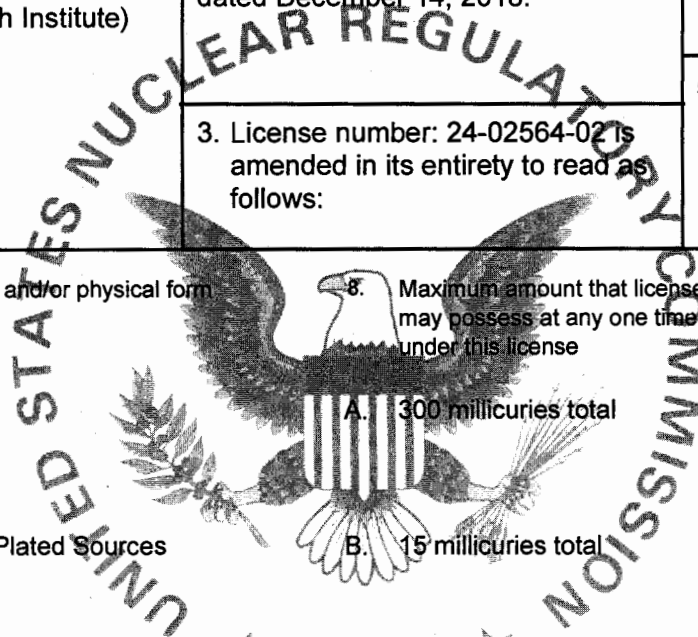


MATERIALS LICENSE

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.

<p style="text-align: center;">Licensee</p> <p>1. MRI Global (formerly Midwest Research Institute)</p> <p>2. 425 Volker Blvd. Kansas City, MO 64110-2299</p>	<p>In accordance with application dated December 14, 2018.</p> <p>3. License number: 24-02564-02 is amended in its entirety to read as follows:</p>	<p>4. Expiration Date: February 28, 2021</p> <p>5. Docket No.: 030-05083 Reference No.:</p>
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<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Carbon-14</p> <p>B. Nickel-63</p>	<p>7. Chemical and/or physical form</p> <p>A. Any</p> <p>B. Foils or Plated Sources</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 300 millicuries total</p> <p>B. 15 millicuries total</p>	<p>9. Authorized use</p> <p>A. For research and development as defined in 10 CFR 30.4, including animal studies and calibration and checking of the licensee's instruments.</p> <p>B. For use in gas chromatography devices for sample analysis.</p>
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★ ★ ★
CONDITIONS
★ ★ ★

10. Licensed material may be used or stored at the licensee's facilities located at 425 Volker Boulevard, Kansas City, Missouri, 64110.
11. A. The Radiation Safety Officer (RSO) for this license is Eric R. Jeppesen.
- B. Licensed material shall only be used by, or under the supervision of, the following individuals for the materials and uses indicated:

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number
24-02564-02

Docket or Reference Number
030-05083

Amendment No. 70

Authorized Users

Peter Dearhoff
Scott Klamm
Frank Pendleton
Brian Wimmer

Material and Use

Carbon-14
Nickel-63
Nickel-63
Carbon-14

12. Except as otherwise specified in this license, the licensee shall have available and follow the instructions contained in the manufacturer's instruction manual for the chromatography device.
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. 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.
- D. 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 Number
24-02564-02Docket or Reference Number
030-05083

Amendment No. 70

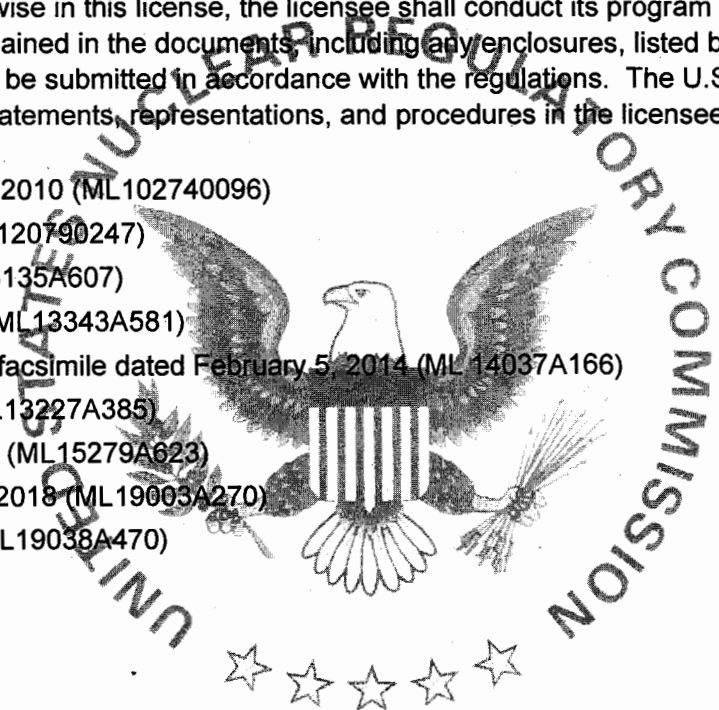
- E. Tests for leakage and/or contamination, including leak test sample collection and analysis, shall be performed by the licensee or other persons specifically licensed by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
- F. Records of leak test results shall be kept in units of becquerels (microcuries) and shall be maintained for 3 years.
14. Sealed sources or detector cells containing licensed material shall not be opened or the foil sources removed from the detector cell by the licensee.
15. The licensee shall not use the licensed material in or on humans.
16. The licensee shall not use licensed material in field applications where activity is released except as provided otherwise by specific condition of this license.
17. Experimental animals, or the products from experimental animals, that have been administered licensed material shall not be used for human or animal consumption.
18. 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 U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
19. 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.
20. 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.

**MATERIALS LICENSE
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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 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. Application dated September 28, 2010 (ML102740096)
- B. Letter dated March 19, 2012 (ML120790247)
- C. Letter dated May 14, 2013 (ML13135A607)
- D. Letter dated December 6, 2013 (ML13343A581)
- E. Letter dated January 5, 2014 via facsimile dated February 5, 2014 (ML14037A166)
- F. Letter received July 19, 2013 (ML13227A385)
- G. Letter dated September 28, 2015 (ML15279A623)
- H. Application dated December 14, 2018 (ML19003A270)
- I. Letter dated February 7, 2019 (ML19038A470)



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: MAR 29 2019By: 
Frank P. D. Tran
Region 3