

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, and 70, 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. PETNET Solutions, Inc. 2. 810 Innovation Drive Knoxville, Tennessee 37932		In accordance with letter dated February 27, 2015,	
		3. License No. 41-32720-03 is amended in its entirety to read as follows:	
		4. Expiration Date: January 31, 2022	
		5. Docket No. 030-38230 Reference No.	
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	
A. Fluorine-18	A. Any	A. 10 curies	
B. Carbon-11	B. Any	B. 2 curies	
C. Nitrogen-13	C. Any	C. 2 curies	
D. Oxygen-15	D. Any	D. 3 curies	
E. Hydrogen-3	E. Liquid	E. 5 millicuries	
F. Any byproduct material with atomic numbers 3 through 83; excluding Zinc-65	F. Incidentally activated products	F. 250 millicuries	
G. Zinc-65	G. Incidentally activated products	G. 300 millicuries	
H. Sodium-22	H. Sealed source (Eckert & Ziegler Model RV-022-200U)	H. 250 microcuries per source, 1 millicurie total possession	
I. Cesium-137	I. Sealed source (Eckert & Ziegler Model RV-137-200U)	I. 250 microcuries per source, 1 millicurie total possession	
J. Krypton-85	J. Gas	J. 60 millicuries	

9. Authorized use:

A. through J. Possession and storage only until termination of the license.

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10. Licensed material shall be stored only at the licensee's facilities located at 3635 Vista Ave., St. Louis, Missouri.
11. The Radiation Safety Officer (RSO) for this license is John Beyer, R.Ph.
12. Licensed material shall be stored by, or under the supervision of, **Nicholas Ackles**.
13. This license does not authorize distribution pursuant to 32.72 or 32.74; to persons exempt from licensing; or to general licensees.
14.
 - A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed the intervals specified in the certificate of registration issued by NRC under 10 CFR 32.210 or by an Agreement State.
 - B. 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 NRC under 10 CFR 32.210 or by an Agreement State prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested and the test results received.
 - C. 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.
 - D. The leak test shall be capable of detecting the presence of 0.005 microcurie (185 Becquerels) of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie (185 Becquerels) 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.
 - E. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or by other persons specifically licensed by the U. S. Nuclear Regulatory Commission or an Agreement State to perform such services.
 - F. Records of leak test results shall be kept in units of microcuries and shall be maintained for three years.
15. Sealed sources containing licensed material shall not be opened or sources removed from source holders by the licensee, except as specifically authorized.
16. The licensee shall conduct a physical inventory every six months, or at other intervals approved by the U. S. Nuclear Regulatory Commission, to account for all sources and/or devices received and possessed under the license.

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17. The licensee is authorized to hold byproduct material with a physical half-life of less than or equal to 120 days from decay-in-storage before disposal without regard to its radioactivity if the licensee:
- 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.
 - B. A record of each such disposal permitted under this license condition shall be retained for three 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.
18. The licensee is authorized to transport licensed material only in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
19. The licensee shall perform confirmatory calculations of radioactive gas effluent release activity based on detector count rates, calibrated conversion factors, and ventilation rates whenever the eluent monitoring system identifies a daily release greater than 1200 microcuries for fluorine-18. The licensee shall document the results of the confirmatory calculations.
20. The licensee shall limit the annual effluent release of fluorine-18 to less than 300 millicuries.

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21. 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. 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.

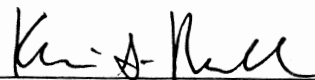
A. Application dated September 25, 2009; and,

B. Letters dated December 28, 2011, January 17, 2012, May 3, 2012, March 29, 2013, July 31, 2013, October 14, 2013, October 18, 2013 (with attachments), December 6, 2013, March 4, 2014, June 3, 2014 (excluding commitment to control fluorine-18 gaseous effluent releases to no greater than 214 millicuries per year), April 10, 2014, August 8, 2014, August 29, 2014, October 3, 2014, November 13, 2014 (including LabImpex Systems stack monitor calibration procedure E6128 LR Issue 1 Amendment 0 dated March 15, 2007), **February 27, 2015, April 13, 2015 and May 28, 2015.**

FOR THE U. S. NUCLEAR REGULATORY COMMISSION

Date MAY 29 2015

By


Kevin G. Null
Materials Licensing Branch
Region III