Nuclear Regulatory Commission (NRC)
Advisory Committee on the Medical Use of Isotopes (ACMUI)

Subcommittee Review and Comments on

Germanium-68/Gallium-68 Generator Licensing Guidance, Revision 1

Submitted on: November 30, 2018

Subcommittee Members:
Ms. Melissa Martin
Dr. Darlene Metter
Mr. Michael Sheetz
Ms. Megan Shober (Chair)

NRC Staff Resource: Said Daibes-Figueroa, Ph.D.

Background

The subcommittee and its Chair were appointed by ACMUI Chairman, Christopher Palestro, at the ACMUI meeting on September 21, 2018. The purpose of the subcommittee was to review the NRC staff's draft proposed revision to the licensing guidance for Germanium-68 (Ge-68)/Gallium-68 (Ga-68) generators. The NRC's current licensing guidance for Ge-68/Ga-68 generators (Revision 1) was issued on July 13, 2017. At that time, the only Ge-68/Ga-68 generator approved by the U.S. Food and Drug Administration (FDA) and available on the market was the Eckert and Ziegler GalliaPharm® generator. As such, the NRC tailored its licensing guidance to this specific product. Now that additional Ge-68/Ga-68 generators (IREs [Institute of Radio Elements] Galli Eo™ generator and others) are becoming commercially available, the Ge-68/Ga-68 generator licensing guidance is being revised to eliminate reference to any specific generator manufacturer or product. This document represents the Subcommittee's report on the draft proposed revision of this licensing guidance issued by NRC staff in July 2018.

Changes to Guidance Considered by the Subcommittee and its Recommendations

General Comment: Throughout the document, ensure that font sizing and bullet size and shape are uniform.

Specific Comments

Title: The Subcommittee supports the change to the title of the proposed guidance.

Pg 1, 1st paragraph: Delete the sentence "Future Ge-68/Ga-68 radionuclide generators will be addressed in revisions to the licensing guidance."

Pg 2, Section 4.1, 2nd paragraph: Replace the words "FDA approved" with "if utilizing an FDA-approved kit for radiolabeling."

Pg 3, Authorized Use for commercial nuclear pharmacies: Add "(Form 313 Item 5)" under "Radionuclides," "Chemical/Physical Form," and "Maximum Possession Limit."

Pg 4 Section 4.4, 1st paragraph: Replace "to develop/create Ga-68" with "to elute Ga-68".

Pg 4, Section 4.4: The training for authorized individuals has omitted an "alternate pathway" option for ANPs, similar to 10 CFR 35.55(b), and written attestation signed by a preceptor ANP.

Pg 5 Written attestation requirement: Replace "35.1000 Ge-68 generator use" with "35.1000 Ge-68/Ga-68 generator use."

Pg 5, Section 4.4, last sentence: Replace "Physicians or nuclear pharmacists" with "Other individuals."

Pg 6, 1st bullet: Delete the word "to."

Pg 6, 3rd bullet: Begin the sentence with "Eluting…"

Pg 6, 7th bullet: Remove the value of 0.001 percent, as this is specific to a particular manufacturer. Replace with a generic reference to "the manufacturer's recommended breakthrough limit."

Pg 6, 7th bullet: Delete the sentence "Not knowingly distributing or administering to a patient or human research subject any material containing Ga-68 which is determined to exceed the manufacturer's 0.001 percent breakthrough limit." This topic is covered by the revised 8th bullet, below.

Pg 6, 8th bullet: Revise to read "During the course of breakthrough testing, if the eluate exceeds the manufacturer's breakthrough limits, the eluate will not be distributed or administered to a patient or human research subject;"

Pg 6, 10th bullet: Move this bullet to be the last bullet in the series.

Pg 6, 11th bullet: The criteria for "multiple" and "unusable" are vague. Delete "on multiple occasions rendering the generator unusable in human patients and research subjects." Adopt the language from the new 10 CFR 35.3204 for telephone reports to the NRC Operations Center within 7 days.

Pg 6, 12th bullet: "Center" should be capitalized.

Pg 7, general: Due to the extended time necessary for completing a breakthrough test, the guidance should specify when a generator failure is "effective." The Subcommittee recommends specifying that a generator has "failed" on the date when the breakthrough calculation is

performed. This should be no more than 7 days from the date of the previous breakthrough calculation.

Pg 7, 1st bullet: Remove this bullet. There is no reasonable scenario where a breakthrough failure could cause a reportable medical event due to Ge-68, based on 5 rem effective dose to the whole body or 50 rem dose to an organ.

Pg 7, 2nd bullet: In the first sentence, replace "manufacture's" with "manufacturer's."

Pg 7, 3rd bullet: Revise the sentence to read "Conduct surveys of all areas of licensed material use, including the generator storage and kit preparation areas, for contamination each day of use; and"

Pg 7, 4th bullet: Remove the bullet. This bullet appears to be less stringent than the guidance in NUREG-1556, Vol. 13, Appendix R, which says that areas where licensed material is stored must be surveyed for contamination weekly. What additional survey should be performed every three months that would not be captured in the required weekly surveys?

Pg 8, Section 7.3.2: Distributor (in 2 cases) should be spelled with an "o."

Pg 9, Section 7.4.1, 2nd paragraph: In the last sentence, delete the first "for" to read "…must provide financial assurance for decommissioning…"

Pg 10, Section 8, 1st paragraph: Add "Medical" at the beginning of the first sentence.

Pg 10, Section 8, 2nd paragraph: Delete "also."

Other recommendations

The subcommittee agrees with the remainder of the licensing guidance document.

Respectfully submitted, November 30, 2018,
Subcommittee on Germanium-68/Gallium-68 Generator Licensing Guidance,
Advisory Committee on the Medical Use of Isotopes (ACMUI),
Nuclear Regulatory Commission (NRC)