

MedStar Georgetown University Hospital

3800 Reservoir Rd
Washington, DC 20007
202.444.4637 PHONE
202.444. FAX
medstargeorgetown.org

Radiation Safety

May 3, 2017

Ms. Robin L. Elliott
Health Physicist - Medical Branch
Division of Nuclear Materials
U.S. NRC, Region I
2100 Renaissance Boulevard, Suite 100
King of Prussia, PA 19406-2713

Subject: License No. 08-30577-01, CN593070, Amendment Request (Your email, 17 April 2017)

In response to your request for additional information the following is submitted. I have used the numbering format in subject email in my response.

1. NUREG 1575, Rev. 1 Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Section 2.4.2 provides guidance for Historical Site Assessments. With regard to your Historical Site Assessment, please provide the following:
 - a. Include additional information to support your conclusion that licensed material was only used on the basement and third floors. For example, list the documents/files reviewed, the permits identified and uses approved, persons interviewed, etc.

RESPONSE: Review of available historical documents (copies mailed to the NRC on 18 April 2017) identified the rooms authorized for radioactive material use as those in the basement and on the third floor. Available radioactive material use authorizations were also reviewed (copies included in the documents mailed 18 April 2017). These authorizations included information such as Principal Investigator, room, and radionuclides and quantities authorized. Additionally, the entire building was visually inspected during the survey for any indication of additional use areas and none were identified.

- b. Provide justification for not including an evaluation of the ventilation or sewer systems. For example: verification that only non-volatile forms of licensed material were used, confirmation that waste material was not disposed via sanitary sewer, etc.

RESPONSE: Review of available documents (copies mailed to the NRC on 18 April 2017) does not indicate volatile materials were authorized or used. The historical documents indicate that past use was standard bench-top use of radioactive material that did not generate volatile fractions or airborne radioactivity. Sink disposal was authorized in accordance with effluent release criteria at the time as noted on radioactive material use authorizations reviewed (copies

Knowledge and Compassion
Focused on You

included in the documents mailed 18 April 2017). Furthermore, the sinks were surveyed and no contamination above detection limits was detected.

- c. Provide inventory or disposal information for sealed sources used in the Kober-Cogan Building (KCB). This can be in form of waste manifests, return receipts to the manufacturer, transfer records to another licensee or location, etc.

RESPONSE: All sealed sources were, and are, covered under an existing Georgetown University NRC license (08-03114-05). Therefore, no transfers were required to the new Medstar Georgetown Medical Center, Inc license (08-30577-01). The indication of past use of Cs-137 source was a notation on a historical document as to the location of use for the room assigned by the then Georgetown University Radiation Safety Officer. All records of leak testing for sealed sources covered under license 08-03114-05 are in the possession of the current Georgetown University Radiation Safety Officer.

- d. Provide justification for considering other areas to be non-impacted.

RESPONSE: Review of available historical documents (copies mailed to the NRC on 18 April 2017) identified the rooms authorized for radioactive material use as those in the basement and on the third floor. Available radioactive material use authorizations were also reviewed (copies included in the documents mailed 18 April 2017). These use authorizations included information such as Principal Investigator, room, and radionuclides and quantities authorized. Additionally, the entire building was visually inspected during the survey for any indication of additional use areas and none were identified. As such we believe the remaining facility to be non-impacted.

2. NUREG 1575, Rev. 1 Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Section 5.5 provides guidance for Final Status Surveys. With regard to your Radiological Final Survey:

- a. Provide a discussion of why you consider the Radiological Final Survey to be adequate to demonstrate that it is unlikely that significant quantities of radioactivity have gone undetected.

RESPONSE: Rooms where licensed material was authorized to be used, as noted in available radioactive material use authorizations, were surveyed. Sensitive hand-held radiation detection instrumentation was used to scan both bench-top and floor surfaces. The survey instruments used are sensitive to all beta/gamma radiation. No radiation levels above background were detected (note: radiation levels of porcelain material used for sinks, tub and floor tile were higher than other surfaces/material surveyed which is consistent with known elevated concentrations of naturally occurring radionuclides in the material used in these materials).

Random and biased, direct reading and wipe tests in the impacted areas were collected. No contamination above the instruments detection limits was found. The radionuclides with half-lives greater than 120 days were limited to H-3 and C-14. The detection limits for the surveys conducted are much lower than the screening level, derived concentration guideline levels (DCGLs) and would also detect other radionuclides such as Cl-36 or Sr-90 with equal, and in some cases greater, sensitivity. Licensed material was used under a radiation protection program whereby routine surveillance/contamination surveys were conducted. Significant

contamination would most likely have been detected and documented on the historical survey documents reviewed. Likewise, considering the extent of the survey conducted and the sensitivity of the instrumentation used we are confident any significant contamination would have been identified.

- b. Provide additional information to support your elimination of Cs-137 from the radiological surveys.

RESPONSE: All sealed sources were and are covered under an existing Georgetown University NRC license (08-03114-05). Therefore, no transfers were required. The indication of past use of Cs-137 source was a notation as to the location of use for the room assigned by the then Georgetown University Radiation Safety Officer. All records of leak testing for sealed sources covered under license 08-03114-05 are in the possession of the current Georgetown University Radiation Safety Officer.

- c. In Section 2.9 item #1 you stated, "The amounts of radioactivity used at any 1 time was relatively small (millicurie or sub-millicurie amounts) and there were no spills or incidents resulting in widespread contamination." Please indicate how this was determined; for example, provide a discussion of the review of the permits authorizing material use in the building, a review of the incident file during the period of material use in KCB, etc.

RESPONSE: Review of available documents (copies mailed on 18 April 2017) indicates the researcher's maximum possession limits did not exceed 10 millicuries and typical research protocols involved microCurie activities. Historical records reviewed do not indicate evidence of widespread contamination occurred. Additionally, as stated in our response to 2.a. above, we believe the comprehensive nature of the survey would have identified any significant spills not noted in the historical documentation reviewed.

- d. In Section 3.0 Survey Instrumentation of the RFSR, reference was made to Packard Tricarb Liquid Scintillation Counter for analysis of wipe tests. Provide calibration information for this instrument.

RESPONSE: The calibration certificate for the Packard Tricarb LSC is attached.

3. NUREG 1757 Vol. 1 Rev. 2, Consolidated NMSS Decommissioning Guidance provides licensees guidance for decommissioning facilities. Section 9.2 describes the licensee actions for Group 2 decommissioning. As described in this section, please provide the following:

- a. Provide copies of the last leak tests for sealed sources identified as having been used in the KCB.

RESPONSE: All sealed sources were and are covered under an existing Georgetown University NRC license (08-03114-05). Therefore, no transfers were required. The indication of past use of Cs-137 source was a notation as to the location of use for the room assigned by the then Georgetown University Radiation Safety Officer. All records of leak testing for sealed sources covered under license 08-03114-05 are in the possession of the current Georgetown University Radiation Safety Officer..

- b. Transfer any decommissioning records as appropriate. Refer to 10 CFR 30.35, 10 CFR 30.36, and 10 CFR 30.51. Records of effluent releases, survey records, disposal, etc. Otherwise state that the above referenced records relative to KCB will be retained in accordance with 10 CFR 30.35(g).

RESPONSE: Review of available documents (copies mailed on 18 April 2017) indicate sink disposal was authorized in accordance with effluent release criteria at the time. Likewise, copies of available survey records were also provided and indicate no evidence of significant spills or widespread contamination. Furthermore, the sinks and tub basins were surveyed and no contamination above detection limits was detected.

- c. Please either submit a NRC Form 314 or provide the information included on the form. For example: document the disposal or transfer of licensed material used in the KCB.

RESPONSE: NRC Form 314 is attached. Please note the current license has neither expired nor is it being terminated so Section A is left blank.

4. Confirm that no remediation was performed in KCB prior to performing the final radiological survey. If remediation was performed, please indicate when this occurred.

RESPONSE: Nor remediation has been performed in Kober-Cogan prior to performing the final radiological survey.

5. The Delegation of Authority memo is attached.

I am available should you have additional questions. I can be reached at 202.444.4637 or at david.a.smith@gunet.georgetown.edu.



David A. Smith, PhD
Director, Radiation Safety Department
Radiation Safety Officer
Medstar Georgetown University Hospital

3 Attachments

1. NRC Form 314
2. Delegation of Authority
3. Calibration Certificate



**CERTIFICATE OF DISPOSITION
OF MATERIALS**

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 FOIA, Privacy, and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by e-mail to Infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-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.

LICENSEE NAME AND ADDRESS
Medstar Georgetown Medical Center, Inc
Hospital Administration, 1 Main Hospital
3800 Reservoir Rd NW
Washington, DC 20007

LICENSE NUMBER 08-30577-01	DOCKET NUMBER 030-35409
LICENSE EXPIRATION DATE January 31, 2022	

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:
- b. Disposal of radioactive materials:
1. Directly by the licensee:
Sink disposal was authorized IAW effluent release criteria
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: 02/16/2017
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 David A. Smith, PhD	TITLE Radiation Safety Officer	TELEPHONE (Include Area Code) (202) 444-4637	E-MAIL ADDRESS david.a.smith@gunet.georgetown.edu
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Mail all future correspondence regarding this license to:

C. CERTIFYING OFFICIAL

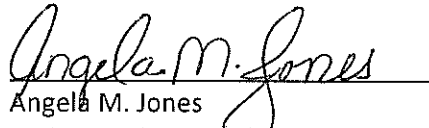
I CERTIFY UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT

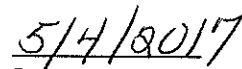
PRINTED NAME AND TITLE Angela M. Jones, Assistant Vice President, Safety & Support Svcs	SIGNATURE <i>Angela M Jones</i>	DATE 05/03/2017
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WARNING: FALSE STATEMENTS IN THIS CERTIFICATE MAY BE SUBJECT TO CIVIL AND/OR CRIMINAL PENALTIES. NRC REGULATIONS 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.

Delegation of Authority

I hereby delegate authority to Dr. David Smith to make licensing decisions for Medstar Georgetown University Hospital.


Angela M. Jones
Assistant Vice President
Safety and Support Services


Date



PO Box 1450
 Laurel, MD 20725-1450
 (301)953-2482

Certificate of Calibration

MAKE: Packard

MODEL: Tri-Carb 3100TR


Serial Number: 424558

Quench #	Set	SN	Isotope	Original Activity	Reference Date	Time (y)	Decay CF	Current Activity
6007603		3	H-3	281000 dpm +/-1.6%	1/7/2015	2.03	0.8921	250668 dpm
6007604		1	C-14	118700 dpm +/-1.3%	9/26/2014	2.31	0.9997	118667 dpm

Quench Curve ID
 Low Energy: 3H UG 01162017
 Mid Energy: 14C UG 01162017

Calibration Date: 1/16/2017
 Calibration Due Date: 7/19/2017

Sample ID	tSIE	Expected (dpm)	Measured (dpm)	Difference (dpm)	% Difference
H-3 UG1	701	250668	251584	916	0.37%
H-3 UG2	616	250668	249277	-1391	-0.55%
H-3 UG3	519	250668	249133	-1535	-0.61%
H-3 UG4	438	250668	248952	-1716	-0.68%
H-3 UG5	336	250668	250681	13	0.01%
H-3 UG6	255	250668	252688	2020	0.81%
H-3 UG7	186	250668	251913	1245	0.50%
H-3 UG8	119	250668	247881	-2787	-1.11%
H-3 UG9	74	250668	248816	-1852	-0.74%
H-3 UG10	42	250668	251382	714	0.28%
C-14 UG1	695	118667	118796	96	0.08%
C-14 UG2	609	118667	117765	-935	-0.79%
C-14 UG3	515	118667	118082	-618	-0.52%
C-14 UG4	443	118667	118710	10	0.01%
C-14 UG5	335	118667	118434	-266	-0.22%
C-14 UG6	254	118667	118495	-205	-0.17%
C-14 UG7	188	118667	118292	-408	-0.34%
C-14 UG8	119	118667	117968	-732	-0.62%
C-14 UG9	75	118667	118277	-423	-0.36%
C-14 UG10	43	118667	118132	-568	-0.48%

Prepared By:  1/16/2017
 Gregory D. Smith Date
 CHP

Reviewed By:  1/16/2017
 Korressa Williams Date
 Lab Analyst/HP



PO Box 1450
 Laurel, MD 20725-1450
 (301)953-2482

Certificate of Calibration

MAKE: Packard
 MODEL: Tri-Carb 3100TR
 S/N: 424558

Calibration Date: 1/16/2017
 Calibration Due Date: 7/19/2017

The instrument listed above was calibrated against radioactive standards with activity traceable to NIST. Results are shown in the tables below and were within 10% of the expected values.


Calibration Results

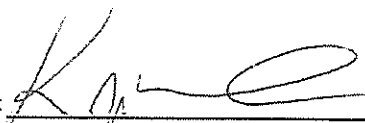
Sample ID	SN	Isotope	Assay Type	Eff	Expected (dpm)	Measured (dpm)	Difference (dpm)	% Difference	Evaluation
6008500	13	H-3	Triple	58%	278478	271038	-7440	-2.7%	Pass
6008500	13	C-14	Triple	85%	117398	117691	293	0.2%	Pass
EZA AB CI-36	94994	CI-36	Triple	99%	97640	98197	557	0.6%	Pass

Note: for CI-36 using Triple label protocol, measured dpm is sum of DPM 2 and DPM 3.

Energy	Quench Curve ID	Evaluation
Low Energy:	3H UG 01162017	Pass
Mid Energy:	14C-UG 01162017	Pass
High Energy:	32P-UG-02-28-05	Pass

Sample ID	SN	Isotope	Assay Type	Expected Eff	Measured (cpm)	Known Activity (dpm)	Efficiency (%)	% Difference	Efficiency Evaluation
EZA AB CI-36	94994	CI-36	AB Disc 182	98%	94938	97640	97.2%	-0.8%	Pass
EZA AB Am-241	94984	Am-241	AB Disc 182	99%	99917	101300	98.6%	-0.4%	Pass

Prepared By:  1/16/2017
 Gregory D. Smith Date
 CHP

Reviewed By:  1/16/2017
 Korressa Williams Date
 Lab Analyst/HP

Note:

Radioactive Standards Data

Standard #	Set	SN	Isotope	Original Activity	Reference Date	Decay Time (y)	Current Activity
6008500		13	H-3	281200 dpm	11/14/2016	0.17	278478 dpm
6008500		13	C-14	117400 dpm	11/14/2016	0.17	117398 dpm
EZA AB CI-36		94994	CI-36	97640 dpm	10/25/2013	3.23	97639 dpm
EZA AB Am-241		94984	Am-241	101300 dpm	10/25/2013	3.23	100776 dpm