

U.S. NUCLEAR REGULATORY COMMISSION

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.

<p style="text-align: center;">Licensee</p> <p>1. Department of the Army 20th Command (CBRNE)</p> <p>2. 2400 21st Street Aberdeen Proving Ground, Maryland 21010-5424</p>	<p>In accordance with the letter dated February 10, 2016,</p> <p>3. License number 19-31127-01 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date April 30, 2016</p> <hr/> <p>5. Docket No. 030-37133 Reference No.</p>	
<p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Californium 252</p> <p>B. Americium 241</p> <p>C. Sodium 22</p> <p>D. Cobalt 57</p>	<p>7. Chemical and/or physical form</p> <p>A. Sealed Source (Frontier Technology Corporation Model 100)</p> <p>B. Sealed Sources (Eckert & Ziegler Model No. AMRB 3135)</p> <p>C. Sealed Sources (Eckert & Ziegler Models GF-022-D and HEG-022)</p> <p>D. Sealed Sources (Eckert & Ziegler Model HEG-1)</p>	<p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. 2.7 millicuries per source and 135 millicuries total</p> <p>B. 10 nanocuries per source and 100 nanocuries total</p> <p>C. 12,022 microcuries total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear regulatory Commission or an Agreement State</p> <p>D. 54 millicuries total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear regulatory Commission or an Agreement State</p>

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number
19-31127-01

Docket or Reference Number
030-37133

Amendment No. 07

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|---|--|--|
| 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 |
| E. Cobalt 60 | E. Sealed Sources (Eckert & Ziegler Model GF-060-D) | E. 30 microcuries total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear regulatory Commission or an Agreement State |
| F. Barium 133 | F. Sealed Sources (Eckert & Ziegler Models HEG-133 and GF-133-D) | F. 1,352 microcuries total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear regulatory Commission or an Agreement State |
| G. Cesium 137 | G. Sealed Sources (Eckert & Ziegler Model GF-137-D) | G. 100 microcuries total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear regulatory Commission or an Agreement State |
| H. Europium 152 | H. Sealed Sources (Eckert & Ziegler Model GF152-D) | H. 40 microcuries total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear regulatory Commission or an Agreement State |
| I. Thorium 230 | I. Sealed Source | I. 30 nanocuries per source and 150 nanocuries total |
| J. Uranium 238 | J. Sealed Source | J. 30 nanocuries per source and 150 nanocuries total |
| K. Americium 241 | K. Sealed Sources (Eckert & Ziegler Models GF-241-D and PHI-241) | K. 724 microcuries total and no single source to exceed the maximum activity specified in the certificate of registration issued by the U.S. Nuclear regulatory Commission or an Agreement State |

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| 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 |
| L. Americium 241 | L. Sealed Sources (DuPont Model No. NES-128S; Amersham Model. AMR-1151) | L. 11 microcuries per source and 17 microcuries total |
| 9. Authorized use: | | |

- A. In Portable Isotopic Neutron Spectrometer for non-intrusive analysis, training of authorized users, training exercises, operational checks of instruments, and for storage of sources for the conduct of military operations including contingency purposes or emergency response.
- B. Eckert & Ziegler sealed sources for response checking of continuous air monitors.
- C. through L. For use in training exercises, instrument operational checks and calibration, and for reference.

CONDITIONS

10. Licensed material may be used or stored at the licensee's facilities on Aberdeen Proving Ground, Maryland; CBRNE Analytical and Remediation Activity facilities on Aberdeen Proving Ground, Maryland; 110TH Chemical Battalion (Technical Escort), Joint Base Lewis-McChord, Washington; Pine Bluff Arsenal, Arkansas; National Training Center, Fort Irwin, California; Joint Readiness Training Center, Fort Polk, Louisiana; Fort Bliss, Texas; Fort Hood, Texas; Fort Stewart, Georgia; Redstone Arsenal, Alabama; and at temporary job sites of the licensee anywhere in the United States.
11. Licensed material shall be used by, or under the supervision of, individuals who have received the training described in the memorandum dated September 11, 2013, and November 5, 2013, and have been designated in writing by the Radiation Safety Officer. The licensee shall maintain records of individuals designated as users for 3 years following the last use of licensed material by the individual.
12. The Radiation Safety Officer for this license is Barry Scott Davidson.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**License Number
19-31127-01Docket or Reference Number
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Amendment No. 07

13. A. Sealed sources shall be tested for leakage and/or contamination at intervals not to exceed six months or at 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. 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 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 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.
- E. 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 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 microcuries and shall be maintained for 5 years.
14. Sealed sources or source rods containing licensed material shall not be opened or sources removed or detached from source rods or gauges by the licensee, except as specifically authorized.
15. 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, manufacturers name and model numbers, and the date of the inventory.
16. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."

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SUPPLEMENTARY SHEET**

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17. 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. Memorandum dated September 11, 2013 (ML13270A151)
 - B. Memorandum dated November 5, 2013 (ML13329A443)
 - C. Memorandum dated December 16, 2014 (ML15012A380)
 - D. Memorandum dated February 10, 2016 (ML16063A225)
 - E. Memorandum dated April 8, 2016 (ML16116A198)



For the U.S. Nuclear Regulatory Commission

Date April 25, 2016

By ***Original signed by Scott Wilson***

 Scott Wilson
 Commercial, Industrial, R&D and Academic Branch
 Division of Nuclear Materials Safety
 Region I