1.0 Purpose:

The purpose of this procedure is to outline the processing of exempt quantity distribution products.

2.0 Scope:

This procedure entails the license to manufacture, process, produce, package, repackage, or transfer quantities of radioactive material for commercial transfer or distribution to persons exempt from licensing requirements (general public) in accordance with a license issued by the Nuclear Regulatory Commission (NRC).

3.0 Safety:

Not Applicable

4.0 Definitions/Acronyms:

Not Applicable

5.0 Equipment/Materials:

Not Applicable

6.0 Flow Chart:

Not Applicable

7.0 Procedure:

7.1. General Information:

7.1.1. Eckert & Ziegler Analytics (EZA) is licensed to manufacture, process, produce, package, repackage, dispose, or transfer quantities of radioactive material for commercial transfer or distribution to persons exempt from licensing requirements (general public) in accordance with a license issued by the NRC (referred to as an E-license).

7.1.2. All exempt distributions must be in accordance with this E-license. In general, the NRC licenses byproduct material as defined in the Energy Policy Act of 2005 (EPAct). This expanded definition of byproduct material includes naturally occurring and accelerator produced radioactive material (NARM). Appendix 10.1 shows the nuclides and upper limits of activities that are exempted by the NRC exempt quantity regulations (10 CFR 30.71 Schedule B).

7.1.3. State variations – with the new definition of byproduct material, the NRC regulates all exempt distribution sources, so State variations will not be encountered.

7.1.4. Appendix 10.2 shows the list of EZA products whose distribution and possession is exempted from licensing requirements in accordance with EZA's Exempt Quantity Distribution License.

7.2. Sales:

7.2.1. The nuclide, activity, and model number for each order must be checked by a member of the Customer Service Department to verify that:

7.2.1.1. The article is an NRC approved EZA Model Number series (Appendix 10.2 lists the NRC approved Sources) that meets the requirements shown in Appendix 10.1 under the column labeled 'NRC Quantity.'

7.2.1.2. The total activity to ship to the customer in a single shipment does not exceed 10 times the exempt quantity limit.

7.2.2. If the material is exempt, Customer Service (the person who performs the verification) stamps or writes "EXEMPTED QUANTITIES" on the work order and notes the following information in the Exempt Quantity Order Log (which may exist in data base form):

NOTE:
During order entry either select the Exempt Quantity model number, feature option, or make sure that the words "Exempt Quantity" are present in the item description or other section of the Order.

7.2.2.1. Date

7.2.2.2. Company and Address

7.2.2.3. Nuclide

7.2.2.4. Activity

7.2.2.5. EZA Model and/or Catalog Number

7.2.2.6. Number of Items

7.2.2.7. NRC (exempt source)

7.2.3. If the order is for the maximum exempt amount of a nuclide, Sales also must note on the work Order that this "maximum activity MUST NOT be exceeded" and/or indicate the accepted activity range e.g. +0%, -15%.

7.2.4. All sales orders containing exempt quantity sources must be reviewed and countersigned by either QO or HP qualified personnel. This approval is documented on the EZA Purchase order review form.

7.3. Inventory Control (Labeling):

7.3.1. Each Exempt Quantity Source must be marked or labeled with the words, "Radioactive Material". In addition, the following must also appear on the source in a legible and durable fashion:

7.3.1.1. Nuclide

7.3.1.2. Activity (in microcuries)

7.3.1.3. Serial/Source number or lot number

7.3.1.4. Calibration or Reference date

7.3.2. The order processing paperwork, procedures, drawings, and/or engraving/marking instructions shall state that the source must be marked with "Radioactive Material", nuclide, activity, serial/source or lot number, and calibration or reference date.

7.4. Quality Control:

7.4.1. Each Exempt Quantity Source must undergo and pass the following Quality Control inspections:

7.4.1.1 Visual inspection of required labeling. The words "Radioactive Material" must be visible on the source. The nuclide, activity, serial/source number or lot number, and calibration or reference date must be visible on the source.

7.4.1.2 Review the contained activity per the Quality Control Review Form or lab notebook page to verify that activity is below exempt quantity limits as listed on Appendices 10.1 and 10.2 of this procedure.

7.4.1.3 Verify that Form ANA-HP-16-01 “Important Instructions for Exempt Material” is included with the order.

7.4.1.4 Standard Quality Control checks as required by contract, work order, and/or product Quality Control procedures.

7.5. Preparation for Shipping:

7.5.1. Each quantity of exempt material listed in Appendix 10.1 must be separately and individually packaged.

7.5.1.1. No more than 10 Exempt Quantity Sources may be placed in any outer package.

7.5.1.2. The dose rate of any external surface of the outer package must not exceed 0.5 mR/h.

7.5.1.3. Each Exempt Quantity Source must be marked in accordance to section 7.3.1 of this procedure.

7.5.1.4. Each order must include instructions for possession, use, and disposal of exempt radioactive material, Form ANA-HP-16-01.

7.5.1.5. When transferring sources containing fractional amounts of Exempt Quantity Limits, the sum of the activities in one shipment must not exceed 10 exempt quantity limits for the nuclide involved.

7.5.1.6. Multiple packages each containing up to 10 sources as described in 7.5.1.1 may be shipped to any single customer on any given day as long as the total activity of all the sources doesn't exceed 10 times the exempt quantity.

NOTE:
For example, for a nuclide with an Exempt Quantity of 10 uCi, the customer could receive 10 sources that were each 10 uCi in one box

Or

The customer could receive 100 sources that were 1 uCi each – 10 boxes with 10 sources in each box would be required for this order.

7.6. Reports:

7.6.1. There are two reports that are generated:

7.6.1.1. NRC Exempt Quantity Report per 10 CFR 32.16 and 10 CFR 32.20.

7.6.1.1.1. Report should include: Nuclide, Physical Form (liquid, solid, gas), and Quantity.

7.6.1.2. Summary Report when filing a renewal or when notifying the NRC of discontinuation of activities under the E-license

7.6.1.3. NRC notification per 10 CFR 21.21 (as referred).

7.6.2. Records of transfers shall be retained for one year after inclusion in a summary report.

8.0 Reference(s):

8.1. US NRC exempt distribution license XX-XXXXX-XXX

8.2. 10 CFR 21 Reporting of defects and non-compliance

8.3. 10 CFR 30 Rules Of General Applicability To Domestic Licensing Of Byproduct Material

8.4. 10 CFR 32 Specific domestic licenses to manufacture and transfer certain items containing byproduct materials.

9.0 Revision History:

Revision:	Effective Date:	Description of Change:	Submitted/ Approved By:

10.0 Appendices:

10.1. NRC Exempt Quantities

10.2. Exempt Quantity Sources

10.3. Instructions for Possession, Use, and Disposal

10.4. Description of Multinuclide Mixture Options

11.0 Forms:

11.1. Form ANA-HP-16-01 “Important Instructions for Possession, Use, Storage, and Disposal of Exempt Radioactive Material.

Appendix 10.1: NRC Exempt Quantities (10 CFR 30.71 Schedule B)

Radionuclide	NRC Quantity (Microcuries)
Antimony-122 (Sb-122)	100
Antimony-124 (Sb-124)	10
Antimony-125 (Sb-125)	10
Arsenic-73 (As-73)	100
Arsenic-74 (As-74)	10
Arsenic-76 (As-76)	10
Arsenic-77 (As-77)	100
Barium-131 (Ba-131)	10
Barium-133 (Ba-133)	10
Barium-140 (Ba-140)	10
Beryllium-7 (Be-7)	Not Allowed
Bismuth-210 (Bi-210)	1
Bromine-82 (Br-82)	10
Cadmium-109 (Cd-109)	10
Cadmium-115m (Cd-115m)	10
Cadmium-115 (Cd-115)	100
Calcium-45 (Ca-45)	10
Calcium-47 (Ca-47)	10
Carbon-14 (C-14)	100
Cerium-141 (Ce-141)	100
Cerium-143 (Ce-143)	100
Cerium-144 (Ce-144)	1
Cesium-129 (Cs-129)	100
Cesium-131 (Cs-131)	1,000
Cesium-134m (Cs-134m)	100
Cesium-134 (Cs-134)	1

Radionuclide	NRC Quantity (Microcuries)
Cesium-135 (Cs-135)	10
Cesium-136 (Cs-136)	10
Cesium-137 (Cs-137)	10
Chlorine-36 (Cl-36)	10
Chlorine-38 (Cl-38)	10
Chromium-51 (Cr-51)	1,000
Cobalt-57 (Co-57)	100
Cobalt-58m (Co-58m)	10
Cobalt-58 (Co-58)	10
Cobalt-60 (Co-60)	1
Copper-64 (Cu-64)	100
Dysprosium-165 (Dy-165)	10
Dysprosium-166 (Dy-166)	100
Erbium-169 (Er-169)	100
Erbium-171 (Er-171)	100
Europium-152 9.2 h (Eu-152 9.2 h)	100
Europium-152 13 yr (Eu-152 13 yr)	1
Europium-154 (Eu-154)	1
Europium-155 (Eu-155)	10
Fluorine-18 (F-18)	1,000
Gadolinium-153 (Gd-153)	10
Gadolinium-159 (Gd-159)	100
Gallium-67 (Ga-67)	100
Gallium-72 (Ga-72)	10
Germanium-68 (Ge-68)	10
Germanium-71 (Ge-71)	100
Gold-195 (Au-195)	10
Gold-198 (Au-198)	100
Gold-199 (Au-199)	100

Radionuclide	NRC Quantity (Microcuries)
Hafnium-181 (Hf-181)	10
Holmium-166 (Ho-166)	100
Hydrogen-3 (H-3)	1,000
Indium-111 (In-111)	100
Indium-113m (In-113m)	100
Indium-114m (In-114m)	10
Indium-115m (In-115m)	100
Indium-115 (In-115)	10
Iodine-123 (I-123)	100
Iodine-125 (I-125)	1
Iodine-126 (I-126)	1
Iodine-129 (I-129)	0.1
Iodine-131 (I-131)	1
Iodine-132 (I-132)	10
Iodine-133 (I-133)	1
Iodine-134 (I-134)	10
Iodine-135 (I-135)	10
Iridium-192 (Ir-192)	10
Iridium-194 (Ir-194)	100
Iron-52 (Fe-52)	10
Iron-55 (Fe-55)	100
Iron-59 (Fe-59)	10
Krypton-85 (Kr-85)	100
Krypton-87 (Kr-87)	10
Lanthanum-140 (La-140)	10
Lead-210 (Pb-210)	Not Allowed
Lutetium-177 (Lu-177)	100
Manganese-52 (Mn-52)	10
Manganese-54 (Mn-54)	10

Radionuclide	NRC Quantity (Microcuries)
Manganese-56 (Mn-56)	10
Mercury-197m (Hg-197m)	100
Mercury-197 (Hg-197)	100
Mercury-203 (Hg-203)	10
Molbdenum-99 (Mo-99)	100
Neodymium-147 (Nd-147)	100
Neodymium-149 (Nd-149)	100
Nickel-59 (Ni-59)	100
Nickel-63 (Ni-63)	10
Nickel-65 (Ni-65)	100
Niobium-93m (Nb-93m)	10
Niobium-95 (Nb-95)	10
Niobium-97 (Nb-97)	10
Osmium-185 (Os-185)	10
Osmium-191m (Os-191m)	100
Osmium-191 (Os-191)	100
Osmium-193 (Os-193)	100
Palladium-103 (Pd-103)	100
Palladium-109 (Pd-109)	100
Phosphorus-32 (P-32)	10
Platinum-191 (Pt-191)	100
Platinum-193m (Pt-193m)	100
Platinum-193 (Pt-193)	100
Platinum-197m (Pt-197m)	100
Platinum-197 (Pt-197)	100
Polonium-210 (Po-210)	0.1
Potasium-42 (K-42)	10
Potasium-43 (K-43)	10
Praseodymium-142 (Pr-142)	100

Radionuclide	NRC Quantity (Microcuries)
Praseodymium-143 (Pr-143)	100
Promethium-147 (Pm-147)	10
Promethium-149 (Pm-149)	10
Rhenium-186 (Re-186)	100
Rhenium-188 (Re-188)	100
Rhodium-103m (Rh-103m)	100
Rhodium-105 (Rh-105)	100
Rubidium-81 (Rb-81)	10
Rubidium-86 (Rb-86)	10
Rubidium-87 (Rb-87)	10
Ruthenium-97 (Ru-97)	100
Ruthenium-103 (Ru-103)	10
Ruthenium-105 (Ru-105)	10
Ruthenium-106 (Ru-106)	1
Samarium-151 (Sm-151)	10
Samarium-153 (Sm-153)	100
Scandium-46 (Sc-46)	10
Scandium-47 (Sc-47)	100
Scandium-48 (Sc-48)	10
Selenium-75 (Se-75)	10
Silicon-31 (Si-31)	100
Silver-105 (Ag-105)	10
Silver-110m (Ag-110m)	1
Silver-111 (Ag-111)	100
Sodium-22 (Na-22)	10
Sodium-24 (Na-24)	10
Strontium-85 (Sr-85)	10
Strontium-89 (Sr-89)	1
Strontium-90 (Sr-90)	0.1

Radionuclide	NRC Quantity (Microcuries)
Strontium-91 (Sr-91)	10
Strontium-92 (Sr-92)	10
Sulphur-35 (S-35)	100
Tantalum-182 (Ta-182)	10
Technetium-96 (Tc-96)	10
Technetium-97m (Tc-97m)	100
Technetium-97 (Tc-97)	100
Technetium-99m (Tc-99m)	100
Technetium-99 (Tc-99)	10
Tellerium-125m (Te-125m)	10
Tellerium-127m (Te-127m)	10
Tellerium-127 (Te-127)	100
Tellerium-129m (Te-129m)	10
Tellerium-129 (Te-129)	100
Tellerium-131m (Te-131m)	10
Tellerium-132 (Te-132)	10
Terbium-160 (Tb-160)	10
Thallium-200 (Tl-200)	100
Thallium-201 (Tl-201)	100
Thallium-202 (Tl-202)	100
Thallium-204 (Tl-204)	10
Thulium-170 (Tm-170)	10
Thulium-171 (Tm-171)	10
Tin-113 (Sn-113)	10
Tin-125 (Sn-125)	10
Tungsten-181 (W-181)	10
Tungsten-185 (W-185)	10
Tungsten-187 (W-187)	100
Vanadium-48 (V-48)	10

Radionuclide	NRC Quantity (Microcuries)
Xenon-131m (Xe-131m)	1,000
Xenon-133 (Xe-133)	100
Xenon-135 (Xe-135)	100
Ytterbium-175 (Yb-175)	100
Yttrium-87 (Y-87)	10
Yttrium-88 (Y-88)	10
Yttrium-90 (Y-90)	10
Yttrium-91 (Y-91)	10
Yttrium-92 (Y-92)	100
Yttrium-93 (Y-93)	100
Zinc-65 (Zn-65)	10
Zinc-69m (Zn-69m)	100
Zinc-69 (Zn-69)	1,000
Zirconium-93 (Zr-93)	10
Zirconium-95 (Zr-95)	10
Zirconium-97 (Zr-97)	10
Any radionuclide not listed above other than alpha emitting radionuclides	0.1

Appendix 10.2: Exempt Quantity Sources

The following Eckert & Ziegler Analytics products are exempt quantity sources:

Model No.	Nuclide	Form	**Description: BUTTON** **Overall Diameter:** 1 x 1/4 Inch, 1 x 1/8 Inch **Active Diameter:** 5 mm **Drawing** E-XXX-BUT	Manufacturer
E-XXX-BUT	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-BUT	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-BUT	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- BUT	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0- BUT	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9- BUT	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE1- BUT	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- BUT	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CE9-BUT	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CO7- BUT	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- BUT	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- BUT	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- BUT	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- BUT	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- BUT	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- BUT	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- BUT	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-BUT	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9- BUT	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-BUT	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-BUT	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-BUT	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-BUT	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GE8-BUT	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GRS-BUT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- BUT	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- BUT	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- BUT	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- BUT	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- BUT	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-BUT	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-BUT	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-BUT	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-BUT	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- BUT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN2- BUT	Mn-52	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MN4- BUT	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: BUTTON Overall Diameter: 1 x 1/4 Inch, 1 x 1/8 Inch Active Diameter: 5 mm Drawing E-XXX-BUT	Manufacturer
E-MO9- BUT	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- BUT	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- BUT	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD3- BUT	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9- BUT	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3- BUT	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- BUT	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SB2- BUT	Sb-122	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB4- BUT	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- BUT	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-BUT	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3- BUT	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- BUT	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-BUT	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- BUT	Multinuclide (No Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TRI- BUT	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- BUT	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- BUT	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-BUT	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-BUT	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-BUT	Zr-97	Counting Standard	Less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: CARTRIDGE** Plastic or Metal **Drawing** E-XXX-CAR	Manufacturer
E-XXX-CAR	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3- CAR	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GRS-CAR	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-I25- CAR	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- CAR	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-CAR	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-MGS-CAR	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TCC- CAR	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TRI- CAR	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: DISK** **Overall Diameter:** 25.4 x 0.64 mm 47 x 0.64 mm or 47.1 x 0.9 mm **Active Diameter:** 5 mm – 47 mm **Drawing** E-XXX-DIS	Manufacturer
E-XXX-DIS	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-DIS	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- DIS	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- DIS	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-C14- DIS	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- DIS	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9- DIS	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE1- DIS	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- DIS	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CE9-DIS	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CL6- DIS	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7- DIS	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- DIS	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- DIS	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- DIS	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- DIS	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- DIS	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- DIS	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- DIS	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-DIS	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- DIS	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9- DIS	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-DIS	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-DIS	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-DIS	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-DIS	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-DIS	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-DIS	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- DIS	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- DIS	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- DIS	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- DIS	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- DIS	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- DIS	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-DIS	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-DIS	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- DIS	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4- DIS	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- DIS	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- DIS	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	Description: DISK Overall Diameter: 25.4 x 0.64 mm 47 x 0.64 mm or 47.1 x 0.9 mm Active Diameter: 5 mm – 47 mm Drawing E-XXX-DIS	Manufacturer
E-NI3- DIS	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- DIS	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32- DIS	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3- DIS	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9- DIS	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7- DIS	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0- DIS	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3- DIS	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- DIS	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35- DIS	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB2- DIS	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB4- DIS	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- DIS	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-DIS	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-DIS	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- DIS	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- DIS	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3- DIS	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- DIS	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9- DIS	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- DIS	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-DIS	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9- DIS	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- DIS	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-DIS	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4- DIS	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI- DIS	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- DIS	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- DIS	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- DIS	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-DIS	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-DIS	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-DIS	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: **ELECTRODEPOSITED** 24.1 mm Diameter x 0.65 mm Thick Stainless Steel Disk 47.1 mm Diameter x 0.9 mm Thick Stainless Steel Disk **Drawing** E-XXX-ELE	Manufacturer
E-XXX- ELE	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-TC9- ELE	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: FILTER** 47-50 mm Diameter Filter in Tape or in Planchet or Petri Dish 0.5, 0.8, 1.7 or 10.8 mg/cm2 tape cover **Drawing** E-XXX-FIL	Manufacturer
E-XXX-FIL	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-FIL	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- FIL	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- FIL	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-C14- FIL	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- FIL	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9- FIL	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-FIL	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1- FIL	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- FIL	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6- FIL	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7- FIL	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- FIL	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- FIL	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- FIL	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- FIL	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- FIL	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- FIL	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- FIL	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-FIL	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- FIL	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9- FIL	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-FIL	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-FIL	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-FIL	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-FIL	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-FIL	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-FIL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- FIL	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- FIL	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- FIL	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- FIL	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- FIL	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- FIL	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-FIL	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-FIL	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- FIL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4- FIL	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- FIL	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- FIL	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: FILTER** 47-50 mm Diameter Filter in Tape or in Planchet or Petri Dish 0.5, 0.8, 1.7 or 10.8 mg/cm2 tape cover **Drawing** E-XXX-FIL	Manufacturer
E-NI3- FIL	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- FIL	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-FIL	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3- FIL	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-FIL	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-FIL	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-FIL	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-FILS	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- FIL	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35- FIL	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB2- FIL	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB4- FIL	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- FIL	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-FIL	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-FIL	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- FIL	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- FIL	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3- FIL	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- FIL	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9- FIL	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- FIL	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-FIL	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9- FIL	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-FIL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-FIL	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4- FIL	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI- FIL	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- FIL	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- FIL	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- FIL	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-FIL	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-FIL	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-FIL	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: GAS** 33 mL Glass Gas Sphere; Pressurized Lecture Bottle; Pressurized Stainless Steel Cylinder **Drawing** E-XXX-GAS	Manufacturer
E-XXX-GAS	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-KR5-GAS	Kr-85	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-Xe1-GAS	Xe-131m	Counting Standard	less than 1000 uCi	Eckert & Ziegler Analytics
E-Xe3-GAS	Xe-133	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: LIQUIDS 2 - 50 mL Liquid Flame Sealed Vial 100 – 1000 mL Liquid in Flame Sealed Reagent Bottle **Drawing** E-XXX-LIQ	Manufacturer
E-XXX-LIQ	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-LIQ	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-LIQ	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-LIQ	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-LIQ	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-C14-LIQ	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-LIQ	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9-LIQ	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-LIQ	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-LIQ	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-LIQ	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6-LIQ	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7-LIQ	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-LIQ	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-LIQ	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-LIQ	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-LIQ	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-LIQ	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-LIQ	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-LIQ	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-LIQ	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-LIQ	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9-LIQ	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-LIQ	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-LIQ	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-LIQ	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-LIQ	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-LIQ	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-LIQ	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-H-3-LIQ	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-HG3-LIQ	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-LIQ	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-LIQ	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-LIQ	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-LIQ	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-LIQ	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-LIQ	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-LIQ	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-LIQ	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-LIQ	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-LIQ	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: LIQUIDS** 2 - 50 mL Liquid Flame Sealed Vial 100 – 1000 mL Liquid in Flame Sealed Reagent Bottle **Drawing** E-XXX-LIQ	Manufacturer
E-MO9-LIQ	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-LIQ	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3-LIQ	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-LIQ	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-LIQ	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-LIQ	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-LIQ	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-LIQ	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-LIQ	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-LIQ	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-LIQ	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35-LIQ	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB5-LIQ	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-LIQ	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-LIQ	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-LIQ	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-LIQ	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3-LIQ	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-LIQ	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9-LIQ	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-LIQ	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-LIQ	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC5-LIQ	Tc-95m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TC9-LIQ	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-LIQ	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-LIQ	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4-LIQ	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI-LIQ	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-LIQ	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-LIQ	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-LIQ	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-LIQ	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-LIQ	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-LIQ	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: PLANCHET** Simulated Evaporated Liquid Stainless Steel or Aluminum Planchet with 0.5, 0.8 or 1.7 mg/cm2 mylar cover **Drawing** E-XXX-PLN	Manufacturer
E-XXX-PLN	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-PLN	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- PLN	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- PLN	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-C14- PLN	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5- PLN	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9- PLN	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-PLN	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1- PLN	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- PLN	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6- PLN	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7- PLN	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- PLN	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- PLN	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- PLN	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- PLN	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- PLN	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- PLN	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- PLN	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-PLN	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5- PLN	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9- PLN	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-PLN	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-PLN	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-PLN	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-PLN	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-PLN	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-PLN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- PLN	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- PLN	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- PLN	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- PLN	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- PLN	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- PLN	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-PLN	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-PLN	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- PLN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4- PLN	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- PLN	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- PLN	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: PLANCHET** Simulated Evaporated Liquid Stainless Steel or Aluminum Planchet with 0.5, 0.8 or 1.7 mg/cm2 mylar cover **Drawing** E-XXX-PLN	Manufacturer
E-NI3- PLN	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9- PLN	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-PLN	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3- PLN	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-PLN	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-PLN	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-PLN	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-PLN	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- PLN	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35- PLN	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB2- PLN	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB4- PLN	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- PLN	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-PLN	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-PLN	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1- PLN	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3- PLN	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3- PLN	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- PLN	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9- PLN	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0- PLN	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-PLN	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9- PLN	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- PLN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-PLN	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4- PLN	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI- PLN	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- PLN	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90- PLN	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- PLN	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-PLN	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-PLN	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-PLN	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: POINT** Point Source in Tape on 2 Inch Aluminum Ring **Drawing** E-XXX-PNT	Manufacturer
E-XXX-PNT	XXX = nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-PNT	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- PNT	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- PNT	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CD9- PNT	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-PNT	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1- PNT	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- PNT	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CO7- PNT	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- PNT	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- PNT	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- PNT	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- PNT	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- PNT	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- PNT	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- PNT	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-PNT	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9- PNT	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-PNT	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-PNT	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD8-PNT	Gd-148	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-GD3-PNT	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-PNT	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-PNT	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-PNT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- PNT	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- PNT	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- PNT	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- PNT	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- PNT	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- PNT	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-PNT	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-PNT	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- PNT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4- PNT	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- PNT	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- PNT	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3- PNT	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-PNT	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3-PNT	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- PNT	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SB2- PNT	Sb-122	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: POINT** Point Source in Tape on 2 Inch Aluminum Ring **Drawing** E-XXX-PNT	Manufacturer
E-SB4- PNT	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- PNT	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-PNT	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3- PNT	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- PNT	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-PNT	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- PNT	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-PNT	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TRI- PNT	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- PNT	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- PNT	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-PNT	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-PNT	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-PNT	Zr-97	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: QUENCH** 20 mL Flame Sealed Liquid Scintillation Vial or 7 mL Flame Sealed Liquid Scintillation Vial **Drawing** E-XXX-QUE	Manufacturer
E-XXX-QUE	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-QUE	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-QUE	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-QUE	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-QUE	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-C14-QUE	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-QUE	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9-QUE	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-QUE	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-QUE	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-QUE	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6-QUE	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7-QUE	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-QUE	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-QUE	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-QUE	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-QUE	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-QUE	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-QUE	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-QUE	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-QUE	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-QUE	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9-QUE	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-QUE	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-QUE	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-QUE	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-QUE	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-QUE	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-H-3-QUE	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-HG3-QUE	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-QUE	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-QUE	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-QUE	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-QUE	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-QUE	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-QUE	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-QUE	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-QUE	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MN4-QUE	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-QUE	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-QUE	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3-QUE	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-QUE	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: QUENCH** 20 mL Flame Sealed Liquid Scintillation Vial or 7 mL Flame Sealed Liquid Scintillation Vial **Drawing** E-XXX-QUE	Manufacturer
E-P32-QUE	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-QUE	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-QUE	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-QUE	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PO0-QUE	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-RU3-QUE	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-QUE	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35-QUE	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB5-QUE	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-QUE	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-QUE	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-QUE	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-QUE	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3-QUE	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-QUE	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9-QUE	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-QUE	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-QUE	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9-QUE	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TE3-QUE	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4-QUE	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y88-QUE	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-QUE	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-QUE	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-QUE	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-QUE	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-QUE	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: UNQUENCHED 20 mL Flame Sealed Liquid Scintillation Vial or 7 mL Flame Sealed Liquid Scintillation Vial Drawing E-XXX-UNQ	Manufacturer
E-XXX-UNQ	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14-UNQ	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-H-3-UNQ	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: ROD** 0.625 Inch Diameter x 5 Inch Long**,** **active area** <5 mm 0.5 Inch Diameter x 5 Inch Long, **active area** <5 mm 0.5 Inch Diameter x 3 Inch Long, **active area** <5 mm **Drawing** E-XXX-ROD	Manufacturer
E-XXX-ROD	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0- ROD	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3- ROD	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7- ROD	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0- ROD	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9- ROD	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE1- ROD	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4- ROD	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CE9- ROD	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CO7- ROD	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8- ROD	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0- ROD	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1- ROD	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4- ROD	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7- ROD	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2- ROD	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4- ROD	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5- ROD	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9- ROD	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7- ROD	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1- ROD	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3- ROD	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1- ROD	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GE8- ROD	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GRS- ROD	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3- ROD	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6- ROD	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25- ROD	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29- ROD	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31- ROD	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1- ROD	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2- ROD	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4- ROD	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7- ROD	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS- ROD	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN2- ROD	Mn-52	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MN4- ROD	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9- ROD	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2- ROD	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: ROD** 0.625 Inch Diameter x 5 Inch Long, **active area** <5 mm 0.5 Inch Diameter x 5 Inch Long, **active area** <5 mm 0.5 Inch Diameter x 2.95 Inch Long, **active area** <5 mm **Drawing** E-XXX-ROD	Manufacturer
E-PD3- ROD	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9- ROD	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3- ROD	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6- ROD	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SB2- ROD	Sb-122	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB4- ROD	Sb-124	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SB5- ROD	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5- ROD	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3- ROD	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5- ROD	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2- ROD	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC- ROD	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TRI- ROD	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88- ROD	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5- ROD	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3- ROD	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5- ROD	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7- ROD	Zr-97	Counting Standard	Less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: SAND** Marinelli Beakers Bottles **Drawing** E-XXX-SAN	Manufacturer
E-XXX-SAN	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-SAN	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-SAN	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-SAN	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-SAN	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9-SAN	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-SAN	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-SAN	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-SAN	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CO7-SAN	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-SAN	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-SAN	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-SAN	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-SAN	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-SAN	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-SAN	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-SAN	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-SAN	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9-SAN	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-SAN	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-SAN	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-SAN	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-SAN	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-SAN	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-SAN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3-SAN	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-SAN	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-SAN	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-SAN	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-SAN	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-SAN	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-SAN	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-SAN	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-SAN	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-SAN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-SAN	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-SAN	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-SAN	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-SAN	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-SAN	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3-SAN	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-SAN	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: SAND** Marinelli Beakers Bottles **Drawing** E-XXX-SAN	Manufacturer
E-SB5-SAN	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-SAN	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3-SAN	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-SAN	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-SAN	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-SAN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-SAN	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TRI-SAN	Multinuclide (no Am-241)	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-SAN	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-SAN	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-SAN	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-SAN	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-SAN	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: SIMULATED GAS** 33 mL Glass Gas Sphere; 15 mL Off Gas Vial Marinelli Beakers **Drawing** E-XXX-SIM	Manufacturer
E-XXX-SIM	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-SIM	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-SIM	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-SIM	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-SIM	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9-SIM	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-SIM	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-SIM	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-SIM	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CO7-SIM	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-SIM	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-SIM	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-SIM	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-SIM	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-SIM	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-SIM	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-SIM	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-SIM	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9-SIM	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-SIM	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-SIM	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-SIM	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-SIM	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-SIM	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3-SIM	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-SIM	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-SIM	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-SIM	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-SIM	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-SIM	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-SIM	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-SIM	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-SIM	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-SIM	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-SIM	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-SIM	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-SIM	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-SIM	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-SIM	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3-SIM	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-SIM	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: SIMULATED GAS** 33 mL Glass Gas Sphere; 15 mL Off Gas Vial Marinelli Beakers **Drawing** E-XXX-SIM	Manufacturer
E-SB5-SIM	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-SIM	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3-SIM	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-SIM	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-SIM	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-SIM	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-SIM	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TRI-SIM	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-SIM	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-SIM	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-SIM	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-SIM	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-SIM	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: SIMULATED VEGETATION Marinelli Beakers Bottles Drawing E-XXX-SVE	Manufacturer
E-XXX-SVE	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	Eckert & Zieger Analytics
E-AG0-SVE	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-SVE	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-SVE	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-SVE	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-C14-SVE	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CA5-SVE	Ca-45	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CD9-SVE	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-SVE	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-SVE	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-SVE	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CL6-SVE	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO7-SVE	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-SVE	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-SVE	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-SVE	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-SVE	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-SVE	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-SVE	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-SVE	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-SVE	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE5-SVE	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-FE9-SVE	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-SVE	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-SVE	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-SVE	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-SVE	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-SVE	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-SVE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-H-3-SVE	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-HG3-SVE	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-SVE	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-SVE	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-SVE	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-SVE	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-SVE	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-SVE	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-SVE	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-SVE	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-SVE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-SVE	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: SIMULATED VEGETATION** Marinelli Beakers Bottles **Drawing** E-XXX-SVE	Manufacturer
E-MO9-SVE	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-SVE	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI3-SVE	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-NI9-SVE	Ni-59	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-P32-SVE	P-32	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-SVE	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-SVE	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PM7-SVE	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU3-SVE	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-RU6-SVE	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-S35-SVE	S-35	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SB5-SVE	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-SVE	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SI2-SVE	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-SM1-SVE	Sm-151	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SM3-SVE	Sm-153	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-SN3-SVE	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-SVE	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR9-SVE	Sr-89	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SR0-SVE	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TA2-SVE	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9-SVE	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-SVE	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-SVE	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TL4-SVE	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TRI-SVE	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-SVE	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-Y90-SVE	Y-90	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-SVE	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-SVE	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-SVE	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-SVE	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: SOLID** Liquid Scintillation Vial Marinelli Beaker Bottles **Drawing** E-XXX-SOL	Manufacturer
E-XXX-SOL	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-AG0-SOL	Ag-110m	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-BA3-SOL	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-BI7-SOL	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-BI0-SOL	Bi-210	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CD9-SOL	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CE9-SOL	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-CE1-SOL	Ce-141	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CE4-SOL	Ce-144	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CO7-SOL	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-CO8-SOL	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-CO0-SOL	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CR1-SOL	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Analytics
E-CS4-SOL	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-CS7-SOL	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-EU2-SOL	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU4-SOL	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-EU5-SOL	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-FE9-SOL	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GA7-SOL	Ga-67	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GA1-SOL	Ga-71	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GD3-SOL	Gd-153	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE8-SOL	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-GE1-SOL	Ge-71	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-GRS-SOL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 6.0 uCi Gamma Ray Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-HG3-SOL	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-HO6-SOL	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I25-SOL	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-I29-SOL	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-I31-SOL	I-131	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-IN1-SOL	In-111	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-IR2-SOL	Ir-192	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-IR4-SOL	Ir-194	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-LU7-SOL	Lu-177	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-MGS-SOL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 3.5 uCi Mixed Gamma Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-MN4-SOL	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-MO9-SOL	Mo-99	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-NA2-SOL	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-PD3-SOL	Pd-103	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-PD9-SOL	Pd-109	Counting Standard	less than 100 uCi	Eckert & Ziegler Analytics
E-RU3-SOL	Ru-103	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Model No.	Nuclide	Form	**Description: SOLID** Liquid Scintillation Vial Marinelli Beaker Bottles **Drawing** E-XXX-SOL	Manufacturer
E-RU6-SOL	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Analytics
E-SB5-SOL	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SE5-SOL	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SN3-SOL	Sn-113	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-SR5-SOL	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TA2-SOL	Ta-182	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TC9-SOL	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-TCC-SOL	Multinuclide (no Am-241)	Counting Standard	Not exceeding 4.1 uCi TCC Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-TE3-SOL	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Analytics
E-TRI-SOL	Multinuclide	Counting Standard	Not exceeding 2.1 uCi Tri-Nuclide Series Ref.: Appendix 10.4	Eckert & Ziegler Analytics
E-Y88-SOL	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZN5-SOL	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR3-SOL	Zr-93	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR5-SOL	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics
E-ZR7-SOL	Zr-95	Counting Standard	less than 10 uCi	Eckert & Ziegler Analytics

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Disk Source Overall Diameter 25 mm x 3 mm Active Diameter 16 mm Drawing VZ-1366-001	Manufacturer
E-XXX-VZ1366	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1366	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1366	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1366	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1366	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1366	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1366	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1366	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1366	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1366	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1366	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1366	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1366	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1366	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1366	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1366	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1366	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Aluminum Disk Source** **Overall Diameter** 30 mm x 3 mm **Active Diameter** 25 mm **Drawing** VZ-1367-001	Manufacturer
E-XXX-VZ1367	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1367	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1367	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1367	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1367	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1367	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1367	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1367	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1367	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1367	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1367	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1367	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1367	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1367	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1367	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1367	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1367	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Aluminum Disk Source** **Overall Diameter** 10-190 x 1- 5 mm **Active Diameter** 9-188 mm **Drawing** VZ-497-001	Manufacturer
E-XXX-VZ497	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ497	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ497	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ497	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ497	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ497	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ497	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ497	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ497	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ497	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ497	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ497	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ497	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ497	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ497	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ497	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ497	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Aluminum Disk Source** **Overall Diameter** 40-380 x 3- 6 mm **Active Diameter** 20-200 mm **Drawing** VZ-1214-001	Manufacturer
E-XXX-VZ1214	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1214	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1214	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1214	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1214	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1214	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1214	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1214	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1214	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1214	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1214	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1214	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1214	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1214	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1214	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1214	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1214	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Aluminum Disk Source** **Overall Diameter** 15-60 x 1 mm **Active Diameter** 10-55 mm **Drawing** VZ-2132-001	Manufacturer
E-XXX-VZ2132	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ2132	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ2132	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ2132	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ2132	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ2132	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ2132	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ2132	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ2132	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ2132	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ2132	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ2132	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ2132	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ2132	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ2132	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ2132	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ2132	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Aluminum Disk Source** **Overall Diameter** 50 mm x 3 mm **Active Diameter** 36 mm **Drawing** VZ-1369-001	Manufacturer
E-XXX-VZ1369	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	Eckert & Ziegler Nuclitec
				Eckert & Ziegler Nuclitec
E-BA3-VZ1369	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1369	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1369	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1369	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1369	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1369	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1369	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1369	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1369	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1369	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1369	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1369	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1369	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1369	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1369	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1369	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Aluminum Disk Source** **Overall Diameter** 60 mm x 3 mm **Active Diameter** 50 mm **Drawing** VZ-1370-001	Manufacturer
E-XXX-VZ1370	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1370	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1370	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1370	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1370	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1370	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1370	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1370	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1370	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1370	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1370	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1370	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1370	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1370	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1370	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1370	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1370	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Alunimum Planchet Source** **Overall Diameter** 194 mm x 3 mm **Active Diameter** 190 mm **Drawing** VZ-615-001	Manufacturer
E-XXX-VZ615	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ615	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ615	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ615	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ615	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ615	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ615	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ615	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ615	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ615	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ615	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ615	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ615	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ615	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ615	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ615	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ615	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Alunimum Disk Source** **Overall Diameter** 50 mm x 0.8 mm **Active Diameter** 40.6 mm **Drawing** VZ-1688	Manufacturer
E-XXX-VZ1688	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1688	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1688	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1688	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1688	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1688	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1688	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1688	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1688	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1688	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1688	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1688	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1688	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1688	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1688	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1688	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1688	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Alunimum Disk Source** **Overall Diameter** 47 mm x 0.8 mm **Active Diameter** 40 mm **Drawing** VZ-1964-001	Manufacturer
E-XXX-VZ1964	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1964	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1964	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1964	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1964	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1964	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1964	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1964	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1964	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1964	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1964	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1964	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1964	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1964	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1964	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1964	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1964	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source **Overall Diameter** 50 mm x 3 mm **Active Diameter** 49 mm **Drawing** VZ-1430-001	Manufacturer
E-XXX-VZ1430	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1430	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1430	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1430	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1430	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1430	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1430	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1430	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1430	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1430	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1430	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1430	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1430	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1430	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1430	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1430	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1430	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source **Overall Diameter** 60 mm x 3 mm **Active Diameter** 58 mm **Drawing** VZ-1431-001	Manufacturer
E-XXX-VZ1431	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1431	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1431	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1431	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1431	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1431	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1431	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1431	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1431	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1431	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1431	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1431	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1431	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1431	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1431	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1431	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1431	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Stainless Steel Planchet Source** **Overall Diameter** 216 mm x 12 mm **Active Diameter** 197 mm **Drawing** VZ-339-001	Manufacturer
E-XXX-VZ339	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ339	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ339	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ339	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ339	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ339	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ339	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ339	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ339	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ339	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ339	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ339	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ339	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ339	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ339	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ339	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ339	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Stainless Steel Planchet Source **Overall Diameter** 60 mm x 8 mm **Active Diameter** 58 mm **Drawing** VZ-1392-001	Manufacturer
E-XXX-VZ1392	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1392	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1392	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1392	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1392	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1392	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1392	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1392	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1392	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1392	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1392	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1392	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1392	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1392	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1392	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1392	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1392	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Anodized Aluminum Plate Source** **Overall Diameter** 120 mm x 120 mm x 3 mm **Active Diameter** 100 mm x 100 mm **Drawing** VZ-626-001	Manufacturer
E-XXX-VZ626	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ626	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ626	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ626	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ626	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ626	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ626	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ626	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ626	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ626	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ626	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ626	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ626	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ626	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ626	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ626	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ626	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source **Overall Diameter** 120 mm x 170 mm x 3 mm **Active Diameter** 100 mm x 150 mm **Drawing** VZ-628-001	Manufacturer
E-XXX-VZ628	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ628	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ628	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ628	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ628	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ628	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ628	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ628	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ628	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ628	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ628	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ628	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ628	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ628	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ628	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ628	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ628	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Photon Source **Overall Diameter** 150 mm x 150 mm x 3 mm **Active Diameter** 100 mm x 100 mm **Drawing** VZ-1658-001	Manufacturer
E-XXX-VZ1658	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-FE5-VZ1658	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Photon Source **Overall Diameter** 150 mm x 150 mm x 3 mm **Active Diameter** 100 mm x 100 mm 200 mg/cm2 Stainless Steel **Drawing** VZ-1776-001	Manufacturer
E-XXX-VZ1776	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CO7-VZ1776	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Photon Source **Overall Diameter** 150 mm x 150 mm x 3 mm **Active Diameter** 100 mm x 100 mm 800 mg/cm2 Stainless Steel **Drawing** VZ-2162-001	Manufacturer
E-XXX-VZ2162	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2162	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Photon Source **Overall Diameter** 150 mm x 150 mm x 3 mm **Active Diameter** 100 mm x 100 mm 81 mg/cm2 Aluminum **Drawing** VZ-1898-001	Manufacturer
E-XXX-VZ1898	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CO0-VZ1898	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Gamma Reference Source **Overall Diameter** 50 mm x 3 mm **Active Diameter** 32 mm **Drawing** VZ-2130	Manufacturer
E-XXX-VZ2130	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-I29-VZ2130	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Photon Source **Overall Diameter** 120 mm x 170 mm x 5 mm **Active Diameter** 100 mm x 150 mm **Drawing** VZ-1958	Manufacturer
E-XXX-VZ1958	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-I29-VZ1958	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum LadderSource **Overall Diameter** 2020 mm x 267 mm **Active Diameter** 100 mm x 100 mm each source (6) **Drawing** VZ-1634-002	Manufacturer
E-XXX-VZ1634	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CO0-VZ1634	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1634	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1634	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Beta Source **Overall Diameter** 87 mm x 50 mm x 1 mm **Active Diameter** 19 mm **Drawing** VZ-2020-001	Manufacturer
E-XXX-VZ2020	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CL6-VZ2020	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ2020	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ2020	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ2020	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Beta Reference Source **Overall Diameter** 87 mm x 50 mm x 1 mm **Active Diameter** 19 mm **Drawing** VZ-2029-001	Manufacturer
E-XXX-VZ2029	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2029	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ2029	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ2029	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Co-60 Check Source **Overall Diameter** 16 mm x 60 mm **Active Diameter** 2 mm **5 discs on 1 strip** **Drawing** VZ-3433-001	Manufacturer
E-XXX-VZ3433	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CO0-VZ3433	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source **Overall Diameter** 113 mm x 310 mm x 50 mm **Active Diameter** 100 mm x 100 mm **Drawing** VZ-1614-001	Manufacturer
E-XXX-VZ1614	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1614	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1614	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1614	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1614	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1614	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1614	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1614	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1614	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1614	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1614	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1614	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1614	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1614	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1614	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1614	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1614	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source **Overall Diameter** 113 mm x 310 mm x 50 mm **Active Diameter** 150 mm x 100 mm **Drawing** VZ-1684-001	Manufacturer
E-XXX-VZ1684	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1684	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-C14-VZ1684	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ1684	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1684	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1684	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1684	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1684	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-H-3-VZ1684	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-I29-VZ1684	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NI3-VZ1684	Ni-63	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PM7-VZ1684	Pm-147	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-PO0-VZ1684	Po-210	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SI2-VZ1684	Si-32	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ1684	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ1684	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ1684	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Beta / Gamma Reference Disk Source** **Overall Diameter** 25 mm x 3 mm **Active Diameter** 7 mm in 16 mm Foil **Drawing** VZ-599-002	Manufacturer
E-XXX-VZ599	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ599	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ599	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ599	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ599	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ599	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ599	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ599	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I29-VZ599	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ599	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ599	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ599	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ599	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Beta / Gamma Reference Disk Source** **Overall Diameter** 50 mm x 4 mm **Active Diameter** 7 mm in 36 mm foil **Drawing VZ-605-002**	Manufacturer
E-XXX-VZ605	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ605	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ605	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ605	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CL6-VZ605	Cl-36	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ605	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ605	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ605	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-I29-VZ605	I-129	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ605	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR0-VZ605	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-TC9-VZ605	Tc-99	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TL4-VZ605	Tl-204	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Anodized Aluminum Source **Overall Diameter** 134 mm x 210 mm **Active Diameter** 10 mm x 75 mm **Drawing** VZ-1610	Manufacturer
E-XXX-VZ1610	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-H-3-VZ1610	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Anodized Aluminum Plate Source **Overall Diameter** 86 mm x 226 mm **Active Diameter** 15 mm x 152 mm **Drawing** VZ-1516-001	Manufacturer
E-XXX-VZ1516	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-H-3-VZ1516	H-3	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Check Source Soldered to a Brass Capsule **Drawing** VZ-269-001	Manufacturer
E-XXX-VZ269	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ269	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source **Active Diameter** 32 mm **Drawing** VZ-2044	Manufacturer
E-XXX-VZ2044	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-FE5-VZ2044	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule **Active Diameter** 5.8 mm **Drawing** VZ-2134-001	Manufacturer
E-XXX-VZ2134	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2134	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule **Drawing** VZ-542-001	Manufacturer
E-XXX-VZ542	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ542	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO6-VZ542	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule **Drawing** VZ-543 **-001**	Manufacturer
E-XXX-VZ543	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ543	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO6-VZ543	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule **Drawing** VZ-2936-001	Manufacturer
E-XXX-VZ2936	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2936	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule **Drawing** VZ-130/2	Manufacturer
E-XXX-VZ130	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ130	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule **Drawing** VZ-1145	Manufacturer
E-XXX-VZ1145	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ1145	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Reference Source Welded in Stainless Steel Capsule **Drawing** VZ-2733	Manufacturer
E-XXX-VZ2733	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-CS7-VZ2733	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: C-14 Beta Check Source Glued in Aluminum Capsule **Drawing** VZ-623-002	Manufacturer
E-XXX-VZ623	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14-VZ623	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: C-14 Beta Check Source glued in Aluminum Capsule Drawing ES-3686-001	Manufacturer
E-XXX-VZ3686	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-C14-VZ3686	C-14	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	Description: Gamma Check Source Laminated between Sealed Plastic Foils Drawing VZ-3549-002	Manufacturer
E-XXX-VZ3549	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-NA2-VZ3549	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Gamma Reference Source **Overall Diameter** 23.5 mm x 11 mm x 2 mm **Drawing** VZ-1240-001	Manufacturer
E-XXX-VZ1240	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-BA3-VZ1240	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ1240	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ1240	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ1240	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ1240	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ1240	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ1240	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ1240	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ1240	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ1240	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ1240	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ1240	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ1240	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ1240	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ1240	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ1240	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ1240	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ1240	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ1240	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ1240	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ1240	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ1240	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ1240	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ1240	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ1240	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ1240	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ1240	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ1240	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	Description: Gamma Reference Source **Overall Diameter** 25 mm x 3 mm **Drawing** VZ-477-002	Manufacturer
E-XXX-VZ477	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	Eckert & Ziegler Nuclitec
				Eckert & Ziegler Nuclitec
E-BA3-VZ477	Ba-133	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-BI7-VZ477	Bi-207	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CD9-VZ477	Cd-109	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CE9-VZ477	Ce-139	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-CO7-VZ477	Co-57	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-CO8-VZ477	Co-58	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-CO0-VZ477	Co-60	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CR1-VZ477	Cr-51	Counting Standard	less than 1 mCi	Eckert & Ziegler Nuclitec
E-CS4-VZ477	Cs-134	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-CS7-VZ477	Cs-137	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-EU2-VZ477	Eu-152	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU4-VZ477	Eu-154	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-EU5-VZ477	Eu-155	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-FE5-VZ477	Fe-55	Counting Standard	less than 100 uCi	Eckert & Ziegler Nuclitec
E-FE9-VZ477	Fe-59	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-GE8-VZ477	Ge-68	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HG3-VZ477	Hg-203	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-HO6-VZ477	Ho-166m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-I25-VZ477	I-125	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-MN4-VZ477	Mn-54	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-NA2-VZ477	Na-22	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-RU6-VZ477	Ru-106	Counting Standard	less than 1 uCi	Eckert & Ziegler Nuclitec
E-SB5-VZ477	Sb-125	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SE5-VZ477	Se-75	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-SR5-VZ477	Sr-85	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-TE3-VZ477	Te-123m	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec
E-Y88-VZ477	Y-88	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec
E-ZN5-VZ477	Zn-65	Counting Standard	less than 10 uCi	Eckert & Ziegler Nuclitec

Appendix 10.2: Exempt Quantity Sources

Model No.	Nuclide	Form	**Description: Sr-90 Beta Source** **Overall Diameter** 25 mm x 0.8 mm **Active Diameter** 24 mm **Drawing** VZ-3493-001	Manufacturer
E-XXX-VZ3493	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-SR0-VZ3493	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Model No.	Nuclide	Form	**Description Sr-90 Beta Source** **Overall Diameter** 50 mm x 5 mm **Active Diameter** 44.45 mm **Drawing** VZ-3494-001	Manufacturer
E-XXX-VZ3494	XXX=Nuclide		Refer to nuclide in Appendix 10.1, NRC Quantity	
E-SR0-VZ3494	Sr-90	Counting Standard	less than 0.1 uCi	Eckert & Ziegler Nuclitec

Appendix 10.3: Instructions for Possession, Use, and Disposal

(Suggested text for FORM ANA-HP-16-01: "Important Instructions for Exempt Material")

IMPORTANT

INSTRUCTIONS FOR POSSESSION, USE, AND DISPOSAL OF EXEMPT RADIOACTIVE MATERIAL

The enclosed contents of Radioactive Material are exempt from NRC or Agreement State licensing requirements.

These contents are Radioactive Material – Not for Human Use -

HANDLING

- Although the quantities of radioactive material contained in these products is extremely small, the basic radiation principals of time, distance, and shielding should be practiced as effective methods for minimizing exposure.
- Use of radioactive material should be only by responsible persons in authorized areas.
- Introduction into foods, beverages, cosmetics, drugs, or medicinals, or into products manufactured for commercial distribution is prohibited.
- Gloves, safety glasses, and laboratory coats should be worn when working with liquid radioactive material.

USE

- Disk sources should be held by the metal or plastic sides or back. Be careful not to damage any foil used to cover the radioactive material.
- Liquid sources should be handled in such a way as to minimize spillage of the liquid on fingers or unprepared surfaces.
- Exempt quantities should not be combined.

Eckert & Ziegler Analytics
1380 Seaboard Industrial Blvd
Atlanta, GA 30318
Tel 404-352-8677
Fax 404-352-2837

IMPORTANT

INSTRUCTIONS FOR POSSESSION, USE, AND DISPOSAL OF EXEMPT RADIOACTIVE MATERIAL

CONTAMINATION

- Loose radioactive material may be cleaned up with small quantities of detergent in water and absorbent materials.

STORAGE

- Store all sources in a secured container with visible identification when not in use.

DISPOSAL

- This product may be disposed of without regard to its radioactive content provided all radiation symbols have been removed or defaced.

These instructions apply only to the exempt material shipped by Eckert & Ziegler Analytics and are meant as guidelines for your safe handling of the sources. Radioactive material possessed under a specific license from the NRC or an Agreement State must be handled in accordance with those specific license requirements.

Eckert & Ziegler Analytics
1380 Seaboard Industrial Blvd
Atlanta, GA 30318
Tel 404-352-8677
Fax 404-352-2837

Appendix 10.4: Description of MultiNuclide Mixture Options

Mixed Gamma Series (multinuclide) - maximum activity for an Exempt Quantity source is 3.5 uCi total

Nuclides	Exempt Qty Limit	Activity in a 3.5 uCi source
^{109}Cd	10 uCi	2.590 uCi
^{57}Co	100 uCi	0.057 uCi
^{139}Ce	0.1 uCi	0.085 uCi
^{203}Hg	10 uCi	0.189 uCi
^{113}Sn	10 uCi	0.148 uCi
^{137}Cs	10 uCi	0.071 uCi
^{60}Co	1 uCi	0.113 uCi
^{88}Y	10 uCi	0.247 uCi

Gamma-Ray Series (multinuclide) - maximum activity for an Exempt Quantity source is 6.0 uCi total

Nuclides	Exempt Qty Limit	Activity in a 6.0 uCi source
^{109}Cd	10 uCi	2.530 uCi
^{57}Co	100 uCi	0.060 uCi
^{139}Ce	0.1 uCi	0.085 uCi
^{51}Cr	10 uCi	2.540 uCi
^{113}Sn	10 uCi	0.140 uCi
^{85}Sr	10 uCi	0.200 uCi
^{137}Cs	10 uCi	0.075 uCi
^{60}Co	1 uCi	0.120 uCi
^{88}Y	10 uCi	0.250 uCi

Tri-Nuclide Series - maximum activity for an Exempt Quantity source is 2.1 uCi total

Nuclides	Exempt Qty Limit	Activity in a 2.1 uCi source
^{154}Eu	1 uCi	0.84 uCi
^{155}Eu	10 uCi	0.42 uCi
^{125}Sb	10 uCi	0.84 uCi

Appendix 10.4: Description of MultiNuclide Mixture Options

TCC Series (multinuclide) - maximum activity for an Exempt Quantity source is 4.1 uCi total

Nuclides	Exempt Qty Limit	Activity in a 4.1 uCi source
^{109}Cd	10 uCi	2.450 uCi
^{57}Co	100 uCi	0.070 uCi
^{139}Ce	0.1 uCi	0.080 uCi
^{203}Hg	10 uCi	0.180 uCi
^{113}Sn	10 uCi	0.120 uCi
^{134}Cs	1 uCi	0.280 uCi
^{137}Cs	10 uCi	0.070 uCi
^{54}Mn	10 uCi	0.150 uCi
^{88}Y	10 uCi	0.290 uCi
^{65}Zn	10 uCi	0.410 uCi