



THE CATHOLIC UNIVERSITY OF AMERICA

Environmental Health and Safety
Washington, DC 20064
202-319-5206
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April 30, 2015

J6

Licensing Assistance Team
US Nuclear Regulatory Commission Region I
2100 Renaissance Boulevard
Suite 100
King of Prussia, PA 19406-2713

SNM-164
07000190

REC'D 10501 15:4083

RE: Response To Comments Related to
License No. 08-02075-03, Docket No. 03000638
License No. SUD-157, Docket No. 04006329

To Whom It May Concern:

In response to two emails from Mr. Dennis Lawyer to Mahmoud Haleem, RSO of the Catholic University of America, dated April 9, 2015, please see the following responses related to the three numbered items in the two emails:

- 1. The Certification of Financial Assurance has been updated to reflect the newly requested activity limits. A copy has been enclosed as per your request.
2. Delete Barium-134 from the list of nuclides on our license amendment request.
3. Leak test certificates are enclosed for each of the sealed sources requiring leak tests which we wish to remove from our license, having transferred them to appropriately licensed facilities. No leak test was done for the two plated Neptunium-237 sources since the plated alpha sources have activities that are less than 10 µCi.

If you have any questions, please contact Mr. Haleem for further clarification.

Sincerely,

[Handwritten signature of Jerry Conrad]

Jerry Conrad
Associate VP for Facilities Operation

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586436

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NMSS/RGN1 MATERIALS-002

Enclosures: Certification of Financial Assurance
Leak Test Certificates of Sources to be removed from license

586499



## THE CATHOLIC UNIVERSITY OF AMERICA

### CERTIFICATION OF FINANCIAL ASSURANCE

Principal: The Catholic University of America

NRC license number 08-0075-03: The Catholic University of America, Marist Annex Building, Cardinal Station, Washington, DC 20064

NRC license number SUD-157: The Catholic University of America, Marist Annex, Washington, DC 20064

NRC license number SNM-164: The Catholic University of America, 620 Michigan Avenue, N.E., Washington, DC 20064

Issued by: U.S. Nuclear Regulatory Commission

I certify that, as of the date of this certification, the Catholic University of America is licensed to possess the following types of licensed materials: sealed sources or plated foils with a half-life greater than 120 days licensed under 10 CFR Part 30, unsealed byproduct material with a half-life greater than 120 days licensed under 10 CFR Part 30, source material in a readily dispersible form licensed under 10 CFR Part 40, and unsealed special nuclear material licensed under 10 CFR Part 70 in the following amounts.

License No. 08-0075-03

<u>Byproduct Material</u>	<u>Chemical or Physical Form</u>	<u>Amount of Material</u>
Any byproduct material with atomic numbers 3 through 83	Any	Not to exceed 10 mCi per radionuclide and 500 mCi total
Any byproduct material with atomic numbers greater than 83	Any	Not to exceed 10 $\mu$ Ci per radionuclide and one mCi total
Hydrogen 3	Any	2 curies
Carbon 14	Any	50 mCi
Phosphorous 32	Any	30 mCi
Phosphorous 33	Any	30 mCi
Sulfur 35	Any	30 mCi
Potassium 42	Any	100 mCi
Strontium 90	Any	30 mCi
Molybdenum 99	Any	200 mCi

# NONNEGOTIABLE

Technetium 99m	Any	200 mCi
Iodine 125	Any	25 mCi
Iodine 131	Any	100 mCi
Cesium 134	Any	30 mCi
Cesium 137	Any	50 mCi
Lead 210	Any	250 µCi
Lead 214	Any	250 µCi
Bismuth 210	Any	250 µCi
Bismuth 214	Any	250 mCi
Polonium 210	Any	250 µCi
Polonium 214	Any	250 µCi
Radon 222	Any	250 µCi
Radium 226	Any	250 µCi
Thorium 230	Any	100 µCi
Americium 241	Any	35 µCi

Nickel 63                      Foils or plated sources  
(Amersham Model NBC  
7020, NRD Model-1001  
or DuPont Merck Model  
NER-002)                      Not to exceed 15 mCi per  
source and 45 mCi total

Nickel 63                      Foils (New England Nuclear) 225 mCi

Samarium 151                      Sealed Source                      500 mCi  
(Model 0103 DA Product  
Code SSD167)

License No. SUD-157

<u>Source Material</u>	<u>Chemical or Physical Form</u>	<u>Amount of Material</u>
Natural Uranium	Any	40 kilograms
Depleted Uranium	Any	40 kilograms
Natural Thorium	Any	50 kilograms
Thorium 232	Any	50 kilograms

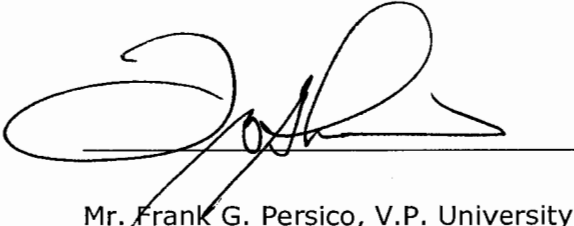
License No. SNM-164

<u>Special Nuclear Material</u>	<u>Chemical or Physical Form</u>	<u>Amount of Material</u>
Uranium enriched to not more than 2%	Any	5 kilograms
Uranium enriched to not more than 1%	Any	10 kilograms
Plutonium 238	Any	30 microcuries
Plutonium 239	Plated alpha sources	1 microgram

**NONNEGOTIABLE**

Plutonium 239	Any	20 microcuries
Plutonium 240	Any	3 microcuries
Plutonium 241	Any	760 microcuries
Plutonium 242	Any	200 microcuries
Plutonium 244	Any	1 microcuries

I also certify that financial assurance in the amount of four hundred fifty thousand dollars (\$450,000) has been obtained for the purpose of decommissioning as prescribed by 10 CFR Parts 30, 40 and 70.



Mr. Frank G. Persico, V.P. University Relations and Chief of Staff

4-28-15

Date

Corporate seal

**NONNEGOTIABLE**

**LEAK TEST FOR Cs-137 SEALED SOURCE**  
**Activity 120 mCi**

**Date: 10/07/2008**

<b>Isotope</b>	<b>Source #</b>	<b>License #</b>	<b>Device Authorized User</b>	<b>Location</b>	<b>Date</b>	<b>Results <math>\mu</math>Ci</b>
<b>Cs-137</b>	<b>S-121</b>	<b>6.LL</b> <i>6. MM</i>	<b>Beam Calibrator RSO</b>	<b>Han-36</b>	<b>10/07/2008</b>	<b>&lt;0.005</b>

# Leak test of CS-137 source (120mei)

## 10/07/08

Tennessee Series 5400  
 Unit ID: 55407  
 Mount: Detef

SWIPE SURVEY 397  
 Procedural: Prod7

05Oct2008  
 12:27:04  
 Pg. 1 of 1

Mode: 40 Time Min: 1.00 Scat Pct: 1 Rnd Pct: 001:001  
 Rig Sub: Auto/3-6 Eff Cal: Auto/3-6 Int Cal: Yes/On Sol Conn: Yes/On  
 P Preset: R0000000 S Preset: R0000000 W Time: 0 W Dter: 0  
 GULD NFB: 0.05 BULD NFB: 24.20 WLD NFB: 77.20 HULD NFB: 100.00

1st Pct: 71-99 02Feb2006 1386  
 1 Bkg: BkgBlank 02Feb2006 7.00E-05 ± 1.97E-05  
 2 Bkg: BkgBlank 02Feb2006 24.33 ± 0.33  
 3 Eff: R0039 02Feb2006 77.32 ± 1.86 α-B: 10.66 ± 0.11  
 4 Eff: 71-99 02Feb2006 75.37 ± 1.76 B-B: 7.80E-02 ± 3.75E-03  
 5: 1.00 ± 0.00 α Action: 50.00 α NDA: 1.16 dpm  
 6: 1.00 ± 0.00 β Action: 200.00 β NDA: 22.98 dpm

SAMPLE NUM:RPT	TIME MIN	ALPHA CTS	BETA CTS	ALPHA NCPM	BETA NCPM	ALPHA dpm	BETA dpm	SAMPLE START	
001:001	1.00	22001	2486	21999.00	115.31	58941.52	325.92	12:22:54	- Alpha Check source
002:001	1.00	3	36765	-25.75	36740.36	-49.01	1.03E+05	12:24:04	- Beta Check source
083:001	1.00	0	27	-7.2E-02	2.68	-0.19	7.58	12:25:14	→ Background
015:001	1.00	1	19	0.93	-5.42	2.50	-15.33	12:26:24	→ Sample wipe

# RADIOACTIVE SEALED SOURCES REQUIRING LEAK TESTS

Date: 11/05/2010

Isotope Serial # Activity	Source #	License #	Device Authorized User	Location	Date	Results μCi
Am-241 MRC-AM-211 (200 mCi)	S-107	6.HH 6. II	RSO Storage	Rad Storage	11/05/2010	<0.005
Am-241 NUMEC#9AMG14 (30 mCi)	S-104	6.GG 6. GG	RSO Storage	Rad Storage	11/05/2010	<0.005

Tennelec Series 54FC  
 Unit ID: 554FC  
 User: Guest

SWIRE SUPPLY PART  
 Processor: Proc0

18Aug2009  
 11:00:15  
 Rev 4.05

Mode: 02 Time Min: 1.00 Smpl Rpt: 1 Grp Rpt: 001:001  
 kg Sbg: Auto/Svs Eff Calc: Auto/Svs Act Calc: Yes/On Sp: Corr: Yes/On  
 Preset: 9000000 B Preset: 900000000 Wk Time: 0 Wk Dts: 0  
 ALLD NFB: 0.25 BULD NFB: 21.20 dLLD NFB: 37.20 aULD NFB: 100.00

g#8 Plate: 1c-FF 18Aug2009 1410  
 g Skg: SkgBlank 18Aug2009 0.10 ± 0.34E-02  
 B Skg: SkgBlank 18Aug2009 24.57 ± 0.3e  
 g Eff: FuZ09 18Aug2009 37.50 ± 1.57 g-1a: 10.08 ± 0.34E-01  
 B Eff: 1c-FF 18Aug2009 35.39 ± 1.77 B-1a: 0.1e ± 0.01E-02  
 Net: 1.00 ± 0.00 g Action: 50.00 g NDA: 1.40 ± 0.01  
 FB: 1.00 ± 0.00 B Action: 200.00 B NDA: 27.10 ± 0.01

SAMPLE	TIME	ALPHA	BETA	ALPHA	BETA	ALPHA	BETA	SAMPLE
NUM:RPT	MIN	CTS	CTS	WCFM	WCFM	cts	cts	BT:RPT
001:001	1.00	20-FF	2552	206e-02	841.00	1905.034	107e-05	10:48:00
010:001	1.00	1	38192	-35.6e	381e7.17	-148.14	1.02E-05	10:49:10
020:001	1.00	0	24	-0.10	-0.55	-0.27	-0.57	10:50:20
030:001	1.00	0	14	-8.7E-02	-10.55	-0.20	-29.97	10:51:30
040:001	1.00	1	1e	0.90	-8.0e	0.42	-24.47	10:52:39
050:001	1.00	0	16	-8.1E-02	-8.55	-0.24	-24.16	10:53:49

- Alpha check source  
 - Beta check source  
 - Background  
 - Am-241 (200 mci)  
 - Am-241 (30 mci)  
 - Pig inside surface Area.



# RADIOACTIVE SEALED SOURCES REQUIRING LEAK TESTS

Date: 05/03/2013

Isotope	RMIC#	License #	Device Authorized User	Location	Date	Results $\mu$ Ci
Sm-151	88-324	6.CC	RSO	RSO-SAFE	05/03/2013	<0.005
Co-57	06-11	LL	RSO	RSO-SAFE	05/03/2013	<0.005
Sn-119m	10-47	A	RSO	RSO-SAFE	05/03/2013	<0.005
Co-57	09-28	MM	Mossbauer Dr. Muller	Han-230	05/03/2013	<0.005
Co-60		6Z	RSO	RSO-SAFE	05/03/2013	<0.005

6.88

Tennelec Series 5APC  
Unit ID: 55APC  
User: Guest

SWIPE SURVEY RPT  
Procedure: ProcC

03May2013  
13:25:07  
Rev4.05

Mode: 28 Time Min: 1.00 Sopl Rpt: 1 Grp Rpt: 001:001  
Eko Sub: Auto/Sys Eff Calc: Auto/Sys Act Calc: Yes/On Spl Corr: Yes/On  
a Preset: 90000000 B Preset: 90000000 Wk Time: 0 Wk Cts: 0  
BLLD 3FS: 0.25 BULD 3FS: 21.20 aLLD 3FS: 37.20 bULD 3FS: 100.00

a+B Plat: Tc-99 03Apr2012 1380  
a Eko: EkoBlank 03Apr2012 0.90 ± 18.83E-02  
B Eko: EkoBlank 03Apr2012 19.95 ± 0.31  
a Err: Pu239 03Apr2012 38.10 ± 1.90 a-78: 10.34 ± 17.86E-02  
B Err: Tc-99 03Apr2012 35.55 ± 1.77 B-78: 6.40E-02 ± 4.87E-03  
Ia: 1.00 ± 0.00 a Action: 50.00 a MDA: 4.12 dpm  
Ib: 1.00 ± 0.00 B Action: 200.00 B MDA: 20.72 dpm

SAMPLE NUM:RPT	TIME MIN	ALPHA CTS	BETA CTS	ALPHA NCFM	BETA NCFM	ALPHA dpm	BETA dpm	SAMPLE START
001:001	1.00	8710	7443	8704.33	6522.09	22840.81	18343.95	13:13:32
002:001	1.00	1	31517	-20.08	31497.03	-52.71	88588.19	13:18:10
020:001	1.00	0	15	-0.90	-4.85	-2.36	-13.65	13:19:20
061:001	1.00	0	23	-0.90	3.14	-2.37	6.84	13:20:29
018:001	1.00	2	20	1.09	-6.3E-02	2.87	-0.17	13:21:39
099:001	1.00	0	22	-0.90	2.14	-2.37	6.02	13:22:48
066:001	1.00	0	19	-0.90	-0.85	-2.37	-2.40	13:23:57
007:001	1.00	0	16	-0.90	-3.85	-2.36	-10.84	13:25:07

- Alpha source  
- Beta source  
- Background  
- Co-57, Room 230 VSL, 5  
- Sn-119m, safe, Radwaste st  
- Sm-151, safe, Radwaste st  
- Co-57, safe, Radwaste st  
- Co-60, safe Radwaste st