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DNMS



Cheyenne Regional  
Medical Center

214 EAST 23RD STREET  
CHEYENNE, WY 82001  
307-634-2273  
WWW.CRMWCWY.ORG

18 December 2012

Michelle Simmons, Health Physicist  
Nuclear Regulatory Commission, Region IV  
612 East Lamar Blvd., Suite 400  
Arlington, Texas 76011-4125

Subj: **AMENDMENT OF LICENSE NO. 49-01380-01**

Dear Ms Simmons;

I am writing this letter to request the following changes to our license:

- 1.) To **add Ernesto Cruz, MD** as an Authorized User. As evidence of qualifications, please find the attached copy of an agreement state license listing him as an Authorized User for Any form authorized in Group 200 of Exhibit A Arizona Administrative Code, Title 12, Article 7. And Thallium Chloride for diagnosis of heart disease.
- 2.) To **add Muhammad Asad A. Khan MD** as an Authorized User for part 35.200. As evidence of qualifications, please find the attached copy of his board certification as well as NRC Form 313A
- 3.) To **remove Geraldine Gardner DO** as an Authorized User.

If you have any questions I can be reached at 307.633.7838. Or you can e-mail me at [todd.christensen@crmcwy.org](mailto:todd.christensen@crmcwy.org)

Thank you.

Sincerely,

Todd A. Christensen MS DABR  
Radiation Safety Officer  
Cheyenne Regional Medical Center  
214 East 23<sup>rd</sup> Street  
Cheyenne WY 82001

PUBLIC

- ☐ Immediate Release  
☒ Normal Release

NON-PUBLIC

- ☐ A.3 Sensitive-Security Related  
☐ A.7 Sensitive Internal  
☐ Other: \_\_\_\_\_

Reviewer: JAC Date: 12/31/12

No. 5 7 9 6 4 7



## ARIZONA RADIATION REGULATORY AGENCY

## RADIOACTIVE MATERIAL LICENSE

Pursuant to Chapter 4, Title 30, Arizona Revised Statutes, and Title 12, Chapter 1 of the Arizona Administrative Code, and in reliance on statements and representations made to the Agency by the licensee, a license is hereby issued authorizing the acquisition, reception, possession, use and transfer of the radioactive material listed in this license for the purposes and at the places specified. This license is subject to all applicable rules and Agency orders now or hereafter in effect and to the conditions specified. In accordance with application dated July 27, 2012, signed by John Sutherland, License Number 07-182 is hereby amended in its entirety to read as follows: **ALL CHANGES ARE IN BOLD**

## LICENSEE

- |             |   |                       |                                     |
|-------------|---|-----------------------|-------------------------------------|
| 1. NAME:    | VHS Arizona Heart Institute Inc.<br>d/b/a Arizona Heart Institute | 3. a. LICENSE NUMBER: | 07 - 182                            |
|             |   | b. AMENDMENT NO.:     | 54                                  |
| 2. ADDRESS: | 2632 North 20th Street<br>Phoenix, Arizona 85006                  | 4. EXPIRATION DATE:   | March 31, 2016                      |
|             |   | 5. CATEGORY:          | B(3) - MEDICAL MATERIALS<br>CLASS B |

- |  |  |   |
|--|--|---|
| 6. Radioactive material<br>(element and mass number) | 7. Chemical or physical form   | 8. Maximum quantity licensee<br>may possess at any time |
| A. Technetium-99m                                    | A. Any form authorized in<br>Group 200 of Exhibit A,<br>Arizona Administrative<br>Code, Title 12, Article 7. | A. 37 GBq (1,000 millicuries)                           |
| B. Thallium-201                                      | B. Thallium Chloride   | B. 14.8 GBq (400 millicuries)                           |
9. Authorized Use:  
A. and B. For diagnosis of heart disease.

## CONDITIONS

10. Radioactive material may be possessed and used at the licensee's address stated in Item 2 above.
11. The licensee shall comply with the provisions of Title 12, Chapter 1, Arizona Administrative Code; Article 3, "Radioactive Material Licensing"; Article 4, "Standards for Protection Against Ionizing Radiation"; Article 7, "Medical Uses of Radioactive Material"; and Article 10, "Notices, Instructions and Reports to Ionizing Radiation Workers; Inspections".

POST IN ACCORDANCE WITH R12-1-1002

No. 579647



RADIOACTIVE MATERIAL LICENSE  
SUPPLEMENTARY SHEETLicense Number: 07-182  
Amendment Number: 54

12. A. Radioactive material shall be used by, or under the supervision of:
- Ernesto Cruz, M.D.                      Neil Goldberg, M.D.                      Ayman Jamal, M.D.  
Shani Saks, D.O.                      John Sutherland, M.D.
- B. The Radiation Safety Officer for this license is: John Sutherland, M.D.
- C. The Alternate Radiation Safety Officer is: Ernesto Cruz, M.D., Neil Goldberg, M.D., or Shani Saks, D.O. The Alternate Radiation Safety Officer shall administer the Radiation Safety Program under the policy and procedure guidance of the Radiation Safety Officer
13. Technical personnel using radioactive material under the supervision of the authorized user on this license shall be a nuclear medicine technologist registered with the Medical Radiologic Technology Board of Examiners.
14. For purposes of ending the principal activities authorized under this radioactive material license:
- A. The license stays in effect beyond the license expiration date. Beyond the expiration date the licensee shall store radioactive material only, until the Agency authorizes its use by license amendment, or the Agency notifies the licensee in writing that the license is terminated.
- B. The licensee shall ensure the timeliness of decommissioning of facilities where principal activities are conducted under this license in accordance with Agency requirements.
- C. The licensee shall continue to control public access into restricted areas and pay the annual licensing fee until the license is terminated.
15. A. A licensee shall not administer to a person; radioactive material in an unsealed form that has not had its radioactivity determined.
- B. For unit dosages, the licensee shall make the determination by:
1. Direct measurement of the radioactivity in a dose calibrator; or
  2. Decay correction, based on the radioactivity or radioactivity concentration determined by a properly licensed:
    - a. Manufacturer, or
    - b. Nuclear pharmacy.
  3. A licensee shall make decay corrections by correcting a dosage for decay if it is apparent that, if administered, the dosage will vary from the prescribed dosage by plus or minus 10%, or the licensee shall use a decay range that has been determined by an authorized user on the licensee's license.
- C. For other than unit dosages, the licensee shall make the determination by:
1. Direct measurement of the radioactivity in a dose calibrator;
  2. A combination of Part 1 and applicable mathematical calculation; or
  3. A combination of volumetric measurement and applicable mathematical calculation, based on a radioactivity measurement determined by the supplier.

POST IN ACCORDANCE WITH R12-1-1002

579647

RADIOACTIVE MATERIAL LICENSE  
SUPPLEMENTARY SHEETLicense Number: 07-182  
Amendment Number: 54

## D. A licensee shall:

1. Check each dose calibrator for constancy with a dedicated check source at the beginning of each day of use;
2. Test each dose calibrator for accuracy upon installation and at least annually thereafter by assaying at least two sealed sources containing different radionuclides whose activity the manufacturer has determined within 5 percent of its stated activity, whose activity is at least 10 microcuries for radium-226 and 50 microcuries for any other photon-emitting radionuclide, and at least one of which has a principal photon energy between 100 keV and 500 keV;
3. Test each dose calibrator for linearity upon installation and at least quarterly thereafter over a range from the highest dosage that will be administered to a patient or human research subject to 1.1 megabecquerels (30 microcuries);
4. Test each dose calibrator for geometry dependence upon installation over the range of volumes and volume configurations for which it will be used. The licensee shall keep a record of this test for the duration of the use of the dose calibrator.
5. Perform appropriate checks and tests required by this section following adjustment or repair of the dose calibrator; and
6. Mathematically correct dosage readings for any geometry or linearity error that exceeds 10 percent if the dosage is greater than 10 microcuries and shall repair or replace the dose calibrator if the accuracy or constancy error exceeds 10 percent.

## E. A licensee using a dose calibrator to "verify" a dose prepared by a supplier listed in Part B shall maintain the dose calibrator according to Part D.

16. Except as specifically provided otherwise by this license, the licensee shall possess and use the radioactive material described in Items 6, 7 and 8 of this license in accordance with the statements, representations and procedures contained in:

1. Application dated February 15, 2011, signed by Brad Garber.

The most recent statements, representations, and procedures shall govern if they conflict with previously submitted documents, unless otherwise specified by a license condition; and the Agency's rules shall govern the licensee's statements in applications or letters.

  
AUBREY V. GODWIN, DIRECTOR

PRK:AVG:mpw

DATE ISSUED AUG 14 2012

POST IN ACCORDANCE WITH R12-1-1002



NRC FORM 313A (AUD)  
(10-2007)

U.S. NUCLEAR REGULATORY COMMISSION

**AUTHORIZED USER TRAINING AND EXPERIENCE  
AND PRECEPTOR ATTESTATION**  
(for uses defined under 35.100, 35.200, and 35.500)  
[10 CFR 35.190, 35.290, and 35.590]

APPROVED BY OMB: NO. 3150-0120  
EXPIRES: 10/31/2008

Name of Proposed Authorized User

MUHAMMAD ASAD A KHAN, MD.

State or Territory Where Licensed

WYOMING.

Requested Authorization(s) (check all that apply)

☐ 35.100 Uptake, dilution, and excretion studies☒ 35.200 Imaging and localization studies☐ 35.500 Sealed sources for diagnosis (specify device \_\_\_\_\_)

**PART I -- TRAINING AND EXPERIENCE**  
(Select one of the three methods below)

\* Training and Experience, including board certification, must have been obtained within the 7 years preceding the date of application or the individual must have obtained related continuing education and experience since the required training and experience was completed. Provide dates, duration, and description of continuing education and experience related to the uses checked above.

☒ **1. Board Certification**

a. Provide a copy of the board certification.

b. If using only 35.500 materials, stop here. If using 35.100 and 35.200 materials, skip to and complete Part II Preceptor Attestation.

☐ **2. Current 35.390 Authorized User Seeking Additional 35.290 Authorization**

a. Authorized user on Materials License \_\_\_\_\_ meeting 10 CFR 35.390 or equivalent Agreement State requirements seeking authorization for 35.290.

b. Supervised Work Experience.

(If more than one supervising individual is necessary to document supervised work experience, provide multiple copies of this section.)

Description of Experience	Location of Experience/License or Permit Number of Facility	Clock Hours	Dates of Experience*
Eluting generator systems appropriate for the preparation of radioactive drugs for imaging and localization studies, measuring and testing the eluate for radionuclidic purity, and processing the eluate with reagent kits to prepare labeled radioactive drugs			

**Total Hours of Experience:**

Supervising Individual

License/Permit Number listing supervising individual as an authorized user

Supervisor meets the requirements below, or equivalent Agreement State requirements (check all that apply).

☐ 35.290☐ 35.390 + generator experience in 32.290(c)(1)(ii)(G)

**AUTHORIZED USER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)**☐ **3. Training and Experience for Proposed Authorized User****a. Classroom and Laboratory Training.**

Description of Training	Location of Training	Clock Hours	Dates of Training*
Radiation physics and instrumentation			
Radiation protection			
Mathematics pertaining to the use and measurement of radioactivity			
Chemistry of byproduct material for medical use (not required for 35.590)			
Radiation biology			
<b>Total Hours of Training:</b>			

**b. Supervised Work Experience** (completion of this table is not required for 35.590).  
*(If more than one supervising individual is necessary to document supervised work experience, provide multiple copies of this section.)*

Supervised Work Experience		Total Hours of Experience:	
Description of Experience Must Include:	Location of Experience/License or Permit Number of Facility	Confirm	Dates of Experience*
Ordering, receiving, and unpacking radioactive materials safely and performing the related radiation surveys		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Performing quality control procedures on instruments used to determine the activity of dosages and performing checks for proper operation of survey meters		<input type="checkbox"/> Yes <input type="checkbox"/> No	



## AUTHORIZED USER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)

## 3. Training and Experience for Proposed Authorized User (continued)

## b. Supervised Work Experience. (continued)

Description of Experience Must Include:	Location of Experience/License or Permit Number of Facility	Confirm	Dates of Experience*
Calculating, measuring, and safely preparing patient or human research subject dosages		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Using administrative controls to prevent a medical event involving the use of unsealed byproduct material		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Using procedures to contain spilled byproduct material safely and using proper decontamination procedures		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Administering dosages of radioactive drugs to patients or human research subjects		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Eluting generator systems appropriate for the preparation of radioactive drugs for imaging and localization studies, measuring and testing the eluate for radionuclidic purity, and processing the eluate with reagent kits to prepare labeled radioactive drugs		<input type="checkbox"/> Yes <input type="checkbox"/> No	

Supervising Individual

License/Permit Number listing supervising individual as an authorized user

Supervisor meets the requirements below, or equivalent Agreement State requirements (check one).

☐ 35.190☐ 35.290☐ 35.390☐ 35.390 + generator experience in 35.290(c)(1)(ii)(G)

## c. For 35.590 only, provide documentation of training on use of the device.

Device	Type of Training	Location and Dates

## d. For 35.500 uses only, stop here. For 35.100 and 35.200 uses, skip to and complete Part II Preceptor Attestation.

NRC FORM 313A (AUD)  
(10-2007)

U.S. NUCLEAR REGULATORY COMMISSION

**AUTHORIZED USER TRAINING AND EXPERIENCE AND PRECEPTOR ATTESTATION (continued)****PART II - PRECEPTOR ATTESTATION**

**Note:** This part must be completed by the individual's preceptor. The preceptor does not have to be the supervising individual as long as the preceptor provides, directs, or verifies training and experience required. If more than one preceptor is necessary to document experience, obtain a separate preceptor statement from each. (Not required to meet training requirements in 35.590)

By checking the boxes below, the preceptor is attesting that the individual has knowledge to fulfill the duties of the position sought and not attesting to the individual's "general clinical competency."

**First Section**

**Check one of the following for each use requested:**

For 35.190

Board Certification

☐ I attest that \_\_\_\_\_ has satisfactorily completed the requirements in  
Name of Proposed Authorized User

10 CFR 35.190(a)(1) and has achieved a level of competency sufficient to function independently as an authorized user for the medical uses authorized under 10 CFR 35.100.

**OR**

Training and Experience

☐ I attest that \_\_\_\_\_ has satisfactorily completed the 60 hours of training and  
Name of Proposed Authorized User

experience, including a minimum of 8 hours of classroom and laboratory training, required by 10 CFR 35.190(c)(1), and has achieved a level of competency sufficient to function independently as an authorized user for the medical uses authorized under 10 CFR 35.100.

For 35.290

Board Certification

☒ I attest that Muhammed Asad Khan has satisfactorily completed the requirements in  
Name of Proposed Authorized User

10 CFR 35.290(a)(1) and has achieved a level of competency sufficient to function independently as an authorized user for the medical uses authorized under 10 CFR 35.100 and 35.200.

**OR**

Training and Experience

☐ I attest that \_\_\_\_\_ has satisfactorily completed the 700 hours of training  
Name of Proposed Authorized User

and experience, including a minimum of 80 hours of classroom and laboratory training, required by 10 CFR 35.290(c)(1), and has achieved a level of competency sufficient to function independently as an authorized user for the medical uses authorized under 10 CFR 35.100 and 35.200.

**Second Section**

**Complete the following for preceptor attestation and signature:**

☒ I meet the requirements below, or equivalent Agreement State requirements, as an authorized user for:

☐ 35.190    ☒ 35.290    ☐ 35.390    ☐ 35.390 + generator experience

Name of Preceptor <u>M. OBADHA ALCHERAKTE</u>	Signature <u>[Signature]</u>	Telephone Number <u>307 286 6193</u>	Date <u>12/5/12</u>
License/Permit Number/Facility Name <u>CRMC</u>		<u>579647</u>	



# Certification Board of Nuclear Cardiology

Incorporated 1996

Certifies that

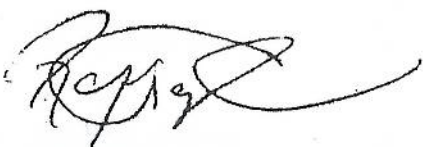
## Muhammad Asad Amir Khan, MD

HAVING MET THE REQUIREMENTS PRESCRIBED BY THIS BOARD  
FOR PHYSICIANS TRAINED IN THE UNITED STATES  
AND HAVING SATISFACTORILY PASSED THE REQUIRED EXAMINATION,  
IS HEREBY DESIGNATED

A DIPLOMATE CERTIFIED IN THE SUBSPECIALTY OF

### NUCLEAR CARDIOLOGY

FOR THE PERIOD 2007 - 2017



President



CERTIFICATE NUMBER: 5406

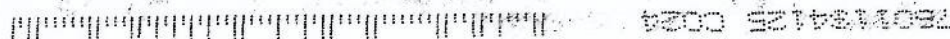


Secretary

579647



Cheyenne Regional  
Medical Center  
214 East 23rd Street  
Cheyenne, WY 82001

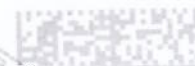


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Michelle Simmons, Health Physicist  
Nuclear Regulatory Commission, Region IV  
612 East Lamar Blvd., Suite 400  
Arlington, Texas 76011-4125

579647





DATE

01/02/2013

NAME AND ADDRESS OF APPLICANT AND/OR LICENSEE

Memorial Hospital of Laramie County  
dba Cheyenne Regional Medical Center  
Department of Radiology  
ATTN: Todd A. Christensen, MS DABR, RSO  
214 East 23rd Street  
Cheyenne, Wyoming 82001

LICENSE NUMBER

49-01380-01

MAIL CONTROL NUMBER

579647

LICENSING AND/OR TECHNICAL REVIEWER

ch

This is to acknowledge the receipt of your:



LETTER and/or



APPLICATION

DATED: 12/18/2012

The initial processing, which included an administrative review, has been performed.



AMENDMENT



TERMINATION



NEW LICENSE



RENEWAL



There were no administrative omissions identified during our initial review.



This is to acknowledge receipt of your application for renewal of the material(s) license identified above. Your application is deemed timely filed, and accordingly, the license will not expire until final action has been taken by this office.



Your application for a new NRC license did not include your taxpayer identification number. Please fill out NRC Form 531, located at the following link:

<http://www.nrc.gov/reading-rm/doc-collections/forms/nrc531.pdf>

Send the completed NRC Form 531, by facsimile, to the following number: (301) 415-5387

A copy of your action has been emailed to our License Fee and Accounts Receivable Branch, in our Headquarters office in Rockville, MD. You will be contacted separately if there is a fee issue involved.

Your application has been assigned the above listed **MAIL CONTROL NUMBER**. When calling to inquire about this action, please refer to this control number. Your application has been forwarded to a technical reviewer. Please note that the technical review, which is normally completed within 180 days for a renewal application (90 days for all other requests), may identify additional omissions or require additional information. If you have any questions concerning the processing of your application, our contact information is listed below:

Region IV  
U. S. Nuclear Regulatory Commission  
DNMS/NMSB - B  
1600 E. Lamar Boulevard  
Arlington, TX 76011-4511  
(817) 200-1103 or (817) 200-1140

✓1/2/13

BETWEEN:

Accounts Receivable/Payable  
and  
Regional Licensing Branches

[ FOR ARPB USE ]  
INFORMATION FROM WBL

Program Code: 02230  
Status Code: Pending Amendment  
Fee Category: 7C  
Exp. Date:  
Fee Comments: CODE 13  
Decom Fin Assur Req: N

## License Fee Worksheet - License Fee Transmittal

### A. REGION

#### 1. APPLICATION ATTACHED

Applicant/Licensee: MEMORIAL HOSPITAL OF LARAMIE CTY.  
Received Date: 12/28/2012  
Docket Number: 3003496  
Mail Control Number: 579647  
License Number: 49-01380-01  
Action Type: Amendment

#### 2. FEE ATTACHED

Amount: \_\_\_\_\_

Check No.: \_\_\_\_\_

#### 3. COMMENTS

Signed: \_\_\_\_\_

Date: \_\_\_\_\_

### B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered / / )

1. Fee Category and Amount: \_\_\_\_\_

#### 2. Correct Fee Paid. Application may be processed for:

Amendment: \_\_\_\_\_

Renewal: \_\_\_\_\_

License: \_\_\_\_\_

#### 3. OTHER \_\_\_\_\_

Signed: \_\_\_\_\_

Date: \_\_\_\_\_