

DISPOSITION FORM

(AR 340-15)

OFFICE OR OFFICE SYMBOL

SUBJECT

Approval for Radioisotope

TO

Commander, Radioisotope Com

FROM

Recorder, Radioisotope Com

DATE

3 Apr 53

GMT 1

Mail Johnson/Amd/26218

Major Robert H. Herman, MC is requesting approval for specific radioisotopes in limited amount specified in his request to be used in humans on an experimental basis. Documentation of his experience is present on AEC form 313A and 313.

David E. Thomas
David Thomas, Col MC
Chief, Medical Service

Arthur Steer
Arthur Steer, Col MC
Chief, Pathology Service

Edwin Fresholt
Edwin Fresholt, Col MC
Chief, Medical Service

John E. Conahan
John Conahan, Lt Col MC
Commanding Officer, USAF SWL

Paul Siebert
Paul Siebert, Lt Col MC
Chief, Radiology Service

Edmund E. Linoria
Edmund E. Linoria, Pab
Acting Chief, Radioisotope Section
RADIOISOTOPES

Leonard Griff
Leonard Griff, Capt MC
Acting Chief, Radioisotope Section
Radiology Service

Herbert F. Johnson

HERBERT F. JOHNSON
Major MC
Recorder, Radioisotope Committee

ARM2.950127.013a

DA FORM 2496

REPLACES DD FORM 96, EXISTING SUPPLIES OF WHICH WILL BE
USED AND USED UNTIL 1 SEP 53 UNLESS SOONER EXHAUSTED.

U.S. GOVERNMENT PRINTING OFFICE: 1963 O-207-911

Washington National Record Center
Office of the Army Surgeon General
Record Group 112

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>Robert H. Harman Major, MC Chief, Division of Metabolism USAMRIID, Fitzsimons General Hospital Denver, Colorado 80240</p>	<p>(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a).)</p>
<p>2. DEPARTMENT TO USE BYPRODUCT MATERIAL</p> <p>Division of Metabolism USAMRIID, Fitzsimons General Hospital Denver, Colorado 80240</p>	<p>3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)</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>Robert H. Harman Major, MC</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>6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.)</p> <p>Carbon 14 Phosphorous 32</p>	<p>(b) CHEMICAL AND/OR PHYSICAL FORM AND MAXIMUM NUMBER OF MILLICURIES 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>^{14}C - glucose - 50 μC) ^{14}C - cholesterol- 50 μC) $^{32}\text{PO}_4$ - 5 μC)</p> <p>Kept at Radioisotope Laboratory</p>
<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.)</p> <p>Laboratory research in the biochemistry and metabolism of glucose, cholesterol, and phosphate.</p>	

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

B. TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	Walter Reed Army Institute of Research	1 yr	(es) No	(Yes) No
b. Radioactivity measurement standardization and monitoring techniques and instruments	Walter Reed Army Institute of Research	1 yr	(es) No	(Yes) No
c. Mathematics and calculations basic to the use and measurement of radioactivity	Ill. Instit. of Technology	2 yrs	Yes (No)	(Yes) No
d. Biological effects of radiation	Walter Reed Army Institute of Research & Walter Reed Gen Hosp (incl. res in Int. Med)	5 yrs	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
⁴⁵ Ca		WRAIR	9 mos	Lab. res.
⁵⁹ Fe		WRAIR	1 month	Lab. res.
⁵¹ Cr	(See attached)	Walter Reed Genl Hosp.	3 years	Blood vol. deter. in patients

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)
Scintillation counter	3	¹⁴ C			Measuring
Gas-flow B-counter	3	¹⁴ C ⁴⁵ Ca			Measuring
Gamma counter	1	⁵⁹ Fe			Measuring
4 Pi-Paper scanner	2	¹⁴ C			Measuring
Thin-layer chromatogram scanner	1	¹⁴ C			Measuring

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.
Done by personnel at U.S. Army Institute of Research and Univ. of Pennsylvania.

12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED. (For film badges, specify method of calibrating and processing, or name of supplier.)
Film badges provided by radiation safety office at WRAIR and the Univ. of Penn.

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
- 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.
- 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.

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.

Robert D. Neuman
 Applicant named in item 1

22 July 1965

By:

Title of certifying official

WARNING.—18 U.S.C. Section 1021, Act of June 25, 1949, 62 Stat. 749 makes it a criminal offense to make a willfully false statement or misrepresentation to any department or agency of the United States as to any matter within its jurisdiction.

Washington National Record Center
 Office of the Army Surgeon General

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

9. EXPERIENCE WITH RADIATION (Continued)

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE WAS GAINED	DURATION OF EXP.	TYPE OF USE
^{14}C -progesterone		WRAIR and Walter Reed Gen Hosp.	1 month	Metabolism of adrenal steroids in patients with metabolic disease
^{14}C -glucose	22,200 dpm/flask	WRAIR	4 yrs	Lab. research
$^{14}\text{CO}_2$ -		WRAIR	4 yrs	Lab. research
^{14}C -Cholesterol	Approx. 10^5 dpm	Univ. of Penn. Dept of Biochemistry	3 yrs	Lab. research
^{14}C -Steroids (Various kinds)	Approx. 10^5 dpm	Univ. of Penn. Dept of Biochemistry	3 yrs	Lab. research
^{14}C -Isobutyric acid	Approx. 10^7 dpm	Univ. of Penn. Dept of Biochemistry	3 yrs	Chemical synthesis of ^{14}C -labeled steroids

Washington National Record Center
Office of the Army Surgeon General

**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
Robert H. Herman
Major, MC
USAMRIID, FGH, Denver, Colo.

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

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

(A) ISOTOPE	(B) CONDITION(S) DIAGNOSED OR TREATED	(C) NUMBER OF CASES	(D) TYPE OF PARTICIPATION FOR ALL CASES IN COLUMN B (circle applicable numbers of items in accordance with key set forth below)
I-131	Diagnosis of thyroid function	Approx 50	(1) 2 (3) (4)
	Treatment of hyperthyroidism	Approx 50	(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	Approx 4	(1) 2 (3) (4)
	Brain tumor localization		1 2 3 4
	Treatment of bone metastases		1 2 3 4
	Others: Treatment of thrombocytosis	Approx 1	(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	Approx 1	(1) 2 (3) (4)
	Others:		1 2 3 4
Cr-51	Blood determinations	Approx 20	(1) (2) (3) (4)
	Others:		1 2 3 4
Other Isotopes			1 2 3 4
			1 2 3 4

Key to above numbers (column D)

Active Participation and Discussion in the:

1. Examination of patients to determine suitability for radioisotope diagnosis and/or treatment and recommendations on dosage to be prescribed.
2. Collaboration in calibration and administration of dosages including related measurements and plotting of data.
3. Active period of training and experience of sufficient duration to permit followup of patients through treatment and posttreatment period including reevaluation as to effectiveness and complications.
4. Study and discussion of case histories to establish most efficacious diagnostic and/or therapeutic techniques for this radioisotope use.

11. TOTAL NUMBER OF HOURS OF PARTICIPATION IN CLINICAL TRAINING _____ hours **At least 100 hrs over a 3 year residency in internal medicine and 1 1/2 yrs doing cl. invest. in metabolic & endocrine disease.**

12. THE TRAINING AND EXPERIENCE INDICATED ABOVE WAS OBTAINED UNDER THE SUPERVISION OR GUIDANCE OF **Appropriate staff members at Walter Reed General Hospital.**

_____, AT _____ (Institution)

Robert H. Herman (Signature)

Washington National Record Center
 Office of the Army Surgeon General