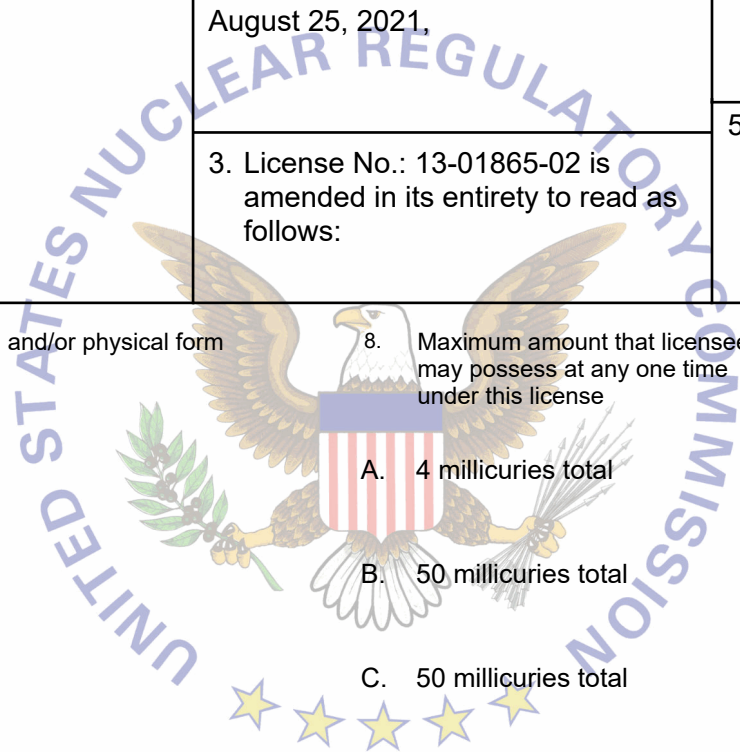


MATERIALS LICENSE

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. Butler University</p> <p>2. 4600 Sunset Avenue Indianapolis, IN 46208</p>	<p>In accordance with letter dated August 25, 2021,</p>	<p>4. Expiration Date: October 31, 2022</p>
	<p>3. License No.: 13-01865-02 is amended in its entirety to read as follows:</p>	<p>5. Docket No.: 030-00693 Reference No.:</p>



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	9. Authorized use
A. Calcium-45	A. Any	A. 4 millicuries total	A. For possession and storage in standby. This license must be amended prior to any use.
B. Carbon-14	B. Any	B. 50 millicuries total	B. For possession and storage in standby. This license must be amended prior to any use.
C. Hydrogen-3	C. Any	C. 50 millicuries total	C. For possession and storage in standby. This license must be amended prior to any use.
D. Phosphorus-32	D. Any	D. 50 millicuries total	D. For possession and storage in standby. This license must be amended prior to any use.
E. Phosphorus-33	E. Any	E. 10 millicuries total	E. For possession and storage in standby. This license must be amended prior to any use.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License No.: 13-01865-02

Docket or Reference No.:
030-00693

Amendment No. 28

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

9. Authorized use

F. Sulfur-35

F. Any

F. 50 millicuries total

F. For possession and storage in standby. This license must be amended prior to any use.



**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License No.: 13-01865-02

Docket or Reference No.:
030-00693

Amendment No. 28

CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at Butler University, Indianapolis, Indiana, in the Departments of Biology, Chemistry, Physics, and the College of Pharmacy.
11. The Radiation Safety Officer (RSO) for this license is Craig W. Barnhart.
12. Licensed material listed in Item 6 above is only authorized for use by, or under the supervision of, the following individuals for the materials and uses-indicated:

<u>Authorized Users</u> Conrad Hong, Ph.D.	<u>Material and Use</u> Hydrogen-3 and sulfur-35
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13. Licensed material shall not be used in or on humans except as provided otherwise by specific condition of this license.
14. The licensee shall not use licensed material in field applications where activity is release except as provided otherwise by specific condition of this license.
15. The licensee is authorized to hold radioactive material with a physical half-life of less than or equal to 120 days for decay-in-storage before disposal in ordinary trash provided:
 - A. Before disposal as ordinary trash, the waste shall be surveyed at the container surface with the appropriate survey instrument set on its most sensitive scale and with no interposed shielding to determine that its radioactivity cannot be distinguished from background. All radiation labels shall be removed or obliterated.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License No.: 13-01865-02

Docket or Reference No.:
030-00693

Amendment No. 28

- B. A record of each such disposal permitted under this license condition shall be retained for three years. The record must include the date of disposal, the date on which the byproduct material was placed in storage, the radionuclides disposed, the survey instrument used, the background dose rate, the dose rate measured at the surface of each waste container, and the name of the individual who performed the disposal.



**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

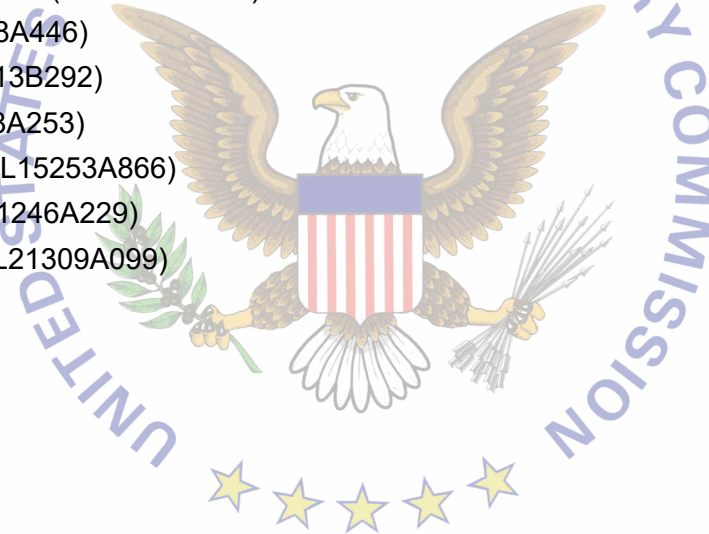
License No.: 13-01865-02

Docket or Reference No.:
030-00693

Amendment No. 28

16. 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 statements, representations, and 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 impose on the licensee requirements that are more restrictive than or in addition to the regulations.

- A. Application dated September 26, 2012 (ML12293A169)
- B. Letter dated May 1, 2012 (ML12128A446)
- C. Letter dated April 16, 2015 (ML15113B292)
- D. Letter dated July 6, 2015 (ML15198A253)
- E. Letter dated September 1, 2015 (ML15253A866)
- F. Letter dated August 25, 2021 (ML21246A229)
- G. Letter dated November 3, 2021 (ML21309A099)



FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date: November 19, 2021By: _____
Cassandra F. Frazier
Region 3