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Form AEC-313  
8-64  
10 CFR 30

UNITED STATES ATOMIC ENERGY COMMISSION  
**SUPPLEMENTARY APPLICATION FOR BYPRODUCT MATERIAL LICENSE**

Form approved.  
Budget Bureau No. 38-R027

**INSTRUCTIONS.** - Complete items 1 through 16 if this is an initial application or an application for renewal of a license. Information contained in previous applications filed with the Commission with respect to items 8 through 15 may be incorporated by reference provided references are clear and specific. Use supplemental sheets where necessary. Item 16 must be completed on all applications. Mail two copies to: U.S. Atomic Energy Commission, Washington, D.C., 20545, Attention: Isotopes Branch, Division of Materials Licensing. 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.

1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital, person, etc. Include ZIP Code.) (b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a). Include ZIP Code.)

Melpar, Inc.  
7700 Arlington Blvd.  
Falls Church, Va. 22046

2. DEPARTMENT TO USE BYPRODUCT MATERIAL 3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.)

Research Division

45-7548-1 (including amendments)  
(G67)

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.) 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.)

Add to list of individual users of Carbon 14(6A), Phosphorus 32(6B) Hydrogen 3(6D), and Sulfur 35 (6L):  
Dr. J. Verna & Dr. D. Lorenz.

No change

6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.) (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.)

No change

No change

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

Information in this report was obtained

in accordance with the Freedom of Information Act, exemptions 6  
FOIA- 2007-0221

(Continued on reverse side)

b6

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 sheets		Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments	#1, Dr. J. Verna #2, Dr. D. Lorenz		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 sheets #1 & #2				

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.)  
No change

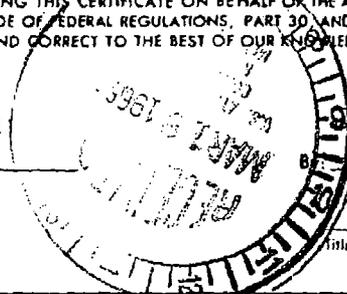
**INFORMATION TO BE SUBMITTED ON ADDITIONAL SHEETS IN DUPLICATE**

- 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.  
No change
- 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.

Date 14 March 1966


MELPAR, INC.  
 Applicant named in item 1  
Dr. P. E. Ritt  
 Research & Engineering  
 Title of certifying official

**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.

Data with Respect to the Training and Experience of

JOHN E. VERNA

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

Item 8 John E. Verna, Senior Scientist

PhD in Biology, Brown Univ. Prov. R. I.

(b)(6)

F. 6

<u>Type of Training</u>	<u>Where</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal Course</u>
a) Principles.....	Northeastern Univ.	1 yr.	-	Yes
b) Radioactivity.....	Brown Univ.	1 yr.	Lab	Yes
	Univ. Minn.	2 yr.	Lab	No
c) Mathematics.....	Northeastern Univ.	2 yr.	-	Yes
d) Biological.....	Brown Univ.	1 yr.	-	Yes
	Univ. Minn.	3 yr.	Lab	-

Item 9

Experience with Radiation

<u>Isotope</u>	<u>Max. Amt.</u>	<u>Where</u>	<u>Duration</u>	<u>Type of Use</u>
<sup>32</sup> P	10 mc	Univ. Minn.	3 yr.	Virus labeling
<sup>35</sup> S	110 mc	Melpar	6 mo.	Virus labeling
<sup>3</sup> H	100 mc	Melpar	1 yr.	Virus labeling



Data with Respect to the Training and Experience of

DOUGLAS E. LORENZ

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

Item 8

Douglas E. Lorenz, Senior Scientist

Ph.D. in Microbiology, University of California,  
Los Angeles, (b)(6)

Ex 6

<u>Type of Training</u>	<u>Where</u>	<u>Duration</u>	<u>On the Job</u>	<u>Formal Course</u>
a) Principle.....	U.C.L.A.	1 yr	No	Yes
b) Radioactivity.....	U.C.L.A.	1 yr	No	Yes
c) Mathematics.....	U.C.L.A.	1 yr	No	Yes
d) Biological.....	U.C.L.A.	1 yr	No	Yes
	Univ. of Minn.	1 yr	Yes	No

Item 9.

Experience with Radiation

<u>Isotope</u>	<u>Max. Amt.</u>	<u>Where</u>	<u>Duration</u>	<u>Type of Use</u>
C <sup>14</sup>	50 uc	UCLA	1 yr	Metabolic studies
Co <sup>60</sup>		UCLA	1 yr	Detector stan- dardization
Cs <sup>137</sup>		UCLA	1 yr	Detector stan- dardization
I <sup>131</sup>	10 uc	UCLA	1 yr	Antibody labeling
P <sup>32</sup>	10 uc	UCLA & MINN.	2 yrs	Nucleic acid labeling
S <sup>35</sup>	50 uc	UCLA	1 yr	Metabolic studies

