

## **INSTRUCTIONS FOR CUSTOMERS RETURNING RADIOACTIVE WASTE TO THE NUCLEAR PHARMACY**

(Reference: 49 CFR, 173.421)

Only items containing or contaminated with radioactive materials that were supplied by Radiopharmacy, Inc. of Evansville, IN may be returned for disposal. The following procedures should be utilized when returning radioactive waste:

- 1.) After use, return the dose container (i.e., syringe or vial) to the shield in which the dose was delivered
- 2.) Insure that radioactive quantities returned are equal to or less than those specified below for radionuclides of the most commonly used radiopharmaceuticals:

<u>Radionuclide</u>	<u>Maxmim Returnable Quantity (mCi)</u>
Technetium-99m (Tc-99m)	11
Iodine-131 (I-131)	1.9
Iodine-123 (I-123)	8.1
Iodine-125 (I-125)	8.1
Thallium-201 (Tl-201)	11
Gallium-67 (Ga-67)	8.1
Indium-111 (In-111)	8.1
Xenon-133 (Xe-133)	270 (gas), 27 (liquid)
Cobalt-57 (Co-57)	27
Cobalt-58 (Co-58)	2.7
Phosphorous-32 (P-32)	1.6
Samarium-153 (Sm-153)	1.6
Yttrium-90 (Y-90)	0.81
Rhenium-186 (Re-186)	1.6
Carbon-14 (C-14)	8.1
Barium-133 (Ba-133)	8.1
Chromium-51 (Cr-51)	81
Cesium-137 (Cs-137)	1.6
Fluorine-18 (F-18)	1.6
Molybdenum-99 (Mo-99)	2
Nitrogen-13 (N-13)	1.6

\*Note: Multiply values listed above by 10 for solid or sealed sources.

When returning a package containing more than one of the above radionuclides, the maximum returnable quantity is determined by the lowest mCi quantity assigned for the items shipped. For example, if Tc-99m and I-131 are being shipped in the same package, only 1.9 mCi of **total activity** (including both Tc-99m and I-131) may be contained in the package.

- 3.) If radioactive quantities are greater than those specified on the above table, retain the material behind appropriate shielding until it has decayed to an acceptable quantity.
- 4.) Insure the radiation level at any point on the external surface of the package does not exceed 0.5 mrem/hour.
- 5.) Ensure that nonfixed (removable) radioactive surface contamination on the external surface of the package does not exceed 6600 dpm from a wipe of 300 cm<sup>2</sup> (22dpm/ cm<sup>2</sup>).

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