

U.S. NUCLEAR REGULATORY COMMISSION

Amendment No. 11

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. Gamma Irradiator Service, LLC</p> <p>2. 337 Distillery Hill Road Benton, Pennsylvania 17814</p> | <p>In accordance with the application dated February 4, 2016</p> <p>3. License number 37-30850-01 is amended in its entirety to read as follows:</p> <hr/> <p>4. Expiration date May 31, 2024</p> <hr/> <p>5. Docket No. 030-36438 Reference No.</p> |
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| <p>6. Byproduct, source, and/or special nuclear material</p> <p>A. Cobalt 60</p> <p>B. Strontium 90</p> <p>C. Yttrium 90</p> <p>D. Cesium 137</p> | <p>7. Chemical and/or physical form</p> <p>A. Sealed sources registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State</p> <p>B. Sealed sources registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State</p> <p>C. Sealed sources registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State</p> <p>D. Sealed sources registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State</p> | <p>8. Maximum amount that licensee may possess at any one time under this license</p> <p>A. Not Applicable (See Condition 10)</p> <p>B. Not Applicable (See Condition 10)</p> <p>C. Not Applicable (See Condition 10)</p> <p>D. Not Applicable (See Condition 10)</p> |
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| E. Europium 152 | E. Sealed sources registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State | E. Not Applicable (See Condition 10) |
| F. Americium 241 | F. Sealed sources registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State | F. Not Applicable (See Condition 10) |
| G. Americium 241: Beryllium | G. Sealed sources registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State | G. Not Applicable (See Condition 10) |
| H. Californium 252 | H. Sealed sources registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State | H. Not Applicable (See Condition 10) |

9. Authorized use:

A. through H. For use incident to:

- (1) Collection of leak test samples; analysis of test samples as a service for other persons as defined in 10 CFR 20.1003.
- (2) Installation of sealed sources into or removal of sealed sources from ANSI Category I self-shielded irradiators as described in the licensee's Authorized Work Activities Procedure AP-004 dated April 30, 2014 and Procedure for Unloading/Loading Single Source Irradiators Procedure GIS-014 dated April 30, 2014.
- (3) Relocation, radiation surveys, realignment, repair, routine and non-routine maintenance, and servicing of ANSI Category I self-shielded irradiators and ANSI Category II irradiators that have been registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State as described in the licensee's Preventive Maintenance Procedure GMP-002 dated April 30, 2014 and Relocation and Preparation for Shipping Procedure GIS-REL-003 dated April 30, 2014.
- (4) Instruction and training of individuals in the safe use and operation of ANSI Category I self-shielded irradiators and ANSI Category II irradiators that have been registered either with the U.S. Nuclear Regulatory Commission under 10 CFR 32.210 or with an Agreement State.
- (5) Performing preventative maintenance on the modified J.L. Shepherd Mark I Model 25 irradiator as described in the licensee's Preventive Maintenance Procedure GMP-002 dated April 30, 2014.

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CONDITIONS

10. The licensee does not take possession of the radioactive material(s) and/or source(s) while at the client's facility.
11. Licensed material may be used only 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.
12. A. Licensed material shall be used by, or under the supervision of, and in the physical presence of Doyle Terry Stout, Christopher V. Nostrand, or Chad S. Gunther.
- B. The Radiation Safety Officer for this license is Christopher V. Nostrand.
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. Notwithstanding Paragraph A of this Condition, sealed sources designed to primarily emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed 3 months.
- 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 received from another person shall not be put into use until tested and the test results received.
- D. Sealed sources need not be tested if they contain only hydrogen-3; or they contain only a radioactive gas; or the half-life of the isotope is 30 days or less; or they contain not more than 100 microcuries of beta- and/or gamma-emitting material or not more than 10 microcuries of alpha-emitting material.
- E. 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.

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- F. 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.
- G. 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.
- H. Records of leak test results shall be kept in units of microcuries and shall be maintained for 5 years.
14. Except for maintaining labeling as required by 10 CFR Part 20 or 71, the licensee shall obtain authorization from U.S. Nuclear Regulatory Commission before making any changes in the sealed source, device, or source-device combination that would alter the description or specifications as indicated in the respective Certificates of Registration issued either by the Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or by an Agreement State.
15. The licensee shall comply with the "Limitations and/or other considerations of use" described in the Sealed Source and Device Registrations when servicing ANSI Category I self-shielded irradiators and ANSI Category II irradiators.
16. At least 14 days before initiating activities involving source reloads and source exchanges in NRC jurisdiction, the licensee shall notify, in writing, the Director, Division of Nuclear Materials Safety, Region I, 2100 Renaissance Boulevard, Suite 100, King of Prussia, Pennsylvania 19406-2713. The notification shall include the estimated project start date and the customer's NRC license number.
17. 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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18. 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. Letter received on May 15, 2014 with
Procedures dated April 30, 2014 (ML14142A145 and ML14142A146)
- B. Letter received February 4, 2016 (ML16060A402)



For the U.S. Nuclear Regulatory Commission

Date March 4, 2016

By **Original signed by Laurie A. Kauffman**
 Laurie A. Kauffman
 Decommissioning and Technical Support
 Division of Nuclear Materials Safety
 Region I
 King of Prussia, Pennsylvania 19406