

Araceli Rivera Serrano, M.D.
Owner and Radiation Safety Officer
Mayagüez Nuclear Medicine
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April 30, 2014

Robin L. Elliott
Health Physicist
U. S. Nuclear Regulatory Commission
Region I, Division of Nuclear Materials Safety
2100 Renaissance Blvd
King of Prussia, PA 19406-2713
(610) 337-5076 voice
(610) 337-5269 fax

SUBJECT: MAYAGÜEZ NUCLEAR MEDICINE, REQUEST FOR ADDITIONAL
INFORMATION CONCERNING APPLICATION FOR TERMINATION OF LICENSE,
CONTROL NO.
583411

Docket No. 03035314
License No. 52-25507-01
Control No. 583411

Dear Ms. Elliott:

This is the following additional information that you requested:

1. On the Certificate of Disposition of Materials submitted you indicated that all sealed sources were returned to the manufacturer(s) for disposal. Please provide a list of all sealed sources disposed, including model and serial numbers, and provide the name, address, telephone number, and license number for the manufacturer(s) to which they were sent.
 - a. Manufacturer that received the sources:

Eckert & Ziegler Isotope Products	International Isotopes Inc
1800 N. Keystone Street	4137 Commerce Circle
Burbank, CA 91504	Idaho Falls, ID 83401
661-309-1010	208-524-5300
License #:N/A - Manufacturer	License #: N/A - Manufacturer

- b. Sources that were disposed:
- | | |
|----------------------------------|--------------------------------|
| Cs-137 SN: 365042-038 (149 uCi) | Co-57 SN: 1631-116 (3.323 mCi) |
| Ba-133 SN: 109456 (173 uCi) | |
| Co-57 SN: RV-057-5M (1.756 mCi) | |
| Co-60 SN: 354015-008 (9 uCi) | |
| Ge-68 x 3 SN: HEGL-0020 (24 uCi) | |

2. Please provide copies of the most recent leak tests for the sealed sources disposed of in item number one above and include the calibration information for the counting equipment used to count the wipe samples.

a. Attached

3. With respect to the Radiation Close-Out Survey form submitted, please provide the following information:

* You indicated that isotopes Tc-99m, Tl-201, Ga-67, etc. were used. Please list all isotopes that were used at this location.

Mo-99 generator, Tc-99m, Tl-201, Ga-67, In-111, I-123, I-131, F-18,
Sealed sources: Cs-137, Co-57, Ba-133, Ge-68

* Please clarify the results section; i.e. what were the results (dpm/100cm² and mR/hr) for each location surveyed and what is the background reading in mR/hr.

Dose rate measurements

Background reading = 0.02 mR/hr

All surveyed areas were equal to 0.02 mR/hr

Wipe results

Background measurements = 154 cpm/100 cm²

Wipe – background = net cpm/100 cm²

1 & 2 Hot Lab - 19 cpm/100 cm²

3 Decay Room - 23 cpm/100 cm²

4 Injection chair & area - 24 cpm/100 cm²

5 Camera 1 area - 17 cpm/100 cm²

6 & 7 Treadmill & Stress area - 4 cpm/100 cm²

10 Camera 2 area - 7 cpm/100 cm²

8, 9, 11 PET camera & area - 15 cpm/100 cm²

12 Uptake system & area - 33 cpm/100 cm²

Note 2200 dpm = 661 cpm

* Please provide the calibration information for the survey/counting equipment used; i.e. Ludlum Model 14C and Beckman Model Gamma 5500.

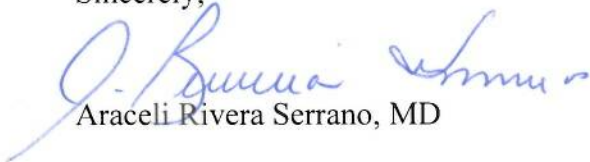
Attached

4. On the Certificate of Disposition of Materials item 2.a. "All Tc-99m generators to 52-25430-01." Please indicate how many generators were transferred. In addition, please clarify if the license the generators were transferred to was 52-25430-01 or 52-25430-03.

Number of generators transferred = 19
The generators were transferred to 52-25430-03

If you need additional information, please contact me at 787-361-6062.

Sincerely,


Araceli Rivera Serrano, MD

Leak Test Record
NRC License 52-25430-01

Leak Tested For: Mayaguez Nuclear Medicine
Leak Tested By: David Rhoe

Standard Source: Cs-137 NES-139S
Standard Activity: 0.105 uCi Nominally
Date of Standard: 9-Sep-88

Date of Leak Test: 9/12/2013
Decay Activity: 0.05891 From decay chart
Standard (dpm): 130780

Instrument: Gamma
Beckman Gamma
Instrument Model Number: 5500
Instrument Serial Number: 8044788

Standard (cpm) 36321
Efficiency: 0.27773 27.8 %
Counting time (minutes) 1
Background (cpm) 192
Minimum Detectable Activity: 3.178E-05

Wipe (Smear) Test: All external or accessible surfaces of the source or housing are wiped with a piece of filter paper or other absorbent material which has been moistened with an appropriate solvent and the activity removed is measured.

Source ID and Serial Number	Gamma	
	Wipe Test	Sample Activity
Cs-137 Sn356042-038 206 uCi 1/21/2000	186	0.00030
Ba-133 Sn109456 266 uCi 6/1/2007	176	0.00029
Co-57 Sn63518 5.089 mCi 4/1/2005	211	0.00034
Co-57 Flood Sn1501-161 10 mCi 5/1/11	198	0.00032

This test reveals that 0.005 microcuries or less was present as removable contamination. Should the removable contamination exceed 0.005 microcuries, the source must be removed from use and necessary measures taken according to NRC regulations.


David Rhoe Health/Medical Physicist

Universidad Central Del Caribe
 CRM Survey Meter Calibration Service
 Instrument Calibration Report
 NRC License 52-25430-01

Calibration For: Mayaguez Nuclear
 Calibrated By: David Rhoe
 Check Source ID: Sn164970
 Check Source mR/hr: 0.25 mR/hr without cap
 Calibration Geometry: Perp

Instrument: Ludlum Mod# 14C Sn164970
 Calibration Source: Cs-137, Model # 77302, Serial # S-764
 Original mR/hr @ 1m: 50.952
 Date of original mR/hr: 27-Oct-99
 Calibration Date: 9-Aug-13
 37.11

Scale mR/hr	Attenuator	Distance meters	mR/hr Calculated	mR/hr Measured	Trigger +/- 20 Percent	Trigger Percent Average
200	1	0.48	160	160	1.00	1.00
	4	0.48	40	40	1.00	
20	10	0.48	16	16	1.00	1.00
	40	0.48	4	4	1.00	
2	100	0.48	1.6	1.6	1.00	1.13
	400	0.48	0.4	0.5	1.25	
0.2	100	1.52	0.16	0.16	1.00	1.00
	400	1.52	0.04	0.04	1.00	

The formula for % Error is (Measured/Calculated)
 Trigger limit is +/- 20 percent (Corr Factors from 1.2 to 0.8)