U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 44

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 May 11, 2016
1. U.S. Department of Commerce National Oceanic and Atmospheric Administration	3. License number 05-11997-01 is amended in its entirety to read as follows:
2. 325 Broadway Boulder, Colorado 80305	4. Expiration date January 31, 2022
	5. Docket No. 030-03746 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. Nickel-63	A. Sealed sources (Foils or plated sources registered either with NRC under 10 CFR 32.210 or with an Agreement State)	A. 15 millicuries maximum per source and 2.7 curies total
B. Polonium-210	B. Sealed sources (Foils or plated sources registered either with NRC under 10 CFR 32.210 or with an Agreement State)	B. 30 millicuries maximum per source and 400 millicuries total
C. Americium-241	C. Sealed sources (Foils or plated sources registered either with NRC under 10 CFR 32.210 or with an Agreement State)	C. 20 millicuries maximum per source and 100 millicuries total

9. Authorized use:

A. To be used in research and development, as defined in 10 CFR 30.4, for sample analysis in custom-made gas chromatographs devices fitted with registered electron capture detectors containing licensed material. The electron capture detectors must have been registered either with NRC under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with an NRC or Agreement State specific license authorizing the distribution to persons specifically authorized by an NRC or Agreement State license to receive, possess, and use the devices.

To be used for sample analysis in compatible gas chromatographs devices and electron capture detectors containing licensed material that have been registered either with NRC under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with an NRC or Agreement State specific license authorizing the distribution to persons specifically authorized by an NRC or Agreement State license to receive, possess, and use the devices.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
05-11997-01

Docket or Reference Number
030-03746

Amendment No. 44

B. To be used in research and development, as defined in 10 CFR 30.4, for sample analysis using custom-made or registered chemical ionization mass spectrometers fitted with custom-made or registered source housing containing licensed material. The custom-made or registered source housing must have been distributed in accordance with an NRC or Agreement State specific license authorizing the distribution to persons specifically authorized by an NRC or Agreement State license to receive, possess, and use the devices.

To be used for sample analysis in compatible chemical ionization mass spectrometers that have been registered either with NRC under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with an NRC or Agreement State specific license authorizing the distribution to persons specifically authorized by an NRC or Agreement State license to receive, possess, and use the devices.

C. To be used in research and development, as defined in 10 CFR 30.4, for sample analysis using custom-made or registered chemical ionization mass spectrometers fitted with custom-made or registered source housing containing licensed material. The custom-made or registered source housing must have been distributed in accordance with an NRC or Agreement State specific license authorizing the distribution to persons specifically authorized by an NRC or Agreement State license to receive, possess, and use the devices.

To be used for sample analysis in compatible chemical ionization mass spectrometers that have been registered either with NRC under 10 CFR 32.210 or with an Agreement State and have been distributed in accordance with an NRC or Agreement State specific license authorizing the distribution to persons specifically authorized by an NRC or Agreement State license to receive, possess, and use the devices.

CONDITIONS

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

A. Earth System Research Laboratory, 325 Broadway R/ESRL, Boulder, Colorado,
B. Mauna Loa Observatory, Hilo, Hawaii,
C. NOAA Field Station, Barrow, Alaska,
D. NOAA Field Station, Pago Pago, American Samoa,
E. NOAA Field Station, Trinidad Head, California,
F. NOAA Field Station, Niwot Ridge, Colorado, and
G. Temporary job sites of the licensee anywhere in the United States, including mobile platforms such as aircrafts, vessels, balloons, etc.

11. A. Licensed material shall only be used by, or under the supervision of, Charles A. Brock, John P. Schneider, James Elkins, James Roberts, Brian Vasel, Ann Middlebrook, Brad Hall, Geoffrey Dutton, Fred Moore, Troy Thornberry, Ru Shan Gao, Andrew Neuman, and Eric Hintsa.

B. The Radiation Safety Officer for this license is Brian A. Vasel.

MATERIALS LICENSE SUPPLEMENTARY SHEET

License Number
05-11997-01

Docket or Reference Number
030-03746

Amendment No. 44

12. A. Sealed sources and/or 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 under equivalent regulations of an Agreement State.

    B. Notwithstanding Paragraph A of this Condition, detector cells containing Nickel-63 located in remote geographic locations that are inaccessible due to adverse weather conditions shall be tested for leakage and/or contamination at intervals not to exceed 1 year as specified in the letter dated December 23, 2008 (ML090020005).

    C. 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 under equivalent regulations of 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.

    D. Sealed sources or detector cells 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 or detector cell 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 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. 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, 1600 East Lamar Blvd., Arlington, Texas 76011-4511, ATTN: Director, Division of Nuclear Materials Safety. The report shall specify the source involved, the test results, and corrective action taken.

    F. 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 Commission or an Agreement State to perform such services.

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

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

14. Maintenance, repair, cleaning, replacement, and disposal of <u>all sealed sources</u> authorized by this license shall be performed only by the device manufacturer or other persons specifically authorized by the Commission or an Agreement State to perform such services.

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
05-11997-01

Docket or Reference Number
030-03746

Amendment No. 44

15. A. The licensee is authorized to perform non-routine maintenance involving the installation of electron capture detectors (ECDs) containing Nickel-63 into custom-made Oven Assemblies (OAs), replacement and repair of electronic components on the exterior of ECDs, removal and replacement of ECDs from custom-made OAs, and removal from service of ECDs taken from custom-made OAs as described in the procedures included with letter dated December 23, 2008 (ML090020005) and procedures included in E-mail dated February 20, 2009 (ML090550017). This non-routine maintenance does not authorize opening the ECDs or removing the sealed sources from the ECDs.

    B. The following individuals are authorized to perform the non-routine maintenance described in Paragraph A of this Condition: Brad Hall, Geoffrey Dutton, James Roberts, Fred Moore and James Elkins.

16. The licensee shall comply with the temperature limits and with the section titled "Limitations and/or other considerations of use" described in the corresponding Sealed Source and Device Registration certificate of each registered electron capture detector and/or of each registered sealed source used in custom-made gas chromatographs.

17. The licensee shall comply with the temperature limits and with the section "Limitations and/or other considerations of use" described in the corresponding Sealed Source and Device Registration certificate of each registered electron capture detector and/or of each registered sealed source used in compatible gas chromatographs.

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

20. This license does not authorize disposal of licensed material in land or at sea.

21. 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.

22. The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.

23. 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
05-11997-01

Docket or Reference Number
030-03746

Amendment No. 44

24. Notwithstanding the requirements of License Condition Number 25, the licensee is authorized to make changes to radiation safety procedures specifically identified in the application dated December 23, 2008 (ML090020005), E-mail dated February 5, 2009 (ML090360455), and E-mail dated February 20, 2009 (ML090550017), which were previously approved by the Commission and incorporated into the license, without prior Commission approval, as long as:

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

    B. The revised program is in accordance with regulatory requirements, will not change 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.

25. 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 July 17, 2011 (ML11206B243)
    B. Letter dated October 19, 2011 (ML11327A097)

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

/RA/

Date: August 11, 2016

By: _____

Jacqueline D. Cook, Senior Health Physicist
Nuclear Materials Safety Branch B
Region IV
Arlington, Texas 76011-4511