

# FREEMAN HEART & VASCULAR INSTITUTE



### Cardiology

John M. Cox, D.O., FACC  
C. Ryan Longnecker, M.D., FACC  
John Nicholas, M.D., FACC  
Robert C. Stauffer, MD., FACC  
David A. Zuehlke, M.D., FACC

### Electrophysiology

John F. Swartz, III, M.D.

### Nurse Practitioners

Catherine J. Bancs, ARNP-BC  
Kyra L. Reichardt, ARNP-BC  
Linda vonWedell, ARNP, FNP-C  
Tiffany Main, ARNP-BC

October 27, 2011

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

Dear Sir or Madam:

In regards to our current Radioactive Materials License number 24-32315-01. Our facility has decided, due to increased patient volume in the hospital, to terminate the current license (24-32315-01) and move the existing equipment to the hospital location to be included under the current hospital license # 24-17205-01.

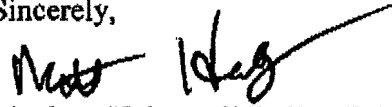
I have included in this fax the results of the final wipes and surveys of our current facility and the most recent calibration tests performed on the counting equipment and survey equipment used for decommissioning the area.

All procedures done in the current area are done utilizing Technetium based products. The last scheduled patient was performed on October 21<sup>st</sup> 2011. Final wipes and surveys were performed 6 days following last scheduled patient.

As you may be aware, our community was devastated by an E-F5 Tornado on May 22, 2011. As a result of the destruction, which also destroyed our neighboring hospital, St. John's Regional Medical Center, our hospital and health system has experienced and continues to experience an increase in patient volume, in that we are the only heart care facility in our immediate community. We are currently in the process of needing to begin construction on our heart care clinic to meet the increased demand for cardiac care. As part of this construction, it is our plan to remodel our nuclear medicine lab area for patient care.

Therefore, anything that can be done to expedite the process of decommissioning the area would be greatly appreciated.

Sincerely,

  
Matthew Hulsey, CNMT, RT(R)

576319

Freeman Heart & Vascular Institute • 1102 W. 32nd St., Suite 300 • Joplin, Missouri 64804  
417-347-5000 • Toll Free: 1-888-66-HEART (1-888-664-3278) • Fax: 417-787-3088

1002 S. US Hwy 60, Building 17, Suite 202  
Duncan, Missouri 64555



310 2ND AVENUE SW, SUITE 103

620-421-5203 • Fax 620-421-5509

www.freemanhealth.com

918-542-7159 • Fax 918-542-6320

**Section B, Item 2.a.**

All radioactive content included on the inventory list provided in this fax will be transferred from the current license #24-32315-01 Freeman Heart Clinic, Joplin, MO. to Freeman Oak Hill Health System West, Joplin, MO. License # 24-17205-01 on October 27<sup>th</sup>, 2011.

License Recipient contact information:  
Lesa Deardorff (Director of Radiology)  
(417) 347-4934  
NRC License # 24-17205-01

NRC FORM 314

U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0028

EXPIRES: 10/31/2013

(12-2010)  
10 CFR 30.360(1); 40.420(1);  
70.380(1); and 72.540(5)(1)(1)

Estimated burden per response to comply with this mandatory collection request: 30 minutes. This submittal is used by NRC as part of the basis for its determination that the facility is released for unrestricted use. Send comments regarding burden estimate to the Information Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to [Infocollect.Resource@nrc.gov](mailto:Infocollect.Resource@nrc.gov), and to the Desk Officer, Office of Information and Regulatory Affairs, NE08-10202, (3150-0028), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

**CERTIFICATE OF DISPOSITION OF MATERIALS**

LICENSEE NAME AND ADDRESS

Freeman Heart Clinic  
1102 West 32nd Street  
Suite 300  
Joplin, MO. 64804

LICENSE NUMBER

24-32315-01

DOCKET NUMBER

030-35696

LICENSE EXPIRATION DATE

**A. LICENSE STATUS (Check the appropriate box)**

- This license has expired.  This license has not yet expired; please terminate it.

**B. DISPOSAL OF RADIOACTIVE MATERIAL**

(Check the appropriate boxes and complete as necessary. If additional space is needed, provide attachments)

The licensee, or any individual executing this certificate on behalf of the licensee, certifies that:

1. No radioactive materials have ever been procured or possessed by the licensee under this license.
2. All activities authorized by this license have ceased, and all radioactive materials procured and/or possessed by the licensee under this license number cited above have been disposed of in the following manner.
- a. Transfer of radioactive materials to the licensee listed below:  
Transferred to new license # 24-17205-01 on 10/27/2011.
- b. Disposal of radioactive materials:
1. Directly by the licensee:

2. By licensed disposal site:

3. By waste contractor:

c. All radioactive materials have been removed such that any remaining residual radioactivity is within the limits of 10 CFR Part 20, Subpart E, and is ALARA.

**C. SURVEYS PERFORMED AND REPORTED**

1. A radiation survey was conducted by the licensee. The survey confirms:
- a. the absence of licensed radioactive materials
- b. that any remaining residual radioactivity is within the limits of 10 CFR 20, Subpart E, and is ALARA.
2. A copy of the radiation survey results:
- a. is attached; or  b. is not attached (Provide explanation); or  c. was forwarded to NRC on: \_\_\_\_\_ Date \_\_\_\_\_
3. A radiation survey is not required as only sealed sources were ever possessed under this license, and
- a. The results of the latest leak test are attached; and/or  b. No leaking sources have ever been identified.

The person to be contacted regarding the information provided on this form:

NAME	TITLE	TELEPHONE (include Area Code)	E-MAIL ADDRESS
Denise Oplotnik	Office Coordinator	(417) 347-6453	dloplotnik@freemanhealth.com

Mail all future correspondence regarding this license to:  
Denise Oplotnik, Freeman Heart Institute, 1102 West 32nd Street, Suite 300, Joplin MO. 64804

**C. CERTIFYING OFFICIAL**  
I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT

PRINTED NAME AND TITLE	SIGNATURE	DATE
Matt Hulsey CNMT,RT(R).		10/27/2011

**WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS REQUIRE THAT SUBMISSIONS TO THE NRC BE COMPLETE AND ACCURATE IN ALL MATERIAL RESPECT AS U.S.C. SECTION 1001 IS PENALIZED AS A CRIMINAL OFFENSE IF THERE IS A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER RELATIVE TO INFORMATION.**

**RADIOLOGICAL SOLUTIONS**

PO BOX 450338  
 Grove, OK 74345  
 (918) 688-8001

**Nuclear Medicine Sealed Source Inventory**

Institution: **Freeman Heart Clinic**

NRC License No.: **24-32315-01**

Reviewer: **K. Arcide, M.S.**

Date: **27-May-11**

Leak tests performed?

**YES**

Leak tests are due: **Nov-11**

Source Mfr.	Model Number	Serial Number	Radio-nuclide	µCi at calib.	Date of calibration	Present µCi	Leak test req'd?	Storage location
NAS	MED3550	54206	Cs-137	209.3	1-Nov-04	180.0	YES	Hot lab cave
E & Z	CTRF10018	1434-069	Co-57	15000	1-May-10	5521	YES	Hot lab floor
CH		1445-3-3	Co-57	5308	1-Aug-10	2471.7	YES	Hot lab cave
IPL	RV137200U	747-33-78	Cs-137	196.6	1-Jun-01	156.3	NO	Hot lab cave Not in use (sealed)
IPL	RV133250U	747-39-6	Ba-133	254.7	1-May-01	131.0	YES	Hot lab cave Not in use
IPL	RV-057-5M	747-21-121	Co-57	5598	1-May-01	0.5	NO	Hot lab cave Not in use
Spectrum Techniques	rod	172	Cs-137	0.084	15-Nov-00	0.066	NO	Hot lab cave
Spectrum Techniques	Disk	2783	Cs-137	1.0	15-Oct-04	0.859	NO	Ludlum meter
IPL	GF-0008	1034-63-37	Cs-137	0.500	1-Dec-04	0.431	NO	Hot lab cave

\*Bold items are new to the inventory.

Verified by: Kari S. Arcide  
 Kari S. Arcide, MS

RSO: David S. Jenkins, MS

### RADIOLOGICAL SOLUTIONS

PO BOX 450338  
 Grove, OK 74345  
 (918) 688-8001

## Counting Equipment Calibration

Institution: Freeman Heart Clinic

Reviewer: K. Arcide

Date: 22-Aug-11

### Well and Probe Chi-Square Tests

WELL COUNTER			UPTAKE PROBE		
	Counts	(Cts-mean) <sup>2</sup>		Counts	(Cts-mean) <sup>2</sup>
1)	16770	2809	1)		
2)	16490	51529	2)		
3)	16770	2809	3)		
4)	16520	38809	4)		
5)	16720	9	5)		
6)	17000	80089	6)		
7)	16470	61009	7)		
8)	16720	9	8)		
9)	16880	26569	9)		
10)	16830	12769	10)		
Mean:	16717		Mean:		
Chi-Square =	16.5		Chi-Square =		
Acceptable range (90% confidence):	3.3-16.9		Acceptable range (90% confidence):	3.3-16.9	
Chi-Square value acceptable?	YES		Chi-Square value acceptable?		

### Energy Resolution Test

WELL COUNTER				UPTAKE PROBE	
Cs-137 Test:	OK 2.0%	Gain:	1411	Full width at half maximum:	
Energy Dev.:	0.50%				

### Efficiency of System Used to Count Wipes:

Source Nuclide	Calibration Date	Initial Activity	Present Activity	Date of Count	Window net cpm	Bkgd. cpm	Percent Efficiency
Tc-99m (Co-57)	6/1/2010	0.0953	0.0305	22-Aug-11	56920	0	85.6%
I-131 (Ba-133)	7/1/1996	0.1007	0.0370	22-Aug-11	27520	0	33.9%
Cs-137	9/1/1996	0.1045	0.0741	22-Aug-11	16717	0	11.4%
Source Nuclide	Calibration Date	Initial Activity	Present Activity	Date of Count	Open window (wipe) cpm	Bkgd. cpm	Percent Efficiency
Tc-99m (Co-57)	6/1/2010	0.0953	0.0305	22-Aug-11	65970	405	98.6%
I-131 (Ba-133)	7/1/1996	0.1007	0.0370	22-Aug-11	85110	405	100.0%
Cs-137	9/1/1996	0.1045	0.0741	22-Aug-11	54300	405	36.8%

Detection system: Capintec Caprac Sources used: as above

Window set: Co-57: Ch 2 Ba-133: Ch 3 & 4 Cs-137: Ch 4 & 5


Physicist: Kari S. Arcide  
 Kari S. Arcide, MS

# Certificate of Instrument Calibration

Facility: Freeman Heart ID #: 182  
 Manufacturer: Ludlum Serial No. 213009  
 Detector Type: GM Model: 14c  
 Temperature: 71.6 °F Detector Model: Pancake  
 Battery Check: OK Humidity: 31%  
 Calibration Geometry: Perpendicular Pressure: 29.88 inHg  
Dedicated Check Source: 1.3 mR/hr  
Calibration Window: Open

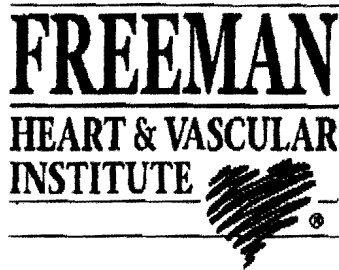
Scale Multiplier	Distance (cm)	Calculated Reading	Measured mR/hr	Correction Factor
X 1000	38.8	1500	1500	1.00
X 1000	67.2	500	550	0.91
X 100	122.7	150	150	1.00
X 100	212.5	50	50	1.00
X 10	271.6	15	15	1.00
X 10	317.8	5.0	5.2	0.96
X 1	121.5	1.5	1.5	1.00
X 1	210.4	0.5	0.5	1.00
X 0.1	117.4	0.15	0.15	1.00
X 0.1	203.4	0.05	0.05	1.00

Mid-America Calibrations, Inc.  
 808 SW Nautica Court  
 Lee's Summit, Missouri 64082  
 816.537.4147

Calibrated By: 

Date Calibrated: March 8, 2011  
 Date Due: March 8, 2012  
 NRC License # 24-32531-01

The above instrument was calibrated with a 137Cs Standard Model 90 RA certificate 1001100010. The output is traceable to the NBS (N.I.S.T.) and all instruments are calibrated in accordance with MIL-STD-45662A and ANSI N433-1979.



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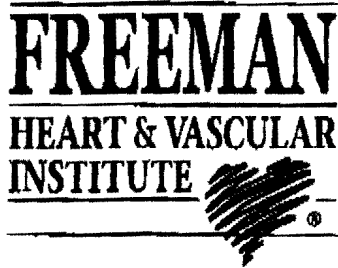
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**Freeman Heart Clinic  
Decommissioning wipes and surveys  
Date: 10/27/2011**

**Area Surveys  
Equipment Used: Ludlum Pancake Probe  
Meter model # 14C  
Probe model: PGM  
Meter Serial # 213009  
Probe Serial # 222811**

<b>Background:</b>	<b>.03 mR/hr</b>
1. South imaging area floor	.03 mR/hr
2. West imaging area floor	.03 mR/hr
3. South Stress area floor	.03 mR/hr
4. West Stress area floor	.03 mR/hr
5. West wall area floor	.03 mR/hr
6. Entry door handle	.03 mR/hr
7. Hot lab door handle	.03 mR/hr
8. Hot lab sink and counter	.03 mR/hr
9. Camera A	.03 mR/hr
10. Camera B	.03 mR/hr
11. South imaging area wall	.03 mR/hr
12. East imaging area wall	.03 mR/hr
13. East Stress area wall	.03 mR/hr
14. Stress area sink	.03 mR/hr
15. Hot Lab floor	.03 mR/hr





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**Freeman Heart Clinic  
Decommissioning wipes and surveys  
Date: 10/27/2011**

**Wipes**

**Equipment used: Capintec Caprac Well Counter  
Serial # 171217  
Model # CRC 15W**

- Background: 273 cpm
- Wipe 288 cpm
- 1. South imaging area floor 15 dpm
- 2. West imaging area floor 15 dpm
- 3. South Stress area floor 15 dpm
- 4. West Stress area floor 15 dpm
- 5. West wall area floor 15 dpm
- 6. Entry door handle 15 dpm
- 7. Hot lab door handle 15 dpm
- 8. Hot lab sink and counter 15 dpm
- 9. Camera A 15 dpm
- 10. Camera B 15 dpm
- 11. South imaging area wall 15 dpm
- 12. East imaging area wall 15 dpm
- 13. East Stress area wall 15 dpm
- 14. Stress area sink 15 dpm
- 15. Hot Lab floor 15 dpm





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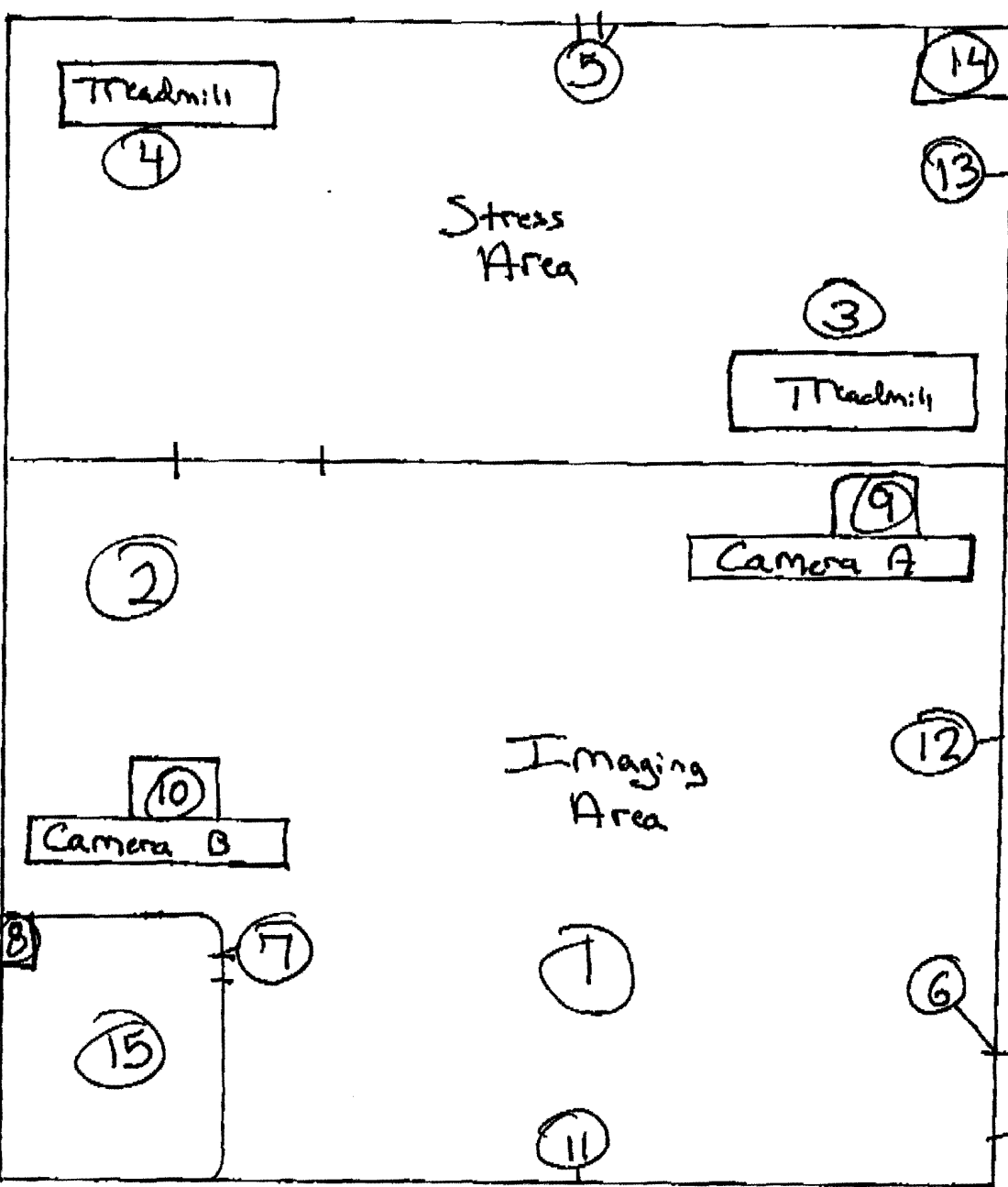


Diagram of Nuclear Lab.  
Guide for wipes & Surveys

