DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MEDICAL DEPARTMENT ACTIVITY
4500 STUART STREET
FORT JACKSON, SC 29207-5720

REPLY TO
ATTENTION OF

June 25, 2010

Br. 1

Preventive Medicine Service

Nuclear Regulatory Commission
Region 1
Division of Nuclear Materials Safety
Attention: Licensing
475 Allendale Road
King of Prussia, Pennsylvania 10406-1415

Dear Sir or Madam:

03008195

Request that Nuclear Regulatory Commission License, Number 39-14873-01, be amended to remove room 10-90 as a radiation use area and release the room for unrestricted use. The decommissioning survey, conducted in accordance with Appendix B of the MARRSIM manual, is attached. Moncrief Army Community Hospital's Radiation Control Committee approved this report by electronic vote on 21 June 2010.

For further information please contact Captain James Wilson at (803) 751-4552/2207.

Sincerely,

Ramona M. Fiorey
Colonel, U.S. Army
Commander

573284
NMSS/RGN1 MATERIALS-002

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MEDICAL DEPARTMENT ACTIVITY
4500 STUART STREET
FORT JACKSON, SC 29207-5720

June 21, 2010

REPLY TO
ATTENTION OF

Preventive Medicine Department

Nuclear Regulatory Commission
Region 1
Division of Nuclear Materials Safety
Attention: Licensing
475 Allendale Road
King of Prussia, Pennsylvania 10406-1415

Dear Sir or Madam:

1. Room 10-90 is no longer used for use or storage of radioactive material. A survey was conducted on 10 June 2010 by CPT James Wilson, United States Army Health Physicist and SSG Daniel White, Health Physics Technician, to determine that the area is free of fixed or removable contamination and suitable to be released for unrestricted use. CPT Wilson is the radiation safety officer on the license.

2. Two instruments were used in the survey; a Ludlum 3 G-M with pancake probe and a cobra gamma counter. These instruments were selected for their ability to detect the isotopes used in the area, which were sealed button sources and sealed calibration sources for the gamma counter, none of which require leak testing. The only other material used in the area was survey sample swipes from Nuclear Medicine. CPT Wilson determined the room to be a class 3 area (Chapter 2, MARSSIM) because the room was not used for 90 days prior to the survey and no contamination was anticipated to be found. Survey techniques were derived in accordance with MARSSIM Appendix B.

Nuclear Medicine uses the following isotopes:

Isotope	**½ life**
1) Technetcium 99m (Tc-99m)	6.02 hours
2) Iodine 123 (I-123)	13.13 hours
3) Thallium 201 (Tl-201)	73.06 hours
4) Indium 111 (In-111)	2.83 days
5) Gallium (Ga-67)	3.261 days
6) Xenon 133 (Xe-133)	5.245 days
7) Iodine 131 (I-131)	8.04 days

3. Direct readings were taken with the Ludlum 3 according to the attached diagram (Enclosure 1). Readings were taken at a range of 1cm from the surface. The area of the room where the sealed sources

and gamma counter were located was surveyed more frequently than the remainder of the room. Only the area of increased survey sampling was listed on the license as a use area. The remainder of the room was sampled to confirm the absence of radioactive material.

4. Swipes were taken as shown in the attached diagram (Enclosure 1) to determine the presence of removable contamination. Swipes at each location covered an area of 100 cm^2. Background swipes were taken in an adjoining hallway for reference. The swipes were analyzed in the cobra gamma counter.

5. Technical data:

a. Results – Direct measurements were compared with background readings taken from adjacent non-use areas and determined to be below the LLD for the instrument (Enclosure 2). Wipe samples were counted for 10 minutes. A calibration verification was run and background sample was tested prior to the sample run and the counter subtracted this background from sample results. Results greater than zero were determined to be below the LLD of the system. (Enclosure 3)

b. Instrument calibration – See Enclosure 4.

c. Gamma Counter MDC – See Enclosure 5.

6. The tenth floor is intended to be converted to office space in the near future. Please advise if you require any additional information pertaining to our request to remove room 10-90 from the hospital's NRC license (**NRC License No. 39-14873-01**). I may be contacted by:

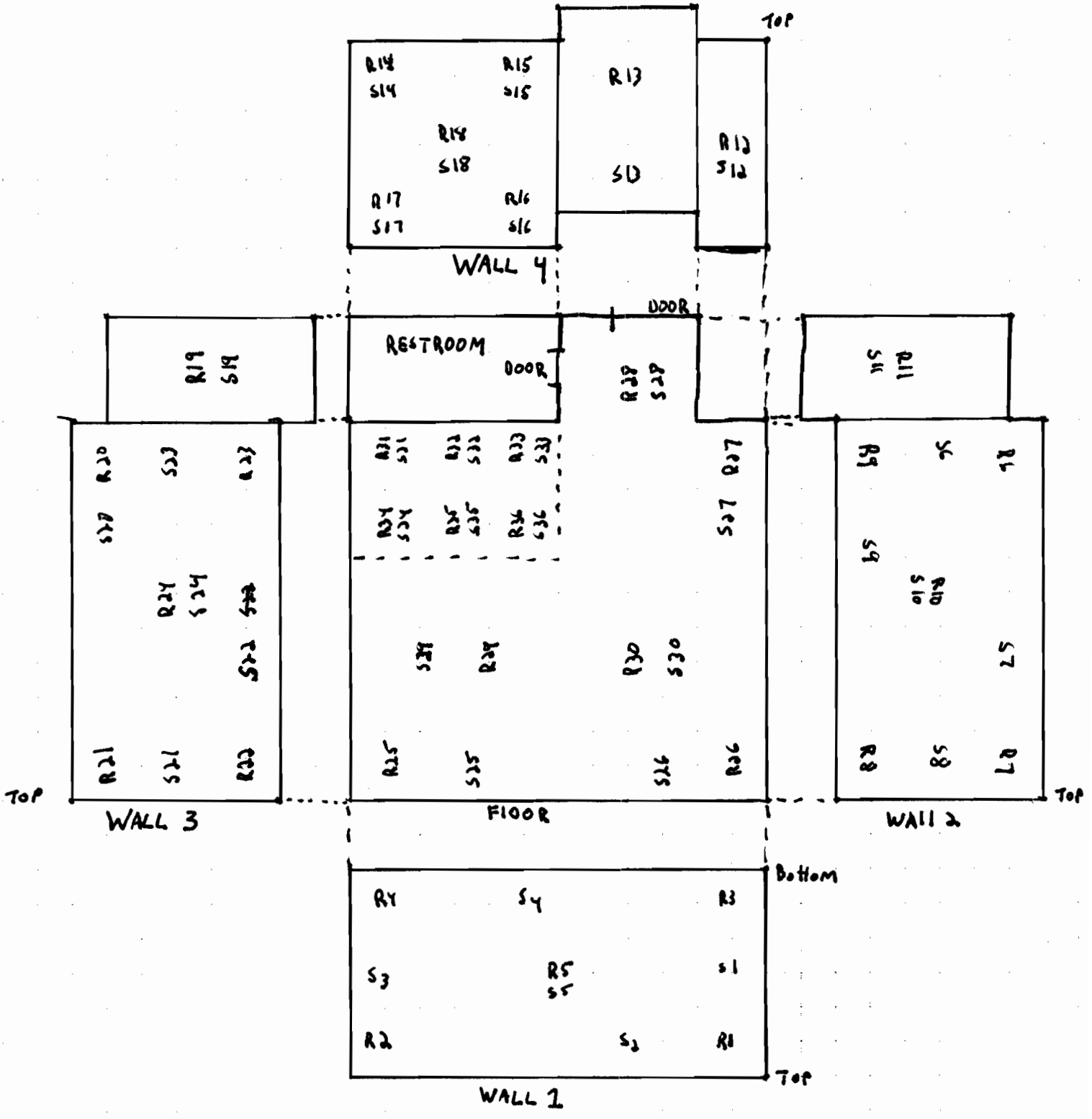
Telephone: (803) 751-4552/2207
Email: jim.wilson4@us.army.mil
Mail: Commander
4500 Stuart Street
ATTN: Preventive Medicine Department, Health Physics Section
Columbia, South Carolina 20207

Sincerely,

James E. Wilson
Captain, Medical Service Corps
Radiation Safety Officer

Enclosures
as

Room 10-90



ENCL 1

Room 10-90 decomissioning survey.

Sample	Reading (cpm)
Background 1	60
Background 2	~~80~~ 80
Background 3	60
Background 4	40
Background 5	80
Background Average	64
1	60
2	80
3	50
4	100
5	100
6	60
7	40
8	60
9	80
10	80
11	60
12	60
13	60
14	80
15	100
16	80
17	60
18	60
19	40
20	40
21	40
22	80
23	60
24	80
25	80
26	80
27	60
28	40
29	80
30	60
31	100
32	40
33	60
34	80
35	100
36	60

Encl 2

Ch A

$LLD = 2.71 + 3.29\sqrt{463 \cdot 2.4} = 35.46$

Ch B

$LLD = 2.71 + 3.29\sqrt{66.3 \cdot 2.4} = 44.21$

ch C

$LLD = 2.71 + 3.29\sqrt{200.2 \cdot 2.4} = 88.03$

* all in cpm

Encl 3

Encl 3

Encl 3

U.S. Army Test, Measurement, and Diagnostic Equipment Activity
U.S. Army, Radiation Standards Laboratory, RSL
Building 5417, Redstone Arsenal, AL 35898-5000

REPORT OF CALIBRATION

Ludlum Model No. 3 RADIAC Meter
Serial Number: 205507

Submitted By:

W2MJAA

The instrument was calibrated in accordance with SRN-18, "Calibration Technique for Gamma Calibration of Survey Instruments (Active)" using the RSL standard identified at the top of the following page(s) of this report. This calibration is metrologically traceable to the National Institute of Standards and Technology. Supporting documentation relative to traceability is on file and is available for examination upon request. Calibration accuracy (k=2) is +/- 10 % at the 95% confidence level over the calibration interval. The user should be aware that factors exist which may cause the instrument to drift out of calibration prior to calibration due date.

Atmospheric conditions in the laboratory at the time of calibration, provided for information only: temperature, 22 +/- 3 degrees Celsius; pressure, 750 +/- 10 mm Hg; relative humidity, between 15 and 75 percent. No correction to the calibration data for atmospheric conditions in the laboratory is required. For on-site atmospheric correction for ion chambers, use

$$CF = \frac{(273 + T)}{295} \times \frac{p_0}{p}$$

where T is ambient temperature in degrees C,
p_0 is one standard atmosphere pressure (760 mm Hg, 1013.25 mbar, 29.92 in Hg)
p is ambient pressure (in same units as p_0)

This calibration is accredited to ISO / IEC 17025 by the National Voluntary Laboratory Accreditation Program (NVLAP Lab Code 200715-0) and fully complies with the provisions of ANSI/NCSL Z540.3-2006. In addition, the quality system of the Radiation Standards Laboratory is registered to ISO 9001.2008. This report shall not be reproduced except in full without written permission of the Radiation Standards Laboratory.

Calibrated By:

Thomas V. Wilks
Engineering Technician, Nucleonics
DSN 746-1302 / Commercial (256) 876-1302

Reviewed By:

Steven C. Rogers
Senior Physicist, Nucleonics
Rad Stds Laboratory

Calibration Report No.: 205507

Date: 11 December 2009
Calibration Due: 6 December 2010

NVLAP
NVLAP LAB CODE 200715-0

Survey Instrument Calibration Report

PUIC **W1PLPN** OUIC W2MJAA

Mfr Ludlum Meter Model 3 S/N 205507

Probe Model 44-9 S/N PR212071

Detector Type: ☐ Ion Chamber ☑ G-M ☐ NaI ☐ Scintillation ☐ Other (

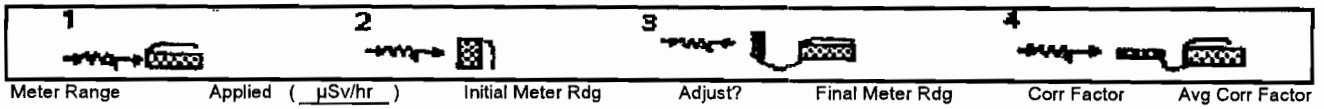
Calibration Source: Model 81-16Q S/N 7085 Isotope/Energy/Beam Code Cs137

Ludlum Model 500 Pulse Generator Used? ☐ S/N N/A Instrument Battery Check OK

1µCi Cs137 S/N: 795

Dedicated Check Source Indication: 25µSv/hr Flush Against Detector? Yes, door open Distance

Geometry: Calibration 3 Check Source 3 Window ☑ Open ☐ Closed ☐ Fixed



Meter Range	Applied (µSv/hr)	Initial Meter Rdg	Adjust?	Final Meter Rdg	Corr Factor	Avg Corr Factor
x100	1500	1625	Y	1500	1.00	0.95
	500	600	Y	550	0.91	
x10	150	180	Y	150	1.00	0.95
	50	60	Y	55	0.91	
x1	15		N	15	1.00	1.00
	5		N	5	1.00	
x0.1	1.5		N	1.5	1.00	1.00
	0.5		N	0.5	1.00	

Remarks

Calibration Report No 205507

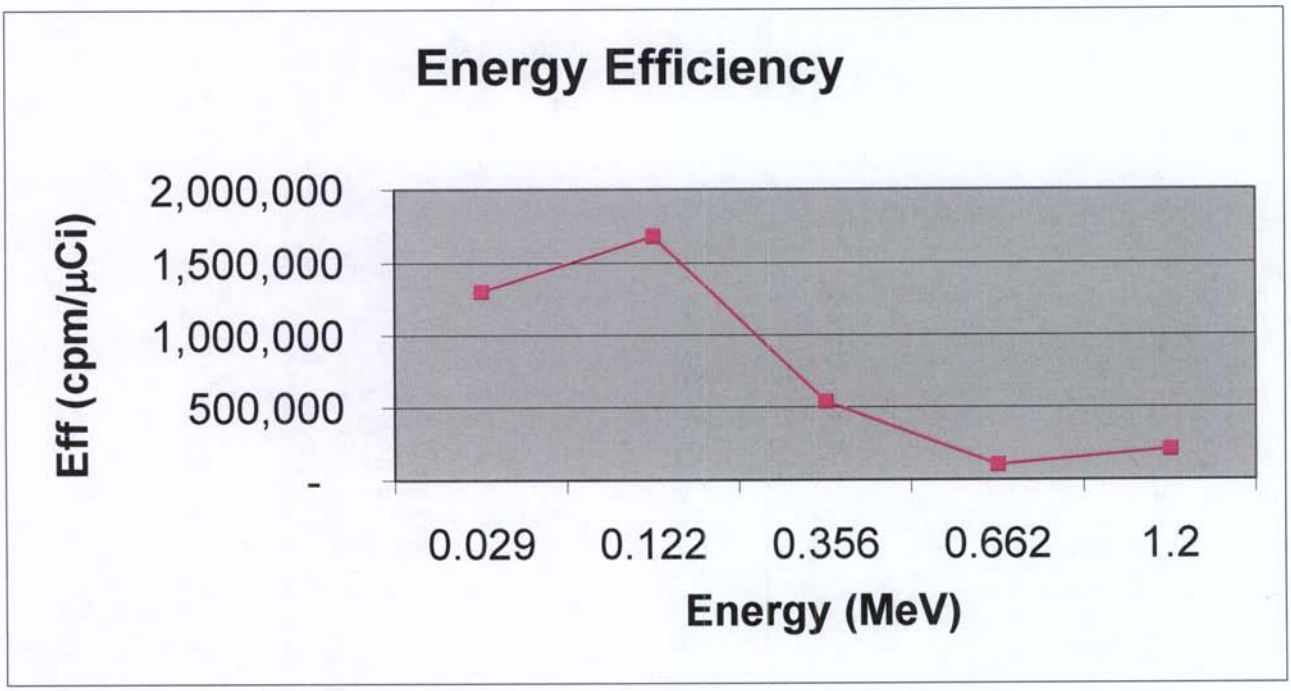
Date 11-Dec-09

Page 2 of 2

Encl 4

Health Physics Office Cobra Gamma Counter

Nuclide	Energy Peak (MeV)	Eff(cpm/μCi)	Eff (cpm/dpm)	LL - UL (KeV)	Detector Position	dpm factor
I-129	0.029	1,307,801	0.59	15 - 100	4	1.70
Co-57	0.122	1,689,679	0.76	100-200	4	1.31
Ba-133	0.356	544,616	0.25	200 - 400	4	4.08
Cs-137	0.662	109,527	0.05	400 - 1000	4	20.27
Co-60	1.2	215,174	0.10	1050-1500	4	10.32



Standards used:

Nuclide	Initial Acitivty (uCi)	Cal Date
I-129	8.00E-02	8/4/1998
Co-57	1.08E-01	4/1/2008
Ba-133	8.53E-02	2/1/2008
Cs-137	1.03E-01	3/1/2008
Co-60	9.98E-02	7/15/2000

Analysis performed 21 July 2009 by CPT Wilson , Health Physics.

Encl 5

I-129	A:CPM
1	40
2	48
3	32
1	104624

Co-57	Window A
1	37
2	51
3	43
16	33590

Ba-133	C:CPM
1	71
2	71
3	81
1	55925

Cs-137	B:CPM
1	93
2	96
3	101
4	26214

Encl 5

	Co-60	Window B
1	43	276
2	45	308
3	38	298
4	6122	

Encl 5

I-129

INITIAL ACTIVITY:	8.00E-02	**µCi**
Cal DATE:	8/4/1998	
Count Date:	1/21/2010	
T1/2:	1.57E+07	**years**
Time:	11.50	**years**
CURRENT ACTIVITY:	8.00E-02	**µCi**
Check Sources used:	007	

	CPM
Detector	**POS 4**
1	104,624

CPM/µCi
POS 4
1,307,801

Encl 5

Co-57		
INITIAL ACTIVITY:	0.1076	**µCi**
Cal DATE:	4/1/08	
Count Date:	1/21/10	
T1/2:	270.90	**days**
Time:	1.81	**Years**
CURRENT ACTIVITY:	1.99E-02	**µCi**
Check Source used:	80	

	CPM
Detector	**POS 4**
1	33,590

CPM/µCi
POS 4
1,689,679

Encl 5

Ba-133		
INITIAL ACTIVITY:	0.08528	**µCi**
Cal DATE:	2/1/2008	
Count Date:	1/21/2010	
T1/2:	10.50	**Years**
Time:	1.98	**Years**
CURRENT ACTIVITY:	1.03E-01	**µCi**
Check Sources used:	009	

	CPM
Detector	**POS 4**
1	55,925

CPM/µCi
POS 4
544,616

End 5

Cs-137

INITIAL ACTIVITY:	0.25	**µCi**
Cal DATE:	3/1/08	
Count Date:	1/21/10	
T1/2:	30.17	**Years**
Time:	1.90	**Years**
CURRENT ACTIVITY:	2.39E-01	**µCi**
Check Sources used:	063	

	CPM
Detector	**POS 4**
1	26,214

CPM/µCi
POS 4
109,527

Co-60		
INITIAL ACTIVITY:	0.09983	**µCi**
Cal DATE:	7/15/00	
Count Date:	1/21/10	
T1/2:	5.27	**Years**
Time:	9.55	**Years**
CURRENT ACTIVITY:	2.85E-02	**µCi**
Check Source used:	001	

	CPM
Detector	**POS 4**
1	6,122

CPM/µCi
POS 4
215,174

Encl 5

MDA for I-125/I-129 Window (15 - 100 KeV) Efficiency = 1,307,801

Data (CPM) obtained with blank tubes and a 1 minute count time.

	Detector 1
CPM	40.00
	48.00
	32.00
Std Dev:	8.00

MDA (μCi):
Detector 1: 0.00003

MDA for Co-57 Window (100-200 KeV) Efficiency = 1,689,679

Data (CPM) obtained with blank tubes and a 1 minute count time.

	Detector 1
CPM	37.00
	51.00
	43.00
Std Dev:	7.02

MDA (μCi):
Detector 1: 0.00002

MDA for Ba-133 Window (200 - 400 KeV) Efficiency = 544,616

Data (CPM) obtained with blank tubes and a 1 minute count time.

	Detector 1
CPM	71.00
	71.00
	81.00
Std Dev:	5.77

MDA (μCi):
Detector 1: 0.00005

MDA for Cs-137 Window (400-1000 KeV) Efficiency = 109,527

Data (CPM) obtained with blank tubes and a 1 minute count time.

	Detector 1
CPM	93.00
	96.00
	101.00
Std Dev:	4.04

MDA (μCi):
Detector 1: 0.00020

MDA for Co-60 Window (400-1000 KeV) Efficiency = 215,174

Data (CPM) obtained with blank tubes and a 1 minute count time.

	Detector 1
CPM	43.00
	45.00
	38.00

MDA (μCi):
Detector 1: 0.00009

Encl 5

Std Dev: 3.61

MDCR for Wide Window (15 - 2000 KeV)

Data (CPM) obtained with blank tubes and a 1 minute count time.

	Detector 1
CPM	276.00
	308.00
	298.00

Std Dev: 16.37

MDCR (CPM):

Detector 1: 78.8

Encl 5

This is to acknowledge the receipt of your letter/application dated 6/25/10 rec'd in Region I 8/5/10, and to inform you that the initial processing which includes an administrative review has been performed.

☐ There were no administrative omissions. Your application was assigned to a technical reviewer. Please note that the technical review may identify additional omissions or require additional information.

☐ Please provide to this office within 30 days of your receipt of this card

_____.

A copy of your action has been forwarded to our License Fee & Accounts Receivable Branch, who will contact you separately if there is a fee issue involved.

Your action has been assigned **Mail Control Number** 573284.
When calling to inquire about this action, please refer to this control number.
You may call us on (610) 337-5398, or 337-5260.

NRC FORM 532 (RI)
(6-96)

Sincerely,
Licensing Assistance Team Leader