

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 37, 39, 40, 70 and 71, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

Licensee 1. Cardinal Health 414, LLC 2. 7000 Cardinal Place Dublin, OH 43017		In accordance with letter dated June 18, 2025,	4. Expiration Date: October 31, 2037
		3. License No.: 34-32780-05 is amended in its entirety to read as follows:	5. Docket No.: 030-39293 Reference No.:
6. Byproduct, source, and/or special nuclear material A. Any byproduct material with Atomic Numbers 1 through 83 with half-life less than or equal to 120 days, with exceptions B. Lutetium-177 C. Radium-223 D. Actinium-225	7. Chemical and/or physical form A. Any B. Any C. Any D. Any	8. Maximum amount that licensee may possess at any one time under this license A. 1 curie per radionuclide and 5 curies total B. 30 curies total C. 50 millicuries total D. 20 curies total	9. Authorized use A. For manufacturing, preparation, packaging, and distribution of radioactive drugs and radiochemicals for (1) medical use in accordance with 10 CFR 32.72 to persons licensed pursuant to 10 CFR 35.100, 10 CFR 35.200, and 35.300, or under equivalent licenses of Agreement States, and to commercial nuclear pharmacies and for (2) non-medical use to authorized recipients. Also for use in calibration and checking of the licensee's instruments. B. Same as listed in Subitem No. 9.A. C. Same as listed in Subitem No. 9.A. D. Same as listed in Subitem No. 9.A.



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6. Byproduct, source, and/or special nuclear material	7. Chemical and/or physical form	8. Maximum amount that licensee may possess at any one time under this license	9. Authorized use
E. Radium-225	E. Any	E. 30 curies total	E. Same as listed in Subitem No. 9.A.
F. Any byproduct material with Atomic Numbers 3 through 83	F. Sealed Sources (As permitted under 10 CFR 35.65, and as manufactured under specific license issued by the U.S. Nuclear Regulatory Commission or an Agreement State.)	F. 30 millicuries per source and 100 millicuries total	F. Same as listed in Subitem No. 9.A.
G. Americium-241	G. Sealed Sources (Also solid sources; as manufactured under specific license issued by the U.S. Nuclear Regulatory Commission or an Agreement State.)	G. 1 microcurie total	G. Same as listed in Subitem No. 9.A.
H. Chlorine-36	H. Sealed Sources (Also solid sources; as manufactured under specific license issued by the U.S. Nuclear Regulatory Commission or an Agreement State.)	H. 1 microcurie total	H. Same as listed in Subitem No. 9.A.
I. Thorium-229	I. Solid or Liquid	I. 10 curies total	I. Same as listed in Subitem No. 9.A.
J. Thorium-228	J. Solid or Liquid	J. 50 curies total	J. Same as listed in Subitem No. 9.A.
K. Any byproduct material with Atomic Numbers 1 through 83 with half-life greater than 120 days	K. Solid or Liquid	K. 200 microcuries per radionuclide and 10 millicuries total	K. For use in calibration and checking of the licensee's instruments.
L. Americium-241	L. Solid or Liquid	L. 1 microcurie total	L. Same as listed in Subitem No. 9.K.
M. Zirconium-89	M. Any	M. 2 curies total	M. Same as listed in Subitem No. 9.A.

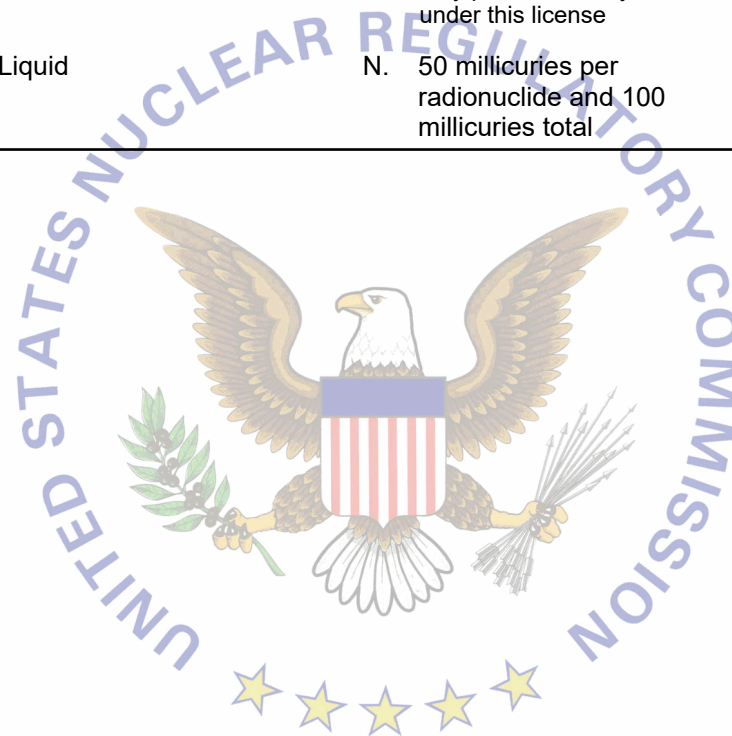
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|---|----------------------------------|--|---|
| 6. Byproduct, source, and/or special nuclear material | 7. Chemical and/or physical form | 8. Maximum amount that licensee may possess at any one time under this license | 9. Authorized use |
| N. Any byproduct material with Atomic Numbers 84 through 96 | N. Solid or Liquid | N. 50 millicuries per radionuclide and 100 millicuries total | N. For possession as an impurity in material listed in Subitem No. 6.I. |



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CONDITIONS

10. Licensed material shall be used or stored at the licensee's facilities located at Cardinal Health 414, LLC, 7736 Zionsville Rd., Indianapolis, Indiana, 46268.
11. A. The Radiation Safety Officer (RSO) for this license is Jacob Farkas, CNMT, MSHP.
- B. The Alternate Radiation Safety Officer (RSO) for this license is Jessie Armitage.
12. Licensed material shall only be used by, or under the supervision of:
- | | | |
|----------------------|--------------------|--------------------------|
| Cody Apple | Jessie Armitage | Laura Barbee |
| Megan Bemis | Blake Berger | Kathryn Bilsky |
| Ariana Black | Randy Blume | James Brading |
| Amber Bruce | Lindsay Bruce | Geoffrey Davis |
| Grover Eads | Austin Erwin | Jacob Farkas, CNMT, MSHP |
| Christopher Gale | Kelli Grace | Alexandra Graverson |
| Kevin Haffey | Abigail Hamilton | Aaron Henke |
| Wendy Hill | Andrew Hughes | Tyler B. Keller |
| Ryan Kelly | Tereza Lazic | Catie Liggett |
| Katlynn McCray | Greg McCreary | Robert Miller |
| Nicholas Mitchell | Zoe Neuman | Ana Hernandez Ocampo |
| Yessenia Ortiz | Henry Padgett, PhD | Vijay Patel |
| Imari Powell | Troy S. Sambyal | Jenna Schreckenghaust |
| Anthony T. Stapleton | Erin Starks | Aaron Stephens |
| Cami Still | Michael Stoner | Jace-Cameron Taylor |

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030-39293Kyle Taylor
Jacob Wolfla

Chad R. Warkentien

Evan T. Western, CHP

13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or by an Agreement State. In the absence of a registration certificate, sealed sources shall be tested for leakage and/or contamination at intervals not to exceed 6 months, or at such other intervals as specified.
- B. Notwithstanding Paragraph A of this Condition, sealed sources designed to primarily emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within the intervals specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or by an Agreement State, prior to the transfer, a sealed source received from another person shall not be put into use until tested and the test results received.
- D. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta- and/or gamma-emitting material or not more than 10 microcuries of alpha-emitting material.
- E. Sealed sources need not be tested if they are in storage and are not being used. However, when they are removed from storage for use or transferred to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
- F. The leak test shall be capable of detecting the presence of 185 becquerels (0.005 microcuries) of radioactive material on the test sample. If the test reveals the presence of 185 becquerels (0.005 microcuries) or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 30.50(c)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations.

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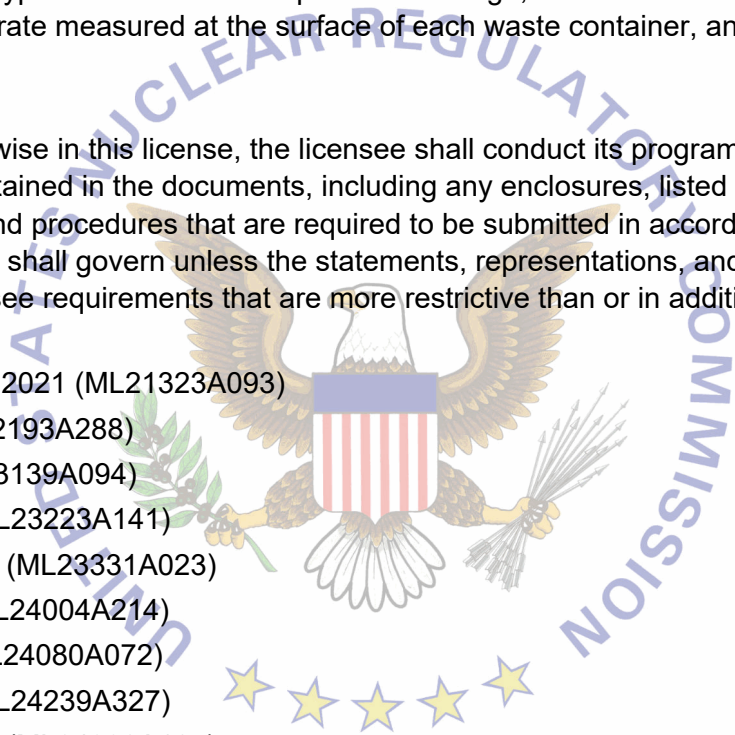
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- G. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
- H. Records of leak test results shall be kept in units of becquerels (microcuries) and shall be maintained for 3 years.
14. The licensee shall conduct a physical inventory every 6 months, or at other intervals approved by the U.S. Nuclear Regulatory Commission, to account for all sealed sources and/or devices received and possessed under the license. Records of inventories shall be maintained for 3 years from the date of each inventory, and shall include the radionuclides, quantities, manufacturer's name and model numbers, and the date of the inventory.
15. Sealed sources containing licensed material shall not be opened or sources removed from source holders by the licensee, except as specifically authorized.
16. Except for maintaining labeling as required by 10 CFR Part 20, or Part 71, the licensee shall obtain authorization from the U.S. Nuclear Regulatory Commission before making any changes in the sealed source, device, or source-device combination that would alter the description or specifications as indicated in the respective certificate of registration issued either by the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or by an Agreement State.
17. This license does not authorize distribution to persons exempt from licensing.
18. The licensee is authorized to hold radioactive material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal in ordinary trash provided:
- A. Before disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated, except for radiation labels on materials that are within containers and that will be managed as biomedical waste after they have been released from the licensee.

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- B. A record of each such disposal permitted under this license condition shall be retained for 3 years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.
19. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. This license condition applies only to those statements, representations, and procedures that are required to be submitted in accordance with the regulations. The U.S. Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence impose on the licensee requirements that are more restrictive than or in addition to the regulations.
- A. Application dated November 18, 2021 (ML21323A093)
 - B. Letter dated July 12, 2022 (ML22193A288)
 - C. Letter dated May 18, 2023 (ML23139A094)
 - D. Letter dated August 10, 2023 (ML23223A141)
 - E. Letter dated November 22, 2023 (ML23331A023)
 - F. Letter dated January 4, 2024 (ML24004A214)
 - G. Letter dated March 18, 2024 (ML24080A072)
 - H. Letter dated August 23, 2024 (ML24239A327)
 - I. Letter dated November 22, 2024 (ML24330A165)
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- J. Letter dated December 20, 2024 (ML24358A061)
- K. Letter dated February 25, 2025 (ML25056A516)



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: September 16, 2025

By: _____
Sara A. Forster
Region 3