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**CERTIFICATE OF DISPOSITION OF MATERIALS**

LICENSEE NAME AND ADDRESS

Hawaii Medical Center  
2230 Liliha Street  
Honolulu, HI 96817

LICENSE NUMBER

53-11966-01

DOCKET NUMBER

030-03557

LICENSE EXPIRATION DATE

October 31, 2015

**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:

List of radioactive material transfers is attached.

- b. Disposal of radioactive materials:

1. Directly by the licensee:

Decay in storage

2. By licensed disposal site:

3. By waste contractor:

Drum containing Sm-153 waste and sealed sources shipped to Environmental Management and Controls, Inc., 3106 S. Faith Home Road, Turlock CA 95380 Contact Gaye Nelson 209-667-1102

- 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.

RECEIVED  
MAR 20 2012  
DNMS

**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: 2/15/2012  
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
Ronald Frick	Radiation Safety Officer	808-282-0169	rfrick@gammacorp.com

Mail all future correspondence regarding this license to:  
P.O. Box 30100, Honolulu, HI 96820

**C. CERTIFYING OFFICIAL**

I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT

PRINTED NAME AND TITLE	SIGNATURE	DATE
Maria L. Kostylo, Chief Executive Officer	<i>Maria L. Kostylo</i>	3/20/12

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. 18 U.S.C. SECTION 1001 MAKES IT A CRIMINAL OFFENSE TO MAKE A WILLFULLY FALSE STATEMENT OR REPRESENTATION TO ANY DEPARTMENT OR AGENCY OF THE UNITED STATES AS TO ANY MATTER WITHIN ITS JURISDICTION.

## NRC Form 314 - Attachment

Hawaii Medical Center, License #53-59263-01

Section B, Item 2.a: Transfer of radioactive materials to the licensees listed below:

January 25, 2012: Two Cs-137 E-vial sources and three Co-57 flood sources were shipped to Eckert & Ziegler Isotope Products.

January 27, 2012: One Co-57 flood source was transferred to Straub Clinic & Hospital, NRC License #53-18126-01, Leighton Yin 808-522-4501

January 27, 2012: One Cs-137 E-vial source and one Cs-137 rod source transferred to Gamma Corporation, NRC License #53-23207-01, Ronald Frick 808-282-0169



## Decommissioning Survey (Supplemental)

**Facility:** Hawaii Medical Center

**Addresses:** 2230 Liliha Street  
Honolulu, HI 96817

**Survey Area:** Hot lab storage cabinet

**Survey dates:** 3/19/12

**Report date:** 3/19/12

**Performed By:** Ronald Frick, M.S., CHP, DABR

### Background

#### 2230 Liliha Street

At the time of the final status survey, which was completed on February 3, 2012, two Tl-201 sharps containers remained with detectable radiation levels. As of March 19, 2012, both of these containers have decayed to background radiation level, and have been disposed. All radioactive materials have now been removed from this facility.

A survey was performed of the area where these containers were stored.

### Survey Guidelines

The dose rate survey trigger level and surface contamination level was set at the level distinguishable from background.

The removable contamination trigger level was set at 171 dpm/100 cm<sup>2</sup>, which is the minimum detectable activity for the instrument used.

### Instrumentation

Dose rate measurements were performed using a Bicon Microrem survey meter. This meter contains a tissue-equivalent organic scintillator which can measure environmental levels of 0-20 µrem/hr. Background for this meter is approximately 4 µrem/hr. This meter was last calibrated on December 13, 2011 (certificate previously submitted).

Scan surveys were performed using a Bicon Analyst survey meter with Thermo HP308 100 cm<sup>2</sup> beta scintillation probe. This meter was last calibrated on June 15, 2011 (certificate previously submitted).

Wipe samples were analyzed using a Capintec Caprac NaI well counter. Efficiency and Minimum Detectable Activity determinations are attached.

#### **Survey Description**

The shelves of the storage cabinet were surveyed using the Bicon Microrem survey meter. The meter was held approximately 2 inches away from the surface.

The shelves of the storage cabinet were surveyed using the Bicon Analyst survey meter with Thermo HP308 100 cm<sup>2</sup> beta scintillation probe.

Wipe samples were taken in the numbered locations indicated on the attached survey diagram. All wipes were performed using dry filter paper over at least 100 cm<sup>2</sup>, and counted in the well counter.

#### **Survey Results**

Surveys with the Microrem meter revealed no areas with dose rates exceeding background level of 4  $\mu$ rem/hr.

Surveys with the Bicon Analyst survey meter with Thermo HP308 100 cm<sup>2</sup> beta scintillation probe revealed no areas of contamination exceeding the minimum detectable activity.

All wipe samples were below the minimum detectable activity. Tabulated wipe results are attached.

#### **Conclusion**

No detectable contamination remains within the facility. It is recommended that this facility be released for unrestricted use.

### Efficiency/MDA Determinations

#### Well counter

Note: Sample detection efficiency for all wipe samples is conservatively based on efficiency for I-131.

Detection efficiency for I-131 gammas was determined using a Ba-133 standard. Minimum detectable activity for a 20 second (0.33 minute) count was determined using the following equation:

$$MDA(dpm) = \frac{2.71 + 3.29 \sqrt{R_B t_S \left[1 + \frac{t_S}{t_B}\right]}}{\epsilon \times t_S}$$

$T_B = 1$  minute

$T_S = 0.33$  minute

Ba-133 Standard current activity (1/24/12)= 37954 dpm

Measured net cpm = 33,080 cpm

Detection efficiency = 87.2%

Background count rate( $R_B$ ) = 453 cpm

Wipe area = 100 cm<sup>2</sup>

MDA = 171 dpm/100cm<sup>2</sup>

#### Bicron Analyst/Thermo HP308 100 cm<sup>2</sup> beta scintillation probe

Measured efficiency for Sr-90: 43%

Background count rate: 300 cpm = 5 cps

Based on the information in MARSSIM, the minimum detectable count rate for scanning surveys is determined by the following equation (assuming a scan rate of one probe width per second):

$$Scan \ MDCR = \frac{d' \sqrt{5cps} \times 60}{\sqrt{p}}$$

$d' = 1.38$ , based on a requirement of 95% correct detections, and an acceptable rate of false positives equal to 60%.

$p$  is assumed to be 0.5

Scan MDCR = 262 cpm

For a detection efficiency of 43%, and a probe area of 100 cm<sup>2</sup>, the **minimum detectable concentration is 609 dpm per 100 cm<sup>2</sup>.**

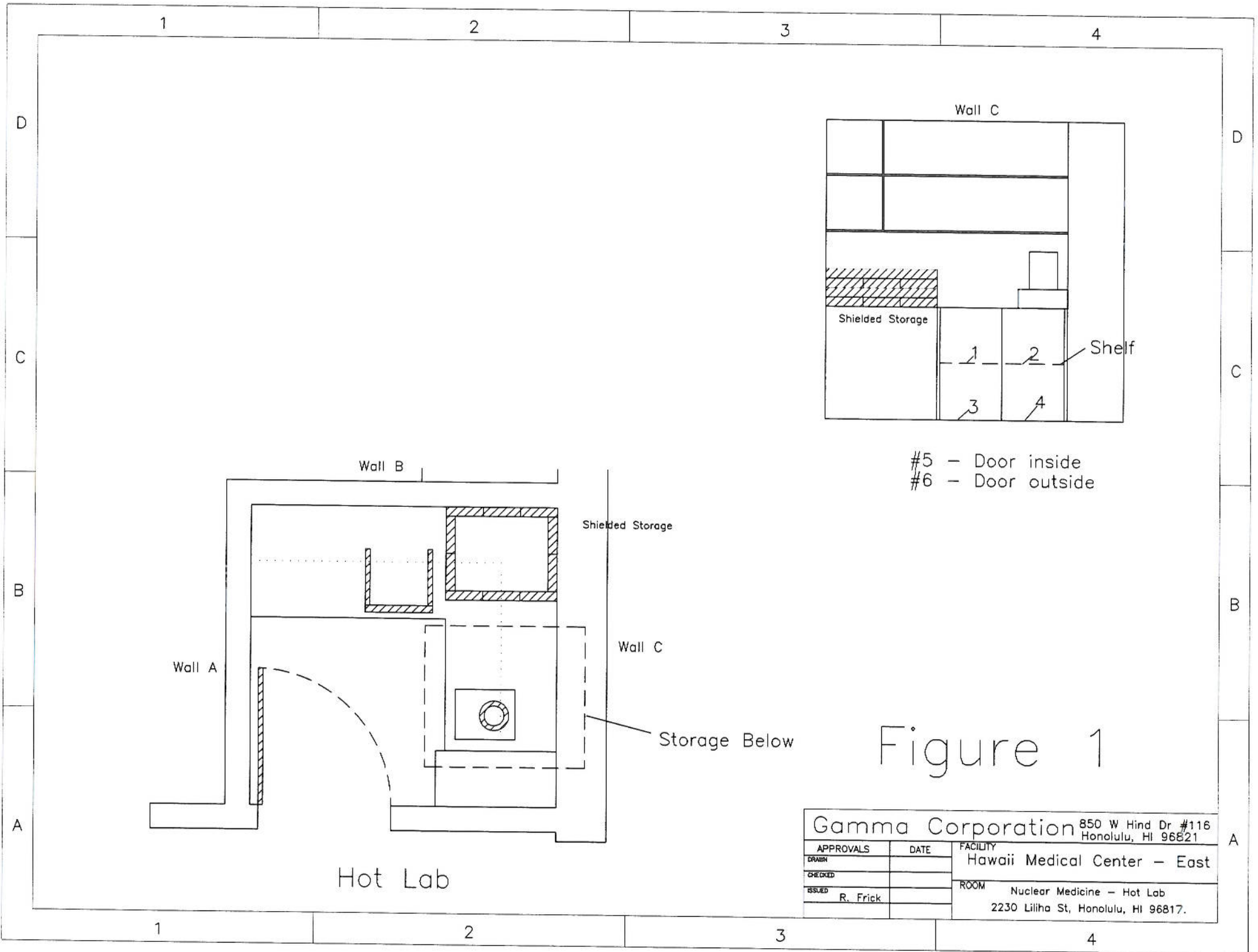
**Table 1: Wipe Test Data (locations from Figure 1)**

Background=453 cpm

MDA=171 net dpm/100 cm<sup>2</sup>

Wipe Number	Net cpm/100 cm <sup>2</sup>	Net dpm/100 cm <sup>2</sup>
1	-6	0
2	3	3
3	-42	0
4	-24	0
5	33	38
6	-15	0

W 577175



#5 - Door inside  
 #6 - Door outside

Figure 1

APPROVALS		DATE	FACILITY
DRAWN			Hawaii Medical Center - East
CHECKED			ROOM
ISSUED		R. Frick	Nuclear Medicine - Hot Lab
			2230 Liliha St, Honolulu, HI 96817.

A

# Hill, Carol

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**From:** Cook, Jackie  
**Sent:** Wednesday, March 21, 2012 1:05 PM  
**To:** Murnahan, Colleen; Hill, Carol  
**Subject:** FW: FW: Hawaii Medical Center agreement/decommissioning  
**Attachments:** NRC314.pdf; DECOM\_hmc\_sup.pdf

Ladies:

Please set up the attached termination request.

Thanks,

Jackie

-----Original Message-----

**From:** Ronald Frick [<mailto:rfrick@gammacorp.com>]  
**Sent:** Wednesday, March 21, 2012 12:46 PM  
**To:** Cook, Jackie  
**Cc:** Maria Kostylo; Whitten, Jack  
**Subject:** RE: FW: Hawaii Medical Center agreement/decommissioning

Jackie,  
Attached is the completed form 314, and the supplemental survey of the waste storage cabinet. Please proceed with terminating the license.  
Please contact me if you need additional information.  
Thank you,  
Ron Frick

>>> Ronald Frick 3/20/2012 9:57 AM >>>

Jackie,  
I just disposed of the last container yesterday. It took a bit longer to decay than I expected. I am working on completing form 314 and should be sending it to you soon.  
Ron

>>> "Cook, Jackie" <[Jackie.Cook@nrc.gov](mailto:Jackie.Cook@nrc.gov)> 3/20/2012 9:02 AM >>>  
Ron:

Please note that I am not trying to rush you at all but I'm just checking the status of you submitting a final status survey of where the waste containers were stored along with NRC Form 314. When do you think you will submit this information for Hawaii Medical Center?

Thanking you in advanced for your understanding and assistance in this matter,

Jackie

-----Original Message-----



From: Ronald Frick [mailto:rfrick@gammacorp.com]  
Sent: Wednesday, February 15, 2012 9:50 PM  
To: Cook, Jackie  
Cc: Maria Kostylo; Whitten, Jack  
Subject: Re: FW: Hawaii Medical Center agreement/decommissioning

Jackie,

I have attached the decommissioning survey for Hawaii Medical Center. The two containers of waste still remain within the hot lab. Once they have decayed to background and are disposed, I plan to submit a brief survey of the cabinet of where they are being stored, along with NRC Form 314.

Please let me know if you need any additional information.

Thank you,

Ron Frick

Gamma Corporation

>>> "Cook, Jackie" <Jackie.Cook@nrc.gov> 2/10/2012 9:39 AM >>>

Ron:

Thank you for keeping us apprised of the decommissioning activities at Hawaii Medical Center and submitting a copy of the agreement.

Please feel free to submit before (the last 2 containers are decayed) and after (the last 2 containers are decayed) surveys.

Please keep us aware and submit the necessary NRC Form 314 when the licensee is ready to terminate their license.

Warmest Regards,

Jacqueline "Jackie" D. Cook

Senior Health Physicist

Division of Nuclear Materials Safety

Nuclear Materials Safety Branch B

1600 E. Lamar Blvd., Arlington, TX 76011

817-200-1132 (office)/817-200-1263 (fax) e-mail address: [Jackie.Cook@nrc.gov](mailto:Jackie.Cook@nrc.gov)



DATE  
03/21/2012

NAME AND ADDRESS OF APPLICANT AND/OR LICENSEE

Hawaii Medical Center  
ATTN: Ronald W. Frick, M.S.  
Radiation Safety Officer  
2230 Liliha Street  
Honolulu, Hawaii 96817

LICENSE NUMBER

53-11966-01

MAIL CONTROL NUMBER

577175

LICENSING AND/OR TECHNICAL REVIEWER

ch

This is to acknowledge the receipt of your:

LETTER and/or  APPLICATION      DATED: 03/20/2012

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

*emailed 3/21/12*

BETWEEN:

Accounts Receivable/Payable  
and  
Regional Licensing Branches

[ FOR ARPB USE ]  
INFORMATION FROM LTS

Program Code: 02120  
Status Code: Pending Termination  
Fee Category: 7C  
Exp. Date:  
Fee Comments: CODE 21  
Decom Fin Assur Reqd: N

### License Fee Worksheet - License Fee Transmittal

#### A. REGION

##### 1. APPLICATION ATTACHED

Applicant/Licensee: HAWAII MEDICAL CENTER  
Received Date: 03/20/2012  
Docket Number: 3003557  
Mail Control Number: 577175  
License Number: 53-11966-01  
Action Type: Termination

##### 2. FEE ATTACHED

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

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

##### 3. COMMENTS

Signed: Carol L. Heie

Date: 3/21/12

#### 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: \_\_\_\_\_