

ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

INSTRUCTIONS.—Complete Items 1 through 16 if this is an initial application. If application is for renewal of a license, complete only Items 1 through 7 and indicate new information or changes in the program as requested in Items 8 through 15. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail three copies to: U. S. Atomic Energy Commission, Washington 25, D. C. Attention: Isotopes Branch, Division of Licensing and Regulation. Upon approval of this application, the applicant will receive an AEC Byproduct Material License. An AEC Byproduct Material License is issued in accordance with the general requirements contained in Title 10, Code of Federal Regulations, Part 30 and the Licensee is subject to Title 10, Code of Federal Regulations, Part 20.

<p>1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital, person, etc.)</p> <p>WILLIAM C. BUTZ, M. D. Third US Army Medical Laboratory Fort McPherson, Georgia</p>	<p>(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a).)</p> <p>Third US Army Medical Laboratory Fort McPherson, Georgia and U. S. Army Hospital Fort McPherson, Georgia</p>
<p>2. DEPARTMENT TO USE BYPRODUCT MATERIAL</p> <p>Pathology Department</p>	<p>3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)</p> <p>10-3997-2 (C61) and 10-3997-3 (J61) Renewal of 10-3997-3 (J61)</p>
<p>4. INDIVIDUAL USER(S). (Name and title of individual(s) who will use or directly supervise use of byproduct material. Give training and experience in Items 8 and 9.)</p> <p>WILLIAM C. BUTZ, M. D., Pathologist Colonel, MC, Commanding, US Army and LARRY E. FARRIS, M. D., Pathologist Captain, MC, Chief, Pathology Section</p>	<p>5. RADIATION PROTECTION OFFICER (Name of person designated as radiation protection officer if other than individual user. Attach resume of his training and experience as in Items 8 and 9.)</p> <p>WILLIAM C. BUTZ, M. D. Third US Army Medical Laboratory</p>
<p>6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each)</p> <p>A. Iodine 131 B. Cobalt 57, 58 & 60 C. Chromium 51 D. Iron (Fe⁵⁹) E. Tritium (H³)</p>	<p>(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLCURIES OF EACH CHEMICAL AND/OR PHYSICAL FORM THAT YOU WILL POSSESS AT ANY ONE TIME. (If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.)</p> <p>A. Sodium Iodide - 10 millicuries B. Cyanocobalamin - .05 millicuries C. Sodium Radio-Chromate (Cr⁵¹) - 2 millicuries D. Radio-Iron Chloride (Fe⁵⁹) - 1 millicurie E. Tritiated Water (H³) - 5 millicuries</p>

7. DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED. (If byproduct material is for "human use," supplement A (Form AEC-313a) must be completed in lieu of this item. If byproduct material is in the form of a sealed source, include the make and model number of the storage container and/or device in which the source will be stored and/or used.)

Human use. See attached Form AEC-313a

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FOR DIV. OF COMPLIANCE

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TRAINING AND EXPERIENCE OF EACH INDIVIDUAL NAMED IN ITEM 4 (Use supplemental sheets if necessary)

8. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee	6 weeks	Yes No	(Yes) No
b. Radioactivity measurement standardization and monitoring techniques and instruments	Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee	6 weeks	Yes No	(Yes) No
c. Mathematics and calculations basic to the use and measurement of radioactivity	Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee	6 weeks	Yes No	(Yes) No
d. Biological effects of radiation	Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee	6 weeks	Yes No	(Yes) No

9. EXPERIENCE WITH RADIATION. (Actual use of radioisotopes or equivalent experience.)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXPERIENCE	TYPE OF USE
I 131	10 millicuries	Oak Ridge Inst. of Nuclear Studies, Oak Ridge, Tenn.	6 weeks	Basic Course in Technique of Using Radioisotopes.
CO 57, 58, 60	0.05 millicuries	Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tenn.	" "	Same as above.
Co 131, Co 57, 58, 60	diagnostic dosage	Third US Army Medical Lab Fort McPherson, Ga.	3 years	For Medical Diagnoses.

10. RADIATION DETECTION INSTRUMENTS. (Use supplemental sheets if necessary)

TYPE OF INSTRUMENTS (Include make and model number of each)	NUMBER AVAILABLE	RADIATION DETECTED	SENSITIVITY RANGE (mr/hr)	WINDOW THICKNESS (mg. cm ²)	USE (Monitoring, surveying, measuring)
All made by Nuclear Institute of Chicago					
Portable Survey Meter-2612M	1	Gamma & Beta	0-20	See catalog	Measurement or health monitoring for all listed.
Binary Scaler - 183B	1	Gamma & Beta	N.A.	N.A.	
Pulse Height Analyzer-1810	1		N.A.	N.A.	
1" Scintillation Probe-DS5-2	1	Gamma	N.A.	N.A.	
2" Crystal Well Counter-DS5-5	1	Gamma	N.A.	N.A.	

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.
 Use of Standard Iodine or Cesium; standardize daily.

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)
 Film Badges processed by US Army Signal Corps.

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS

- 13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hoods, etc. Explanatory sketch of facility is attached. (Circle answer) (Yes) No See page 4 of Form AEC-313a
- 14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation survey, servicing, maintenance and repair of the source. See page 4 of Form AEC-313a
- 15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved. See page 4 of Form AEC-313a

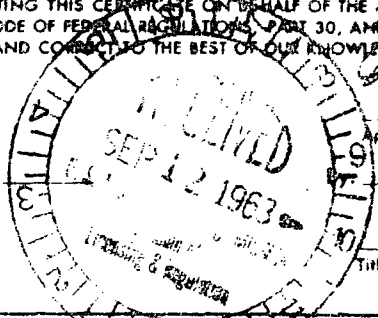
CERTIFICATE (This item must be completed by applicant)

16. THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATE ON BEHALF OF THE APPLICANT NAMED IN ITEM 1, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PART 30, AND THAT ALL INFORMATION CONTAINED HEREIN, INCLUDING ANY SUPPLEMENTS ATTACHED HERETO, IS TRUE AND CORRECT TO THE BEST OF OUR KNOWLEDGE AND BELIEF.

Date 3 September 1963

Applicant named in item 1: William P. Thompson, CWO, USA
 Adjutant

Title of certifying official: William P. Thompson



WARNING.—18 U. S. C., Section 1001, Act of June 25, 1948, & 5 Stat. 749, makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States or to any matter within its jurisdiction.

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
SUPPLEMENT A—HUMAN USE

If byproduct material is for "human use" (internal administration of byproduct material, or the radiation therefrom to human beings), complete this supplement and attach to the application for byproduct material license.

1. (a) USING PHYSICIAN'S NAME WILLIAM C. BUTZ, M. D. Third US Army Medical Lab Fort McPherson, Georgia	(b) NAME AND ADDRESS OF APPLICANT (if different from 1(a))
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2. THE USING PHYSICIAN INDICATED ABOVE IS LICENSED TO DISPENSE DRUGS IN THE PRACTICE OF MEDICINE BY A STATE OR TERRITORY OF THE UNITED STATES, THE DISTRICT OF COLUMBIA, OR THE COMMONWEALTH OF PUERTO RICO.	(YES) <input type="checkbox"/>	NO <input type="checkbox"/>
	CIRCLE ANSWER	

3. A STATEMENT OF USING PHYSICIAN'S CLINICAL RADIOISOTOPE EXPERIENCE (PAGE 3 OF THIS SUPPLEMENT) IS SUBMITTED IN SUPPORT OF THIS APPLICATION. IF ANSWER IS NO, USE PAGE 2 OF THIS SUPPLEMENT TO EXPLAIN OR REFER TO OTHER APPLICATION OR RELATED DOCUMENTS ON WHICH THIS INFORMATION APPEARS.	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
	CIRCLE ANSWER	

See Amendment No. 1, License No. 10-3997-3 (J61)

PROPOSED DIAGNOSIS OR TREATMENT

4. (a) DESCRIBE PURPOSE FOR WHICH BYPRODUCT MATERIAL WILL BE USED INCLUDING SPECIFIC CONDITIONS OR DISEASES TO BE DIAGNOSED OR TREATED (Use page 2 if necessary): Sodium Iodide will be used in the diagnosis of thyroid function by administering it to the patient and using a scintillation detector over the thyroid to determine the uptake of radioactive iodine. Sodium Iodide; Cyanocobalamin with Cobalt 57, 58 and/or Cobalt 60 in diagnosis of pernicious anemia and malabsorption syndromes. Sodium Radio-Chromate Cr⁵¹ for diagnosis of blood volume and red cell survival. Radio-Iron Chloride Fe⁵⁹ to be used for diagnosis of total iron combining capacity and estimating hemopoiesis and iron metabolism.

(c) DESCRIBE PROCEDURES WHICH WILL BE OBSERVED TO MINIMIZE HAZARD FROM HANDLING, STORAGE, AND DISPOSAL OF THE BYPRODUCT MATERIAL:
Radioactive materials are secured with a locked safe surrounded by lead bricks.

(d) DESCRIPTION AND SKETCHES OF SPECIAL DEVICES TO BE USED FOR ADMINISTERING BYPRODUCT MATERIAL TO HUMAN BEINGS ARE (1) ATTACHED (LITERATURE REFERENCES WILL SUFFICE)	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
	CIRCLE ANSWER	
(2) ON FILE WITH THE ISOTOPES EXTENSION REFER TO APPLICATION NO _____	YES <input type="checkbox"/>	NO <input type="checkbox"/>
	CIRCLE ANSWER	

5. PROPOSED DOSAGE SCHEDULE
(a) In milluries for internally administered byproduct material other than discrete fixed sources; and in roentgens or rads, as appropriate, for internal or external irradiation from discrete fixed sources (gold seeds, cobalt needles, etc.) state separately for each condition or disease (use page 2 if necessary):

Sodium Iodide for thyroid function - 0.010 to 0.050 millicuries
Cyanocobalamin in diagnosis of pernicious anemia - 0.0005 millicuries
Sodium Radio-Chromate Cr⁵¹ - 0.1 millicuries
Radio-Iron Chloride Fe⁵⁹ - 0.011 millicuries

(b) INVESTIGATIVE PROPOSAL FOR EXPERIMENTAL, NEW OR UNUSUAL HUMAN USES IS ATTACHED. (Attachment should include outline of conditions to be evaluated, including data from animal studies and/or abstract of literature reference if any, number and type of patients (i. e. age group, sex, etc.))	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
	CIRCLE ANSWER	

6. IF BYPRODUCT MATERIAL WILL NOT BE OBTAINED IN PRECALIBRATED FORM FOR ORAL ADMINISTRATION OR IN PRECALIBRATED AND STERILIZED FORM FOR PARENTERAL ADMINISTRATION, DESCRIBE IDENTIFICATION, PROCESSING, AND STANDARDIZATION PROCEDURES:
Material will be obtained precalibrated and sterilized.

7. THE PROPOSED USE OF BYPRODUCT MATERIAL HAS BEEN, OR WILL BE, APPROVED BY THE MEDICAL ISOTOPE COMMITTEE.	CIRCLE ANSWER (YES) <input type="checkbox"/>	NO <input type="checkbox"/>
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HOSPITAL FACILITIES FOR INDIVIDUAL PRACTICE USE ONLY

8. (a) THE APPLICANT HAS COMPLETED ARRANGEMENTS FOR A HOSPITAL TO ADMIT RADIOACTIVE PATIENTS WHENEVER ADVISABLE. U. S. Army Hospital, Fort McPherson, Georgia	CIRCLE ANSWER (YES) <input type="checkbox"/>	NO <input type="checkbox"/>
(b) A COPY OF INSTRUCTIONS TO BE FURNISHED TO THE HOSPITAL AS TO RADIOLOGICAL SAFETY PRECAUTIONS TO BE TAKEN AND AVAILABLE RADIATION INSTRUMENTATION IS ATTACHED.	CIRCLE ANSWER (YES) <input type="checkbox"/>	NO <input type="checkbox"/>

UNITED STATES ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE
SUPPLEMENT A—HUMAN USE

This page may be used for providing additional information. Please cross reference to specific items.

AEC-313a

Item No. 4 Continued: Tritiated Water (H^3) to be used as a control for developing a method of tritium analysis in urine in subjects who have been potentially exposed.

**APPLICATION FOR BYPRODUCT MATERIAL LICENSE
SUPPLEMENT A—HUMAN USE**

This page may be completed by the physician's preceptor (if any) in the medical use of radioisotopes. When the information is not furnished by the preceptor, the name and present address of the preceptor (if any) should be shown in item 12 below.

9. (a) USING PHYSICIAN'S NAME
WILLIAM C. BUTZ, M. D.
Third US Army Medical Lab
Fort McPherson, Georgia

(b) NAME AND ADDRESS OF APPLICANT (if different from 9(a))

10. CLINICAL TRAINING AND EXPERIENCE OF PHYSICIAN WHO WILL USE BYPRODUCT MATERIAL

(A) ISOPOE	(B) CONDITION(S) DIAGNOSED OR TREATED	(C) NUMBER OF CASES	(D) TYPE OF PARTICIPATION FOR ALL CASES (IN COLUMN B (circle applicable numbers of rows in accordance with key set forth below)
I-131	Diagnosis of thyroid function	130	(1) (2) (3) (4)
	Treatment of hyperthyroidism		1 2 3 4
	Treatment of thyroid cancer		1 2 3 4
	Treatment of cardiac conditions		1 2 3 4
	Brain tumor localization		1 2 3 4
	Blood determinations		1 2 3 4
	Kidney function		1 2 3 4
	Others:		1 2 3 4
P-32 Soluble	Treatment of polycythemia and leukemia		1 2 3 4
	Brain tumor localization		1 2 3 4
	Treatment of bone metastases		1 2 3 4
	Others:		1 2 3 4
P-32 CrPO ₄	Treatment of prostatic cancer		1 2 3 4
	Treatment of cervical cancer		1 2 3 4
	Treatment of pleural effusions and/or ascites		1 2 3 4
	Others:		1 2 3 4
Au-198 Colloid	Treatment of prostatic cancer		1 2 3 4
	Treatment of cervical cancer		1 2 3 4
	Treatment of pleural effusions and/or ascites		1 2 3 4
	Others:		1 2 3 4
Cs-137	Blood determinations	3	(1) (2) (3) (4)
	Others:		1 2 3 4
Other Isotopes	Vitamin B ₁₂ Co-57	2	(1) (2) (3) (4)
	Vitamin B ₁₂ Co-59		(1) (2) (3) (4)

10. (b) CLINICAL PARTICIPATION AND EXPERIENCE IN THE:

1. Examination of patients to determine suitability for radioisotope diagnosis and/or treatment and measurement of dosage to be prescribed.
2. Collaboration in calibration and administration of dosage including related measurements and plotting of data.
3. Active period of training and experience of sufficient duration to permit delivery of patients through treatment and post-treatment period including knowledge as to effectiveness and complications.
4. Study and discussion of case histories to establish standard diagnostic and/or therapeutic techniques for this radioisotope use.

11. IDEAL NUMBER OF HOURS OF PARTICIPATION IN CLINICAL TRAINING 200 hours

12. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OR GUIDANCE OF

WILLIAM C. BUTZ, M. D.
Third US Army Medical Lab
Fort McPherson, Georgia

William C. Butz

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
SUPPLEMENT A—HUMAN USE

This page may be used for providing additional information.

AEC-313

Item No. 4 Continued: ALLAN J. LEVINE, M. D., Pathologist
BOBBY L. CALDWELL, M. D., Pathologist

Item No. 13 Continued: The pictures of the equipment were submitted with the initial request for licensure, and the only additional equipment is a 3" sodium iodide crystal and well counter.

Item No. 14 Continued: Radioisotope compounds are received precalibrated from Abbott Laboratories, stored in a lead brick lined iron safe in a locked room until ready for use. The material is monitored from safe to patient. The laboratory is monitored each day isotopes are used for spills or leaks.

Item No. 15 Continued: Waste material is kept in a safe room until it has deteriorated to a safe level and then discarded down the sink well, diluted with water from the tap, into the common sewerage system.