



HEADQUARTERS
DEPARTMENT OF THE ARMY
OFFICE OF THE SURGEON GENERAL
WASHINGTON 25, D. C.

IN REPLY REFER TO
MEDPS-PO

23 May 1961

Isotopes Branch
Division of Licensing and Regulation
U. S. Atomic Energy Commission
Washington 25, D. C.

Gentlemen:

Recommend approval of the inclosed application for byproduct material license for the Third U. S. Army Medical Laboratory, Fort McPherson, Georgia, for 10 millicuries of Iodine 131; 50 microcuries of Cobalt 60 and 1 millicurie of Chromium 51.

The radioisotope facilities at the Third U. S. Army Medical Laboratory have been recently surveyed by the personnel of the U. S. Army Environmental Hygiene Agency and the health protection measures have been found to be adequate.

Sincerely,

Charles W. Kraul

1 Incl
AEC 313 (in trip)

CHARLES W. KRAUL
Lt. Colonel, MC
Preventive Medicine Division

00/5

Date Received <i>May 25, 1961</i>	Expiration Date	Issue Date <i>6/12/61</i>	Tech. Reviewer <i>g/k</i>
Control No. <i>34833</i>	Reference No.	License No. <i>10-3997-3</i>	Amendment No. <i>2</i>
Isotope	Form	Possession Limit	
A. <i>in accordance with application dated April 26, 1961,</i>	A. <i>is hereby amended as follows:</i>	A.	
B. <i>lic. No. 10-</i>	B. <i>3997-3</i>	B.	
C. <i>Condition 13</i>	C. <i>is amended to read:</i>	C.	
D. <i>13. - - -</i>	D. <i>Col. William C. Butz;</i>	D.	
E.	E. <i>Ronald C. Jessen, MC.</i>	E.	<i>MC or Capt.</i>
F.		F.	
G.		G.	
H.		H.	

Authorized Use

A.

REMARKS, Letters, Phone calls, Visits, Exemptions, Etc. (Use reverse side if necessary)

Conditions			
1. A B C	6.	11.	16.
2. A B C	7.	12.	17.
3. A B C D	8. A B C	13.	18.
4. A B	9. A B C	14. A B C	19.
5.	10.	15.	20.
			21.

Approve Void

Tech. Reviewer *g/k* Date *6/9/61*

Chief *g/k* Date *6/12/61*

Mail to: *Harold Daniels* Date Mailed *JUN 12 1961*

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>Department of the Army 3rd U.S. Army Medical Laboratory Pathology Department Fort McPherson, Ga.</p>	<p>(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a).)</p> <p>Same as (a) and U.S. Army Hospital (FIELD) Fort McPherson, Ga.</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>10-3997-3 (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>Ronald C. Jessen M.D. Pathologist Captain, M.C., U.S.A.R. Licensed user: Col. Wm. C. Butz, M.G.</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>Lt. Col. George W. Johnston, M.S.C. (See previous application for training and experience)</p>
<p>6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.)</p> <p>1. Iodine 131 2. Cobalt 60 3. Chromium 51</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>1. Iodide --- 10 millicuries 2. Vitamin B₁₂ --- 50 microcuries 3. Sodium chromate --- 1 millicurie</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>	

Human use. See attached Form AEC-313a.

A CERTIFIED TRUE COPY

R. C. Jessen
R. C. JESSEN, Capt., M.C.

DUPLICATED
FOR DIV. OF COMPLIANCE

34833

5/25/61

8. TYPE OF TRAINING

	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
See 10-3997-3 for tr. and exp. of Wm.C. Butz, Col., MC				
a. Principles and practices of radiation protection	U. of Ill., Dept. of Radiology	5 wks	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
b. Radioactivity measurement standardization and monitoring techniques and instruments	U. of Ill., Dept. of Radiology	5 wks	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
c. Mathematics and calculations basic to the use and measurement of radioactivity	U. of Ill., Dept. of Radiology	5 wks	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> No
d. Biological effects of radiation	U. of Ill., Dept. of Radiology	4 wks	<input checked="" type="radio"/> Yes <input type="radio"/> No	<input checked="" type="radio"/> Yes <input type="radio"/> 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	0.1 mc	U. of Ill., Dept. of Radiology	7 wks	Diag. of thyroid function; deter. of plasma volume.
Cr ₅₁	0.3 mc	U. of Ill., Dept. of Radiology	7 wks	Deter. of blood volume and RBC survival
Co ₆₀	0.001 mc	U. of Ill., Dept. of Radiology	7 wks	Diag. of pernicious anemia

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 Instrument of Chicago					
Portable Survey Meter 2612M	1	gamma and beta	0-20		Monitoring
Binary Scaler 183B	1	gamma and beta	N.A.	N.A.	Measuring
Pulse Height Analyzer-1810	1		N.A.	N.A.	Measuring
1" Scintillation Probe DS5-2	1	gamma	N.A.	N.A.	Measuring
2" Crystal Well Counter-DS5-5	1	gamma	N.A.	N.A.	Measuring

11. METHOD, FREQUENCY, AND STANDARDS USED IN CALIBRATING INSTRUMENTS LISTED ABOVE.

Intercomparison with assayed solutions as regularly purchased; 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 U.S. Army Signal Corps. A CERTIFIED TRUE COPY R.C. JESSEN, Capt., MC

INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS

13. FACILITIES AND EQUIPMENT. Describe laboratory facilities and remote handling equipment, storage containers, shielding, fume hood, etc. Explanatory sketch of facility is attached. (Circle answer) Yes No See photo with previous license 10-3997-3 and 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

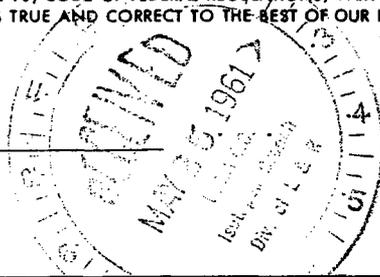
15. WASTE DISPOSAL. If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved. See page 4 of Form AEC-313a.

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 26 April 1961

By: Ronald C. Jessen
William C. Butz, Col USMC
 Title of certifying official W.C. Butz, Col., MC
C.O., 3rd U.S.A.M.L.



WARNING.—18 U. S. C., Section 1001; Act of June 25, 1948; 62 Stat. 749; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States as 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 Ronald C. Jessen M.D. 3rd U.S. Army Medical Laboratory Fort McPherson, Ga.	(b) NAME AND ADDRESS OF APPLICANT (If different from 1(a)) Department of the Army 3rd U.S. Army Medical Laboratory, Pathology Dept. Fort McPherson, Ga.
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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. ILLINOIS AND GEORGIA	CIRCLE ANSWER	<input checked="" type="radio"/> YES	<input type="radio"/> NO
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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.	CIRCLE ANSWER	<input checked="" type="radio"/> YES	<input type="radio"/> NO
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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):
Diagnosis of thyroid function; diagnosis of pernicious anemia; determination of red cell mass and red cell survival time.

(b) CHEMICAL FORM ADMINISTERED: Iodide; vitamin B₁₂; sodium chromate.

(c) DESCRIBE PROCEDURES WHICH WILL BE OBSERVED TO MINIMIZE HAZARD FROM HANDLING, STORAGE, AND DISPOSAL OF THE BYPRODUCT MATERIAL:
All materials will be secured in assayed forms in shipping containers complying with I.C.C. specifications. Any excess material held for decay will be stored as such or in lead containers.

(d) DESCRIPTION AND SKETCHES OF SPECIAL DEVICES TO BE USED FOR ADMINISTERING BYPRODUCT MATERIAL TO HUMAN BEINGS ARE		YES	<input checked="" type="radio"/> NO
(1) ATTACHED (LITERATURE REFERENCES WILL SUFFICE)	CIRCLE ANSWER		
(2) ON FILE WITH THE ISOTOPES EXTENSION REFER TO APPLICATION NO 10-3997-3 (J61)	CIRCLE ANSWER	<input checked="" type="radio"/> YES	<input type="radio"/> NO

5. PROPOSED DOSAGE SCHEDULE

(a) In millicuries 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):

Iodide --- Diagnosis of thyroid function --- 0.005 to 0.050 millicuries
 Vitamin B₁₂ --- Diagnosis of pernicious anemia --- 0.0005 to 0.001 millicuries
 Sodium chromate --- Determination of red cell mass --- 0.030 to 0.100 millicuries
 Sodium chromate --- Determination of red cell survival time -- 0.150 to 0.300 millicuri.

A CERTIFIED TRUE COPY: *R.C. Jessen* R.C. JESSEN, Capt., MC

(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, moribund, etc.))	CIRCLE ANSWER	YES	<input checked="" type="radio"/> NO
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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.

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7. THE PROPOSED USE OF BYPRODUCT MATERIAL HAS BEEN, OR WILL BE, APPROVED BY THE MEDICAL ISOTOPE COMMITTEE.	CIRCLE ANSWER	<input checked="" type="radio"/> YES	<input type="radio"/> NO
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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 (FIELD), Fort McPherson, Ga.	CIRCLE ANSWER	<input checked="" type="radio"/> YES	<input type="radio"/> NO
(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. Refer to 10-3997-3	CIRCLE ANSWER	YES	<input checked="" type="radio"/> NO

UNITED STATES ATOMIC ENERGY COMMISSION

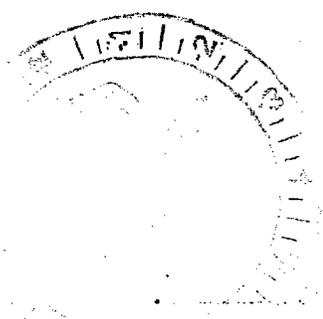
APPLICATION FOR BYPRODUCT MATERIAL LICENSE
SUPPLEMENT A—HUMAN USE

Date: _____
Budget Bureau No. 30-4000.1

PAGE 2

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

[Faint, mostly illegible text covering the majority of the page, likely representing the applicant's response to the application requirements.]



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
Ronald C. Jessen M.D.

(b) NAME AND ADDRESS OF APPLICANT (If different from 9(a))
Department of the Army
3rd U.S. Army Medical Laboratory, Pathology Dept.
Fort McPherson, Ga.

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 D (circle applicable numbers of items in accordance with key set forth below)	
I-131	Diagnosis of thyroid function	20	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		10	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	
Cr-51	Blood determinations	10	① ② ③ ④	
	Others: Determination of red cell survival time	2	① ② ③ ④	
	Determination of splenic index	3	① ② ③ ④	
Other Isotopes	Co ₆₀ - Diagnosis of pernicious anemia	6	① ② ③ ④	
			1 2 3 4	

Key to above numbers (column D)

Active Participation and Discussion

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.

A CERTIFIED TRUE COPY: *R.C. Jessen* R.C. JESSEN, Capt., MC

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11. TOTAL NUMBER OF HOURS OF PARTICIPATION IN CLINICAL TRAINING 50 hours

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

Roger A. Harvey, M. D. AT College of Medicine, University of Illinois, Chicago, Illinois

(Name of physician (preceptor))

(Institution)

(Signature)

840 S. Wood Street.

ATOMIC ENERGY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

Form No. 1
July 1954 Edition, GPO

PAGE 4

SUPPLEMENT A—HUMAN USE

This page may be used for providing additional information.

AEC-313

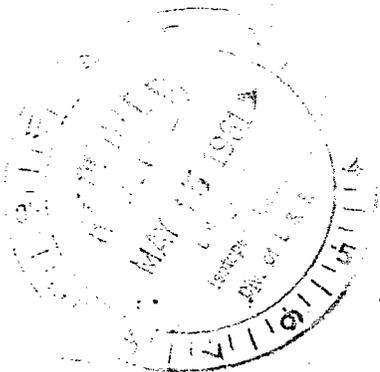
Item No. 14 Continued: Radioisotope compounds are received precalibrated from Abbott Laboratories, stored in a lead brick lined iron safe in a locked room until ready for use. The material is monitored from safe to patient. The laboratory is monitored each day isotopes are used for spills or leaks.

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.

A CERTIFIED TRUE COPY:

R.C. Jesseen

R.C. JESSEEN, Capt., MC



Robert A. Jensen, A. Jensen, Jr., M.D., M.P.H., Director, College of Medicine, University of Illinois at Chicago, Chicago, Illinois