



R. Donald Leedy
Chief Operating Officer
Executive Vice President

333 Cottman Avenue
Philadelphia, Pennsylvania 19111-2497

January 31, 2006

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U.S. Nuclear Regulatory Commission
Region I
475 Allendale Road
King of Prussia, PA 19406

M516
J-2

RECEIVED
REGION 1
2006 FEB -2 AM 10:32

Attention: Willie Lee, Health Physicist

Subject: Information Request License #37-02766-01, Docket Number 030-03026, Control Number 137974

Gentlemen,

The following information, as requested by your e-mail dated January 30, 2006, is provided in support of our amendment request regarding release of the MRI building for unrestricted use:

A copy of the sampling data used to document survey results and conclusions is provided in Attachment 1

No animal studies were conducted in the MRI Building requiring the administration of byproduct material.

The data to confirm the sink drain in Lab M153 was surveyed for fixed and removable contamination is provided in Attachment 2.

The square footage for the MRI building is 17,900 sq. ft.

The zoning uses of the surrounding area are Institutional and a mix of Residential and Commercial.

If you need further information in support of our request please contact Karen Sheehan, the Radiation Safety Officer for this facility at (215) 728-3021.

Sincerely,

R. Donald Leedy

Cc: Karen L. Sheehan, RSO
Enclosures: Attachment 1 & 2

137974

NONION MATERIALS-002

ATTACHMENT 1



Docket # 030-03026
Control # 137974

Attachment 1

Sampling data used to document survey results is enclosed:

- 1) Calibration of the Ludlum Model # S/N 168298 with detectors model 44-9 and 44-3, S/N 172979 and 078270 respectively.
- 2) Calibration of the Victoreen Model 451P S/N 6679.
- 3) Calibration of the Beckman Model LS6000 TA liquid scintillation counter (LSC) S/N 7060641.
- 4) Report from Joe McCue to Karen Sheehan dated November 10, 2005 showing survey procedures and results.
- 5) Copies of the LSC printouts of wipe test results.



CALIBRATION SERVICES

CERTIFICATE OF CALIBRATION

WAS SHIN'S LAB
NOW Rad. Saf. Off.

Customer: Institute For Cancer Research **Contact:** Karen Sheehan
Address: 7701 Burholme Ave. **Phone:** (215) 728-3021
 Phila., PA 19111 **Logbook No:** 116833

INSTRUMENT IDENTIFICATION

Manufacturer: Ludlum **Model:** 3 **S/N:** 168293
Detector Mfr: Ludlum **Model:** 44-9, 44-3 **S/N:** 172979, 078270

CALIBRATION SOURCE I.D.

All sources used are NIST Traceable
 137-Cs (8.3 Ci) Source s/n 10288 129-I Disc (0.1071 uCi) s/n A5330

Calibration accuracy is within +/- 10%.

INSTRUMENT READING

Range	Calibration Point	Before Adjustment	After Adjustment
44-9 Probe X 0.1	0.050 mR/hr	0.070 mR/hr	0.050 mR/hr
	0.150	0.175	0.155
X 1.0	0.50	0.50	0.46
	1.50	1.62	1.51
X 10	5.0	5.0	5.0
	15.0	15.0	15.0
X 100	50	50	50
	150	150	150
X 1.0 RANGE	Ck-Source Response	@ Contact : Approx :	1.3 - 1.8 mR/hr
44-3 Probe	129-I : 0.1071 uCi	10,000 CPM: 8.4% 2Pi	93,000 CPM/uCi
X 1.0 RANGE	Ck-Source Response	@ Contact : Approx :	5200 - 6200 CPM

COMMENTS

Bkg is subtracted from source responses. 44-9 Probe positioned so front of probe faces source during dose rate calibration. 44-3 Probe efficiency taken with source positioned 1 cm from probe window, taken in " CPM " ONLY. ** Repaired audio connection. Ck-Source responses taken on (X 1.0 RANGE).

Calibration **Calibration Due:** 9/1/2006
Performed by: Harold W. Harbison H.W. Harbison **Date:** 9/1/2005
Checked by: R.S.O. R.S.O. **Date:** 9/1/2005

NRC LICENSE #37-302298-01 (JRT-CALIBRATION PROCEDURE # J-2 AND J-7)

JRT is not responsible for damage incurred during shipment. The calibration system conforms to the requirements of (ANSI) N323A-1997, Reg Guide 8.25-1992, and ANSI/NCL Z 540-1-1994.



CALIBRATION SERVICES

CERTIFICATE OF CALIBRATION

Customer: Fox Chase Cancer Center
 Address: 7701 Burholme Ave.
 Philadelphia, PA 19111

Contact: Karen Sheehan
 Phone: (215) 728-3021
 Logbook No: 116945

INSTRUMENT IDENTIFICATION

Manufacturer: Victoreen Model: 451P S/N: 6679
 Detector Mfr: // Model: // S/N: //

CALIBRATION SOURCE LD.

All sources used are NIST Traceable
 137-Cs (8.3 Ci) Source s/n 10288

Calibration accuracy is within +/- 10%.

INSTRUMENT READING

Range	Calibration Point	Before Adjustment	After Adjustment
uR/hr	100 uR/hr	103 uR/hr	103 uR/hr
	400	390	390
mR/hr	1.0 mR/hr	0.95 mR/hr	0.99 mR/hr
	4.0	3.79	3.88
	10.0	9.7	9.9
	40.0	38.3	39.8
	100	98.0	101
	400	389	405
R/hr	1.0 R/hr	0.94 R/hr	0.94 R/hr
	4.0	4.15	4.15
INT-Mode	////////////////////////////////////	////////////////////////////////////	////////////////////////////////////
0-500 uR-INT	400 uR-INT	410 uR-INT	410 uR-INT
0-5 mR-INT	4.0 mR-INT	3.8 mR-INT	3.8 mR-INT
0-50 mR-INT	40.0 mR-INT	38 mR-INT	38 mR-INT
0-500 mR-INT	400 mR-INT	410 mR-INT	410 mR-INT
0-5 R-INT	4.0 R-INT	4.0 R-INT	4.0 R-INT

COMMENTS

Ion Chamber positioned perpendicular to source during calibration.

Calibration Due: 9/21/2006
 Calibration Performed by: Harold W. Harbison H.W. Harbison, Date: 9/21/2005
 Checked by: R.S.O. R.S.O. Date: 9/21/2005

NRC LICENSE #37-302298-01 (JRT-CALIBRATION PROCEDURE # J-2 AND J-7)

JRT is not responsible for damage incurred during shipment. The calibration system conforms to the requirements of (ANSI) N323A-1997, Reg Guide 8.25-1992, and ANSI/NCL Z 540-1-1994.



Karen L. Sheehan
Radiation Safety Officer

215 728 3021
FAX 215 728 3136
Karen.Sheehan@fcccc.edu

333 Cottman Avenue
Philadelphia, Pennsylvania 19111-2497

Sensitivity of Liquid Scintillation Counter

**And
CPM to DPM Conversion**

July 8, 2005

Counter: Beckman LS 6000 TA

Location: W248

Standards: H-3, 108400 DPM on 1/24/01, <1.0 uCi
C-14, 99600 DPM on 1/24/01, <1.0 uCi

Quoted Efficiency: H-3 47%
(from manual) C-14 95%
S-35 95%
P-32 98%

Calculations H-3 standard on 7/8/05 = 84,306 DPM
 $\frac{48,631\text{CPM}}{84,306\text{DPM}} = 57.7\%$ Sensitivity for H-3

C-14 standard on 7/8/05 = 99,546 DPM
 $\frac{77,882\text{CPM}}{99,546\text{DPM}} = 78.2\%$ sensitivity for C-14

So from 10 CFR 71.87 requirement of 22 DPM/cm²

22 DPM/cm² (300 cm²) = 6600 DPM/Swipe = Action Level

H-3: 6600 DPM ($\frac{0.577\text{CPM}}{\text{DPM}}$) = 3808 CPM = Action Level

C-14: 6600 DPM ($\frac{0.782\text{CPM}}{\text{DPM}}$) = 5161 CPM = Action Level

CPM to DPM Conversion Factors

H-3 CPM x 1.733 = H-3 DPM
C-14 CPM x 1.279 = C-14 DPM

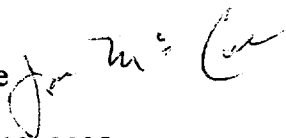
Doc:SenLiqCo

Jarrell Brown
Karen L. Sheehan, RSO
8/10/05

Joseph Mc Cue
353 Wenonah Ave
Mantua, NJ 08051

TO: Karen Sheehan, RSO
FCCC

FROM: Joe Mc Cue



DATE: November 10, 2005

Introduction

The MRI Building at the Fox Chase Cancer Center (FCCC) was constructed in 1985 and is scheduled for demolition in January 2006. It is a two-story building that is connected to the Hospital. The building contains seven labs but only Four, M019, M144, M153 and M157, had radioactive material used or stored in them. The ground floor has one lab M019. The first floor has six labs M144, M 151, M153, M155, M156, and M157.

Radioisotope use:

Only H-3, C-14, P-32 and P-33 were possessed or used in the MRI building. No P-32 or P33 has been used since 2003.

Survey Procedures: Done in accordance with 10CFR 30.36. following NUREG 1757 Vol. 1 Rev. 1 and Vol. 2 Guidance. All lab areas were surveyed.

Scanning: Scanning of all surfaces with RSO Ludlum meter with pancake probe was performed on October 21 and November 4, 2005. No levels were found that were distinguishable from the background reading of 40 cpm.

Radiation Levels: Although no levels were expected, radiation levels at one meter above all surfaces were measured on October 21 and Nov 4, 2005. No levels above the background level of 3 microrentgen per hour for the RSO Inovision Model 415 P. meter

Wipe test: Tests were taken on October 21, November 4, 2005

Sample Number	Lab	Area Wiped
1	Background	Office areas
2	M144	Left 1/2 of lab
3	M144	Right 1/2 of lab
4	All labs	Hallway outside of labs
5	M151	Left 1/3 rd of lab
6	M151	Center 1/3 rd of lab (also cold box)
7	M151	Right 1/3 rd of lab
8	M153	Left 1/3 rd of lab
9	M153	Center 1/3 rd of lab (also cold box)
10	M153	Right 1/3 rd of lab
11	M153	Fume hood including ductwork

Joseph Mc Cue
353 Wenonah Ave
Mantua, NJ 08051

12	M144/M151	Hallway outside labs
13	M155	Room to the left
14	M155	Left 1/3 rd of room
15	M155	Center 1/3 rd of room
16	M155	Right 1/3 rd of room
17	M157	Entire room
18	M156	Entire room
19	M019	Left ½ of room
20	M019	Right ½ of room (also hood duct)
21	M157 (Hallway)	Hood & hood duct
22	M019	Hood & hood duct
23	M019	Sink drain-line
24	M144	Sink drain-line
25	M157	Sink drain-line

The area wiped designation is the view from the hallway doorway looking into the room. All wipes covered an area of approximately 300 sq cm taken 30 ten cm mini-areas scattered about the less than 300 sq ft of lab surfaces being tested. All wipes were assayed by the RSO. Wipe test results were not distinguishable from background.

FCCC

Beckman Model LS6000TA
SR # 7060641

PAGE 1

ID # RSD SWIPES

7 NOV 2005 09:26

USER: 7

COMMENT:

PRESET TIME : 1.00

DATA CALC : CPM MS : NO SAMPLE REPEATS : 1 PRINTER : 312

COUNT BLANK : NO TCM : YES REPLICATES : 1 PULSE : 100

TWO PHASE : NO ACC : NO CYCLE REPEATS : 1

SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REQ: 0

LOW LEVEL : NO HALF LIFE CORRECTION BASIS: none

ISOTOPE 1: 35S KERROR: 0.00 FACTOR: 1.0000 DYS. SD% : 0

ISOTOPE 2: 32P KERROR: 0.00 FACTOR: 1.0000 DYS. SD% : 0

SAB NO	POS	TIME MIN	ICW	35S		32P		LUMEX %	ELAPSED TIME
				CPM	KERROR	CPM	KERROR		
Bkg 1	*X-1	1.00	177.9	31.00	35.82	10.00	63.25	0.45	1.00
2	*X-2	1.00	246.4	23.00	41.70	7.00	75.59	1.02	2.00
* 3	*X-3	1.00	16.60	79.00	22.50	15.00	51.64	0.80	3.00
4	*X-4	1.00	355.7	23.00	41.70	11.00	60.30	0.66	4.00
5	*X-5	1.00	332.7	18.00	47.14	9.00	66.67	0.95	5.00
6	*X-6	1.00	188.5	21.00	43.64	6.00	81.65	0.66	6.00
7	*X-7	1.00	339.4	20.00	44.72	9.00	66.67	0.78	7.00
8	*X-8	1.00	302.7	21.00	43.64	11.00	60.30	1.14	8.00
9	*X-9	1.00	101.1	47.00	29.17	10.00	63.25	0.52	9.00
10	*X-10	1.00	273.0	25.00	40.00	15.00	51.64	0.61	10.00
11	*X-11	1.00	473.1	24.00	40.82	13.00	55.87	0.75	11.00
12	*X-12	1.00	290.8	23.00	41.70	10.00	63.25	0.55	12.00
13	*X-1	1.00	341.4	18.00	47.14	9.00	66.67	1.14	13.00
14	*X-2	1.00	325.5	15.00	55.47	8.00	68.67	1.07	14.00
15	*X-3	1.00	374.9	24.00	40.82	7.00	75.59	1.08	15.00
16	*X-4	1.00	361.9	18.00	47.14	8.00	70.71	1.15	16.00
17	*X-5	1.00	422.5	25.00	40.00	11.00	60.30	0.84	17.00
18	*X-6	1.00	389.0	22.00	43.64	9.00	66.67	0.58	18.00
19	*X-7	1.00	407.2	20.00	44.72	8.00	70.71	1.04	19.00
20	*X-8	1.00	397.0	21.00	43.64	14.00	52.95	0.73	20.00
21	*X-9	1.00	241.9	21.00	43.64	5.00	85.43	0.91	21.00
22	*X-10	1.00	210.4	22.00	43.64	6.00	81.65	1.35	22.00
23	*X-11	1.00	203.0	18.00	47.14	5.00	85.43	1.87	23.00
24	*X-12	1.00	161.0	32.00	35.36	8.00	70.71	1.69	24.00
MISSING SAMPLE									
25	*X-1	1.00	183.1	29.00	37.14	11.00	60.30	1.19	25.00

* Recounted (24 cpm)

* P-33 included in S-35 channel/window
Ked.

ID: 73503 SINIFER
 USER: 7 COMMENT:
 PRESET TIME: 1.00
 DATA CYCLE: 8PM 88 1.00 20 CYCLE REPEATS: 1 PRINTER: ON
 COUNT RANGE: 80 1.00 2000 REPLICATES: 1 SEMI: OFF
 TVI PHASE: 0.0 1.00 2000 CYCLE REPEATS: 1
 SUBJECT: 110015 LINEX: NO LOW SAMPLE RES: 0
 LOT NO: NO HALF LIFE CORRECTION DATE: none
 1370RE: 13 358 ZERROR: 0.00 FACTOR: 1.0000 BKG. SUB: 0
 1370RE: 13 328 ZERROR: 0.00 FACTOR: 1.0000 BKG. SUB: 0

SAL NO	POS	TIME MIN	CON	358		328		LINEX %	CLASSIFIED TIME
				CPM	ZERROR	CPM	ZERROR		
*	110015	1.00	110015	24.00	40.02	8.00	35.58	1.93	1.25

R
 Recount #3

7 NOV 2003 09:01

USER: JZ COMMENT:
 PRESET TIME : 1.00
 DATA VALID : CPM HM : NO SAMPLE REPEATS : 1 PRINTER : STD
 COUNT BLANK : NO FCM : YES REPLICATES : 1 PDS30 : OFF
 TWO PHASE : NO ACC : NO CYCLE REPEATS : 1
 SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REJ: 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

ISOTOPE 1: 3H ZERROR: 0.00 FACTOR: 1.0000 BKG. SUB: 0
 ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.0000 BKG. SUB: 0

SAM NO	POS	TIME MIN	IC#	3H		14C		LUMEX %	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR		
Bkg 1	**1	1.00	191.4	19.00	45.88	9.00	70.71	0.96	1.07
2	**2	1.00	443.2	4.00	100.00	9.00	66.67	1.63	2.59
3	**3	1.00	324.5	5.00	89.44	16.00	50.00	1.29	3.94
4	**4	1.00	239.5	16.00	50.00	16.00	50.00	0.76	5.31
5	**5	1.00	419.2	7.00	75.59	8.00	70.71	1.33	6.64
6	**6	1.00	225.5	15.00	51.64	15.00	51.64	1.20	7.99
7	**7	1.00	373.1	10.00	63.25	8.00	70.71	1.16	9.36
8	**8	1.00	244.0	21.00	43.64	13.00	53.45	0.94	11.11
9	**9	1.00	312.1	15.00	51.64	13.00	53.45	0.87	12.97
10	**10	1.00	8.905	24.00	40.82	13.00	53.45	0.79	15.42
11	**11	1.00	661.8	4.00	100.00	9.00	66.67	1.97	17.76
12	**12	1.00	318.3	11.00	60.30	10.00	63.25	1.15	19.71
13	**1	1.00	160.1	15.00	51.64	10.00	63.25	1.07	21.57
14	**2	1.00	361.8	1.00	91.74	10.00	63.25	1.19	18.54
15	**3	1.00	311.3	11.00	60.30	14.00	53.45	1.23	20.31
16	**4	1.00	3.027	* 234.00	15.07	12.00	57.74	0.94	21.59
17	**5	1.00	453.9	10.00	63.25	6.00	81.67	1.34	23.04
18	**6	1.00	209.6	12.00	57.74	15.00	51.64	0.91	24.39
19	**7	1.00	386.4	15.00	51.64	9.00	66.67	0.97	25.75
20	**8	1.00	343.6	6.00	81.65	13.00	53.45	0.97	27.11
21	**9	1.00	201.4	16.00	50.00	15.00	51.64	0.84	28.47
22	**10	1.00	11.89	* 38.00	32.44	23.00	41.70	0.95	29.84
23	**11	1.00	239.9	11.00	60.30	10.00	63.25	0.12	31.19
24	**12	1.00	216.3	17.00	48.51	14.00	53.45	2.06	32.54
25	**1	SAMPLE TERMINATED:							

* Recounted #16 → 14cpm ^{3H} - 6cpm ^{14C}
 #22 → 11cpm ^{3H} - 9cpm ^{14C}

Karen L. Sheehan, RSO

5 0 4 1 0 0 0 5 0 0 1 1

USER: JLC COMMENT:

PREPOT TIME : 1.00
 DATA CALC : CPM HW : NO SAMPLE REPEATS : 1 POSITION : 511
 COUNT BLANK : NO ICF : YES REPLICATES : 1 POSITION : 511
 TWO PHASE : NO ADC : NO CYCLE REPEATS : 1
 SCINTILLATOR : LIQUID LUMEX : NO LOW SAMPLE REPT : 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE : none

ISOTOPE 1 : 34 XERROR: 0.00 FACTOR: 1.0000 BKGR. SUB: 0
 ISOTOPE 2 : 140 XERROR: 0.00 FACTOR: 1.0000 BKGR. SUB: 0

SAM NO	POS	TIME MIN	ICH	34		140		LUMEX %	ELAPSED TIME
				CPM	XERROR	CPM	XERROR		
#25 1	34-1	1.00	187.0	15.00	51.64	17.00	48.51	1.00	1.26
	MISSING SAMPLE								
2	34-2	1.00	218.3	14.00	53.45	6.00	31.65	0.95	2.62
4	34-4	1.00	274.2	11.00	60.30	9.00	60.67	2.32	3.93

3 Recount # 16

4 Recount # 22

Sam L. Sheehan, RSO



FCCC

Beckman Model LS 6000 TA

SR #7060641

PAGE 1

TEST RESULT SUMMARY
 USER: JZ
 PRESET TIME: 1.00
 DATA CALL: CPM
 COUNT BLANK: NO
 THO PHASE: NO
 SCINTILLATOR: 1.50UTE
 LOW LEVEL: NO
 COMMENT:
 IN# : NO
 IC# : YES
 AGC : NO
 LUNEX: NO
 HALF LIFE CORRECTION DATA:
 SAMPLE REPEATS: 1
 REPLICATES: 1
 CYCLE REPEATS: 1
 LOW SAMPLE REP: 0
 PRINTERR: + 010
 RASZDZ: 1.000
 none

ISOTOPE 1: TH ZERROR: 0.00 FACTOR: 1.0000 BKS. SUB: 0
 ISOTOPE 2: 14C ZERROR: 0.00 FACTOR: 1.0000 BKS. SUB: 0

SAMP NO	POS	TIME MIN	IC#	TH		14C		LUNEX %	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR		
1	11-1	1.00	213.0	15.00	51.64	11.00	60.30	0.89	1.37
2	11-2	1.00	297.2	10.00	63.25	11.00	60.30	0.89	2.62
3	11-3	1.00	367.2	9.00	66.67	6.00	81.65	0.90	3.95
4	11-4	1.00	253.0	8.00	70.71	12.00	57.74	0.90	5.30
5	11-5	1.00	361.7	7.00	75.59	11.00	60.30	1.16	6.67
6	11-6	1.00	300.7	11.00	60.30	9.00	66.67	0.93	8.01
7	11-7	1.00	367.8	14.00	53.45	10.00	63.25	1.05	9.29
8	11-8	1.00	284.2	14.00	53.45	14.00	53.45	0.90	10.73
9	11-9	1.00	698.6	5.00	89.44	6.00	81.65	0.91	12.07
10	11-10	1.00	172.4	21.00	43.64	12.00	57.74	0.69	13.64
11	11-11	1.00	173.7	11.00	60.30	11.00	60.30	0.89	14.77
12	11-12	1.00	368.8	6.00	81.65	14.00	53.45	1.59	16.14
13	11-1	1.00	804.2	7.00	75.59	5.00	89.44	1.21	17.60
14	11-2	1.00	282.2	6.00	81.65	11.00	60.30	0.92	18.97
15	11-3	1.00	346.1	14.00	53.45	8.00	70.71	0.90	20.34
16	11-4	1.00	303.9	12.00	57.74	13.00	55.67	0.73	21.71
17	11-5	1.00	210.7	12.00	57.74	5.00	89.44	1.17	23.06
18	11-6	1.00	309.1	17.00	49.51	12.00	57.74	0.44	24.39
19	11-7	1.00	280.6	7.00	75.59	18.00	47.14	0.95	25.76
20	11-8	1.00	343.9	11.00	60.30	11.00	60.30	0.65	27.11
21	11-9	1.00	259.7	8.00	70.71	17.00	49.51	1.00	28.47
22	11-10	1.00	656.3	3.00	115.47	10.00	63.25	0.74	29.86
23	11-11	1.00	196.7	4.00	100.00	14.00	53.45	1.73	31.19
24	11-12	1.00	9.037	22.00	42.64	12.00	57.74	0.74	32.56
MISSING SAMPLE									
25	11-1	1.00	172.2	9.00	66.67	16.00	50.00	1.25	34.29

Re count of Swipes MRI Bldg
 FCCC

310-130 SWIPES

USER: 7 COMMENT:

PRESET TIME : 1.00
 DATA CALC : CPM
 COUNT BLANK : NO
 TWO PHASE : NO
 SCINTILLATOR : 1-5011
 LOW LEVEL : NO
 SAMPLE REPEATS : 1
 SAMPLES : 1
 CPM REPEATS : 1
 LOW SAMPLE REV : 0
 LIFE CORRECTION DATE:

ADJUST 1: TDS ERROR: 0.00 FACTOR: 1.0000 BKG. SUB: 0
 ADJUST 2: DRP ERROR: 0.00 FACTOR: 1.0000 BKG. SUB: 0

SAM NO	POS	TIME MIN	IC#	GROSS		NET		LUNEY %	SLUGS PER TIME
				CPM	%ERROR	CPM	%ERROR		
1	81-1	1.00	163.5	34.00	34.73	9.00	66.67	0.09	1.29
2	81-2	1.00	137.5	25.00	40.00	13.00	55.47	0.26	2.47
3	81-3	1.00	179.5	26.00	39.22	5.00	91.87	1.00	7.96
4	81-4	1.00	193.9	39.00	32.07	8.00	70.71	0.28	5.31
5	81-5	1.00	259.0	24.00	40.82	6.00	81.27	1.38	6.64
6	81-6	1.00	231.8	28.00	37.80	8.00	70.71	1.11	8.01
7	81-7	1.00	164.9	24.00	40.82	10.00	67.25	1.23	8.36
8	81-8	1.00	240.8	24.00	40.82	9.00	66.67	1.02	10.11
9	81-9	1.00	234.7	24.00	40.82	10.00	67.25	1.17	12.06
10	81-10	1.00	170.0	28.00	37.80	12.00	57.74	0.93	13.42
11	81-11	1.00	7.198	279.00	11.87	13.00	55.47	0.14	14.77
12	81-12	1.00	243.7	28.00	37.80	13.00	55.47	1.44	15.12
13	81-13	1.00	332.6	31.00	38.92	15.00	51.64	2.00	17.89
14	81-14	1.00	259.9	32.00	39.00	5.00	89.41	0.92	18.62
15	81-15	1.00	236.5	21.00	42.64	7.00	78.57	1.27	20.31
16	81-16	1.00	110.0	22.00	42.64	8.00	70.71	0.97	21.56
17	81-17	1.00	181.8	31.00	38.92	10.00	67.25	0.72	23.62
18	81-18	1.00	437.0	23.00	41.70	9.00	66.67	0.53	24.31
19	81-19	1.00	137.6	24.00	40.82	11.00	60.30	0.72	25.76
20	81-20	1.00	323.2	21.00	42.64	13.00	55.47	0.62	27.10
21	81-21	1.00	213.7	22.00	42.64	9.00	66.67	0.95	28.31
22	81-22	1.00	282.2	22.00	42.64	11.00	60.30	1.27	29.51
23	81-23	1.00	271.5	21.00	42.64	5.00	89.41	1.23	30.70
24	81-24	1.00	207.1	26.00	39.22	7.00	78.57	2.34	32.56
25	81-25	1.00	153.0	39.00	32.07	12.00	57.74	1.84	34.02

* recount later time → (25 cpm)



FCCC

Beckman Model LS6000TA
SR # 7060641

11/16/88

XCT# 111112 SERIAL# 111112 TIME 11 NOV 1988 11:10
 USES: 17 COMMENT:

PRESET TIME : 1.00
 DATA CALD : CPM H# : NO SAMPLE REPEATS: 1 PRINTER : 211
 COUNT BLANK : NO C# : YES REPLICATES : 1 RS232 : OFF
 TWC PHASE : NO AGC : NO CYCLE REPEATS : 1
 SCINTILLATOR: LIQUID LUMEX: NO LOW SAMPLE REV: 0
 LOW LEVEL : NO HALF LIFE CORRECTION DATE: none

ISOTOPE 1: 3H XERROR: 0.00 FACTOR: 1.0000 MKS. SUB: 0
 ISOTOPE 2: 14C XERROR: 0.00 FACTOR: 1.0000 MKS. SUB: 0

SAM NO	POS	TIME MIN	IC#	3H		14C		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1 **-1		1.00	234.1	14.00	53.45	17.00	98.51	0.52	1.27
2 **-2		1.00	375.3	13.00	53.47	9.00	66.67	0.76	2.51
3 **-3		1.00	480.9	7.00	75.59	8.00	70.71	0.74	3.54
4 **-4		1.00	478.6	7.00	75.59	13.00	95.47	1.35	3.51
5 **-5		1.00	326.1	9.00	66.67	12.00	87.74	1.04	4.44
6 **-6		1.00	313.1	15.00	51.64	14.00	53.45	0.57	6.01
7 **-7		1.00	244.7	7.00	75.59	5.00	89.44	1.21	9.37
8 **-8		1.00	229.2	14.00	53.45	11.00	49.82	1.00	10.22
9 **-9		1.00	332.2	8.00	70.71	14.00	53.45	1.01	13.07
10 **-10		1.00	173.8	17.00	48.51	13.00	33.87	0.99	13.44
11 **-11		1.00	370.4	5.00	89.44	13.00	95.47	1.24	14.27
12 **-12		1.00	254.5	17.00	48.51	13.00	53.47	1.33	14.14
13 **-1		1.00	314.3	14.00	53.45	24.00	40.82	0.69	17.61
14 **-2		1.00	222.4	11.00	60.30	15.00	51.64	1.02	19.96
15 **-3		1.00	214.1	26.00	39.23	11.00	60.70	0.72	20.31
16 **-4		1.00	361.4	12.00	57.74	9.00	66.67	0.94	21.57
17 **-5		1.00	251.8	14.00	53.45	9.00	66.67	0.94	21.57
18 **-6		1.00	377.5	13.00	53.47	17.00	57.74	1.03	23.30
19 **-7		1.00	204.9	11.00	60.30	18.00	57.74	0.89	25.74
20 **-8		1.00	335.7	12.00	57.74	15.00	60.30	0.72	28.20
21 **-9		1.00	309.4	5.00	89.44	9.00	66.67	1.22	28.20
22 **-10		1.00	379.2	9.00	66.67	8.00	70.71	1.03	29.84
23 **-11		1.00	125.6	14.00	53.45	15.00	51.64	1.60	31.19
24 **-12		1.00	170.3	5.00	89.44	19.00	45.88	1.12	32.54
25 **-1		1.00	274.1	15.00	51.64	8.00	70.71	1.09	34.00

Recount - Swipes m&I Bldg
FCCC

USER: 7
 PREPRT TIME : 1.00
 DATA CALL : CPM
 COUNT BLANK : NO
 TWO PHASE : NO
 SCYNTILLATOR: CAPILD
 LOW LEVEL : NO
 COMMENT :
 SAMPLE REPEATS: 1
 REPLICATES : 1
 CYCLE REPEATS :
 LOW SAMPLE SIZE: 0
 MULTIPLE CORRECTION DATE: none

ISOTOPE 1: 355 ERROR: 0.00 FACTOR: 1.0000 PKG. SUB: 0
 ISOTOPE 2: 352 ERROR: 0.00 FACTOR: 1.0000 PKG. SUB: 0

SAM NO	POS	TIME MIN	IC#	355		352		LHFX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	88-1	1.00	127.3	36.00	33.33	6.00	81.65	0.55	1.27
2	88-2	1.00	205.6	18.00	47.14	2.00	66.67	1.00	2.01
3	88-3	1.00	182.1	33.00	34.82	10.00	63.22	0.72	3.03
4	88-4	1.00	473.1	16.00	50.00	9.00	66.67	1.73	5.32
5	88-5	1.00	264.7	19.00	43.89	12.00	37.74	1.25	4.67
6	88-6	1.00	231.7	32.00	42.64	5.00	55.34	1.01	3.61
7	88-7	1.00	301.6	17.00	48.51	8.00	78.71	1.32	2.57
8	88-8	1.00	375.1	20.00	44.72	12.00	57.74	1.38	10.73
9	88-9	1.00	301.1	30.00	36.51	13.00	55.47	0.77	12.17
10	88-10	1.00	337.4	19.00	43.89	10.00	63.22	1.08	13.4
11	88-11	1.00	394.1	24.00	40.82	11.00	60.36	0.8	14.11
12	88-12	1.00	271.2	25.00	40.19	6.00	71.21	1.17	15.11
13	88-13	1.00	279.5	29.00	37.14	14.00	51.49	0.95	17.61
14	88-14	1.00	208.2	15.00	50.00	6.00	70.31	1.04	18.11
15	88-15	1.00	172.4	35.00	43.56	5.00	70.31	1.12	19.11
16	88-16	1.00	211.3	23.00	43.12	10.00	57.74	0.77	20.11
17	88-17	1.00	251.2	19.00	43.72	11.00	57.74	1.24	21.11
18	88-18	1.00	402.1	20.00	44.72	14.00	53.43	0.84	22.11
19	88-19	1.00	334.1	18.00	47.14	14.00	53.43	1.09	23.11
20	88-20	1.00	159.3	21.00	43.64	17.00	48.51	0.74	24.11
21	88-21	1.00	210.2	23.00	41.70	9.00	66.67	1.21	25.11
22	88-22	1.00	415.6	20.00	44.72	9.30	64.57	0.91	26.11
23	88-23	1.00	211.2	21.00	43.34	3.00	113.47	1.74	27.11
24	88-24	1.00	580.3	13.00	55.47	5.00	39.34	1.13	28.11
25	88-25	1.00	254.6	22.00	42.64	13.00	55.47	0.75	29.11
MISSING SAMPLE									
26	88-26	1.00	375.1	19.00	44.72	9.00	70.31	1.41	30.11

ATTACHMENT 2



Docket # 030-03026
Control # 137974

Attachment 2

The survey results of the sink drains in room M151 and M153 for removable contamination are enclosed. The results are indistinguishable from background.

The survey results for fixed contamination for these areas were provided in our initial application.

Enclosure: Three LSC results printouts

FCCC

Bldg MRI, Rms 151 + 153 sink drains
 swipes sink drains in MRI 151 + 153
 3 counts in each isotope channel
 Danell Brown

ANALYSIS REPORT FROM THE FIELD
 USER: LB COMMENT: 21 21 21 21 21 21
 SECRET TIME: 1.00
 DATA SOLD: YES NO YES NO SAMPLE REPEATS: 1 REPEATS: 1
 COUNT BLANK: NO YES YES NO RECALCULATE: 1 1 REPEATS: 1
 TUNING PLATE: NO YES YES NO CYCLE REPEATS: 1 1
 POINT TO POINT: LIMITED LUMEX: NO LOW SAMPLE REPEATS: 1
 LOW LEVEL: NO HALF LIFE CORRECTION DATE: 1/20/00

ISOTOPE 1: 3H ZERO: 0.00 FACTOR: 1.0000 PKF. SUB: 0
 ISOTOPE 2: 14C ZERO: 0.00 FACTOR: 1.0000 PKF. SUB: 0

S/N	POS	TIME	IC#	3H		14C		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	BA-1	1.00	11.25	20.00	44.72	13.00	55.47	0.51	1.00
2	BA-2	1.00	308.7	16.00	59.00	11.00	60.34	0.10	0.90
3	BA-3	1.00	245.5	14.00	33.40	14.00	13.45	0.41	0.97

- 1 - RSO BKG
- 2 - 151 SINK + DRAIN
- 3 - 153 SINK + DRAIN

ANALYSIS REPORT FROM THE FIELD
 USER: LB COMMENT: 21 21 21 21 21 21
 SECRET TIME: 1.00
 DATA SOLD: YES NO YES NO SAMPLE REPEATS: 1 REPEATS: 1
 COUNT BLANK: NO YES YES NO RECALCULATE: 1 1 REPEATS: 1
 TUNING PLATE: NO YES YES NO CYCLE REPEATS: 1 1
 POINT TO POINT: LIMITED LUMEX: NO LOW SAMPLE REPEATS: 1
 LOW LEVEL: NO HALF LIFE CORRECTION DATE: 1/20/00

ISOTOPE 1: 3H ZERO: 0.00 FACTOR: 1.0000 PKF. SUB: 0
 ISOTOPE 2: 14C ZERO: 0.00 FACTOR: 1.0000 PKF. SUB: 0

S/N	POS	TIME	IC#	3H		14C		LUMEX %	ELAPSED TIME
				CPM	%ERROR	CPM	%ERROR		
1	BA-1	1.00	159.0	21.00	45.64	17.00	49.31	0.35	1.00
2	BA-2	1.00	213.6	12.00	57.74	12.00	57.74	0.10	0.90
3	BA-3	1.00	108.5	15.00	51.44	13.00	55.47	0.50	0.97

LSC - Beckman model LS 6000T A
 SR # 7060641

FCC MRI Building

Rm 151+153

PAGE 1

0.000 PRELIMINARY QUALIFIED Y/N
 DATE: 11/11/04 COMMENT: 20 JAN 2004 14:14
 PREPARED TIME: 1.00
 DATA PAID: CPM NO YES NO SAMPLE REPEATS: 1 PRINTER: HP
 COUNT RANGE: NO YES YES DUPLICATES: 1 RESID: HP
 TIME RANGE: NO YES NO CYCLE REPEATS: 1
 CONTAMINATION: LIGHT LUNEX: NO LOW SAMPLE RISK: 0
 LOW LEVEL: NO HALF LIFE CORRECTION DATA: none

FACTOR: 1.000 ZERROR: 0.00 FACTOR: 1.0000 BKD. SH: 0
 FACTOR: 1.000 ZERROR: 0.00 FACTOR: 1.0000 BKD. SH: 0

SAB NO	POS	TIME MIN	IC#	SES		SEEF		LUNEX %	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR		
1	151	1.00	20618	20.00	41.72	13.00	35.47	0.37	1.00
2	151	1.00	21111	20.00	41.72	2.00	20.11	3.68	2.51
3	153	1.00	21711	16.00	30.21	14.00	33.47	7.78	2.14

- 1- R50 BK9
- 2- 151- sink drain
- 3- 153- sink drain

PAGE 2

0.000 PRELIMINARY QUALIFIED Y/N
 DATE: 11/11/04 COMMENT: 20 JAN 2004 14:14
 PREPARED TIME: 1.00
 DATA PAID: CPM NO YES NO SAMPLE REPEATS: 1 PRINTER: HP
 COUNT RANGE: NO YES YES DUPLICATES: 1 RESID: HP
 TIME RANGE: NO YES NO CYCLE REPEATS: 1
 CONTAMINATION: LIGHT LUNEX: NO LOW SAMPLE RISK: 0
 LOW LEVEL: NO HALF LIFE CORRECTION DATA: none

FACTOR: 1.000 ZERROR: 0.00 FACTOR: 1.0000 BKD. SH: 0
 FACTOR: 1.000 ZERROR: 0.00 FACTOR: 1.0000 BKD. SH: 0

SAB NO	POS	TIME MIN	IC#	SES		SEEF		LUNEX %	ELAPSED TIME
				CPM	ZERROR	CPM	ZERROR		
1	151	1.00	21611	31.00	33.31	9.00	40.67	1.11	1.00
2	151	1.00	21111	28.00	37.39	9.00	33.67	2.14	2.66
3	153	1.00	21316	28.00	37.39	11.00	35.36	0.97	1.91

LSC Beckman model
 LS 6000TA

SR# 7060641

F E C C M R I E B l d y

PROJECT TIME: 1.00 COMMENT: 72 JAN 21 07 14:00
 START BLANK: NO YES NO SAMPLE DEPOSITED: 1 REVERSE: 0
 TWO PHASE: NO YES YES RECALIBRATED: 1 COUNT: 1
 SCINTILLATOR: LIQUID LUMEX: NO CYCLE REPEATS: 1 LOW LEVEL: 1
 LOW LEVEL: NO HALF LIFE CORRECTION DATE: 0

FACTORS: 1: THE XERROR: 0.00 FACTOR: 1.0000 PKG. #18: :
 REPORT: 2: APP XERROR: 0.00 FACTOR: 1.0000 BKG. SUB: :

SAMPL NO	POS	TIME MIN	IC#	353		352		LUMEX %	ELAPSED TIME
				CPM	XERROR	CPM	XERROR		
1	88-1	1.00	221.3	24.00	40.82	7.00	75.39	0.00	1.00
2	88-2	1.00	308.5	30.00	36.51	13.00	50.81	0.00	1.00
3	88-3	1.00	210.1	19.00	47.14	10.00	67.15	0.00	1.00

1- RSO BKK
 2- 151 SICK-DOWN
 3- 153 SICK-DOWN

PROJECT TIME: 1.00 COMMENT: 72 JAN 21 07 21:00
 START BLANK: NO YES NO SAMPLE DEPOSITED: 1 REVERSE: 0
 TWO PHASE: NO YES YES RECALIBRATED: 1 COUNT: 1
 SCINTILLATOR: LIQUID LUMEX: NO CYCLE REPEATS: 1 LOW LEVEL: 1
 LOW LEVEL: NO HALF LIFE CORRECTION DATE: 0

FACTORS: 1: THE XERROR: 0.00 FACTOR: 1.0000 PKG. #18: :
 REPORT: 2: APP XERROR: 0.00 FACTOR: 1.0000 BKG. SUB: :

SAMPL NO	POS	TIME MIN	IC#	353		352		LUMEX %	ELAPSED TIME
				CPM	XERROR	CPM	XERROR		
1	88-1	1.00	214.4	29.00	37.17	12.00	50.84	0.00	1.00
2	88-2	1.00	308.5	26.00	38.22	13.00	54.07	0.00	1.00
3	88-3	1.00	210.1	24.00	47.14	9.00	70.71	0.00	1.00

LSC - Beckman model LS 6000TA
 SR # 7060641