

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

28 December 1963

Atomic Energy Commission
Washington 25, D. C.

Re: Byproduct Material License
No. 45-7548-1 (G65)

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

Gentlemen:

Enclosed find supplementary application, in triplicate, re-
questing an amendment to the above license permitting the
use of Carbon 14, Hydrogen 3 (6F) and Phosphorus 32 by
Dr. John R. Sherman, Senior Research Scientist.

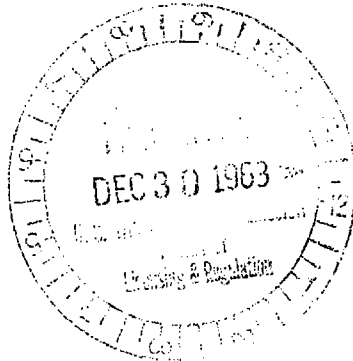
If you need further information, we will be pleased to furnish
it.

Very truly yours,

MELPAR, INC.

Austin G. Roe
House Counsel

Encl.



~~Information in this record was deleted~~
in accordance with the Freedom of Information
Act, exemptions 6
FOIA- 2009-0281

58355

BA

Form AEC-313
(5-58)

SUPPLEMENTARY ATOMIC ENERGY COMMISSION
APPLICATION FOR BYPRODUCT MATERIAL LICENSE

Form approved.
Budget Bureau No. 38-R027.4.

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.

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| 1. (a) NAME AND STREET ADDRESS OF APPLICANT. (Institution, firm, hospital, person, etc.) Melpar, Inc. 3000 Arlington Blvd. Falls Church, Va. | (b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED. (If different from 1 (a).) |
| 2. DEPARTMENT TO USE BYPRODUCT MATERIAL Research Division | 3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.) #45-7548-1 (including amendments) (G65) |
| 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 Carbon 14, Hydrogen 3 (6F) and Phosphorus 32 - Dr. John R. Sherman, Senior Research Scientist | 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.) No change |
| 6. (a) BYPRODUCT MATERIAL. (Elements and mass number of each.) No change | (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 |
| 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 DUPLICATED FOR DIV. OF COMPLIANCE | |

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

| 8. TYPE OF TRAINING | (see attached statement) WHERE TRAINED | DURATION OF TRAINING | ON THE JOB (Circle answer) | FORMAL COURSE (Circle answer) |
|---|---|----------------------|-------------------------------|----------------------------------|
| a. Principles and practices of radiation protection..... | U. S. Navy and University of Wisconsin | 3 yrs. | Yes No | Yes No |
| b. Radioactivity measurement standardization and monitoring techniques and instruments..... | University of Wisconsin | 3 yrs. | Yes No | Yes No |
| c. Mathematics and calculations basic to the use and measurement of radioactivity... | University of Wisconsin | 3 yrs | Yes No | Yes No |
| d. Biological effects of radiation..... | U. S. Navy | 3 mos. | 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 |
|-----------------|----------------|-----------------------------|------------------------|---------------------|
| C ¹⁴ | 1 mc | University of Wisconsin | 3 yrs. | Biological Research |
| H ³ | 500 mc | University of Wisconsin | 9 mos. | Biological Research |
| P ³² | 50 mc | Mass. Institute of Tech. | 3 mos. | Biological Research |

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) |
|--|------------------|--------------------|------------------------------|---|---|
| | | 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

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

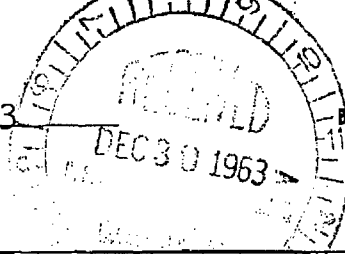
14. RADIATION PROTECTION PROGRAM. Describe the radiation protection program including control measures. If application covers sealed sources, submit leak testing procedures where applicable, name, training, and experience of person to perform leak tests, and arrangements for performing initial radiation 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.
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 23 December 1963 By: MELPAR, INC.
Applicant named in item 1
Dr. P. E. Ritt
Vice President of Research
Title of certifying official



MELPAR, INC. Byproduct Material License #45-7548-1 (1965)

Data with Respect to the Training and
Experience of

DR. JOHN R. SHERMAN

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

John R. Sherman. Biochemist/Molecular Biologist, received B.S. degree (b)(6) high honors in Chemistry from University of Utah in Salt Lake City, Utah. He received the M.S. (b)(6) and Ph.D. (b)(6) degrees from University of Wisconsin in Biochemistry/Molecular Biology. He has done graduate work at Mass. Inst. of Technology (Cambridge, Mass.) in Biology and he also completed the freshman medicine course at the University of Utah.

He served three years in the Navy (1955-58) as explosive ordnance disposal officer aboard USS Saratoga (CVA-60). Qualified as U. S. Navy scuba diver and 2nd Class deep sea diving officer.

His research experience included mechanism of replication of DNA using thymine requiring strains of *E. coli* (Prof. Levinthal's MIT Summer 1959); synthesis of 20 hydroxopregnen-3-one at University of Utah Medical School (Summer 1960); purification and properties of galactokinase from *E. coli* and rapid enzyme assay technique at University of Wisconsin (1960-63). He has had heavy academic work in molecular genetics; microbial genetics; biochemistry; and other life sciences as well as math through differential equations and chemistry through graduate physical chemistry.

He joined Melpar on 10 September 1963 where he is beginning a nucleic acid/molecular biology research program.

Dr. Sherman has had three papers published; he has two more in preparation. He belongs to ACS, AIC, AAAS, Gamma Alpha and Phi Beta Kappa.