

September 8, 2016

UNITED STATES NUCLEAR REGULATORY COMMISSION

Region III, Materials Licensing Section
2443 Warrenville Road
Suite 210
Lisle, IL 60532-4352

Re: MidMichigan Health
Amendment of NRC License No. 21-01549-02
Close-out Survey

Dear Sir/Madam:

We wish to provide the following information, in an effort to amend our NRC license. We previously applied for and received an amendment for a location of use for the new Nuclear Medicine department.

Item #1: Please find the enclosed closeout survey for the old Nuclear Medicine department located at the following address.

*703 North McEwan Street
Clare, Michigan*

Please note the following:

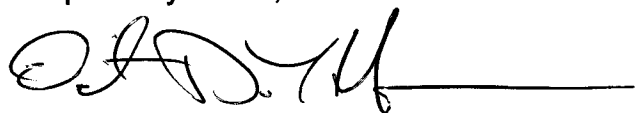
- A close-out survey and wipe test were performed. The data is enclosed for your review.
- A map of the area(s) noted above keyed to the survey and wipe test data.
- The following radionuclide(s) (Sealed) Co-57, Ba-133 and Cs-137 and Unsealed Tc99m, Tl-201, In-111 and Ga-67 were used at this locations.
- All residual byproduct material to include waste was fully decayed in storage and disposed.
- A copy of the sealed source leak test results for the sealed sources used at the facility are enclosed for your review.

This facility is exempt from decommissioning due to low volumes and short physical half-lives of materials used. We did not dispose of radioactive materials by release to sewers or incineration. In addition, there were no spills of any long-lived radioactive material or on-site burials of radioactive materials.

RECEIVED SEP 09 2016

If you have any questions, please contact our consulting physicist, James M. Botti, MS by phone at (734) 662-3197 or by email at jbotti@mpcphysics.com.

Respectfully Yours,

A handwritten signature in black ink, appearing to read "V. Hosfeld", followed by a horizontal line.

Victor D. Hosfeld, MS, DABR
Chief Physicist and RSO
MidMichigan Health
(989) 839-1407

Enclosures

Close-out Survey

Date performed: June 16, 2016

Performed by: Andy Dzinis, CNMT

Comments: Sealed sources and radioactive trash were removed from these areas prior to survey and wipe testing.

Instruments

Wipe tests analyzed with a Atomic Products Well Counter

Instrument: Well Counter

Radionuclide:	<u>Cs-137</u>	MDA for Cs-137	<u>128 dpm's</u>
Date completed:	<u>12/21/15</u>	Conversion factor:	<u>3.83 dpm/dpm</u>

Area survey performed with the following survey meter:

Manufacturer:	<u>Ludlum</u>
Type:	<u>GM</u>
Model Number:	<u>14C</u>
Serial Number:	<u>194303</u>
Probe Model:	<u>Pancake</u>
Calibration Date:	<u>04/12/17</u>

Radionuclides Used

Unsealed

Tc99m, In-111, Tl-201 and Ga-67

Sealed

Co-57, Cs-137, Ba-133

Last date of byproduct radiopharmaceutical use:

June 14, 2016

Visual Check: The area was checked to ensure that all sealed sources and radioactive waste had been removed. No evidence of radioactive material was noted.

Sealed Source Leak Testing: Sealed Source Leak tests demonstrated no removable contamination.

Leaking Sources: There is no history of leaking sources at this facility.

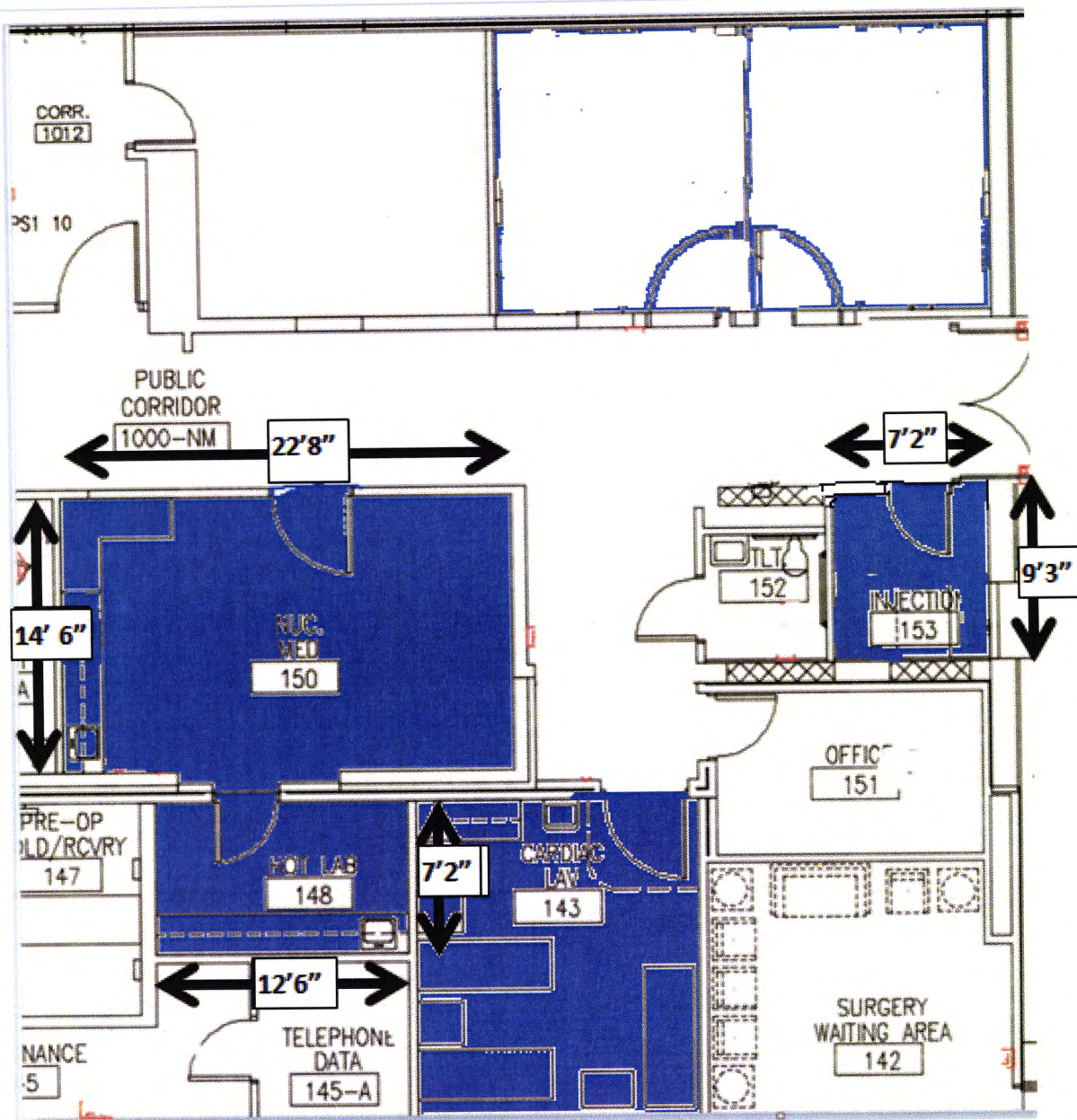
Radiation Level Survey: No area within the department demonstrated radiation levels in excess of the background reading of 0.03 mR/hr.

Removable Contamination: No area within the department demonstrated removable contamination excess of 0 dpm.



MidMichigan Health
UNIVERSITY OF MICHIGAN HEALTH SYSTEM

MidMichigan Medical Center – Midland
4000 Wellness Drive
Midland, Michigan 48670
Phone (989) 839-3000
www.midmichigan.org/midland



Camera Room #150

Area	Result in dpms
#1 Sink	0
#2 Counter	0
#3 Work Station	0
#4 Computer	0
#5 Cabinet	0
#6 Cabinet	0
#7 Floor #1	0
#8 Floor #2	0
#9 Floor #3	0
#10 Floor #4	0
#11 Door	0
#12 Camera	0
#13 Table	0
#14 Collimators	0
#15 Acq. Station	0
#16 N. Wall	0
#17 E Wall	0
#18 S Wall	0
#19 W. Wall	0
#20 Hallway	0

Background: 455 cpm

Maximum removable contamination = 0 dpm

Conclusion: No radioactive materials remain in this area. No removable contamination is present.

Hot Lab #148

Area	Result in dpms
#1 Pb Cabinet / Waste	0
#2 Pass Box	0
#3 Sink	0
#4 Prep Area	0
#5 Cabinet	0
#6 Cabinet	0
#7 Counter	0
#8 Floor #2	0
#9 Floor #3	0
#10 Floor #4	0
#11 Door	0
#12 N. Wall	0
#13 E Wall	0
#14 S Wall	0
#15 W. Wall	0
#16 Doorway	0

Background: 455 cpm

Maximum removable contamination = 0 dpm

Conclusion: No radioactive materials remain in this area. No removable contamination is present.

Injection Room #153

Area	Result in dpms
#1 Sink	0
#2 Chair	0
#3 Counter	0
#4 Door	0
#5 Floor #1	0
#6 Floor #2	0
#7 Floor #3	0
#8 Floor #4	0
#9 Door	0

Background: 449 cpm

Maximum removable contamination = 0 dpm

Conclusion: No radioactive materials remain in this area. No removable contamination is present.

Treadmill Room #143

Area	Result in dpms
#1 Doorway	0
#2 Floor #2	0
#3 Floor #3	0
#4 Floor #4	0
#5 Door	0
#6 N. Wall	0
#7 E Wall	0
#8 S Wall	0
#9 W. Wall	0
#10 Treadmill	0
#11 Bed	0

Background: 625 cpm

Maximum removable contamination = 0 dpm

Conclusion: No radioactive materials remain in this area. No removable contamination is present.



Sealed Source Inventory

Licensee: MidMichigan Medical Center-Clare

Date: 07/14/16

Performed by: James Botti

Nuclide	Type	Location	M/N	S/N	Manufacturer
Cs-137	Vial	Stored	NES-802	S8023003	
Calibration Activity:	30 uCi	Calibration Date: 11/03/87	Current Activity	15.45 uCi	
Cs-137	Vial	Hot Lab	NES-356	3560580A-58	
Calibration Activity:	197 uCi	Calibration Date: 05/13/80	Current Activity	85.38 uCi	
Ba-133	Vial	Hot Lab	NES-358	S358009-001	
Calibration Activity:	289 uCi	Calibration Date: 02/02/91	Current Activity	54.06 uCi	
Co-57	Flood	Hot Lab	BM01-15	BM01151398104	
Calibration Activity:	15 mCi	Calibration Date: 08/16/13	Current Activity	0.989 mCi	
Gd-153	Line	Intevo Camera	HEGL-0133	N5-252	E and Z
Calibration Activity:	10 mCi	Calibration Date: 06/10/16	Current Activity	9.072 mCi	
Co-57	Point	Intevo Camera	PHI-0124	N3-934	E and Z
Calibration Activity:	0.5 mCi	Calibration Date: 05/01/16	Current Activity	0.414 mCi	

SEALED SOURCE AMBIENT EXPOSURE SURVEY

Meter: N/A

Max Reading N/A

RADIATION SAFETY OFFICER: [Signature] 06/31/2016



Sealed Source Leak Test

Licensee: MidMichigan Medical Center-Clare

Date: 07/14/16

Performed by: James Botti

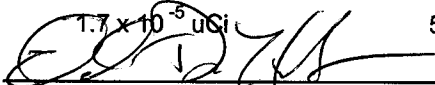
Nuclide	Type	Calibration Activity	Calibration Date	Location	M/N	S/N
Cs-137	Vial	30 uCi	11/03/87	Stored	NES-802	S8023003
Current Activity: 15.45 uCi						
Cs-137	Vial	197 uCi	05/13/80	Hot Lab	NES-356	3560580A-58
Current Activity: 85.38 uCi						
Ba-133	Vial	289 uCi	02/02/91	Hot Lab	NES-358	S358009-001
Current Activity: 54.06 uCi						
Co-57	Flood	15 mCi	08/16/13	Hot Lab	BM01-15	BM01151398104
Current Activity: 0.989 mCi						
Gd-153	Line	10 mCi	06/10/16	Intevo Camer	HEGL-0133	N5-252
Current Activity: 9.072 mCi						
Co-57	Point	0.5 mCi	05/01/16	Intevo Camer	PHI-0124	N3-934
Current Activity: 0.414 mCi						

Comment: The sources listed above were leak tested using a dry wipe technique and were found to have less than 0.005 uCi removable activity. The following Minimum Detectable Activities are based upon a background at the indicated value. Background was at or below these levels when the above tests were completed.

Well Counter: Captus 3000

Nuclide	MDA	Background
Cs-137	2.0×10^{-4} uCi	145 counts/1 min
Ba-133	8.8×10^{-5} uCi	204 counts/1 min
Co-57	1.7×10^{-5} uCi	53 counts/1 min

RADIATION SAFETY OFFICER:

 08/31/2016

FedEx

Express

RT 493
10:30
4319
09:09
FZ

earthsmart
FedEx carbon-neutral
envelope shipping

Align top of FedEx Express® shipping label here.

ORIGIN ID: MESA (988) 839-3825
MIDLAND HEALTH
VICTOR ROSEFIELD
4000 WELLNESS DRIVE
MIDLAND, MI 48670
UNITED STATES US

SHIP DATE: 08SEP16
ACTWST: 050115
CAD: 834811VNET3790
BILL SENDER

TO US NUCLEAR REGULATORY COMMISSION
REGION III, MATERIALS LICENSING SEC
2443 WARRENVILLE ROAD, SUITE 210

LISLE IL 60532

(000) 000-0000

REF: 10400

NY:

PO:

DEPT:



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PRIORITY OVERNIGHT

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6201

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