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 letter dated October 18, 2023,	4. Expiration Date: May 31, 2038
1. Arizona Isotope Science Research Corp. d/b/a AZIsotopes Corp. 2. 7796 S Innovation Way Bunker Hill, IN 46914	3. License No.: 13-35624-03 is amended in its entirety to read as follows:	5. Docket No.: 030-39335 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	9. Authorized use
A. Any byproduct material with Atomic Numbers 1 through 92 with half-life less than or equal to 120 days	A. Any	A. 200 mCi per radionuclide and 2 curies total	A. For receipt, processing, manufacturing, and packaging of radiochemicals; For distribution of manufactured radiochemicals to persons authorized to receive the licensed material in accordance with the terms and conditions of specific licenses issued by the U.S. Nuclear Regulatory Commission or any Agreement State. Not to be distributed as a radiopharmaceutical or as a radioactive drug. For research and development as defined in 10 CFR 30.4.

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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
B. Any byproduct material with Atomic Numbers 1 through 96 with half-live greater than 120 days	B. Non-volatile	B. 100 millicuries per radionuclide and 1 curie total	B. Same as Subitem No. 9.A.
C. Actinium-225	C. Any	C. 250 millicuries total	C. Same as Subitem No. 9.A.
D. Actinium-227	D. Any	D. 150 millicuries total	D. Same as Subitem No. 9.A.
E. Barium-133	E. Any	E. 25 millicuries total	E. Same as Subitem No. 9.A.
F. Carbon-11	F. Any	F. 16 curies total	F. Same as Subitem No. 9.A.
G. Cerium-134	G. Any	G. 10 curies total	G. Same as Subitem No. 9.A.
H. Cerium-139	H. Any	H. 1 curie total	H. Same as Subitem No. 9.A.
I. Cesium-137	I. Any	I. 10 millicuries total	I. Same as Subitem No. 9.A.
J. Cobalt-57	J. Any	J. 10 curies total	J. Same as Subitem No. 9.A.
K. Cobalt-58	K. Any	K. 120 curies total	K. Same as Subitem No. 9.A.
L. Copper-61	L. Any	L. 30 curies total	L. Same as Subitem No. 9.A.
M. Copper-62	M. Any	M. 300 millicuries total	M. Same as Subitem No. 9.A.
N. Copper-64	N. Any	N. 100 curies total	N. Same as Subitem No. 9.A.
O. Copper-67	O. Any	O. 5 curies total	O. Same as Subitem No. 9.A.
P. Fluorine-18	P. Any	P. 300 curies total	P. Same as 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
Q. Gallium-67	Q. Any	Q. 9.9 curies total	Q. Same as Subitem No. 9.A.
R. Gallium-68	R. Any	R. 50 curies total	R. Same as Subitem No. 9.A.
S. Germanium-68	S. Any	S. 50 curies total	S. Same as Subitem No. 9.A.
T. Indium-111	T. Any	T. 10 curies total	T. Same as Subitem No. 9.A.
U. Indium-113m	U. Any	U. 1 curie total	U. Same as Subitem No. 9.A.
V. Iodine-123	V. Any	V. 20 curies total	V. Same as Subitem No. 9.A.
W. Iodine-124	W. Any	W. 6 curies total	W. Same as Subitem No. 9.A.
X. Lead-201	X. Any	X. 15 curies total	X. Same as Subitem No. 9.A.
Y. Lead-203	Y. Any	Y. 90 curies total	Y. Same as Subitem No. 9.A.
Z. Lutetium-177	Z. Any	Z. 15 curies total	Z. Same as Subitem No. 9.A.
AA. Lutetium-177m	AA. Any	AA. 200 millicuries total	AA. Same as Subitem No. 9.A.
AB. Nitrogen-13	AB. Any	AB. 30 curies total	AB. Same as Subitem No. 9.A.
AC. Oxygen-15	AC. Any	AC. 1 curie total	AC. Same as Subitem No. 9.A.
AD. Radium-225	AD. Any	AD. 20 curies total	AD. Same as Subitem No. 9.A.
AE. Radium-228	AE. Any	AE. 1 curie total	AE. Same as Subitem No. 9.A.
AF. Rhenium-188	AF. Any	AF. 1 curie total	AF. Same as Subitem No. 9.A.

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Docket or Reference No.: 030-39335

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
AG. Rubidium-81	AG. Any	AG. 30 curies total	AG. Same as Subitem No. 9.A.
AH. Rubidium-82	AH. Any	AH. 35 curies total	AH. Same as Subitem No. 9.A.
AI. Rubidium-83	AI. Any	AI. 200 curies total	AI. Same as Subitem No. 9.A.
AJ. Sodium-22	AJ. Any	AJ. 10 millicuries total	AJ. Same as Subitem No. 9.A.
AK. Strontium-82	AK. Any	AK. 75 curies total	AK. Same as Subitem No. 9.A.
AL. Strontium-83	AL. Any	AL. 160 curies total	AL. Same as Subitem No. 9.A.
AM. Strontium-85	AM. Any	AM. 75 curies total	AM. Same as Subitem No. 9.A.
AN. Tantalum-178	AN. Any	AN. 300 millicuries total	AN. Same as Subitem No. 9.A.
AO. Thallium-201	AO. Any	AO. 7.5 curies total	AO. Same as Subitem No. 9.A.
AP. Thorium-228	AP. Any	AP. 200 millicuries total	AP. Same as Subitem No. 9.A.
AQ. Thorium-232	AQ. Any	AQ. 750 millicuries total	AQ. Same as Subitem No. 9.A.
AR. Tin-113	AR. Any	AR. 1 curie total	AR. Same as Subitem No. 9.A.
AS. Tungsten -178	AS. Any	AS. 300 millicuries total	AS. Same as Subitem No. 9.A.
AT. Tungsten-188	AT. Any	AT. 1 curie total	AT. Same as Subitem No. 9.A.
AU. Zinc-62	AU. Any	AU. 100 curies total	AU. Same as Subitem No. 9.A.
AV. Zinc-65	AV. Any	AV. 500 curies total	AV. Same as 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
AW. Zirconium-89	AW. Any	AW. 2 curies total	AW. Same as Subitem No. 9.A.
AX. Cobalt-57	AX. Sealed Sources	AX. 6 millicuries per source and 18 millicuries total	AX. For use as calibration and reference sources.
AY. Barium-133	AY. Sealed Sources	AY. 1 millicurie per source and 5 millicuries total	AY. Same as Subitem No. 9.AX.
AZ. Cesium-137	AZ. Sealed Sources	AZ. 1 millicurie per source and 5 millicuries total	AZ. Same as Subitem No. 9.AX.
BA. Germanium-68	BA. Sealed Sources	BA. 1 millicurie per source and 5 millicuries total	BA. Same as Subitem No. 9.AX.
BB. Sodium-22	BB. Sealed Sources	BB. 0.5 millicuries per source and 2 millicuries total	BB. Same as Subitem No. 9.AX.
BC. Uranium- depleted in Uranium-235	BC. Metal	BC. 5000 kilograms total	BC. For use as shielding in generators and shipping containers.

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CONDITIONS

10. Licensed material shall be used or stored at the licensee's facilities located at 7796 S Innovation Way, Bunker Hill, Indiana, 46914.

11. The Radiation Safety Officer (RSO) for this license is Jacob A. Long, Ph.D.

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

Jonathan Bolen	Pulak Chakraborty, Ph.D.	Craig Hill, Ph.D.
Jason Kitten	Jacob A. Long, Ph.D.	Mary McCormick, Ph.D.
Ron Mojica	Veral Richards, Ph.D.	Christopher Ritter
Trevor Sprouse, Ph.D.	David Trump, Ph.D.	Vladislav Vlasenko
A. Lake Wooten, Ph.D.	John A. Zehner, RPh	

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 30.21 inclusive, or equivalent regulations of any Agreement State.

14. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of licensed material in the form of unsealed material and foil or plated sources to quantities below the limits specified in 10 CFR 30.72, which require consideration of the need for an emergency plan for responding to a release of licensed material.

15. 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.

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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 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.

C. 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.

D. 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.

E. 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.

F. Analysis of leak test samples and/or contamination shall be performed by persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services. The licensee is authorized to collect leak test samples but not perform the analysis.

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

16. Sealed sources shall not be opened by the licensee, except as specifically authorized.

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17. 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.

18. 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.

19. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.

20. 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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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. 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 January 10, 2023 (ML23032A465)
B. Letter dated October 18, 2023 (ML23292A066)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: December 28, 2023

By: Laura B. Cender Digitally signed by Laura B. Cender Date: 2023.12.28 13:26:46 -06'00'

Laura B. Cender
Region 3