U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 24

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	In accordance with lthe etter dated February 5, 2020,	4. Expiration Date: July 31, 2021
1. Cardinal Health 414, LLC		5. Docket No.: 030-38331 Reference No.:
2. 7000 Cardinal Place Dublin, OH 43017	3. License number: 34-32780-02 is amended in its entirety to read as follows:	

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

MATERIALS LICENSE SUPPLEMENTARY SHEET

License Number
34-32780-02

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Docket or Reference Number
030-38331

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
A. Carbon-11	A. Any	A. 10 curies total	A. (1) For production, possession, or handling of radiochemicals and sealed sources for transfer to person authorized to receive the licensed material in accordance with the terms and conditions of a specific license issued by the U.S. Nuclear Regulatory Commission or an Agreement State. (2) For packaging and distribution of produced radiochemicals and sealed sources to persons authorized to receive licensed materials in accordance with the terms and conditions of specific licenses issued by the U.S. Nuclear Regulatory Commission or Agreement States. This material should not be distributed as a radiopharmaceutical or radioactive drug.
B. Nitrogen-13	B. Any	B. 10 curies total	B. Same as 9.A.
C. Oxygen-15	C. Any	C. 10 curies total	C. Same as 9.A.
D. Fluorine-18	D. Any	D. 30 curies total	D. Same as 9.A.
E. Any byproduct material with Atomic Numbers 1 through 83 with half-life less than or equal to 120 days	E. Incidentally Activated Products	E. 1 curie per radionuclide and 5 curies total	E. For possession and storage of byproduct materials incidental to radionuclide production.

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F. Hydrogen-3	F. Incidentally Activated Products	F. 10 millicuries total	F. Same as 9.E.
G. Manganese-54	G. Incidentally Activated Products	G. 10 millicuries total	G. Same as 9.E.
H. Cobalt-57	H. Incidentally Activated Products	H. 100 millicuries total	H. Same as 9.E.
I. Cobalt-60	I. Incidentally Activated Products	I. 15 millicuries total	I. Same as 9.E.
J. Zinc-65	J. Incidentally Activated Products	J. 15 millicuries total	J. Same as 9.E.
K. Niobium-93m	K. Incidentally Activated Products	K. 15 millicuries total	K. Same as 9.E.
L. Niobium-94m	L. Incidentally Activated Products	L. 100 millicuries total	L. Same as 9.E.
M. Sodium-22	M. Sealed Sources (Eckert & Ziegler Isotope Products, Model RV-022)	M. 200 microcuries per source and 400 microcuries total	M. For use in calibration and checking of the licensee's instruments.
N. Sodium-22	N. Sealed Sources (Eckert & Ziegler Isotope Products, Model Type R)	N. 1 microcurie per source and 2 microcuries total	N. For use in calibration and checking of the licensee's instruments.
O. Technetium-99m	O. Any	O. 5 curies total	O. For use in calibration and checking of the licensee's instruments.

CONDITIONS

10. Licensed material may be used or stored only at the licensee's facilities located at 131 East Hartland Street, East Hartford, Connecticut 06108.

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11. Licensed material shall only be used by, or under the supervision of,

Authorized Users	Material and Use
Gbolagade Adetola	ALL
Robert Chicoine	ALL
Robert Droege	ALL
Adam Fleshner	ALL
Paul Gotti	ALL
James Matthews	ALL
Norman Medina	ALL
Arshad Mehmood	ALL
Olof Robert Nilsson	ALL
Charles Parraga	ALL
David Ramirez Montero	ALL
Jose Luis Rangel Rodriguez	ALL
Andrew Scovill	ALL
Conor Sutphin	ALL
Misael Vega	ALL

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12. The Radiation Safety Officer (RSO) for this license is Arshad Mehmood.

13. This license does not authorize commercial distribution of licensed material pursuant to 10 CFR 32.72 or 10 CFR 32.74 to persons generally licensed pursuant to 10 CFR Part 31 or equivalent regulations of any Agreement State; or to persons exempt from licensing pursuant to 10 CFR 30.14 through 10 CFR 30.20 inclusive, or equivalent regulations of any Agreement State.

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14. 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. Not withstanding 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.

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.

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H. Records of leak test results shall be kept in units of becquerels (microcuries) and shall be maintained for 3 years.

15. 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.

16. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders or foil sources removed from detector cells by the licensee, except as specifically authorized.

17. 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.

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.

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18. 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 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 are more restrictive than the regulations.

A. Application dated April 15, 2011 (ML111170516 and ML111570417)
B. Letter dated April 22, 2011 (ML111170560)
C. Letter dated July 6, 2011 (ML111940279)
D. Letters dated October 23 and 24, 2012 (ML12312A410)
E. Letter received November 27, 2012 (ML12347A288)
F. Letter dated May 24, 2016 (ML16161A513)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: March 9, 2020

By: Elizabeth Ullrich
Digitally signed by Elizabeth Ullrich
Date: 2020.03.09 14:16:36 -04'00'

Elizabeth Ullrich
Region 1