

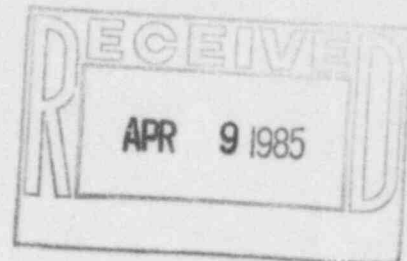


*The*  
**University of Oklahoma**

*Oklahoma City Campus-Health Sciences Center*

DEPARTMENT OF RADIOLOGICAL SCIENCES  
College of Medicine

April 2, 1985



MS-12/16  
T2

Mr. Charles Cain  
U.S. Nuclear Regulatory Commission  
Region IV  
611 Ryan Plaza Drive, Suite 1000  
Arlington, Texas 76011

Dear Mr. Cain,

With reference to our recent telephone conversation related to the teletherapy, education, and training unit and NRC License No. 35-03176-06 for the Co-60 unit located in the O. U. College of Health, the pertinent information for the questions asked by you is provided below:

1. The area survey with the head at  $90^{\circ}$ , i.e. pointing towards the north wall, has been performed. The exposure levels at pertinent locations are provided in the attachment. The locations where exposure measurements have been made are indicated on the sketches provided.

These measurements were made with a 20 cm thick pressed wood phantom in the field of view.

2. Exposure in the North Room Area

(A) The exposure at location J is 85 mR/hrs for the beam pointed towards north wall. There is a concrete wall on the outside. However, the height is about 5 ft. 5 inch.

The room no. 70COH has been assigned to the Office of Radiation Safety for storage of de-classified waste. The room will be locked and the key will be used only by the personnel of the O. U. Office of Radiation Safety. No personnel is going to be present there on a regular basis. All the personnel wear film badge dosimeters. Access to the area is restricted. This area may be considered a controlled area.

(B) Beam Usage Time:

The beam usage in the north direction will be limited and very likely will be no more than 10%.

(C) Exposure Level Around the Outer North Wall of Room 70COH

Exposure level on the outside wall is 4.8 mR/hr, considering 10% use factor the exposure will be 0.48 mR/hr. This wall is in the parking area where occupancy near the wall will be quite limited.

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(D) Exposure Level at the Roof

The exposure at the roof for the beam at  $90^{\circ}$  is 2.5 mR/hr and with beam pointing downwards is 0.5 mR/hr. Considering 10% beam usage time for the beam at  $90^{\circ}$  setting, the average exposure at the roof will be

$$2.5 \times 0.1 + 0.5 \times 0.9 = 0.7 \text{ mR/hr.}$$

Please let me know if any other information is required.

Sincerely yours,

*B. Wally Ahluwalia, Ph.D.*

B. Wally Ahluwalia, Ph.D.  
Radiological Physicist  
Diplomate ABR and ABSNM

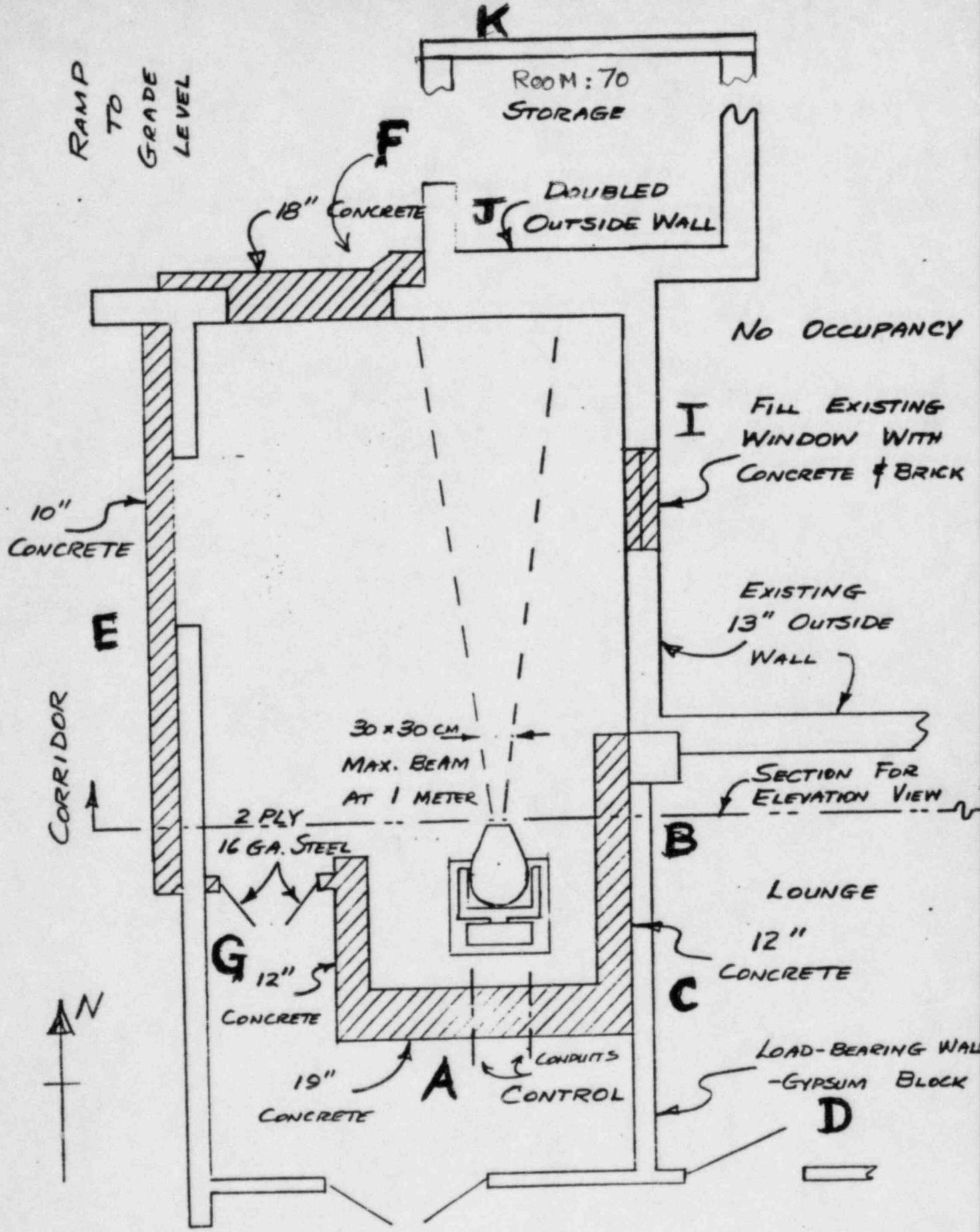
BA/db  
Attachments  
xc: Ms. Carole Sullivan

TELETHERAPY FACILITY SURVEY AND BEAM CALIBRATION

| *<br>Position<br>(keyed to<br>sketches)   | **<br>Maximum<br>Radiation<br>Level<br>(mR/hr) | Restricted<br>Area?           | Beam<br>Orienta-<br>tion         | Maximum<br>Field<br>Size at a<br>Specified<br>Distance | Beam<br>Catcher<br>Used? | Phantom<br>in<br>Beam?        | Beam Calibration                 |                           |            |
|---|--|-------------------------------|----------------------------------|--|--------------------------|-------------------------------|----------------------------------|---------------------------|------------|
|   |  |                               |                                  |  |                          |                               | Distance                         | Field<br>Size             | R/m        |
| B, C, D                                   | 0.05   | No<br>Eastside<br>Housekeep   | Pointing<br>Towards<br>Northwall | 6x6<br>@ 50 cm   | None                     | 30x30<br>cm                   | Measured on<br>December 13, 1984 | 50<br>cm<br><br>6x6<br>cm | 3.94       |
| E   | 0.05   | No<br>West Side<br>Corridor   | "                                | "  | "                        | Compressed<br>Wood<br>Phantom |                                  |                           |            |
| F   | 1.1  | No<br>North Out-<br>side Wall | "                                | "  | "                        | "                             |                                  |                           |            |
| G   | 2.8  | Yes<br>Room<br>Door           | "                                | "  | "                        | "                             |                                  |                           |            |
| H   | 2.5  | No<br>Roof                    | "                                | "  | "                        | "                             |                                  |                           |            |
| I   | 0.9  | No<br>East Side<br>Outside    | "                                | "  | "                        | "                             |                                  |                           |            |
| J   | 85   | No<br>Inside Wall<br>Room 70  | "                                | "  | "                        | "                             |                                  |                           |            |
| K   | 4.8  | No<br>North Out-<br>side Wall | "                                | "  | "                        | "                             |                                  |                           |            |
| Instrument used: Victoreen 470A Sr. #2931 |  |                               |                                  |  |                          |                               | 62.7 RHM                         | On 10/4/84                | Curies 785 |

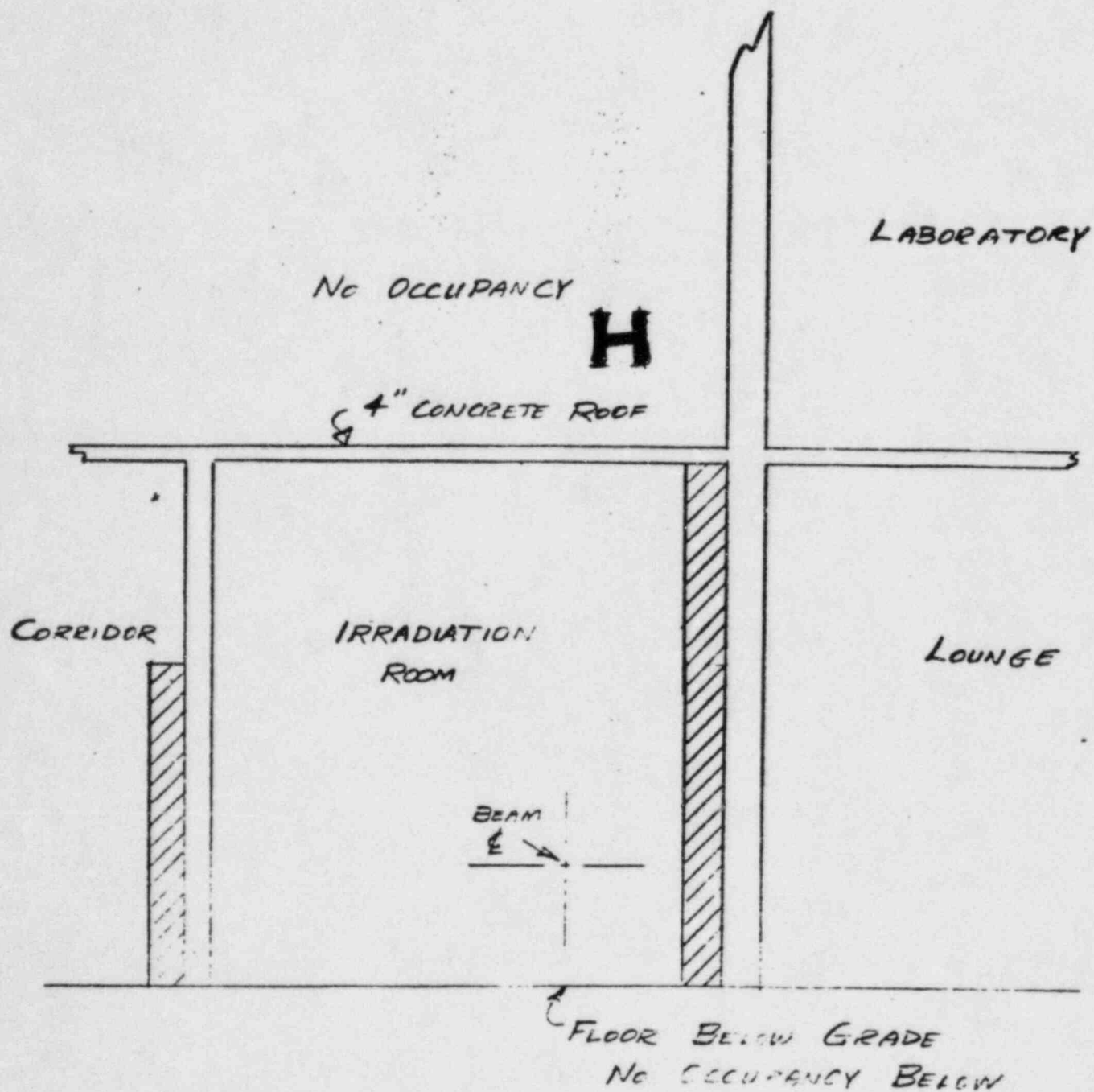
DATE: March 26, 1985

*B. Wally Ahluwalia, Ph.D.*  
 B. Wally Ahluwalia, Ph.D.  
 Radiological Physicist



CHB RM 49  
 SCALE:  $\frac{1}{4}'' = 1'0''$

CORRIDOR



CHB RM 49 ELEVATION  
SCALE:  $\frac{1}{4}" = 1'0"$



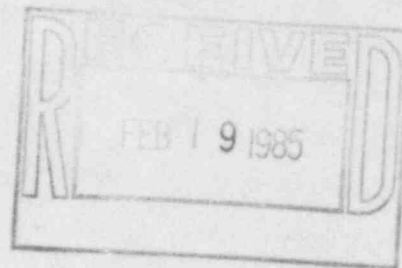
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|---|--|---|--|--|--|---|--|---|--|
| NRC FORM 218<br>(4-76)<br>NRCM 0240   |  | U.S. NUCLEAR REGULATORY COMMISSION                                  |  |  |  | DATE<br><div style="font-size: 1.2em;">2/27/85</div>              |  |   |  |
| TELEPHONE OR VERBAL CONVERSATION RECORD   |  |   |  |  |  | TIME<br><div style="font-size: 1.2em;">2:30</div>                 |  | <input type="checkbox"/> A.M.<br><input checked="" type="checkbox"/> P.M. |  |
| <input type="checkbox"/> INCOMING CALL  |  | <input checked="" type="checkbox"/> OUTGOING CALL                   |  |  |  | <input type="checkbox"/> VISIT                                    |  |   |  |
| PERSON CALLING<br><div style="font-size: 1.2em;">Cain</div>   |  | OFFICE/ADDRESS  |  |  |  | PHONE NUMBER  |  | EXTENSION   |  |
| PERSON CALLED<br><div style="font-size: 1.2em;">Dr. Ahluwalia</div>   |  | OFFICE/ADDRESS<br><div style="font-size: 1.2em;">Univ. of OK.</div> |  |  |  | PHONE NUMBER<br><div style="font-size: 1.2em;">405-271-6121</div> |  | EXTENSION   |  |
| CONVERSATION  |  |   |  |  |  |   |  |   |  |
| SUBJECT<br><div style="font-size: 1.2em;">Deficiencies Identified During Review of 1/29/85 Survey Report</div>  |  |   |  |  |  |   |  |   |  |
| SUMMARY<br><div style="margin-top: 10px;"> <ol style="list-style-type: none"> <li>1. The licensee will rotate head to the north wall and make surveys of roof, north wall exterior, and adjacent wall exteriors <u>or</u> install microswitch on device to prevent head rotation and to maintain vertical down orientation.</li> <li>2. Licensee will describe phantom used in previously submitted measurements (pressboard).</li> <li>3. Licensee stated that device use began in February 1985.</li> <li>4. I indicated that conditions 20. and 21. would be amended or deleted after review of data to be submitted.</li> <li>5. Response will be mailed by 3/4/85.</li> </ol> </div> |  |   |  |  |  |   |  |   |  |
| REFERRED TO: <div style="font-size: 1.2em;">L/N 35-03176-06</div>   |  |   |  |  |  | <input type="checkbox"/> ADVISE ME OF ACTION TAKEN.               |  |   |  |
| ACTION REQUESTED  |  |   |  |  |  | INITIALS  |  |   |  |
| ACTION TAKEN  |  |   |  |  |  | DATE  |  |   |  |



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TEXAS 76011



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

R. J. Everett, Chief  
Material Radiation Protection Section, TPB,  
DV&TP, RIV

LICENSEE FEE TRANSMITTAL

A. REGION IV

1. APPLICATION ATTACHED

Applicant/Licensee:

Application Dated:

Control No.:

License No.:

Oklahoma University, of  
January 29, 1985  
460527  
35-03176-05<sup>06</sup> (030-19258)

2. FEE ATTACHED

Amount:

Check No.:

3. COMMENTS

Pending  
10/31/84  
AIC

Signed

Date

Laura Hurley  
February 5, 1985

B. LICENSEE FEE MANAGEMENT BRANCH

1. Fee Category and Amount:

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

Amendment ✓

Renewal                     

License                     

EX 3E no fee due

Signed

Date

Frances Brown  
2/8/85  
108  
2/8/85