at the time of our last renewal of the broad-scope license in 1981. Copies of these statements are enclosed.
- (2) You have been approved by the Radiation Safety Committee to use our two ⁶⁰Co teletherapy devices authorized by USNRC license #24-00063-08 (Mallinckrodt Institute of Radiology) and USNRC license 24-00063-10 (Jewish Hospital).

If you ever need additional information please call me at (314) 362-2988. Best wishes at Loyola University.

Sincerely,


John Eichling, Ph.D.
Institutional RSO

JE:fiw

enclosures

Box 8053

724 S. Euclid Avenue

St. Louis, Missouri 63110

(314) 362-3476

CONTROL NO. 7 9203