

Null, Kevin

From: Larry Pitt <lpitt@c70isotopes.com>
Sent: Tuesday, July 28, 2015 12:06 PM
To: Null, Kevin
Subject: [External_Sender] Fishers
Attachments: NRC responce 7-28-15.pdf

Kevin,

Attached is the response that was requested. Please contact me if you have any questions. Thank you for all your help.

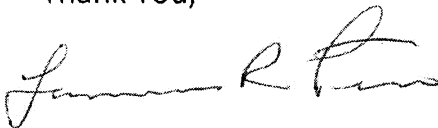
Larry

July 28, 2015

Mr. Kevin Null
Material Licensing Branch
Region III
Nuclear Regulatory Commission

Mr. Kevin Null
The following is the additional support documentation per your request on
Conversation Record dated 07/21/2015. The additional information is needed in the
termination of Positron NRC Material License No. 13-32765-01 at 9715 Kincaid, Fishers
Indiana.

Thank You,

A handwritten signature in black ink, appearing to read "Lawrence R. Pitt", written in a cursive style.

Lawrence R. Pitt
Radiation Safety Officer
Positron Corporation

1. Provide the date that each source was placed in storage.

Cs-137	SN BM06037E11117143	Placed in Storage on June 13, 2012
Co-57	SN BM06057E11214120	Placed in Storage on June 13, 2012
Ba-133	SN BM06133E11157208	Placed in Storage on June 13, 2012

From Radioactive Sealed Source Inventory Log: Provided

2. Provide the date when they were removed from storage for transfer.

The sources were removed from Positron storage on January 7, 2015 by ADCO Services for off-site disposal.

3. Provide the date when they were last leak tested by Positron.

The sealed sources were placed in storage with anticipation of a project that did not develop.

4. Verify the make, model number, activity and isotope of each source that was transferred by ADCO.

See attached Certificate of Calibration for referenced sealed sources.

As a follow-up per our conversation, sealed source CS-137 SN BM0813709295117 (0.11 microcuries) was not listed on Positron's license because it is below the exempt quantity described in 10 CFR 30.18.

Certificate of Calibration

MODEL BM06E GAMMA REFERENCE STANDARD

Radionuclide: Cobalt-57 5.53 mCi 204.61 MBq

Serial Number: BM06057E11214120 Reference Date: 8/4/2011

Half Life¹ 271.79 days

Principal Gamma Emissions¹

Photon Energy	Abundance
14.41 keV	9.16 %
122.06 keV	85.60 %
136.47 keV	10.68 %

Source Description:

The activity is uniformly distributed throughout the approximately 20 milliliters of epoxy resin which is sandwiched between two 1 milliliter layers of inactive epoxy resin in a 30 milliliter polyethylene bottle. The bottle is sealed with chemically bonded inner and outer caps.

Method of Calibration:

The standard was calibrated by direct comparison of standardized solutions traceable to the National Institute of Standards and Technology (NIST), in an identical geometry, using a pressurized ion chamber. This standard is indirectly (implicitly) traceable to the National Institute of Standards and Technology (NIST).

RadQual's contract manufacturer, International Isotopes Inc., actively participates in the Radioactivity Measurement Assurance Program conducted by the National Institute of Standards and Technology (NIST).

Total Uncertainty (95% Confidence Level) 2.09%


Calibration Technologist

8-4-11
Date

CE

Certificate of Calibration

MODEL BM06E GAMMA REFERENCE STANDARD

Radionuclide: Barium-133 0.298 mCi 11.026 MBq

Serial Number: BM06133E11157208 Reference Date: 6/10/2011

Half Life¹ 10.52 years

Principal Gamma Emissions¹

Photon Energy	Abundance
81.00 keV	34.06 %
302.85 keV	18.33 %
356.02 keV	62.05 %

Source Description:

The activity is uniformly distributed throughout the approximately 20 milliliters of epoxy resin which is sandwiched between two 1 milliliter layers of inactive epoxy resin in a 30 milliliter polyethylene bottle. The bottle is sealed with chemically bonded inner and outer caps.

Method of Calibration:

The standard was calibrated by direct comparison of standardized solutions traceable to the National Institute of Standards and Technology (NIST), in an identical geometry, using a pressurized ion chamber. This standard is indirectly (implicitly) traceable to the National Institute of Standards and Technology (NIST).

RadQual's contract manufacturer, International Isotopes Inc., actively participates in the Radioactivity Measurement Assurance Program conducted by the National Institute of Standards and Technology (NIST).

Total Uncertainty (95% Confidence Level) 3.27%

Josh Pratt

Calibration Technologist

6-10-11

Date

CE

Certificate of Calibration

MODEL BM06E GAMMA REFERENCE STANDARD

Radionuclide: Cesium 137 0.207 mCi 7.659 MBq

Serial Number: BM06137E11117143 Reference Date: 5/2/2011

Half Life¹ 30.07 years

Principal Gamma Emissions¹

Photon Energy	Abundance
661.60 keV	85.10 %

Source Description:

The activity is uniformly distributed throughout the approximately 20 milliliters of epoxy resin which is sandwiched between two 1 milliliter layers of inactive epoxy resin in a 30 milliliter polyethylene bottle. The bottle is sealed with chemically bonded inner and outer caps.

Method of Calibration:

The standard was calibrated by direct comparison of standardized solutions traceable to the National Institute of Standards and Technology (NIST), in an identical geometry, using a pressurized ion chamber. This standard is indirectly (implicitly) traceable to the National Institute of Standards and Technology (NIST).

RadQual's contract manufacturer, International Isotopes Inc., actively participates in the Radioactivity Measurement Assurance Program conducted by the National Institute of Standards and Technology (NIST).

Total Uncertainty (95% Confidence Level) 1.01%



Calibration Technologist



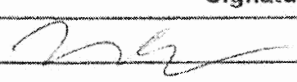
Date

CE

Radioactive Sealed Source Inventory Log: Fishers, IN

Received Date	Positron ID	Isotope	Manufacture	Model Number	Serial Number	Nominal Calibration Date	Activity	Storage Location	Retired / Disposed
2-Apr-10	NA	Cs-137	RadQual	BM08-37	BM0813709295117	27-Oct-09	0.1107 uCi	RAM Room	<input type="checkbox"/> Yes
13-Jun-12	NA	Cs-137	RadQual	BM06E-37	BM06137E11117143	2-May-11	0.207 mCi	RAM Room	<input type="checkbox"/> Yes
13-Jun-12	NA	Co-57	RadQual	BM06E-57	BM06057E11214120	4-Aug-11	5.53 mCi	RAM Room	<input type="checkbox"/> Yes
13-Jun-12	NA	Ba-133	RadQual	BM06E-33	BM06133E11157208	10-Jun-11	0.298 mCi	RAM Room	<input type="checkbox"/> Yes
									<input type="checkbox"/> Yes
									<input type="checkbox"/> Yes
									<input type="checkbox"/> Yes
									<input type="checkbox"/> Yes

Comments: ^{no 16 Sept 14} Cs-137 (7143), ~~Co-57 (7143)~~ Co-57 (4120), and Ba-133 (7208) are in storage and not to be used until a leak test has been conducted.

	Print Name	Signature	Date
Completed By:	Nick Overman		16 Sept 14
Reviewed By:			