U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 14

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, 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	
	In accordance with application dated August 17, 2009
1. Boise State University	3. License number 11-27388-01 is amended in its entirety to read as follows:
2. 1910 University Drive Boise, Idaho 83725-1825	4. Expiration date August 31, 2011
	5. Docket No. 030-32218 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. Americium-241	A. Sealed neutron sources	A. 10 microcuries
B. Carbon-14	B. Any, except sealed sources	B. 10 millicuries
C. Hydrogen-3	C. Any, except sealed sources	C. 10 millicuries
D. Iodine-125	D. Any, except sealed sources	D. 1 millicurie
E. Phosphorus-32	E. Any, except sealed sources	E. 10 millicuries
F. Sulfur-35	F. Any, except sealed sources	F. 3 millicuries

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
11-27388-01

Docket or Reference Number
030-32218

Amendment No. 14

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G. Phosphorus-33	G. Any, except sealed sources	G. 3 millicuries
H. Uranium-233	H. Any, except sealed sources	H. 300 microcuries
I. Uranium-235	I. Any, except sealed sources	I. 5 microcuries
J. Nickel-63	J. Sealed sources (Isotope Products Laboratories [formerly New England Nuclear] Model NER-004)	J. 60 millicuries total. No single source to exceed the maximum activity specified in the certificate of registration issued by NRC or an Agreement State
K. Cesium-137	K. Any, except sealed sources	K. 10 microcuries
L. Lead-202	L. Any, except sealed sources	L. 1 microcurie
M. Lead-205	M. Any, except sealed sources	M. 1 microcurie
N. Thorium-229	N. Any, except sealed sources	N. 5 microcuries
O. Thorium-230	O. Any, except sealed sources	O. 100 microcuries

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
11-27388-01

Docket or Reference Number
030-32218

Amendment No. 14

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P. Thorium-232	P. Any, except sealed sources	P. 1 microcurie
Q. Uranium-236	Q. Any, except sealed sources	Q. 2 microcuries
R. Uranium-238	R. Any, except sealed sources	R. 10 microcuries
S. Chromium-51	S. Any, except sealed sources	S. 4 millicuries
T. Americium-241	T. Sealed neutron sources (CPN International, Inc. Model CPN-131)	T. 50 millicuries total. No single source to exceed the maximum activity specified in the certificate of registration issued by NRC or an Agreement State
U. Cesium-137	U. Sealed sources (CPN International, Inc. Model CPN-131)	U. 10 millicuries total. No single source to exceed the maximum activity specified in the certificate of registration issued by NRC or an Agreement State

9. Authorized Use:

A. through I. and S. To be used in research and development as defined in 10 CFR 30.4; animal and plant studies; teaching and training of students.

J. To be used in laboratory and field applications under research and development as an ionization source contained in an ion mobility spectrometer sensor to be housed in a probe.

K. through Q. To be used in research and development as standards for thermal ionization mass spectrometry.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
11-27388-01

Docket or Reference Number
030-32218

Amendment No. 14

R. To be used in research and development to evaluate materials for use in uranium electro refining and salt/metal separations.

T. and U. To be used in laboratory and field applications under research and development in a CPN International, Inc. Model MC Series PORTAPROBE portable gauging device.

CONDITIONS

10. A. Licensed material shall be used or stored only at the licensee's facilities located at:

1. Science/Nursing Building, 2133 Campus Lane, Boise, Idaho;
2. Multipurpose Classroom Building, 2110 University Drive, Boise, Idaho;
3. Math/Geosciences Building, 2000 University Drive, Boise, Idaho;
4. Micron Engineering Center, 1020 Manitou Avenue, Boise, Idaho;
5. Harry Morrison Civil Engineering Building, 1019 Euclid Avenue, Boise, Idaho; and
6. Center for Geophysical Investigation (CGISS), 1102 Lincoln Avenue, Boise, Idaho

B. Licensed material identified in Items 6.J. and 6.T. may be used in field applications under the purview of the licensee's radiation safety program at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material, including areas of exclusive Federal jurisdiction within Agreement States.

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.

C. Licensed material shall be received at 1453 University Drive (Central Receiving Area), Boise, Idaho.

11. A. Licensed material identified in Item 6.A. shall be used by, or under the supervision of, Richard J. Reimann, Ph.D.

B. Licensed material identified in Items 6.A. through 6.G. and 6.S. shall be used by, or under the supervision of, Al Dufty, Ph.D., James Long, Ph.D., James Munger, Ph.D., Cheryl Jorcyk, Ph.D., Susan Shadle, Ph.D., Denise Wingett, Ph.D., Kenneth Cornell, Ph.D., Darryl Butt, Ph.D., Kevin Feris, Ph.D., Julie Heath, Ph.D., and Kristen Mitchell, Ph.D.

C. Special nuclear material identified in Items 6.H. and 6.I. shall be used by, or under the supervision of, Mark Schmitz, Ph.D., and James Crowley.

D. Licensed material identified in Item 6.R. shall be used by, or under the supervision of, Darryl Butt, Ph.D.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
11-27388-01

Docket or Reference Number
030-32218

Amendment No. 14

E. Licensed material identified in Item 6.J. shall be used by, or under the supervision of Dale D. Russell, Ph.D.

F. Licensed material identified in Items 6.K. through 6.R. shall be used by, or under the supervision of, Mark Schmitz, Ph.D. and James Crowley.

G. Licensed material identified in Items 6.T. and 6.U. shall be used by, or under the supervision of, Warren Barrash, Ph.D.

12. The Radiation Safety Officer (RSO) for this license is Calvin W. Gillis.

13. The licensee is authorized to hold byproduct material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal without regard to its radioactivity if the licensee:

A. Monitors byproduct material at the surface before disposal and determines that its radioactivity cannot be distinguished from the background radiation level with an appropriate radiation detection survey meter set on its most sensitive scale and with no interposed shielding; and

B. Removes or obliterates all radiation labels, 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; and

C. Maintains records of the disposal of licensed materials for 3 years. The record must include the date of the disposal, the survey instrument used, the background radiation level, the radiation level measured at the surface of each waste container, and the name of the individual who performed the disposal.

14. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.

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 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.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
11-27388-01

Docket or Reference Number
030-32218

Amendment No. 14

D. The leak test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie 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. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region IV, 612 E. Lamar Blvd., Suite 400, Arlington, Texas 76011, ATTN: Director, Division of Nuclear Materials Safety. The report shall specify the source involved, the test results, and corrective action taken. Records of leak test results shall be kept in units of microcuries and shall be maintained for inspection by the Commission. Records may be disposed of following Commission inspection.

E. Tests for leakage 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. In addition, the licensee is authorized to collect leak test samples but not perform the analysis; analysis of leak test samples must be performed by persons specifically licensed by the 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 3 years.

15. 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.”

16. Licensed material shall not be used in or on human beings except as provided otherwise by specific condition of this license.

17. Sealed sources, source rods or detector cells containing licensed material shall not be opened or sources removed or detached from source rods, from detector cells or from portable gauges by the licensee, except as specifically authorized.

18. Notwithstanding license condition 17, the licensee shall only install or remove the Ni-63 sealed source (authorized under Item 6.J.) contained in an ion mobility spectrometer sensor for the purpose of cleaning, repairing, or providing maintenance to the sensor in accordance with procedures outlined in the application dated February 22, 2006.

19. The licensee shall use the nickel-63 sealed source (authorized under Item 6.J.), contained in an ion mobility spectrometer sensor, within the manufacturer’s specified temperature and environmental limits as specified in the certificate of registration issued by the NRC or an Agreement State, such that the source is not compromised by environmental factors exceeding tolerance levels.

20. 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. Records of inventories shall be maintained for 5 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.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
11-27388-01

Docket or Reference Number
030-32218

Amendment No. 14

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

22. The licensee shall not use licensed material in field applications where activity is released to the environment except as provided otherwise by specific conditions of this license.

23. When performing tests at temporary job sites, the authorized user shall not leave the moisture/density gauge or the ion mobility spectrometer sensor unattended. Upon completion of tests, the device shall be locked in the licensee's vehicle or a secure building to prevent unauthorized use, loss, or theft.

24. The licensee shall use the americium-241 and cesium-137 sealed sources (authorized under Items 6.T. and 6.U.) contained in a CPN International, Inc. Model MC Series PORTAPROBE portable gauging device, within the manufacturer's specified temperature and environmental limits as specified in the certificate of registration issued by the NRC or an Agreement State, such that the source is not compromised by environmental factors exceeding tolerance levels.

25. Except for maintaining labeling as required by 10 CFR Part 20 or 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 of the portable gauging device CPN International, Inc. Model MC Series PORTAPROBE that would alter the description or specifications as indicated in the respective Registration Certificates issued either by the Commission pursuant to 10 CFR 32.210 or by an Agreement State.

26. 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 portable nuclear gauge or its container must be locked when in transport.

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

28. A. For portable gauging devices and ion mobility spectrometer sensor: If the licensee uses unshielding sealed sources extended more than 3 feet below the surface, the licensee shall use surface casing that extends from the lowest depth to 12 inches above the surface and other appropriate procedures to reduce the probability of the source or from becoming lodged below the surface. If it is not feasible to extend the casing 12 inches above the surface, the licensee shall implement procedures to ensure that the cased hole is free of obstruction before making measurements.

    B. For portable gauging devices and ion mobility spectrometer sensor: If a sealed source or probe containing sealed sources in a portable gauging device becomes lodged below the surface and it becomes apparent that efforts to recover the sealed source or probe may not be successful, the licensee shall notify the U.S. Nuclear Regulatory Commission and submit the report required by 10 CFR 30.50(b)(2) and (c). The licensee shall not abandon the sealed source or probe without obtaining the Commission's prior written consent. Notification and reporting requirements should be made to the NRC Emergency Operations Center at 301-816-5100.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
11-27388-01

Docket or Reference Number
030-32218

Amendment No. 14

29. 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 April 24, 2001 (ML011980201)
B. Application dated July 19, 2004 (ML042120569)
C. Letter dated March 2, 2005 (ML050800402)
D. Application dated February 22, 2006 (ML060610141)
E. Letter dated April 5, 2007 (ML071090227)
F. Email and letter dated July 13, 2007 (ML072070568)
G. Letter and application dated October 13, 2008 (ML083400109)
H. Email dated January 6, 2009 (ML090080209)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Date: November 16, 2009

By: _____

Jacqueline D. Cook, Senior Health Physicist
Nuclear Materials Safety Branch B
Region IV
Arlington, Texas 76011-4125