

# Leila Hospital and Health Center

300 north avenue, battle creek, michigan 49016 telephone 616 962-8551

March 23, 1984

'84 MAR 27 A9:23

Mr. Francis St. Mary  
Material Licensing Branch  
U.S.N.R.C.  
Washington D.C. 20555

RE: Amendment Materials License No. 21-01354-03

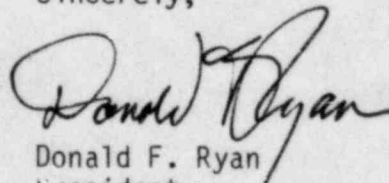
-7A  
-9/84

Dear Mr. St. Mary:

This is to request an amendment to except us from the requirements of 10 CFR 35.24. We propose Mr. Joseph P. Ohlmacher to perform the requirements of this section.

We are enclosing a synoptic description of Mr. Ohlmacher's pertinent course work, a copy of a calibration he performed, a copy of a spot-check form he developed and a copy of written endorsement of his technical qualifications.

Sincerely,

  
Donald F. Ryan  
President

cs0005m

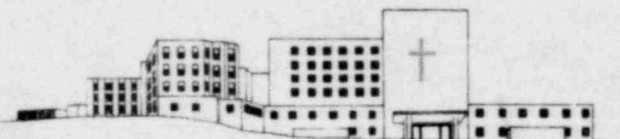
Enclosures

RECEIVED BY LFMB	
Date	4/10/84
Log	Apr-13TH
By	CP/68
Orig. To	
Action Comp	4/13/84

56877
40-7A
amendment
4/10/84
CP/68
No report due - checked after review combined w/ 79361

8512030279 851126  
REG3 LIC30  
21-01354-03 PDR

sponsored by the sisters of mercy



17295

Joseph P. Ohlmacher, B.S.

Bachelor of Science (Physics), University of Toledo, 1972

Employment:

February 1966 to February 1968  
Teledyne Isotopes, Inc.  
Plum Brook Reactor Facility  
Sandusky, OH

Health Physics Technician

February 1972 to September 1981  
Flint Osteopathic Hospital  
Flint, MI

Health Physicist

September 1981 to Present  
Radiological Consultants  
Battle Creek, MI

Health Physicist

University of Toledo  
Toledo, Ohio

Course Title	Hours	Date
Modern Physics	3 semester	Fall 1968
Atomic Physics	3 semester	Winter 1969
Nuclear Physics	3 semester	Spring 1969
Quantum Mechanics & Electromagnetic Radiation	9 semester	Fall 1969 through Spring 1970
Radioisotope Techniques	5 quarter	Spring 1970
Biophysics	5 quarter	Fall 1970
Nuclear Instrumentation Laboratories	4 quarter total	Fall 1969 through Spring 1970
Nuclear Engineering	3 quarter	Fall 1971

Oakland University  
Rochester, Michigan

Advanced Electronics	6 semester	Sept. 1980 - Dec. 1980
Radiobiology	4 semester	Jan. 1981 - June 1981

Short Courses  
University of Wisconsin

Radiotherapy Safety	Mar. 25 & 26, 1982
Recent Advances in Radiotherapy Calibration	Oct. 13 & 14, 1983

Professional Societies

Health Physics Society	Plenary Member	1971
American Association of Physicists in Medicine	Full Member	1979

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# HURLEY MEDICAL CENTER

## DEPARTMENT OF RADIOLOGY

Flint Associated Radiologists, P.C.

313 766-0210

ROBERT S. ORMOND, M.D., F.A.C.R., Director

### DIAGNOSTIC:

SYLVIA M. KOSCIOLEK, M.D.

LILY W. LIM, M.D.

APPARAO MUKKAMALA, M.D.

ROBERT S. ORMOND, M.D.

EDGARDO G. PAGUIO, M.D.

RAMESH C. SHAH, M.D.

C. GENE FOLLIS, M.D., Ph.D.

APPARAO MUKKAMALA, M.D.

Florence Whiting Dalton

Radiation Therapy Center

313 766-0422

VENBLASERRY JAYABALAN, M.D.

SYLVIA M. KOSCIOLEK, M.D.

Nuclear Medicine

313 766-0194

MORRIS I. BANK, Ph.D.

Radiation Physicist

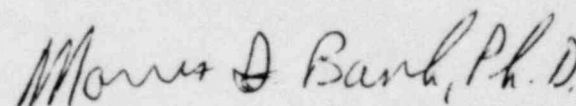
313 766-0194

February 26, 1982

Re: Expertise of Joseph P. Ohlmacher

To Whom It May Concern:

On February 10, 1982 I observed the procedure of Joseph Ohlmacher during calibration of a Cobalt 60 therapy unit, on AECL Theratron 80, located at Hurley Medical Center. I have further discussed calibration techniques and theory with Mr. Ohlmacher and found him to be knowledgeable in this area.



Morris I. Bank, Ph.D.  
Radiological Physicist, A.B.R.

MIB/cp

17295

Date May 20, 1983

MONTHLY CHECK - CUBALIT-60 MACHINE

Performed by J. Blum

## SAFETY INSPECTION

Door Interlock [x] OK  
 Warning Lights [x] OK  
 Television [x] OK  
 Intercom [x] OK

Radiation Monitor [x] OK  
 Emergency Bar [x] OK  
 Mirror [x] OK

copy

## LASER ALIGNMENT

Left +1 mm Right 0 mm Top -1.5 mm Sagittal 0 mm  
 Adjusted [ ] Yes [x] No  
 Optical Rangefinder 78 cm Central Ray - Cross Hairs [x] OK

## OUTPUT CHECK

Air Density Correction Factor  
 Barometric Pressure

	Start	End	Average
Column Height	<u>743.6</u> mm	<u>744.5</u> mm	<u>744.1</u> mm
Column Temperature	<u>18.0</u> °C	<u>18.0</u> °C	<u>18.0</u> °C
Column Temperature Correction	<u>-0.002932</u>		at <u>18.0</u> °C
Interpolated Correction			at <u>      </u> °C
Column Correction (Temp)	<u>-2.1816</u>		mm
Gravitational Correction	<u>-22.02</u>		mm
Corrected Barometric Pressure	<u>741.7</u>		mm Hg

## Air Temperature

	Start	End	Average
	<u>22.6</u> °C	<u>22.2</u> °C	<u>22.4</u> °C
Thermometer Correction			<u>-0.8</u> °C
Corrected Average Temp			<u>21.6</u> °C

273.15 + [ 21.6 ] °C 760.0 mm Hg

295.15 °C

[ 741.7 ] mm Hg= 1.0233

## Dosimeter System

	Mfr	Model	Serial No.
Chamber	<u>VICORGEN</u>	<u>131</u>	<u>619</u>
Electrometer	<u>VICORGEN</u>	<u>570</u>	<u>3466</u>
Chamber calibration factor for Co-60			<u>1.026</u>
Electrometer Linearity Correction at <u>50</u> % full scale			<u>1.000</u>
			<u>60</u> % full scale <u>1.002</u>
Interpolated Linearity Correction at <u>54</u> % full scale			<u>1.0008</u>
Combined Correction Factor	<u>1.0507</u>		R/Unit

Chamber at Isocentre in AirField Size 10 cm by 10 cmBasal Output 55.34 RAD/min on FEB. 27, 1983Elapsed time 82 days 0.2245 yearsDecay Factor (T<sub>1/2</sub>=5.263 yr) 0.9709Expected Output 53.73 RAD/min

No.	Reading	Veritimer	Rate	Cor. Rate
1	<u>53.9</u>	<u>1.00</u>	<u>53.9</u>	<u>56.6</u>
2	<u>53.9</u>	<u>1.00</u>	<u>53.9</u>	<u>56.6</u>
3	<u>53.8</u>	<u>0.99</u>	<u>54.3</u>	<u>57.10</u>
4	<u>53.8</u>	<u>1.00</u>	<u>53.8</u>	<u>56.53</u>
5	<u>53.8</u>	<u>1.00</u>	<u>53.8</u>	<u>56.53</u>

Average

[ 56.68 ][ 53.43 ]

\* (0.957 RAD/R) \* (0.985) =

53.43\* 100 = -0.55

% Difference

[ 53.73 ]



SHUTTER CORRECTION - 2 irradiations Total time = 1.00 min

No.	Reading	Veritimer	Rate	Cor. Rate
1	54.0	1.00	54.0	56.74
2	53.9	1.00	53.9	56.63
3	54.0	1.00	54.0	56.74
4	53.9	0.99	54.4	57.21
5	54.1	0.99	54.7	57.42
Average				56.95

$$[ 56.95 ] * (0.957 \text{ RAD/R}) * (0.985) = 53.68$$

$$\alpha = \frac{[ 53.43 ] - [ 53.68 ]}{(2 * [ 53.68 ]) - [ 53.43 ]} = -0.00467 \text{ min} = -0.280 \text{ sec}$$

SHUTTER CORRECTION - 10 irradiations Total time = 1.00 min

No.	Reading	Veritimer	Rate	Cor. Rate
1	58.0	0.99	58.59	61.56
2	57.9	0.99	58.48	61.45
3	58.0	0.98	59.18	62.19
4	58.0	1.00	58.0	60.94
5	58.0	1.00	58.0	60.94
Average				61.42

$$[ 61.42 ] * (0.957 \text{ RAD/R}) * (0.985) = 57.89$$

$$\alpha = \frac{[ 53.43 ] - [ 57.89 ]}{(10 * [ 57.89 ]) - [ 53.43 ]} = -0.00849 \text{ min} = -0.509 \text{ sec}$$

Field Size		Field Size Factor Check					
		Readings		Average	Cor. Ave.	Ratio	
4	x 4	50.7	50.3	50.3	50.43	52.99	0.935
6	x 6	52.0	52.0	52.0	52.00	53.64	0.964
15	x 15	55.9	56.0	55.9	55.93	58.77	1.037
20	x 20	57.7	57.6	57.7	57.67	60.59	1.069
25	x 25	58.2	58.2	58.3	58.23	61.19	1.080
30	x 30	59.1	59.3	59.4	59.27	62.27	1.099

Field Uniformity 10 x 10 cm Offset = 2.5 cm

Position	Reading	Dose Rate	Ratio (C.R.)
1	54.1	56.8	1.003
2	54.0	56.7	1.001
3	54.0	56.7	1.001
4	54.0	56.7	1.001
5	54.0	56.7	1.001
6	54.0	56.7	1.001
7	53.9	53.9	0.999
8	54.0	56.7	1.001
Ave.		56.36	0.994
		2σ	0.00107
		C.V.	0.107 %

Comments:

## DATA SHEET

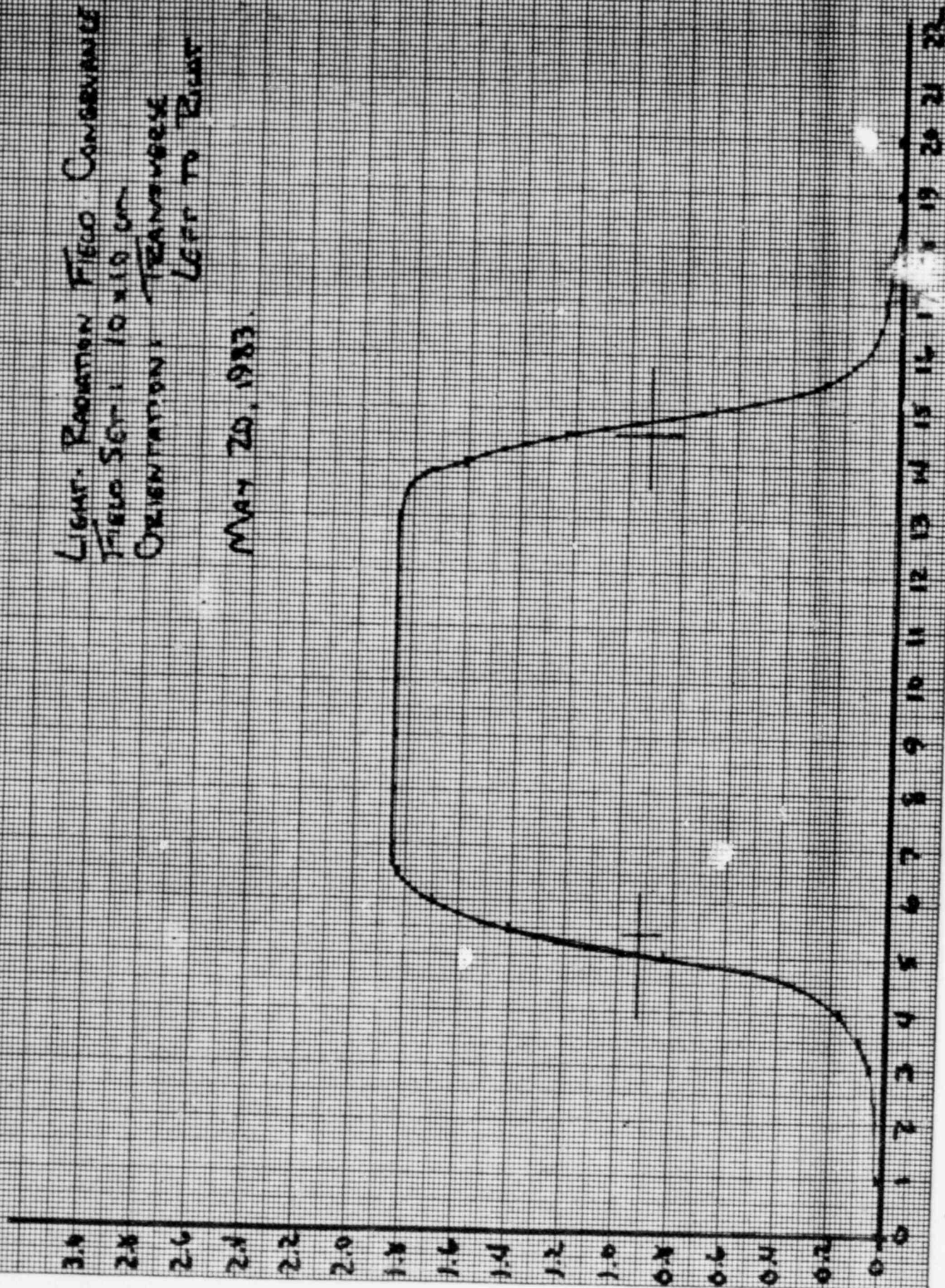
Orientation CEPHEA - CAVAL

Reference	Dens. by
0	0.01
1	0.02
2	0.02
3	0.05
3.5	0.07
4	0.13
4.5	0.30
5	0.81
5.5	1.40
6	1.76
6.5	1.84
7	1.85
8	1.85
9	1.85
10	1.85
11	1.85
12	1.86
13	1.86
13.5	1.86
14	1.76
14.5	1.43
15	0.83
15.5	0.34
16	0.15
17	0.08
18	0.02
19	0.02
20	0.01
C.R. at	1005
Light Fld	5.38/14.81



Light Radiation Field Convergence  
 Field Size: 10 x 10 cm  
 Orientation: Transverse  
 Left to Right

May 20, 1983



Calibration Report

Picker C9 Cobalt-60 Teletherapy Unit, Serial 112  
Leila Hospital & Health Center  
Radiology Department  
Battle Creek, MI 49016

Source: Neutron Products, Inc.  
Model NPI-20-3800W  
Serial No. T-390  
3900 C: as of 4-1-80

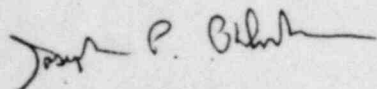
Field Size: 10 x 10 cm at isocenter  
SCD: 81.3 cm  
Trimmers: Retracted

Standard Dose Rate: 55.34 Rad/min at isocenter  
Effective Date: February 27, 1983

Calculated dose rates, effective the first of the month.  
Dose rates are expressed in Rad/min.

	<u>1983</u>	<u>1984</u>
January	--	49.5
February	--	49.0
March	55.3	48.5
April	54.7	--
May	54.1	--
June	53.4	--
July	52.9	--
August	52.3	--
September	51.8	--
October	51.2	--
November	50.6	--
December	50.1	--

Field Size Correction Factors: See attached graph.



Joseph P. Ohlmacher  
Health Physicist

March 4, 1983

17295



DATE: Feb 27, 1983Performed by: J. Blum

## FACILITY:

NAME: Leila Hospital  
ADDRESS: 300 N. Main Ave  
Battle Creek, MI 49617

## CONTACT:

TEL NO.: 616-962-5531 Ext 246TITLE: Asst. TechN.R.C. LICENSE NO. 21-0135404EXPIRY DATE Sept 30, 1984STRUCTURAL CHANGES SINCE LICENSE RENEWAL ( ☒ ) NO ( ) YES (1)  
(If YES append description and radiation survey.)

## PERSONNEL MONITORING:

## Method:

Whole body ( ☒ ) Film ( ) TLD ( ) Other ( ) None  
Head ( ☒ ) Film ( ) TLD ( ) Other ( ) None  
Extremities ( ☒ ) Film ( ☒ ) TLD ( ) Other ( ) NoneMaximum dose to Whole Body (past 12 months) 110 MREM  
Maximum dose to Extremities 140 MREM  
Maximum quarterly Whole Body Dose 180 MREM  
Maximum quarterly Extremity Dose 200 MREM  
Maximum annual Whole Body dose 230 MREM  
Maximum annual Extremity Dose 340 MREMPersonnel assigned dosimeters at another facility ( ☒ ) No ( ) Yes  
(If YES obtain similar data from other facility.)

## MACHINE DATA:

NFR: PICKER MODEL: C-9

## SERIAL:

ISOTOPE: ( ☒ ) CO-60 ( ) CS-137 ACTIVITY: 3900 CI DATE: 4-1-80CURRENT ACTIVITY: 2659 CIDATE OF LAST CALIBRATION: FEB 1, 1982 OUTPUT: 65.56 R/hr AT 130 CM

(1) No changes affecting shielding or use factors noted.

1. Patient viewing system TELEVISION & CONVEY MIRRORS.  
 Type(s):-----  
 Operation: (X) OK ( )-----
2. Source condition Indicators  
 a. Control console (X) OK ( )-----  
 b. Machine Head (X) OK ( )-----  
 c. Area Monitor (X) OK ( )-----  
 Backup Power (X) OK ( )-----  
 Alarm set point: (10) mR/hr
3. Door Interlock  
 Operation: (X) OK ( )-----
4. Source Holder Movement  
 a. Vertical ( 0 degrees) ~0.5 sec  
 b. Horizontal ( 90 degrees) ~0.5 sec  
 c. Inverted (180 degrees) ~0.5 sec  
 d. Horizontal (270 degrees) ~0.5 sec  
 Average time ~0.5 sec  
 Mfr. spec. ~0.5 sec  
 Percent diff. -----  
 Overall operation: (X) OK ( )-----

#### Source Housing Leakage

Point Contact 1 meter

1.	16.0	0.7
2.	19.6	3.2
3.	7.2	0.8
4.	4.8	0.3
5.	6.5	0.4
6.	6.7	0.3
7.	1.8	0.2
8.	8.1	0.8
9.	1.2	0.1
10.	7.1	0.5
11.	17.0	0.8
12.	10.2	0.3
13.	3.2	0.1
14.	7.2	0.3
Ave.	8.3	0.63
Max.	19.6	3.2

REF TO ANSI N449.1-1978

FIG. 1 FOR LOCATIONS

Survey Instrument Mfr. KENTLEY Model 36100 Ser. No. 11945  
 Date of calibration DEC 20, 1982  
 Overall housing leakage condition (X) OK ( )-----

# Machine Movement

Gantry: Set 0 degrees Actual 0  
 Set 90 degrees Actual 90  
 Set 180 degrees Actual 180  
 Set 270 degrees Actual 270  
 Brakes (X) OK ( )

## Head lateral:

Goniometer (X) OK ( )  
 Right limit: 1.0 degrees  
 Left limit: 1.0 degrees  
 Max. beam intercepted? (X) Yes ( ) No  
 Auto centering (X) OK ( )

## Head longitudinal:

Goniometer (X) OK ( )  
 Ceph. limit: 5.0 degrees  
 Caud. limit: 5.0 degrees  
 Max beam intercepted? (X) Yes ( ) No  
 Auto centering (X) OK ( )

Comments: RELAY CHATTER HEARD WHEN MOVING FROM CEPHALIC  
 LIMIT TO CENTER.

## Source Leakage:

GM survey: (X) OK ( )  
 Max. detectable: 0.000047 uCi  
 (Attach Transferable Contamination Survey form.)

## Central Axis Indicator:

Vertical (X) OK ( )  
 Hor. (90) (X) OK ( )  
 Hor. (270) (X) OK ( )



Light/Radiation Field Confluence:

Distance --- 84 --- cm

Vertical:

0° Gantry

0° Coll.

Orientation 1

Left: +1 mm

Right: -2 mm

Toward Gantry: -2 mm

Away from Gantry: -3 mm

Orientation 2

Left: ---- mm

Right: ---- mm

Toward Gantry: ---- mm

Away from Gantry: ---- mm

AS ASSESS - BY INSPECTION.

Horizontal (90 degrees):

Orientation 1

Left: ---- mm

Right: ---- mm

Toward Gantry: ---- mm

Away from Gantry: ---- mm

OK - Lutz Gauge

Orientation 2

Left: ---- mm

Right: ---- mm

Toward Gantry: ---- mm

Away from Gantry: ---- mm

OK Lutz Gauge

Horizontal (270 degrees):

Orientation 1

Left: ---- mm

Right: ---- mm

Toward Gantry: ---- mm

Away from Gantry: ---- mm

OK Lutz Gauge

Orientation 2

Left: ---- mm

Right: ---- mm

Toward Gantry: ---- mm

Away from Gantry: ---- mm

OK Lutz Gauge

(Attach films and density graphs.)

Is center rule.

X-Z plane: -

BY INSPECTION - STAR SHOT & OPPOSED BEAMS.

Y-Z plane: -

Laser Alignment:

(Use Lutz Laser Alignment Jig.)

Left: ---- mm

Overhead: -0-- mm

Right: -0-- mm

Caudal: -0-- mm

ADJUSTED N O/O.

(Attach X-Y star shot and Y-Z opposed beam films.)

## Source Output:

Readout Mfr.: VICOR Model: 570 Ser. No. 3466  
 Chamber Mfr.: VICOR Model: 131 Ser. No. 619  
 Build-up Cap: VICOR Model: 131  
 Date of Calibration: Readout: 3-11-80 Chamber: 3-11-80  
 Calibration factors:

Readout: Percent full scale Cor. factor

20	0.997
40	0.997
50	1.000
60	1.002
80	1.001
100	1.004

Chamber: (X) Co 60 ( ) Other -----

( ) With build up cap

Factor: 1.026

Stein Ionization: ----- (X) Included in chamber factor

Starting Temperature	<u>22.4</u>	C	Starting Pressure	<u>747.8</u>	mm
Ending Temperature	<u>22.5</u>	C	Ending Pressure	<u>746.9</u>	mm
Average Temperature	<u>22.45</u>	C	Average Pressure	<u>747.35</u>	mm
	Cor. <u>23.25</u>			Cor. <u>744.82</u>	

Temperature-Pressure Correction factor:  
 (273.15 + Ave. Temp) 760 1.024

295.15 x 1.024 = 1.024  
 (Bar. Press.)

## Output Determination:

Set 10 x 10 cm field.

Chamber at ISOCENTER IN AIR

Time of irradiation (t): 1 min. Total correction factor: 1.0524  
 No. Readings Cor. Base (Chamber x Readout x Temp-Press Factors)

1	<u>55.9</u>	<u>1.0</u>	1	<u>55.9</u>	<u>0.99</u>	58.81 R/Exposure
2	<u>55.9</u>	<u>1.0</u>	2	<u>55.9</u>	<u>1.00</u>	
3	<u>55.9</u>	<u>1.0</u>	3	<u>55.9</u>	<u>1.00</u>	
4	<u>55.9</u>	<u>0.99</u>	4	<u>55.9</u>	<u>0.99</u>	
5	<u>55.9</u>	<u>0.99</u>	5	<u>55.8</u>	<u>0.99</u>	

(R1) Average: 55.88 S.D. 0.042 C.V. 0.075 Percent  
0.994 min 0.0052 0.520

## Timer Correction:

Set timer for MR above time. I radiate chart

re. ten Times

No. Readings Cor. Base

1	<u>59.9</u>	<u>0.99</u>	63.06 R/Exposure
2	<u>59.9</u>	<u>1.00</u>	
3	<u>59.9</u>	<u>1.00</u>	
4	<u>59.9</u>	<u>1.00</u>	
5	<u>60.0</u>	<u>1.00</u>	

(R2) Average: 59.92 S.D. 0.05 C.V. 0.075 Percent  
0.998 0.00 0.001

Timer correction =  $\frac{(R2-R1)}{(R1-R2)} = \frac{(1.00 \times (63.06) - (58.81))}{(10 \times 58.81) - (63.06)} = \frac{0.0009}{1.00160} / \text{min}$

Time corrected exposure rate =  $\frac{(R1-R2)}{t} = \frac{(2(58.81) - (63.06))}{(1.0009)} = \frac{54.56}{1.0009} = 54.52 \text{ R/min}$

Source-skin distance:

Optical Rangefinder indication on Lutz Jig at isocenter 78 cm

Distance	Exp. Rate	SGR(Exp. Rate)	cm	
100	38.01	0.162	98.6	0.1622
90	47.09	0.146	88.6	0.1457
80	58.2	0.131	78.6	0.1276
70			74.6	0.1211
60				
---	cm			
---	cm			
---	cm			

Regression analysis:

Coefficient of Determination (R<sup>2</sup>): -----

Intercept: -----

Slope: -----

Projected source position: ----- cm

Percent of nominal treatment dist: ----- Percent

Additional Field Sizes and/or Distances:

	1	2	3	Ave	Cele Ave	R <sub>norm</sub>
4 cm X 4 cm, 80 cm SCD	52.0/1.0	52.0/1.0	52.0/1.0	52.0/1.0	55.11	0.938
8 cm X 8 cm, 80 cm SCD	54.2/1.0	54.2/1.0	54.2/1.0	54.2/1.0	57.48	0.979
15 cm X 15 cm, 80 cm SCD	57.2/1.0	57.2/1.0	57.2/1.0	57.2/1.0	60.20	1.025
20 cm X 20 cm, 80 cm SCD	59.5/1.0	59.5/1.0	59.5/1.0	59.5/1.0	62.28	1.061
6 cm X 6 cm, 80 cm SCD	53.5/1.0	53.5/1.0	53.5/1.0	53.5/1.0	56.30	0.999
12 cm X 12 cm, 80 cm SCD	56.1/1.0	56.1/1.0	56.1/1.0	56.1/1.0	59.04	1.035
<del>22 cm X 22 cm, 80 cm SCD</del>	<del>59.5/1.0</del>	<del>59.5/1.0</del>	<del>59.5/1.0</del>	<del>59.5/1.0</del>	<del>62.28</del>	<del>1.061</del>
25 cm X 25 cm, 80 cm SCD	60.0/1.0	60.0/1.0	60.0/1.0	60.0/1.0	63.39	1.080

Comments:



Previous Exposure Rate: 65.36 R/min 391 or 50.94 21mm CURRENT  
Percent Difference: ----- Percent +1.58%

Exposure Rate Corrected for tissue attenuation at equilibrium depth:

(Time corrected exposure rate) x 0.985 = 57.84 R/min (55.35 RAO/mm)

- Projected exposure rates:

Date	Exposure rate (R/min)	
<u>3-1-83</u> 2	<u>57.90</u>	(Convert exposure rate to dose rate by multiplying by 0.957.)
<u>4-1-83</u> 30	<u>57.16</u>	
<u>5-1-83</u> 63	<u>56.54</u>	
<u>6-1-83</u> 94	<u>55.91</u>	
<u>7-1-83</u> 124	<u>55.31</u>	
<u>8-1-83</u> 155	<u>54.70</u>	
<u>9-1-83</u> 186	<u>54.09</u>	
<u>10-1-83</u> 216	<u>53.51</u>	
<u>11-1-83</u> 247	<u>52.91</u>	
<u>12-1-83</u> 287	<u>52.15</u>	
<u>1-1-84</u> 308	<u>51.76</u>	
<u>2-1-84</u> 339	<u>51.18</u>	

Next full calibration due: 2-27-84

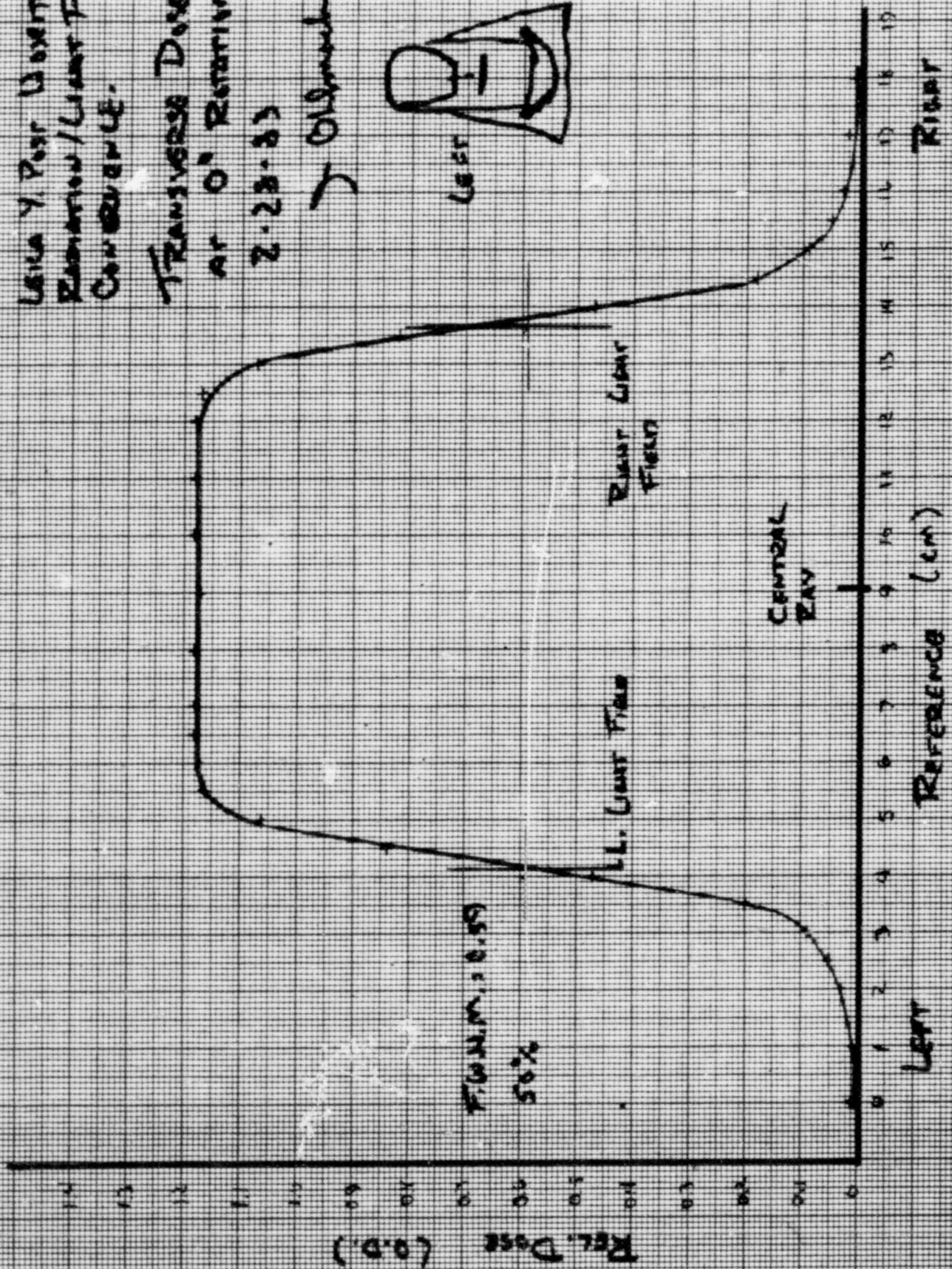
Comments:

LEILA Y. POSE DOXETAL  
PLASMA/LIVER FLOW  
CONCENTRATION

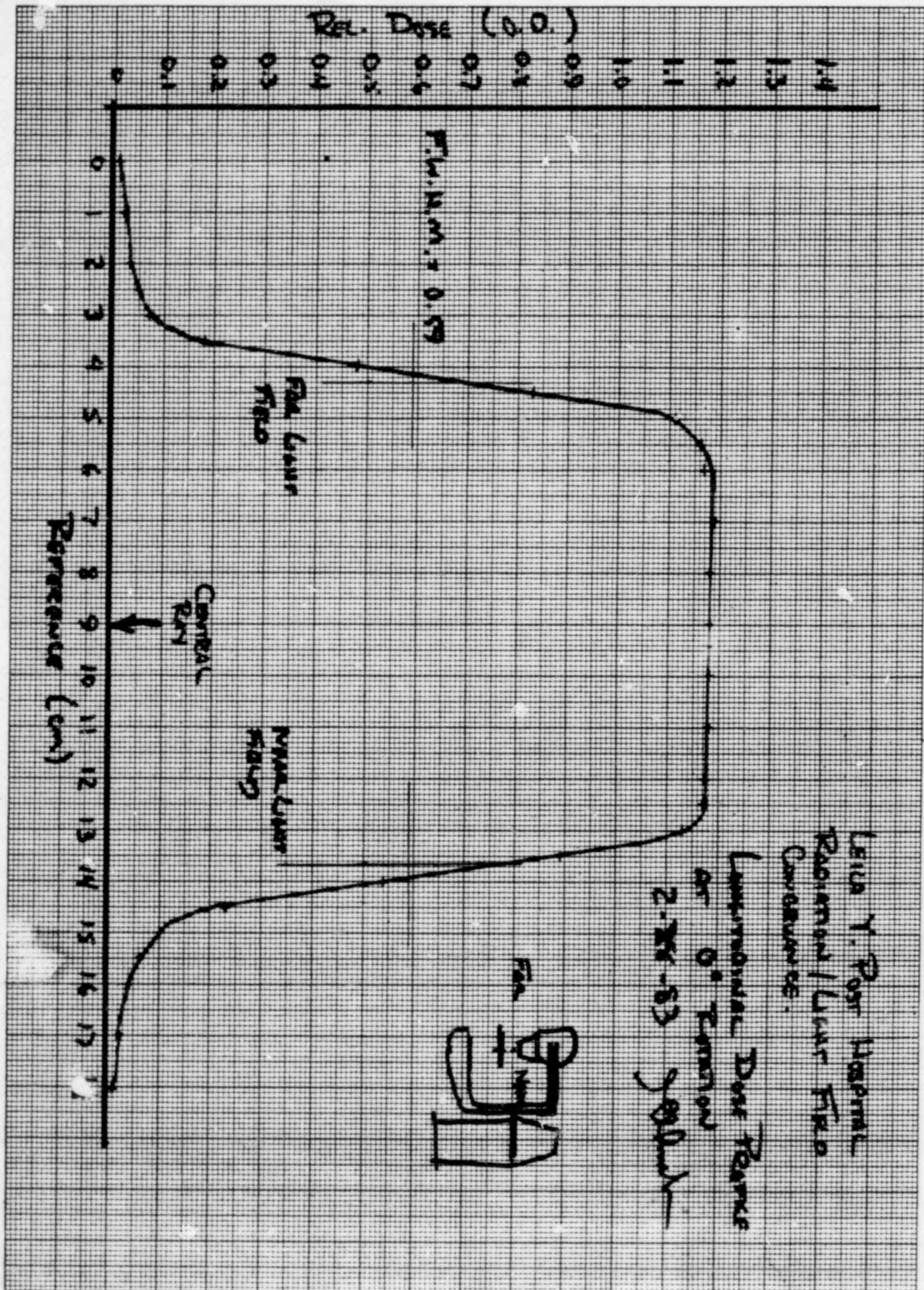
TRANSVERSE DOSE PROFILE  
AT 0° ROTATION

2-28-83

J. Oldenburger









TRANSFERABLE CONTAMINATION SURVEY FORM

Date 2-27-83		Time 0900		Surveyor J. O'NEILL		Reviewed by <i>[Signature]</i>		Date 2-28-83	
Counting System Down Well		Setup 1000-1300 KeV		Background (cpm) 37.1		Standard Co-60		Count 810.5	Net Count Rate 773.4 cpm
No.	Location	Area (cm <sup>2</sup> )	Count	Time (sec)	Net Count	Activity ( $\mu$ Ci)			
1	HEAD, TOP CENTER	~100	37	60	—	N/D			
2	" , FRONT	"	42	"	4.9	$2.57 \times 10^{-5}$			
3	" , RIGHT SIDE	"	37	"	—	N/D			
4	" , LEFT SIDE	"	41	"	3.9	$2.04 \times 10^{-5}$			
5	" , BACK (INSIDE YOKE)	"	40	"	2.9	$1.52 \times 10^{-5}$			
6	COLLIMATOR EXTERIOR, FRONT	"	40	"	2.9	$1.52 \times 10^{-5}$			
7	" " , RIGHT SIDE	"	30	"	—	N/D			
8	" " , LEFT SIDE	"	30	"	—	N/D			
9	" " , BACK	"	24	"	—	N/D			
10	" INTERIOR, FRONT	"	38	"	0.9	$4.72 \times 10^{-6}$			
11	" " , RIGHT SIDE	"	35	"	—	N/D			
12	" " , LEFT SIDE	"	38	"	0.9	$4.72 \times 10^{-6}$			
13	" " , BACK	"	39	"	1.9	$9.96 \times 10^{-6}$			
14	" " , WINDOW	"	40	"	2.9	$1.52 \times 10^{-5}$			
15	FLOOR UNDER GANTRY		RECOUNT 35 46		8.9	$4.67 \times 10^{-5}$			
	BACKGROUND		371	600					
	Co-60 WIPE TEST STD. 1 MIN. COUNT		802	60					
	Co-60 WIPE TEST STD. (ICN) 777.4 cpm 3.2175		8105	600					

Comments: 1804 days  $\Rightarrow$  4.94 yrs

CURRENT CHECK SOURCE ACTIVITY =  $4.05 \times 10^{-3}$   $\mu$ Ci  
 $\Rightarrow$  190759 cpm/ $\mu$ Ci Co<sup>60</sup>

ALL SAMPLES ARE LESS THAN 0.005 MICROCURIES OF  
 CO-60. THE SOURCE APPEARS NOT TO BE LEAKING.

17295

*[Signature]*