ARIZONA DEPARTMENT OF HEALTH SERVICES
BUREAU OF RADIATION CONTROL

RADIOACTIVE MATERIAL LICENSE

Pursuant to Chapter 4, Title 30, Arizona Revised Statutes, and Title 9, Chapter 7 of the Arizona Administrative Code, and in reliance on statements and representations made to the Department by the licensee, a license is hereby issued authorizing the acquisition, reception, possession, use and transfer of the radioactive material listed in this license for the purposes and at the places specified. This license is subject to all applicable rules and Department orders now or hereafter in effect and to the conditions specified. **In accordance with letter dated September 23, 2026, signed by Jennifer Blythe, License Number 10-024 is hereby amended in its entirety to read as follows: ALL CHANGES ARE IN BOLD**

LICENSEE

1. **NAME:** Board of Regents d/b/a University of Arizona

2. **ADDRESS:** 1700 E. Broadway Blvd., 2nd Floor
P.O. Box 210480
Tucson, Arizona 85721

3. **a. LICENSE NUMBER:** 10 - 024
b. AMENDMENT NO.: 97

4. **EXPIRATION DATE:** April 30, 2035

5. **CATEGORY:** A1 - BROAD ACADEMIC

6. Radioactive material (element and mass number)	7. Chemical or physical form	8. Maximum quantity licensee may possess at any time
A. Any radioactive material with atomic numbers 3 through 83 inclusively.	A. Any	A. 37 GBq each nuclide (1000 millicuries)
B. Hydrogen-3	B. Any	B. 1.85 TBq (50 curies)
C. Cobalt-60	C. Sealed Source (U.S. Nuclear, Type 375) S-400	C. 740 MBq (20 millicuries)
D. Cesium-137	D. Sealed Source (ORNL Dwg #SK-193-D) S-399	D. 259 GBq (7 curies)
E Cesium-137	E. Sealed sources in soil moisture/density measurement devices	E. 1.48 GBq (40 millicuries)
F Radium-226	F. Any	F. 185 MBq (5 millicuries)
G. Uranium-Natural	G. Any	G. 110 kilograms
H. Uranium-Depleted	H. Any	H. 100 kilograms
I. Americium-241	I. Any	I. 37 GBq (1 curie)

POST IN ACCORDANCE WITH R9-7-1002

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License Number: 10-024
Amendment Number: **97**

J. Americium-241/Beryllium	J. Sealed source in soil moisture/density measurement device	J. 14.8 GBq (400 millicuries)
K. Thorium-Natural	K. Any	K. 2 kilograms
L. Curium-244/Carbon-13	L. Sealed Source (Amersham Corp. Model CLN.PG1) S-212	L. 2.04 GBq (55 millicuries)
M. Any nuclide with atomic number 84 thru 92.	M. Enriched Standard Materials or Standards	M. 555 MBq (15 millicuries)
N. Any nuclide with atomic number 93 thru 95	N. Enriched Standard Materials or Standards	N. 37 MBq (1 millicuries)
O. Californium-252	O. Sealed Source (Frontier Technology OH-0298-S-102-S)	O. 185 MBq (5 millicuries)
P. Plutonium-239	P. Sealed sources	P. 37 MBq (1 millicurie)
Q. Californium-252	Q. Sealed Source (Eckert & Ziegler CA-0406-S-102-S)	Q. 185 MBq (5 millicuries)

9. Authorized Use:

A, B, F, H, I and K through N.

Research and development, as defined in Arizona Administrative Code A.A.C. R9-7-102.

C. and D. To be used in J.L. Shepard and Associates Model 78-12M Beam Projector calibration device.

E. and J. To be used in approved devices for soil moisture measurements and related functions.

G. To be used as shielding.

O. To be used in Frontier Technology Model 100 neutron source.

P. Research and development, as defined in A.A.C. R9-7-102.

Q. To be used in Eckert & Ziegler, Model 3014, neutron source.

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CONDITIONS

10. A. Radioactive material may be used and/or stored at the following University of Arizona locations:

1. Radioactive material listed under sub items A through Q of Items 6, 7 and 8 may be used and stored at **EHS Office, 1700 E Broadway Blvd., 2nd Floor, Tucson, Arizona 85719**.

2. Radioactive material listed under sub items A and B of Items 6, 7 and 8 may be used and stored at Phoenix Biomedical Campus, 475 North 5th Street, Phoenix, Arizona 85004.

3. Radioactive material listed under sub item J of Items 6, 7 and 8 may be used and stored at Maricopa Agricultural Research Center, 37860 W. Smith-Enke Rd., Maricopa, AZ 85138.

4. Radioactive material listed under sub item J of Items 6, 7 and 8 may be used and stored at Safford Agricultural Research Center, 2134 South Montierth Lane, Safford, Arizona 85546.

5. Radioactive material listed under sub items A, B and J of Items 6, 7 and 8 may be used and stored at Campus Agricultural Center – West, 4101 North Campbell Avenue, Tucson, Arizona 85719.

6. Radioactive material listed under sub item A of Items 6, 7 and 8 may be used and stored at Biosphere 2, 32540 South Biosphere Road, Oracle, Arizona 85623.

11. The licensee shall comply with the provisions of Title 9, Chapter 7, Arizona Administrative Code; Article 3, "Radioactive Material Licensing"; Article 4, "Standards for Protection Against Ionizing Radiation"; and Article 10, "Notices, Instructions and Reports to Radiation Workers; Inspections".

12. A. Radioactive material described above shall be used by, or under the supervision of, individuals approved by the **University Radiation Safety Committee (RSC).**

B. The Radiation Safety Officer is: Leon Harris.

13. The licensee shall request approval from the Department to open sealed sources containing radioactive materials.

14. The licensee shall not use radioactive material in or on human beings, or in products distributed to the public, or in field applications where activity is released.

15. A. Authority to dispose of radioactive waste by burial at the disposal site on the Page Trowbridge Ranch is prohibited.

B. The Page-Trowbridge Ranch groundwater monitoring plan shall adhere to the amended plan submitted October 28, 2008.

16. The licensee may transport radioactive material or deliver material to a carrier for transport in accordance with the provisions of Title 9, Chapter 7, Article 15.

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17. A. The licensee shall, in accordance with A.A.C. R9-7-419(C), require an individual to participate in a Hydrogen-3 bioassay (urinalysis) whenever the individual is likely to receive, in one year, an intake in excess of 0.1 of the Annual Limits of Intake (ALI) specified in Table 1, Columns 1 and 2 of Appendix B in 9 A.A.C. 7, Article 4.

B. The licensee shall initiate an individual's bioassay following any operation involving, at any one time, more than 100 millicuries of Hydrogen-3 in a non-contained form, other than metallic foil. The bioassay shall be performed within one week following a single operation and at weekly intervals for continuing operations. If the average concentration for the individual is less than 10 µCi/liter for a calendar quarter, the bioassay rate may be reduced to monthly intervals.

C. Before an individual initiates work with Hydrogen-3, the licensee shall require the individual participate in a baseline bioassay if the individual is to work with more than 100 millicuries of Hydrogen-3.

D. For any individual whose cumulative annual intake is likely to exceed 0.1 ALI, the licensee shall perform a dosimetric determination based on the results of the bioassay performed under Part A. To assist in determining the total dose equivalent for the individual, the licensee shall add the obtained dose information to the committed dose equivalent for the exposed individual.

E. The licensee shall ensure occupationally exposed minors and declared pregnant women are monitored for hydrogen-3 intake, if they are likely to receive in one year, a committed effective dose equivalent in excess of 0.01 ALI.

F. For bioassays exceeding 0.1 ALI, the licensee shall investigate the circumstances surrounding the exposed individual's uptake. Records of the investigation and all bioassay measurements shall be maintained as part of the licensee's personnel dosimetry records and shall be available for inspection by the Department.

18. All animals administered radioactive materials or their products shall not be used for human consumption.

19. Except for plutonium contained in a medical device designed for individual human application, no plutonium, regardless of form, shall be delivered to a carrier for shipment by air transport or transported in an aircraft by the licensee except in packages, the design of which the NRC has specifically approved for transport of Plutonium by air.

20. A. This license is authorized to calibrate survey meters as a service to others.

B. The licensee is authorized to perform laboratory analysis for other licensees in accordance with the procedures described in 10(D) of Application dated May 15, 2025.

21. A. The licensee shall review the decommissioning funding plan submitted to the Department on an annual basis to ensure that adequate funds are available for disposal of all radioactive material and to complete the termination of this license.

B. A record of the cost estimate performed for determining the decommissioning funding plan shall be maintained for Department review.

C. The decommissioning funding plan and certificate of financial assurance shall be maintained until all radioactive material has been disposed of and the license is terminated.

22. The licensee shall submit to the Department a list of all radioactive use/storage locations on an annual basis.

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23. For purposes of ending the principal activities authorized under this radioactive material license:

A. The license stays in effect beyond the license expiration date. Beyond the expiration date the licensee shall store radioactive material only, until the Department authorizes its use by license amendment, or the Department notifies the licensee in writing that the license is terminated.

B. The licensee shall ensure the timeliness of decommissioning of facilities where principal activities are conducted under this license in accordance with Department requirements.

C. The licensee shall continue to control public access into restricted areas and pay the annual licensing fee until the license is terminated.

24. Except as specifically provided otherwise by this license, the licensee shall possess and use the radioactive material described in Items 6, 7 and 8 of this license in accordance with the statements, representations and procedures contained in:

1. Page Ranch Monitoring Plan submitted October 28, 2008 signed by Daniel Silvain.

2. Application with attachments dated May 15, 2025, signed by Leon Harris.

3. **Letter with attachments dated September 23, 2026, signed by Jennifer Blythe.**

The most recent statements, representations, and procedures shall govern if they conflict with previously submitted documents, unless otherwise specified by a license condition; and the Department's rules shall govern the licensee's statements in applications or letters.

BRIAN D. GORETZKI, BUREAU CHIEF

DATE ISSUED: OCT 2 1 2026
BDG:gd

ODETTE COLBURN, DEPUTY DIRECTOR

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