U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 21

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 letters dated November 08, 2021, and December 17, 2021,	4. Expiration Date: March 31, 2022
1. University of Idaho Environmental Health and Safety		5. Docket No.: 030-32323 Reference No.:
2. 1108 West Sixth Street Moscow, ID 83844-2030	3. License No.: 11-27382-01 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
A. Any byproduct material between Atomic Numbers 3 and 83 with Exceptions	A. Any except sealed source	A. 10 millicuries per radionuclide and 500 millicuries total	A. For research and development as defined in 10 CFR 30.4, including animal studies; teaching and training of students; and calibration and checking of the licensee's instruments.
B. Any byproduct material with atomic numbers > 83 with exceptions	B. Any except sealed source	B. 1 millicurie per radionuclide and 10 millicuries total	B. Same as Item 9.A.
C. Any byproduct material with exceptions	C. Sealed Sources	C. 10 millicuries per radionuclide and 500 millicuries total	C. Same as Item 9.A.
D. Hydrogen-3	D. Any except sealed source	D. 1 curie total	D. Same as Item 9.A.
E. Carbon-14	E. Any except sealed source	E. 300 millicuries total	E. Same as Item 9.A.
F. Phosphorus-32	F. Any except sealed source	F. 450 millicuries total	F. Same as Item 9.A.

MATERIALS LICENSE SUPPLEMENTARY SHEET

License No.: 11-27382-01

Amendment No. 21

Docket or Reference No.: 030-32323

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
G. Phosphorus-33	G. Any except sealed source	G. 100 millicuries total	G. Same as Item 9.A.
H. Sulfur-35	H. Any except sealed source	H. 400 millicuries total	H. Same as Item 9.A.
I. Calcium-45	I. Any except sealed source	I. 100 millicuries total	I. Same as Item 9.A.
J. Chromium-51	J. Any except sealed source	J. 100 millicuries total	J. Same as Item 9.A.
K. Cadmium-109	K. Any Except Sealed Sources	K. 50 millicuries total	K. Same as Item 9.A.
L. Iodine-125	L. Any except sealed source	L. 400 millicuries total	L. Same as Item 9.A.
M. Krypton-85	M. Gas	M. 40 curies total	M. Same as Item 9.A.
N. Hydrogen-3	N. Foils	N. 1 curie total	N. For use in sample analysis in gas chromatography devices.
O. Nickel-63	O. Foils	O. 15 millicuries per source and 400 millicuries total	O. For use in sample analysis in gas chromatography devices.
P. Cobalt-60	P. Sealed Sources	P. 100 millicuries total	P. For research and development as defined in 10 CFR 30.4; teaching and training of students; and for use in portable gauging devices for measuring physical properties of materials.
Q. Cadmium-109	Q. Sealed Sources	Q. 100 millicuries total	Q. For research and development as defined in 10 CFR 30.4; teaching and training of students; and for use in portable gauging devices for measuring physical properties of materials.

MATERIALS LICENSE SUPPLEMENTARY SHEET

License No.: 11-27382-01

Amendment No. 21

Docket or Reference No.: 030-32323

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
R. Cesium-137	R. Sealed Sources	R. 200 millicuries total	R. For research and development as defined in 10 CFR 30.4; teaching and training of students; and for use in portable gauging devices for measuring physical properties of materials.
S. Iron-55	S. Sealed Sources	S. 100 millicuries total	S. For research and development as defined in 10 CFR 30.4; teaching and training of students; and for use in sample analysis in X-ray fluorescence analyzer devices.
T. Americium-241	T. Sealed Neutron Source	T. 800 millicuries total	T. For research and development as defined in 10 CFR 30.4; teaching and training of students; and for use in sample analysis in X-ray fluorescence analyzer devices.
U. Americium-241	U. Sealed Neutron Source	U. 50 millicuries per source and 500 millicuries total	U. For use in CPN International. Inc., Model 503DR and Troxler Electronic Laboratories Model 3226 portable gauging devices for measuring physical properties of materials.
V. Cobalt-57	V. Foils	V. 100 millicuries per source and 200 millicuries total	V. For research and development as defined in 10 CFR 30.4, for use in nuclear gamma resonance spectroscopy.

MATERIALS LICENSE SUPPLEMENTARY SHEET	License No.: 11-27382-01	Docket or Reference No.: 030-32323
	Amendment No. 21	

CONDITIONS

10. Licensed material identified in Items 6.A. through 6.V. shall be stored and/or used at the licensee's facilities as described in Item 3 of application dated September 16, 2011, and located at:

    A. Main Campus, University of Idaho, Moscow, Idaho
    B. Southwest Idaho Research and Extension Center, 29603 University of Idaho Road, Parma, Idaho
    C. Aberdeen Research and Extension Center, 1693 South 2700 West, Aberdeen, Idaho
    D. Idaho Falls Research and Extension Center, 1776 Science Center Drive, Idaho Falls, Idaho
    E. Idaho State University/University of Idaho Center for Higher Education, 1776 Science Center Drive, Idaho Falls, Idaho

11. A. Licensed material identified in Item 6.U. shall be stored and/or used at the licensee’s facilities located at Kimberly Research and Extension Center, 3793 North 3600 East, Kimberly, Idaho.

    B. Licensed material identified in Item 6.U. shall be used at temporary jobsites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.

    If the jurisdiction status of a Federal facility within an Agreement state is unknown, the licensee should contact the federal agency controlling the job site in question to determine whether the proposed job site is an area of exclusive Federal jurisdiction. Authorization for use of radioactive materials at job sites in Agreement States not under exclusive Federal jurisdiction shall be obtained from the appropriate state regulatory agency.

12. A. The Radiation Safety Officer (RSO) for this license is Samir Shahat, Ph.D.

    B. Licensed material shall only be used by, or under the supervision of, individuals designated, in writing, by the Radiation Safety Committee Chairperson, Tracy Davis, Ph.D. The licensee shall maintain records of individuals designated as users for 3 years after the individual's last use of licensed material.

MATERIALS LICENSE SUPPLEMENTARY SHEET	License No.: 11-27382-01	Docket or Reference No.: 030-32323
	Amendment No. 21	

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. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.

D. 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.

E. 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.

F. 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.

G. 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.

MATERIALS LICENSE SUPPLEMENTARY SHEET	License No.: 11-27382-01	Docket or Reference No.: 030-32323
	Amendment No. 21	

H. 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.

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

14. Maintenance, repair, cleaning, replacement, and disposal of foils contained in detector cells shall be performed only by the device manufacturer or other persons specifically authorized by the Commission or an Agreement State to perform such services.

15. A. Detector cells containing a titanium tritide foil or scandium tritide foil shall only be used in conjunction with a properly operating temperature control mechanism which prevents the foil temperature from exceeding that specified in the certificate of registration issued by the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations from an Agreement State.

B. When in use, detector cells containing a titanium tritide foil or scandium tritide foil shall be vented to the outside.

16. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport or storage, or when not under the direct surveillance of an authorized user.

17. Any cleaning, maintenance, or repair of the gauge(s) that requires detaching the source or source rod from the gauge shall be performed only by the manufacturer or by other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

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:

MATERIALS LICENSE SUPPLEMENTARY SHEET	License No.: 11-27382-01	Docket or Reference No.: 030-32323
	Amendment No. 21	

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 biohazard 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.

19. The licensee shall not use the licensed material in or on humans.

20. Experimental animals, or the products from experimental animals, that have been administered licensed material shall not be used for human consumption.

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

22. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.

23. 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.

24. A. In addition to the possession limits in Item 8, the licensee shall further restrict the possession of unsealed byproduct material to quantities less than 10^5 times the applicable limits in Appendix B of 10 CFR Part 30, as specified in 10 CFR 30.35(d).

MATERIALS LICENSE SUPPLEMENTARY SHEET	License No.: 11-27382-01	Docket or Reference No.: 030-32323
	Amendment No. 21	

B. Notwithstanding License Condition 24.A., the licensee is authorized to possess Krypton-85 listed in Items 6.M., 7.M., and 8.M. in accordance with the letter dated December 26, 2002.

25. Notwithstanding the requirements of License Condition 26, the licensee is authorized to make program changes and changes to procedures specifically identified in the application dated September 16, 2011, which were previously approved by the U.S. Nuclear Regulatory Commission and incorporated into the license without prior Commission approval as long as:

A. The proposed revision is documented, reviewed, and approved by the licensee's Radiation Safety Committee in accordance with established procedures prior to implementation;

B. The revised program is in accordance with regulatory requirements, will not change the license conditions, and will not decrease the effectiveness of the Radiation Safety Program;

C. The licensee's staff is trained in the revised procedures prior to implementation; and

D. The licensee's audit program evaluates the effectiveness of the change and its implementation.

MATERIALS LICENSE SUPPLEMENTARY SHEET	License No.: 11-27382-01	Docket or Reference No.: 030-32323
	Amendment No. 21	

26. 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. Letter dated December 26, 2002 (ML030430638)
B. Application dated September 16, 2011 (ML11269A167)
C. Letter dated March 6, 2012 (ML12072A245)
D. Letter dated August 28, 2019 (ML19241A292)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: January 19, 2022

By: Michelle R. Simmons

Digitally signed by Michelle R. Simmons
Date: 2022.01.19 15:20:59 -06'00'

Casey Alldredge
Region 4