

**Maui Memorial**  
**MEDICAL CENTER**

Hawaii Health Systems Corporation Maui Region

July 6, 2006

U.S. Nuclear Regulatory Commission, Region IV  
611 Ryan Plaza Drive, Suite 400  
Arlington, TX 76011-8064

Subject: License Amendment Request  
NRC License No. 53-13519-01  
Docket No. 030-03561

Dear License Reviewer:

We have transferred all licensed materials from our temporary waste storage area to the long-term storage area. We are requesting that the temporary waste storage area be released for unrestricted use. As described in the enclosed decommissioning survey report, surveys have shown that residual radioactivity is below ALARA levels.

Your prompt attention to this request would be greatly appreciated. Please contact our Radiation Safety Consultant, Ronald Frick, at 808-373-7009 if you require additional information.

Sincerely,

Wesley P. Lo  
Chief Executive Officer

Enclosures

RECEIVED

JUL 17 2006

DNMS

**NRC FORM 313**  
 (10-2005)  
 10 CFR 30, 32, 33,  
 34, 35, 36, 39, and 40

**U.S. NUCLEAR REGULATORY COMMISSION**

**APPROVED BY OMB: NO. 3150-0120**

**EXPIRES: 10/31/2008**

Estimated burden per response to comply with this mandatory collection request: 4.4 hours. Submittal of the application is necessary to determine that the applicant is qualified and that adequate procedures exist to protect the public health and safety. Send comments regarding burden estimate to the Records and FOIA/Privacy Services Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NECB-10202, (3150-0120), 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.

**APPLICATION FOR MATERIAL LICENSE**

**INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.**

**APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:**

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY  
 OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS  
 U.S. NUCLEAR REGULATORY COMMISSION  
 WASHINGTON, DC 20555-0001

**ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS:**

**IF YOU ARE LOCATED IN:**

ALABAMA, CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, FLORIDA, GEORGIA, KENTUCKY, MAINE, MARYLAND, MASSACHUSETTS, MISSISSIPPI, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, NORTH CAROLINA, PENNSYLVANIA, PUERTO RICO, RHODE ISLAND, SOUTH CAROLINA, TENNESSEE, VERMONT, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

LICENSING ASSISTANCE TEAM  
 DIVISION OF NUCLEAR MATERIALS SAFETY  
 U.S. NUCLEAR REGULATORY COMMISSION, REGION I  
 475 ALLENDALE ROAD  
 KING OF PRUSSIA, PA 19406-1415

**IF YOU ARE LOCATED IN:**

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN. SEND APPLICATIONS TO:

MATERIALS LICENSING BRANCH  
 U.S. NUCLEAR REGULATORY COMMISSION, REGION III  
 2443 WARRENVILLE ROAD, SUITE 210  
 LISLE, IL 60532-4352

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH, WASHINGTON, OR WYOMING. SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING BRANCH  
 U.S. NUCLEAR REGULATORY COMMISSION, REGION IV  
 611 RYAN PLAZA DRIVE, SUITE 400  
 ARLINGTON, TX 76011-4005

**PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTIONS.**

1. THIS IS AN APPLICATION FOR (Check appropriate item)

- A. NEW LICENSE
- B. AMENDMENT TO LICENSE NUMBER **53-13519-01**
- C. RENEWAL OF LICENSE NUMBER

2. NAME AND MAILING ADDRESS OF APPLICANT (Include ZIP code)

**Maui Memorial Medical Center  
 221 Mahalani Street  
 Wailuku, HI 96793**

3. ADDRESS WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED

Same as in Item #2

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

**Ronald Frick, M.S., CHP, DABR**

TELEPHONE NUMBER

**(808) 373-7009**

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 X 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL

a. Element and mass number; b. chemical and/or physical form; and c. maximum amount which will be possessed at any one time

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE.

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

9. FACILITIES AND EQUIPMENT.

10. RADIATION SAFETY PROGRAM.

11. WASTE MANAGEMENT.

12. LICENSE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY **7C** AMOUNT ENCLOSED \$ **0.00**

13. CERTIFICATION: (Must be completed by applicant) THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, 36, 39, AND 40, AND THAT ALL INFORMATION CONTAINED HEREIN IS TRUE AND CORRECT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF.

WARNING: 18 U.S.C. SECTION 1001 ACT OF JUNE 25, 1948 62 STAT. 749 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.

CERTIFYING OFFICER - TYPE/PRINTED NAME AND TITLE

**Wesley P. Lo, Chief Executive Officer**

SIGNATURE

*WPL*

DATE

**FOR NRC USE ONLY**

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		

APPROVED BY

DATE

**471037**

## Decommissioning Survey

**Facility:** Maui Memorial Medical Center

**Address:** 221 Mahalani St.  
Wailuku, HI 96793

**Survey Area:** Temporary waste/brachytherapy source storage area

**Survey date:** May 1, 2006

**Survey Performed By:** Mike Garringer, CNMT, NCT

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

**Background:** Maui Memorial Medical Center is authorized to use byproduct material listed in 10 CFR 35.100 - 35.400. The area in question was used for the storage of used Mo-99 generators and nuclear medicine decay-in-storage waste. Isotopes stored in this area included Tc-99m, Tl-201, Ga-67, In-111, I-131 and Xe-133. It was also used as a storage area for Cs-137 brachytherapy sources.

All unsealed, short-lived radioactive materials were removed from this area and transferred to the other long term waste storage area more than six months ago. This represents decay of more than 22 half-lives for I-131, which is the longest lived unsealed material stored in this area. The Cs-137 sources were recently transferred to the other long term waste storage area. Leak tests performed on the Cs-137 sources show no evidence of leakage (leak test certificates attached).

Upon decommissioning, this area will be released for unrestricted use. It will be primarily used for equipment storage.

**Previous Incidents:** There have been no major radiological spills or incidents which resulted in off-site contamination or required more than minimal decontamination effort.

**Instrumentation:** Scan surveys were performed with a Victoreen 290 GM survey meter. This meter has a range of 0 to 1,000 mR/hr, and was last calibrated on 5/6/05 (see enclosed certificate).

Wipe samples were analyzed for gamma emitters with the Capintec Captus 3000 NaI well counter. The detection efficiency for I-131 gammas is 89%, as measured with a Ba-133 standard. Average background for the counter is 269 cpm. For a one minute count, minimum detectable activity is 89 dpm. The following MDA formula was used:

$$MDA(dpm) = \frac{2.71 + 4.65\sqrt{CR_B}}{\epsilon}$$

Efficiency determinations are attached. Since I-131 has the highest gamma energy of all unsealed nuclides used at this facility, it is detected least efficiently. The detection efficiency for I-131 was conservatively used for all gamma emitting nuclides.

**Survey Guidelines:** Subpart E of 10 CFR 20, Radiological Criteria for License Termination, states that "A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a TEDE to an average member of the critical group that does not exceed 25 mrem per year, including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable". NRC NUREG-1757, *Consolidated NMSS Decommissioning Guidance*, provides tables which list the residual surface contamination in dpm/100 cm<sup>2</sup> for radionuclides which would result in a TEDE of less than 25 mrem/year for a building occupancy scenario. For Cs-137, the permissible surface contamination is 28,000 dpm/100 cm<sup>2</sup>. No values are listed for short-lived radionuclides. NUREG 1556, Vol 7, *Program-Specific Guidance About Academic, Research and Development, and Other Licenses of Limited Scope*, sets the removable and non-removable contamination limits for beta-gamma emitters at 1000 and 5000 dpm/100 cm<sup>2</sup>, respectively, and sets the removable contamination limit for I-131 at 200 dpm/100 cm<sup>2</sup>.

Based on these documents, we have set a removable contamination guideline of 200 dpm/100 cm<sup>2</sup> for all beta-gamma emitters. These contamination levels are above the minimum detectable activities of the survey equipment used, and can be reasonably achieved using standard decontamination methods.

**Description:** Scan surveys were performed of all floors, walls and doors within the storage area using the GM survey meter.

Wipe samples were taken in the numbered locations indicated on the attached survey diagram. All wipe samples were taken over a minimum area of 100 cm<sup>2</sup>.

**Results:** The scan survey with the GM survey meter found no radiation levels distinguishable from background (approximately 0.01 mR/hr).

Wipe samples taken in all areas revealed no contamination above the minimum detectable activity of 89 dpm/100 cm<sup>2</sup>. Tabulated wipe sample analysis results are attached.

**Conclusion:** Residual contamination within the storage area is far below the levels which would result in a member of the critical group receiving a TEDE greater than 25 mrem/year. Residual contamination is also below the ALARA levels published in NRC guidance documents. It is recommended that this room be released for unrestricted use.

**Efficiency Determination - Well Counter**

Ba-133 Standard activity = 0.118  $\mu$ Ci, Cal. 2/25/82

Activity on 12/21/005 = 56254 dpm

Measured cpm = 50250

Detection efficiency = 89%

**Gamma Wipe Test Results**

Wipe Number	Net cpm	Net dpm
1	7	<89
2	0	<89
3	0	<89
4	0	<89
5	0	<89
6	3	<89
7	0	<89
8	19	<89
9	55	<89

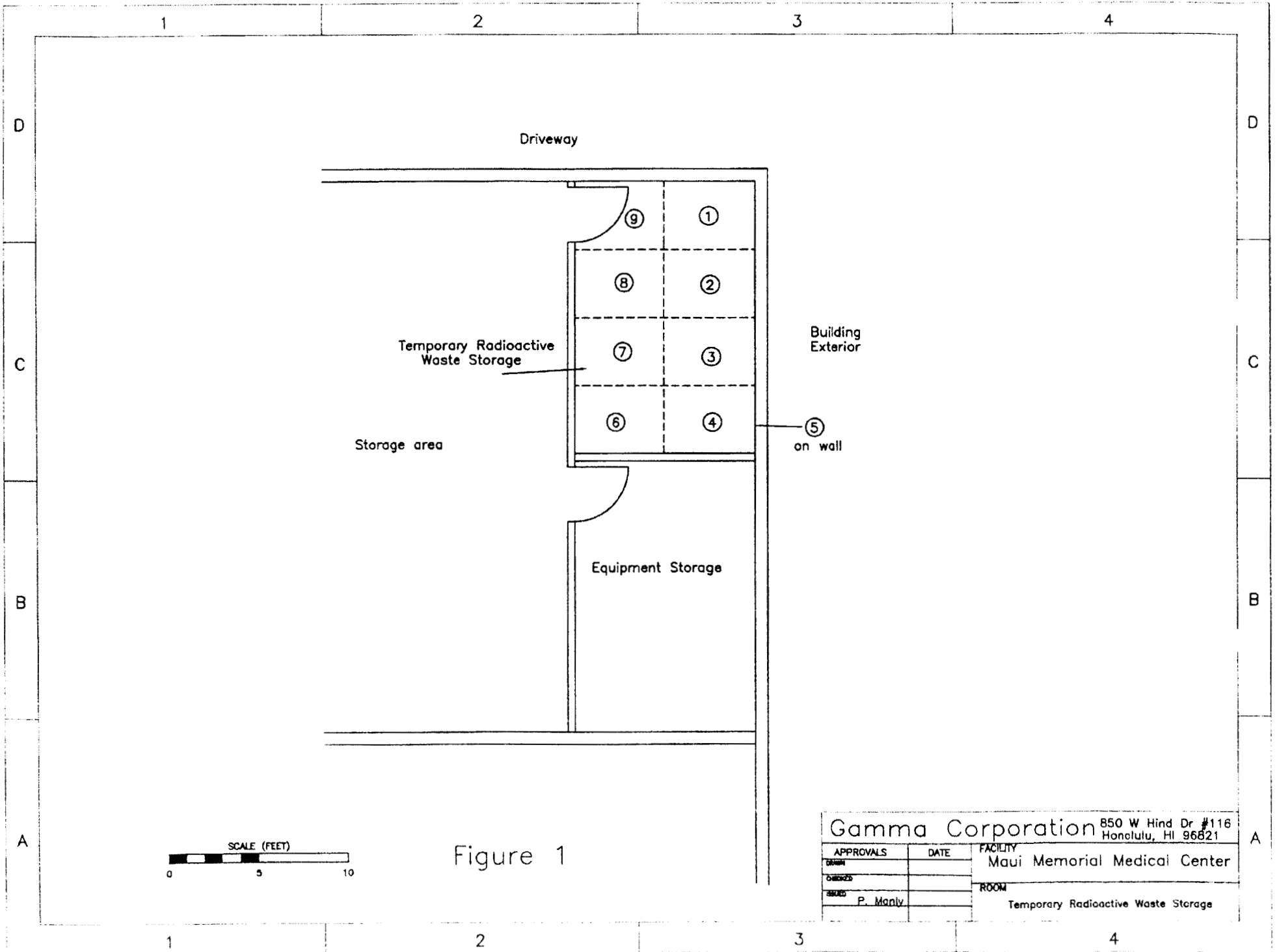


Figure 1

SCALE (FEET)  
0 5 10

APPROVALS		DATE	FACILITY
DESIGNED			850 W Hind Dr #116 Honolulu, HI 96821
DRAWN			Maui Memorial Medical Center
CHECKED			ROOM
P. Manly			Temporary Radioactive Waste Storage

(FOR LEMS USE)  
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INFORMATION FROM LTS  
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BETWEEN:  
License Fee Management Branch, ARM  
and  
Regional Licensing Sections

Program Code: 02120  
Status Code: 0  
Fee Category: 7C  
Exp. Date: 20110531  
Fee Comments: STATE  
Decom Fin Assur Reqd: N

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED MAUI MEMORIAL MEDICAL CENTER  
Applicant/Licensee: 20060717  
Received Date: 3003561  
Docket No: 4711037  
Control No.: 53-13519-01  
License No.:  
Action Type: Amendment

2. FEE ATTACHED

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

3. COMMENTS

Signed *Colleen P. ...*  
Date 7-20-06

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 \_\_\_\_\_



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