

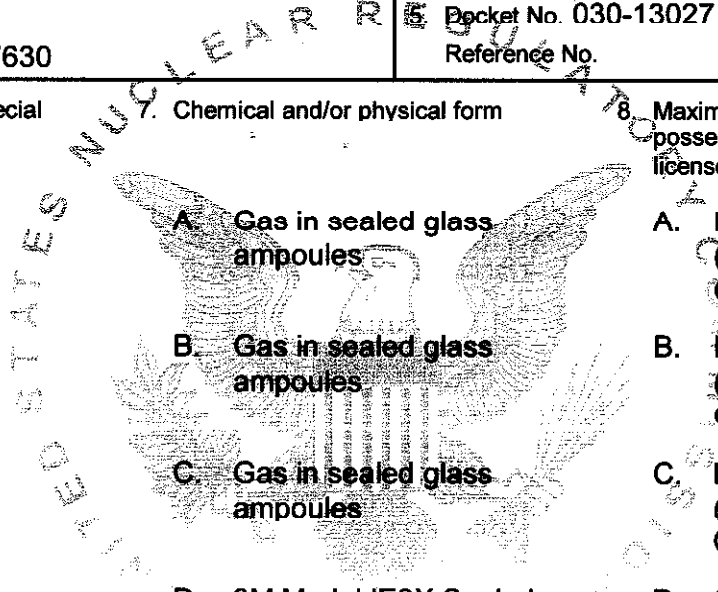
**MATERIALS LICENSE**

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.

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| <p>Licensee</p> <p>1. Department of the Army<br/>U.S. Army Tank-Automotive and</p> <p>2. Armaments Command-Rock Island<br/>ATTN: AMSTA-LC-RS<br/>Rock Island, IL 61299-7630</p> | <p>In accordance with letter dated<br/><b>May 2, 2000</b></p> <p>3. License number <u>12-00722-06</u> is amended in its entirety to read as follows:</p> <p>4. Expiration date <u>August 31, 2008</u></p> <p>5. Pocket No. <u>030-13027</u><br/>Reference No.</p> |
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| <p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Hydrogen-3</p> <p>B. Hydrogen-3</p> <p>C. Hydrogen-3</p> <p>D. Promethium-147</p> <p>E. Hydrogen-3</p> <p>F. Hydrogen-3</p> <p>G. Americium-241</p> | <p>7. Chemical and/or physical form</p> <p>A. Gas in sealed glass ampoules</p> <p>B. Gas in sealed glass ampoules</p> <p>C. Gas in sealed glass ampoules</p> <p>D. 3M Model IE2X Sealed Glass encapsulated ceramic bound sources in rifle sights</p> <p>E. Tritium gas sealed in glass in rifle sights</p> <p>F. Sealed glass ampoules in sights (Mb Microtec AG Model Nos. 400/1, 400/2, 400/3, 400/4, 400/5 or 400/6)</p> <p>G. Plated Foils (Amersham Corp. Model No. AMM5 or N.R.D. Model A001)</p> | <p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. Not to exceed 10 curies (370 GBq) per device (See Condition No. 10)</p> <p>B. Not to exceed 10.2 curies (377 GBq) per device (See Condition No. 10)</p> <p>C. Not to exceed 5.79 curies (213 GBq) per unit (See Condition No. 10)</p> <p>D. One millicurie per sight, total not to exceed one curie</p> <p>E. Nine millicuries per sight, total not to exceed nine curies</p> <p>F. No single sight to exceed 210 millicuries, 42 curies total</p> <p>G. No single cell to exceed 300 microcuries, 25 curies total</p> |
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| <p>6. Byproduct, source, and/or special nuclear material</p> <p>H. Nickel-63</p> | <p>7. Chemical and/or physical form</p> <p>H. Plated Sources (Du Pont Merck Model No. NER-004R, or Amersham Model Nos. NBC or NBCD)</p> | <p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>H. Not to exceed 15 millicuries per source and 1500 curies total</p> |
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9. Authorized Use:

- A. To be used in fire control devices containing self-luminous tritium sources and for possession incident to maintenance and repair of these devices and installation into artillery systems.
- B. For use in Muzzle Reference Sensors (MRS) on the family of main battle tanks used by the United States military services.
- C. For use in the M67 Sight Unit on the M120 and M121, 120mm mortar, the M224 60mm mortar and the M252 81mm mortar.
- D. and E. For possession incident to collection and disposal as radioactive waste only.
- F. To be used in Ranger Antiarmor Antipersonnel Weapon system for enhanced night firing capability.
- G. To be used in Model M43A1 Chemical Agent Detectors for detection of aerosols and gases.
- H. To be used in Models CAM, ICAM or GID-3 Chemical Agent Monitor for aerosol/ vapor detectors.

CONDITIONS

10. The total possession limit for Hydrogen-3 shall not exceed  $1.5 \times 10^6$  curies (55 PBq).
11. A. Licensed material listed in Item 6.A. through 6.C. and 6.F. may be stored at Rock Island Arsenal, Rock Island, Illinois and at Blue Grass Army Depot, Richmond, Kentucky and may be used at U.S. Army, National Guard and Marine Corps installations and temporary job sites throughout the United States and any other location where the Commission maintains jurisdiction for regulating the possession and/or use of licensed material. Ampoules containing hydrogen-3 shall not be opened or removed from fire control devices except as necessary for device repair and maintenance only at facilities that meet criteria for depot level maintenance as described in application dated October 29, 1997.

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- B. Licensed material listed in Items 6.D. and 6.E. may be possessed incident to collection and disposal as radioactive waste only, throughout the United States and any other location where the Commission maintains jurisdiction for regulating the possession of licensed material.
- C. Licensed material listed in Items 6.G. and 6.H. may be stored at Rock Island Arsenal, Rock Island, Illinois and at Blue Grass Army Depot, Richmond, Kentucky and may be used at U.S. Army and National Guard installations and temporary job sites of the licensee throughout the United States and any other location where the Commission maintains jurisdiction for regulating the possession and/or use of licensed material.
12. A. Licensed material in Items 6.A. through 6.F. shall be used by, or under the supervision of, Jeffrey Havenner or U.S. Army, National Guard and Marine Corps. civilian and/or military personnel trained in accordance with application dated October 29, 1997.
- B. Licensed material in Items 6.G. and 6.H. shall be used by, or under the supervision of, Jeffrey Havenner or U.S. Army, and National Guard civilian and/or military personnel trained in accordance with application dated October 29, 1997.
- C. Radiation Safety Officer: Jeffrey Havenner
- D. Alternate Radiation Safety Officer: Tim Mohs
13. Sealed sources containing licensed material shall not be opened.
14. 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."
15. The licensee shall conduct a physical inventory every twelve (12) months to account for all sealed sources and plated foils and sources received and possessed under the license. The records of the inventories shall be maintained for inspection by the Commission, and shall include the quantities and kinds of byproduct material, location of sealed sources and plated foils and sources and the date of the inventory.
16. A. The sources specified in Items 7.G. and 7.H. shall be tested for leakage and/or contamination at intervals not to exceed 12 months.
- B. In the absence of a certificate from a transferor indicating that a leak test has been made within 12 months prior to the transfer, a sealed source or plated foil or source received from another person shall not be put into use until tested.
- C. Sealed sources or plated foil or sources need not be leak tested if:
- (i) they contain only hydrogen-3; or

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- (ii) they contain only a radioactive gas; or
  - (iii) the half-life of the isotope is 30 days or less; or
  - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
  - (v) 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 plated foil or 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 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(b)(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 III, ATTN: Chief, Nuclear Materials Safety Branch, 801 Warrenville Road, Lisle, Illinois 60532-4351. The report shall specify the source involved, the test results, and corrective action taken.
- E. Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically licensed by the Commission or an Agreement State to Perform such services.
17. Notwithstanding the color requirements in 10 CFR 20.1901 (a), the licensee is authorized to label fielded items of equipment with colors as described in letter dated October 29, 1997.
18. Maintenance operations on the Chemical Agent Monitor or Chemical Agent Detector will not include or involve any repair or contact with the nickel-63 plated source or americium-241 plated foil.

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19. 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 October 29, 1997 (with enclosures) excluding Item 10, Subitem 11, addressing decommissioning;
- B. Letters dated October 29, 1997, ~~May 15, 1998, May 20, 1998~~ (requesting deletion of Item 11, "Decommissioning" from application dated October 29, 1997), August 14, 1998, March 18, 1999, November 29, 1999, December 6, 1999 (excluding Page 2, first paragraph, regarding Depot Maintenance Worker training), December 9, 1999 and **May 2, 2000**.
- C. Facsimiles dated ~~May 18, 1999~~ and March 14, 2000.



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date JUL 20 2000By Loren J. Hueter  
Loren J. Hueter  
Materials Licensing Branch  
Region III