

**MELPAR, INC.** 3000 ARLINGTON BOULEVARD, FALLS CHURCH, VIRGINIA · JEFFERSON 4-6000

19 November 1962

Atomic Energy Commission  
Washington 25, D. C.

Attn: Mr. Robert E. Brinkman, Isotopes Branch,  
Division of Licensing & Regulation

Subject: Byproduct Material License, No.  
45-7548-1(G63). Supplementary  
Application

Gentlemen:

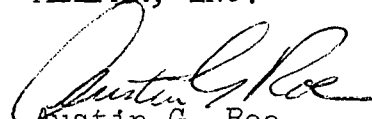
Supplementary application is hereby submitted in triplicate to amend Melpar's Byproduct Material License No. 45-7548-1(G63) by increasing the amount of Hydrogen 3 (Item 6F - labelled compounds) from 100 to 1000 millicuries, and by adding to the list of individual users the following: Dr. Frank L. Aldrich, Paul Killos and Dr. Earl Usdin.

We are in urgent need of the additional amount of Hydrogen 3 and additional users as work is now in performance on a new Government contract requiring its use.

If there is any additional information you desire, we will be pleased to furnish it.

Very truly yours,

MELPAR, INC.

  
Austin G. Roe  
House Counsel

Encis.

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A-217

SUPPLEMENTARY 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>Melpar, Inc. 3000 Arlington Blvd. Falls Church, Va.</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>Research Division</p>	<p>3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)</p> <p>#45-7548-1(G63) - present license (including amendments)</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.) Add to list of individual users of Hydrogen 3 (Item 6F.-labelled compounds):</p> <p>Dr. Frank L. Aldrich Paul Killos Dr. Earl Usdin</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>No change</p>
<p>6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.)</p> <p>No change</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>Revise Subitem F. of Item 8 of present license to read as follows:</p> <p>F. 1000 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.)

No change.

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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	See attached sheet		Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments			Yes No	Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity			Yes No	Yes No
d. Biological effects of radiation			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
See attached sheet				

**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 <sup>2</sup> )	USE (Monitoring, surveying, measuring)
No change					

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

No change

**12. FILM BADGES, DOSIMETERS, AND BIO-ASSAY PROCEDURES USED.** (For film badges, specify method of calibrating and processing, or name of supplier.)

See attached sheet

**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

No change

**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 attached sheet

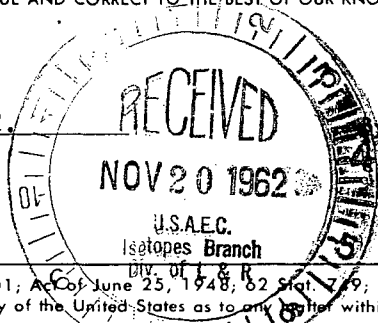
**15. WASTE DISPOSAL.** If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

No change

**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 19 November 1962



MELPAR, INC.

Applicant named in item 1

P.E. Ritt

Vice President - Research

Title of certifying official

**WARNING.**—18 U. S. C., Section 1001; Act of June 25, 1948, 82 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.

Data with Respect to the Training and Experience of

DR. EARL USDIN

as an Additional Individual User

(Reference: Items 8 & 9, Form AEC-313)

Item 8. Dr. Earl Usdin, Senior Scientist

1. Ph.D. Ohio State University

<u>Type of Training</u>	<u>Where</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal</u>
a) Principles...	Ohio State Univ.	3 mo.	No	Yes
b) Radioactivity				
.....	Ohio State Univ.	3 mo.	No	Yes
c) Math....	Ohio State Univ.	3 mo.	No	Yes
d) Biological...	New Mex.Highlands Univ.	3 yrs.	Yes	No

Item 9.

<u>Isotope</u>	<u>Max.Amt.</u>	<u>Where</u>	<u>Duration</u>	<u>Type of Use</u>
H <sup>3</sup>	50 mc	New Mexico Highlands Univ.	3 yrs.	Metabolic studies
H <sup>3</sup>	50 mc	Michael Reese Hospital	3 mos.	Metabolic studies

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Item 12 &  
Item 14. Radiation Protection Program.....

Melpar will perform weekly bio-assays on individuals who use  $H^3$  quantities in excess of 100 millicuries. The bio-assay will consist of a urinalysis to detect tritium. The urinalysis procedure will utilize liquid scintillation techniques performed with Melpar's Packard Tri-Carb liquid scintillation spectrometer Series 314E. Any results exceeding the maximum permissible burden in the body as specified by the National Bureau of Standards Handbook 69 would be reported.