

MID-AMERICA CARDIOLOGY ASSOCIATES, INC.

Hubert H. Bell, M.D., Emeritus
Lynn H Kindred, M.D.
Gary D. Beauchamp, M.D.
James J. Harbrecht, M.D.
Loren D. Berenbom, M.D.
Charles B. Porter, M.D.
Edward J. Laughlin, M.D.
Douglas J. Willhoite, M.D.
Steven D. Owens, M.D.
Thomas L. Rosamond, M.D.
James L. Vacek, M.D.
Randall E. Genton, M.D.
Dak R. Burnett, M.D.
Martin P. Emert, M.D.

1530 N. Church Road
LIBERTY, MISSOURI 64068
913-945-6300
FAX 913-945-6350

KANSAS UNIVERSITY SCHOOL OF MEDICINE
Division of Cardiovascular Diseases
Steven B. Gollub, M.D.
David G. Meyers, M.D.
David B. Wilson, M.D.

Peter N. Tadros, M.D.
Kevin M. Mulhern, M.D.
S. Roy Hegde, M.D.
Robert L. Herman, M.D.
Steven P. Freeman, D.O.
Dennis R. Bresnahan, M.D.
Rhea C. Pimentel, M.D.
Robert C. Candipan, M.D.
Brian C. Weiford, M.D.
Marina N. Hannen, M.D.

September 5, 2017

Nuclear Materials Licensing Branch
US Nuclear Regulatory Commission
Region III
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

Notification RE: Byproduct Materials License Number 24-26254-01

Dear Sir or Madam:

This letter is to notify you as per 10CFR35.14 that we are closing our Nuclear Medicine operations at the following facility listed on our current license:

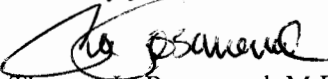
5501 NW 62nd Ter
Kansas City, Missouri 64151

Please remove this area from our license.

The hot lab, camera room, and stress test room have been decommissioned by removing all sources of radioactivity, performing an area radiation survey, and a wipe test to detect any residual contamination. All sources were removed and both surveys detected no residual contamination. The survey data performed by our medical physics consultant are attached with this letter.

If you have any questions, please contact Mike Feldkamp, CNMT at 913-588-9669 or myself at 913-588-9600.

Sincerely yours,



Thomas L. Rosamond, M.D.

Radiation Safety Officer

Mid-America Cardiology Associates, Inc.

Administration - 5799 Broadmoor, Suite 200, Mission, Kansas 66202 (913) 588-9500
University of Kansas Hospital - 3901 Rainbow Boulevard, Kansas City, Kansas 66109-7200 913-588-9600
Overland Park - 10100 West 119th Street, Suite 250, Overland Park, Kansas 66213, 913-588-9400
Atchison - 1301 North 2nd Street, Atchison, Kansas 66002 (913) 367-3100
Toll Free Number for Physicians Outside the Kansas City Area 1-800-365-5510
(Available between 8:00 a.m. - 5:00 p.m. Monday - Friday)

RECEIVED SEP 12 2017

**REPORT
DECOMMISSIONING OF NUCLEAR MEDICINE AREA**

Date: **08/29/17**

Location of Decommissioning: **Mid-America Cardiology Associates, Inc.
5501 NW 62nd Terrace, Suite 201
Kansas City, MO 64152**

Rooms Decommissioned: **Hot Lab, Camera Room, Stress Lab**

Management Representative: **Tracy Rasmussen, Mid-America Cardiology**

Radiation Safety Officer: **Thomas Rosamond, M.D.**

Chair Radiation Safety Comm: **KUHA**

Nuclear Medicine Technologist: **KUHA**

RADIOACTIVE MATERIALS LICENSES

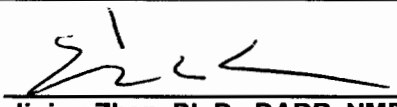
Nuclear Regulatory Commission
Region III

License Number: **24-26254-01**
Amendment Number: **18**
Expiration Date: **01/31/22**

DECOMMISSIONING RESULTS

- 1 No radioactive materials were stored in the area decommissioned at time of the demommissioning.
- 2 The imaging systems, stress system and all removable objects were removed from the rooms.
- 2 No radioactive materials or sources were found during the decommissioning survey.
- 3 The ambient exposure rate survey was acceptable.
- 4 The removable contamination survey was acceptable.

Medical Physics Consultant:


Jiping Zhan, Ph.D., DABR, NMP
Diagnostic Technology Consultants, Inc.
5930 Roe Avenue
Mission, Kansas 66205

8/30/2017

Date

(913) 236-6000
(913) 236-6655 FAX

Radiation Safety Officer:


Thomas Rosamond, M.D.

9/5/17
Date

Licensee: Mid-America Cardiology Associates, Inc.
Address: 5501 NW 62nd Terrace, Suite 201
Kansas City, MO 64152

License Number: 24-26254-01
Expiration: 01/31/22

Decommission Data

08/29/17

Historical Use:

The area for decommissioning consists of the nuclear medicine cardiac Imaging clinic consisting of the Hot Lab, Camera Room, and Stress Lab.

Sealed Sources were stored in the Hot Lab. Patient doses were also stored in the hot lab. The radioactive material used in the stress room consisted of Thallium-201 for stress imaging.

The radioactive materials used in the camera/imaging area consisted of a cobalt-57 sealed source for camera QC. Thallium-201 was used for clinical imaging.

All radioactive waste from dose administration was stored in the hot lab.

Equipment and Device Removal:

The rooms were cleared of all equipment, desks, chairs, wall canisters and items that were not permanently fixed in their location.

Wipe Survey Procedure:

Each wipe test sample was collected by wiping an alcohol pad over the surface over an area identified on the diagrams. The wipe sample was secured in the alcohol packet and appropriately identified with the location of the wipe. The wipe samples were then taken to the Diagnostic Technology Consultants, Inc. office for measurement. The wipe samples were placed into the well counter after all required quality control and test measurements were completed. The results of the wipe surveys were then entered into the spread sheet tables in cpm. The dpm was calculated based on the most recent quarterly efficiency testing.

Wipe Test Results Evaluation:

No Detectable Activity (NDA) means the wipe count was equal to or less than the Decision Limit $[BKG + 2.33 \cdot \text{SQRT}(Bkg)]$

Area Survey Procedure:

The survey meter pancake probe was passed in a sweeping motion over each area identified on the diagrams. The probe to surface distance was maintained at a minimum distance of less than 3.0 cm. The background level was established by taking a series of area survey readings in the hallway adjacent to the rooms being surveyed. The background survey readings were determined to be 0.03 mR/hr.

Area Survey Results and Trigger Level:

The action level was based on any area survey reading exceeding background levels.

Licensee: Mid-America Cardiology Associates, Inc.
 Address: 5501 NW 62nd Terrace, Suite 201
 Kansas City, MO 64152

License Number: 24-26254-01
 Expiration: 01/31/22

Survey and Analysis Equipment Parameters

08/29/17

All Equipment used for surveyers are the property of Diagnostic Technology Consultants, Inc.

Well Counter

Manufacturer: Capintec
 Model: Caprac-t
 Serial Number: 10067

Standard Source Information

Source	Serial No.	Activity (uCi)	Calibration Date	Half-life (Days)	Decay Time (t) (Days)	A(t) (uCi)	A(t) (dpm)
Co-57	1848-51-4	1.08E-01	10/01/16	271.74	258	5.60E-02	1.24E+05
Ba-133	1036-32-2	1.06E-01	02/01/04	3836.15	4884	4.37E-02	9.70E+04
Co-60	NEN100S	1.21E-01	02/26/80	1925.28	13625	8.97E-04	1.99E+03
Cs-137	962-51-9	9.76E-02	03/01/04	10975.55	4855	7.18E-02	1.59E+05

Minimum Detectable Activity (MDA)

Analysis Date	Source Count (5 min)	Bkg (5 min)	Efficiency	MDA (dpm)	MDA (uCi)
06/16/17	454450	865	0.935	68	3.08E-05
06/16/17	578800	865	0.929	69	3.10E-05
06/16/17	4850	865	0.400	160	7.19E-05
06/16/17	238610	865	0.298	214	9.64E-05

Survey Meter

Manufacturer: Ludlum
 Model: Model 3
 Serial Number: 26027

Probe:

Manufacturer: Ludlum
 Model: 44-9 (pancake)
 Serial Number: 097834

Per standard operating procedures, constancy checks using a ¹³⁷Cs sealed source are conducted each day prior to using the equipment. To verify constancy, the measured activity must fall within 20% of the calculated standard activity.

Correction Factors as of March 22, 2017.


Scale Multiplier	Distance (cm)	Calculated mr/hr	Measured (mr/hr)	Correction Factor
100	111.9	150	120	Do not Use
100	193.8	50	80	Do not Use
10	250.9	15	14	1.07
10	304.6	5	5	1.00
1	118.8	1.5	1.4	1.07
1	205.8	0.5	0.5	1.00
0.1	114.0	0.15	0.15	1.00
0.1	197.4	0.05	0.05	1.00

Calibrated by Mid-America Calibrations, Inc. 808 SW Nautica Court, Lee's Summit, Missouri 64082, NRC License No. 24-32531-01, with a J.L. Shepherd Model 28-6a calibrator, serial #10018, 1.2 Ci Cs-137, 3M 4F6H, source serial #2824 or a Ludlum Model 500-2 Pulser, serial #127533. The output is traceable to the NBS (N.I.S.T.) and all instruments are calibrated in accordance with MIL-STD 45662A and ANSI N323-1978.

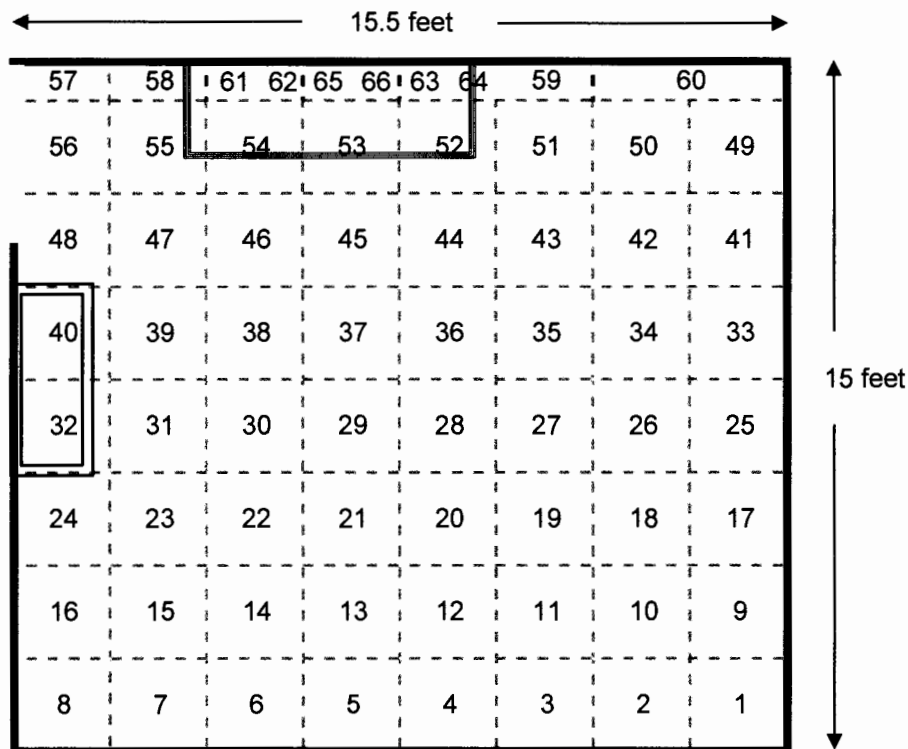
Licensee: Mid-America Cardiology Associates, Inc.
Address: 5501 NW 62nd Terrace, Suite 201
Kansas City, MO 64152

License Number: 24-26254-01
Expiration: 01/31/22

Room Diagram and Area Identification
08/29/17

 = 1x1 foot

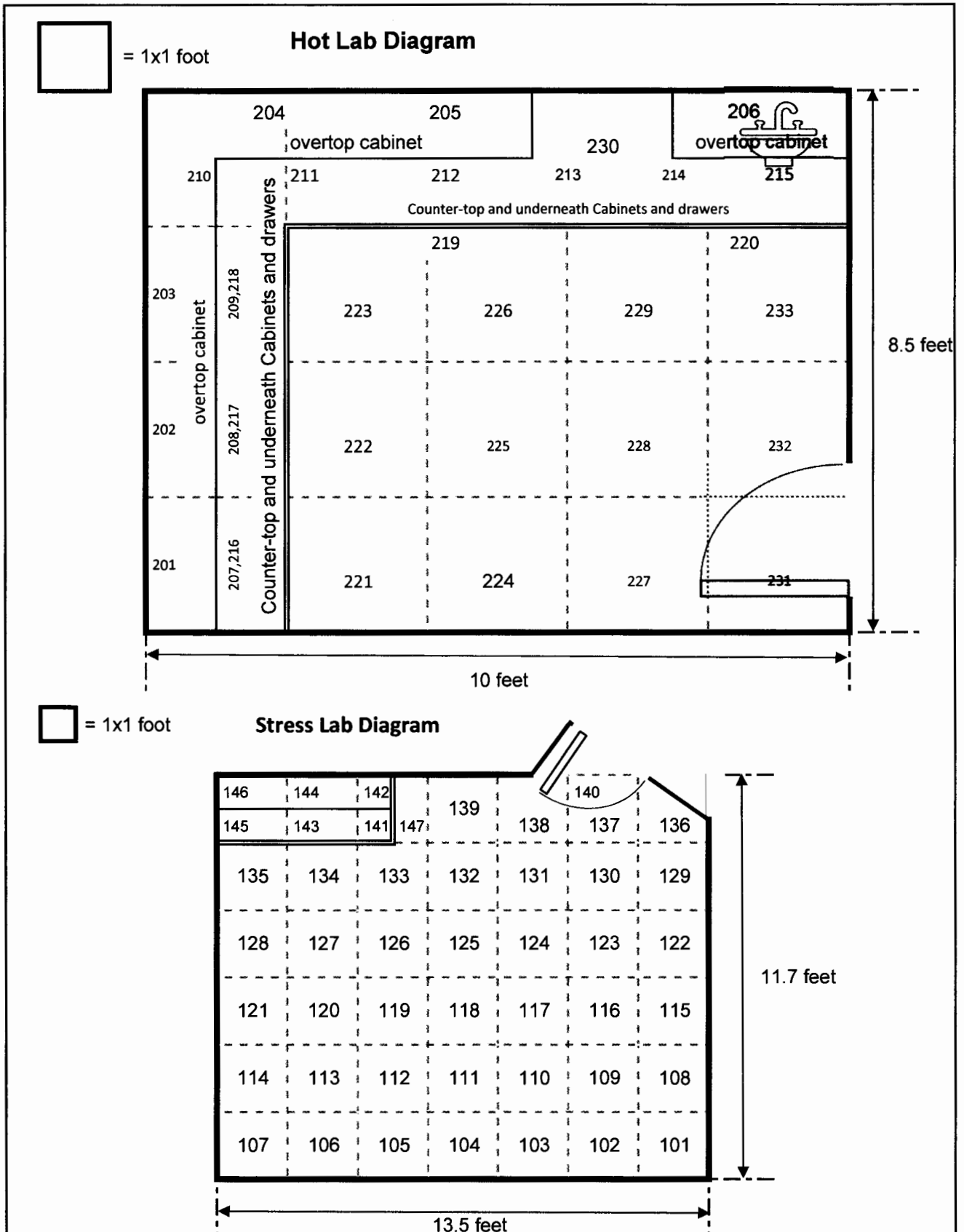
Camera Room Diagram



Licensee: Mid-America Cardiology Associates, Inc.
 Address: 5501 NW 62nd Terrace, Suite 201
 Kansas City, MO 64152

License Number: 24-26254-01
 Expiration: 01/31/22

Additional Wipe and Survey Locations 08/29/17



Licensee: Mid-America Cardiology Associates, Inc.
 Address: 5501 NW 62nd Terrace, Suite 201
 Kansas City, MO 64152

License Number: 24-26254-01
 Expiration: 01/31/22

RADIATION SURVEY - Page 1 of 2

08/29/17

SURVEY				Radiation Survey			Results
No.	Room	Location	Area	Ambient (mR/hr)	Wipe (cpm)	Wipe (dpm)	
		Background		0.03	192		
1	Cam Rm	Floor	Restricted	0.03	192	NDA	PASS
2	Cam Rm	Floor	Restricted	0.03	174	NDA	PASS
3	Cam Rm	Floor	Restricted	0.03	180	NDA	PASS
4	Cam Rm	Floor	Restricted	0.03	174	NDA	PASS
5	Cam Rm	Floor	Restricted	0.03	175	NDA	PASS
6	Cam Rm	Floor	Restricted	0.03	175	NDA	PASS
7	Cam Rm	Floor	Restricted	0.03	174	NDA	PASS
8	Cam Rm	Floor	Restricted	0.03	174	NDA	PASS
9	Cam Rm	Floor	Restricted	0.03	180	NDA	PASS
10	Cam Rm	Floor	Restricted	0.03	197	NDA	PASS
11	Cam Rm	Floor	Restricted	0.03	192	NDA	PASS
12	Cam Rm	Floor	Restricted	0.03	197	NDA	PASS
13	Cam Rm	Floor	Restricted	0.03	179	NDA	PASS
14	Cam Rm	Floor	Restricted	0.03	174	NDA	PASS
15	Cam Rm	Floor	Restricted	0.03	179	NDA	PASS
16	Cam Rm	Floor	Restricted	0.03	175	NDA	PASS
17	Cam Rm	Floor	Restricted	0.03	180	NDA	PASS
18	Cam Rm	Floor	Restricted	0.03	180	NDA	PASS
19	Cam Rm	Floor	Restricted	0.03	197	NDA	PASS
20	Cam Rm	Floor	Restricted	0.03	187	NDA	PASS
21	Cam Rm	Floor	Restricted	0.03	189	NDA	PASS
22	Cam Rm	Floor	Restricted	0.03	180	NDA	PASS
23	Cam Rm	Floor	Restricted	0.03	187	NDA	PASS
24	Cam Rm	Floor	Restricted	0.03	187	NDA	PASS
25	Cam Rm	Cabinet Shelf	Restricted	0.03	168	NDA	PASS
26	Cam Rm	Floor	Restricted	0.03	175	NDA	PASS
27	Cam Rm	Floor	Restricted	0.03	206	NDA	PASS
28	Cam Rm	Floor	Restricted	0.03	175	NDA	PASS
29	Cam Rm	Floor	Restricted	0.03	180	NDA	PASS
30	Cam Rm	Floor	Restricted	0.03	192	NDA	PASS
31	Cam Rm	Floor	Restricted	0.03	179	NDA	PASS
32	Cam Rm	Floor	Restricted	0.03	174	NDA	PASS
33	Cam Rm	Cabinet Shelf	Restricted	0.03	189	NDA	PASS
34	Cam Rm	Floor	Restricted	0.03	200	NDA	PASS
35	Cam Rm	Floor	Restricted	0.03	168	NDA	PASS
36	Cam Rm	Floor	Restricted	0.03	200	NDA	PASS
37	Cam Rm	Floor	Restricted	0.03	189	NDA	PASS
38	Cam Rm	Floor	Restricted	0.03	200	NDA	PASS
39	Cam Rm	Floor	Restricted	0.03	182	NDA	PASS
40	Cam Rm	Floor	Restricted	0.03	203	NDA	PASS
41	Cam Rm	Floor	Restricted	0.03	191	NDA	PASS
42	Cam Rm	Floor	Restricted	0.03	206	NDA	PASS
43	Cam Rm	Floor	Restricted	0.03	175	NDA	PASS
44	Cam Rm	Floor	Restricted	0.03	193	NDA	PASS
45	Cam Rm	Floor	Restricted	0.03	166	NDA	PASS

Cam Rm = Camera Room, Str Rm = Stress Room

SURVEY				Radiation Survey			Results
No.	Room	Location	Area	Ambient (mR/hr)	Wipe (cpm)	Wipe (dpm)	
		Background		0.03	192		
46	Cam Rm	Floor	Restricted	0.03	153	NDA	PASS
47	Cam Rm	Floor	Restricted	0.03	206	NDA	PASS
48	Cam Rm	Floor	Restricted	0.03	153	NDA	PASS
49	Cam Rm	Floor	Restricted	0.03	153	NDA	PASS
50	Cam Rm	Floor	Restricted	0.03	168	NDA	PASS
51	Cam Rm	Floor	Restricted	0.03	191	NDA	PASS
52	Cam Rm	Floor	Restricted	0.03	206	NDA	PASS
53	Cam Rm	Floor	Restricted	0.03	191	NDA	PASS
54	Cam Rm	Floor	Restricted	0.03	193	NDA	PASS
55	Cam Rm	Floor	Restricted	0.03	182	NDA	PASS
56	Cam Rm	Floor	Restricted	0.03	206	NDA	PASS
57	Cam Rm	Floor	Restricted	0.03	193	NDA	PASS
58	Cam Rm	Floor	Restricted	0.03	203	NDA	PASS
59	Cam Rm	Floor	Restricted	0.03	206	NDA	PASS
60	Cam Rm	Floor	Restricted	0.03	169	NDA	PASS
61	Cam Rm	Desk Top	Restricted	0.03	166	NDA	PASS
62	Cam Rm	Drawers	Restricted	0.03	166	NDA	PASS
63	Cam Rm	Desk Top	Restricted	0.03	203	NDA	PASS
64	Cam Rm	Drawers	Restricted	0.03	169	NDA	PASS
65	Cam Rm	Desk Top	Restricted	0.03	182	NDA	PASS
66	Cam Rm	Floor	Restricted	0.03	169	NDA	PASS
101	Str Rm	Floor	Restricted	0.03	200	NDA	PASS
102	Str Rm	Floor	Restricted	0.03	200	NDA	PASS
103	Str Rm	Floor	Restricted	0.03	195	NDA	PASS
104	Str Rm	Floor	Restricted	0.03	183	NDA	PASS
105	Str Rm	Floor	Restricted	0.03	171	NDA	PASS
106	Str Rm	Floor	Restricted	0.03	165	NDA	PASS
107	Str Rm	Floor	Restricted	0.03	186	NDA	PASS
108	Str Rm	Floor	Restricted	0.03	200	NDA	PASS
109	Str Rm	Floor	Restricted	0.03	193	NDA	PASS
110	Str Rm	Floor	Restricted	0.03	186	NDA	PASS
111	Str Rm	Floor	Restricted	0.03	183	NDA	PASS
112	Str Rm	Floor	Restricted	0.03	186	NDA	PASS
113	Str Rm	Floor	Restricted	0.03	186	NDA	PASS
114	Str Rm	Floor	Restricted	0.03	171	NDA	PASS
115	Str Rm	Floor	Restricted	0.03	193	NDA	PASS
116	Str Rm	Floor	Restricted	0.03	171	NDA	PASS
117	Str Rm	Floor	Restricted	0.03	171	NDA	PASS
118	Str Rm	Floor	Restricted	0.03	200	NDA	PASS
119	Str Rm	Floor	Restricted	0.03	195	NDA	PASS
120	Str Rm	Floor	Restricted	0.03	200	NDA	PASS
121	Str Rm	Floor	Restricted	0.03	205	NDA	PASS
122	Str Rm	Floor	Restricted	0.03	176	NDA	PASS
123	Str Rm	Floor	Restricted	0.03	186	NDA	PASS
124	Str Rm	Floor	Restricted	0.03	171	NDA	PASS

Survey Performed By: Jiping Zhan, Ph.D. DABR, NMP
 Survey Performed On: 08/29/17
 Wipe Test Samples Counted By: Jiping Zhan, Ph.D. DABR, NMP
 Wipe Test Samples Counted On: 08/29/17

Background Count: 192
 Delta1 (net counts): 32
 Delta2 (net counts): 67
 Decision Limit (L_c): 259

Licensee: Mid-America Cardiology Associates, Inc.
 Address: 5501 NW 62nd Terrace, Suite 201
 Kansas City, MO 64152

License Number: 24-26254-01
 Expiration: 01/31/22

RADIATION SURVEY - Page 2 of 2

08/29/17

SURVEY				Radiation Survey			Results
No.	Room	Location	Area	Ambient (mR/hr)	Wipe (cpm)	Wipe (dpm)	
		Background		0.03	192		
125	Str Rm	Floor	Restricted	0.03	180	NDA	PASS
126	Str Rm	Floor	Restricted	0.03	193	NDA	PASS
127	Str Rm	Floor	Restricted	0.03	171	NDA	PASS
128	Str Rm	Floor	Restricted	0.03	178	NDA	PASS
129	Str Rm	Floor	Restricted	0.03	176	NDA	PASS
130	Str Rm	Floor	Restricted	0.03	180	NDA	PASS
131	Str Rm	Floor	Restricted	0.03	200	NDA	PASS
132	Str Rm	Floor	Restricted	0.03	205	NDA	PASS
133	Str Rm	Floor	Restricted	0.03	183	NDA	PASS
134	Str Rm	Floor	Restricted	0.03	180	NDA	PASS
135	Str Rm	Floor	Restricted	0.03	171	NDA	PASS
136	Str Rm	Floor	Restricted	0.03	176	NDA	PASS
137	Str Rm	Floor	Restricted	0.03	178	NDA	PASS
138	Str Rm	Floor	Restricted	0.03	186	NDA	PASS
139	Str Rm	Floor	Restricted	0.03	200	NDA	PASS
140	Str Rm	Floor	Restricted	0.03	200	NDA	PASS
141	Str Rm	Desk Top	Restricted	0.03	171	NDA	PASS
142	Str Rm	Cabinet	Restricted	0.03	205	NDA	PASS
143	Str Rm	Desk Top	Restricted	0.03	165	NDA	PASS
144	Str Rm	Cabinet	Restricted	0.03	171	NDA	PASS
145	Str Rm	Desk Top	Restricted	0.03	200	NDA	PASS
146	Str Rm	Drawers	Restricted	0.03	165	NDA	PASS
147	Str Rm	Floor	Restricted	0.03	178	NDA	PASS
201	Hot Lb	Cabinet Shelf	Restricted	0.03	176	NDA	PASS
202	Hot Lb	Cabinet Shelf	Restricted	0.03	179	NDA	PASS
203	Hot Lb	Cabinet Shelf	Restricted	0.03	172	NDA	PASS
204	Hot Lb	Cabinet Shelf	Restricted	0.03	172	NDA	PASS
205	Hot Lb	Cabinet Shelf	Restricted	0.03	176	NDA	PASS
206	Hot Lb	Cabinet Shelf	Restricted	0.03	154	NDA	PASS
207	Hot Lb	Counter Top	Restricted	0.03	171	NDA	PASS
208	Hot Lb	Counter Top	Restricted	0.03	195	NDA	PASS
209	Hot Lb	Counter Top	Restricted	0.03	176	NDA	PASS
210	Hot Lb	Counter Top	Restricted	0.03	179	NDA	PASS
211	Hot Lb	Counter Top	Restricted	0.03	154	NDA	PASS
212	Hot Lb	Counter Top	Restricted	0.03	180	NDA	PASS
213	Hot Lb	Counter Top	Restricted	0.03	171	NDA	PASS
214	Hot Lb	Counter Top	Restricted	0.03	194	NDA	PASS
215	Hot Lb	Sink	Restricted	0.03	171	NDA	PASS
216	Hot Lb	Drawers	Restricted	0.03	180	NDA	PASS
217	Hot Lb	Drawers	Restricted	0.03	171	NDA	PASS
218	Hot Lb	Drawers	Restricted	0.03	186	NDA	PASS
219	Hot Lb	Drawers	Restricted	0.03	194	NDA	PASS
220	Hot Lb	Cabinet	Restricted	0.03	169	NDA	PASS
221	Hot Lb	Floor	Restricted	0.03	169	NDA	PASS
222	Hot Lb	Floor	Restricted	0.03	171	NDA	PASS

Str Rm = Stress Room, Hot Lb = Hot Lab.

SURVEY				Radiation Survey			Results
No.	Room	Location	Area	Ambient (mR/hr)	Wipe (cpm)	Wipe (dpm)	
		Background		0.03	192		
223	Hot Lb	Floor	Restricted	0.03	194	NDA	PASS
224	Hot Lb	Floor	Restricted	0.03	195	NDA	PASS
225	Hot Lb	Floor	Restricted	0.03	172	NDA	PASS
226	Hot Lb	Floor	Restricted	0.03	195	NDA	PASS
227	Hot Lb	Floor	Restricted	0.03	169	NDA	PASS
228	Hot Lb	Floor	Restricted	0.03	186	NDA	PASS
229	Hot Lb	Floor	Restricted	0.03	186	NDA	PASS
230	Hot Lb	Floor	Restricted	0.03	180	NDA	PASS
231	Hot Lb	Floor	Restricted	0.03	171	NDA	PASS
232	Hot Lb	Floor	Restricted	0.03	154	NDA	PASS
233	Hot Lb	Floor	Restricted	0.03	179	NDA	PASS

Survey Performed By: Jiping Zhan, Ph.D. DABR, NMP
 Survey Performed On: 08/29/17
 Wipe Test Samples Counted By: Jiping Zhan, Ph.D. DABR, NMP
 Wipe Test Samples Counted On: 08/29/17

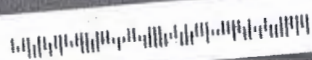
Background Count: 192
 Delta1 (net counts): 32
 Delta2 (net counts): 67
 Decision Limit (L_D): 259

 **THE UNIVERSITY OF KANSAS HEALTH SYSTEM**

3801 Rainbow Blvd., Suite G600 | Kansas City, KS 66160



US POSTAGE® PITNEY BOWES
ZIP 66160 \$ 001.75⁰
02 48
0000350026 SEP 05 2017



Nuclear Materials Licensing Branch
US Nuclear Regulatory Commission
Region III
2443 Warrenville Road, Suite 210
Lisle, Illinois 60532-4352

RECEIVED SEP 12 2017