

UNITED STATES ATOMIC ENERGY COMMISSION
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 <i>(Institution, firm, hospital, person, etc. Include ZIP Code.)</i> Monsanto Company Carondelet Plant 8201 Idaho Avenue St. Louis, Missouri 63111	(b) STREET ADDRESS(ES) AT WHICH BYPRODUCT MATERIAL WILL BE USED <i>(If different from 1 (a). Include ZIP Code.)</i> N.A.
2 DEPARTMENT TO USE BYPRODUCT MATERIAL 1. Central Lime Slurry 2. DiCalcium Phosphate	3 PREVIOUS LICENSE NUMBER(S) <i>(If this is an application for renewal of a license, please indicate and give number.)</i> 24-1113-13 (A67) with amendments 1, 2, and 3
4 INDIVIDUAL USER(S) <i>(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.)</i> W.S. Henderson, Maint. Supervisor E.R. Billen, Maint. Superintendent	5 RADIATION PROTECTION OFFICER <i>(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.)</i> E. R. Billen

6 (a) BYPRODUCT MATERIAL <i>(Elements and mass number of each.)</i> 1. Cesium 137 (Lime Slurry) 2. Cesium 137 (Dilute phosphate liquor)	(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 <i>(If sealed source(s), also state name of manufacturer, model number, number of sources and maximum activity per source.)</i> 5 sealed sources 750 MC each total 3.750 curies Source Model #LAB-713(S)-E 1 sealed source 150 MC Source Model #US Nuclear 8-0126, Ohmart A-2102
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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.)*

1. Ohmart density gauges to measure specific gravity of lime slurry in a 3" Schedule 40 pipe line. Continuous operation. Process temperature between 30°C and 100°C. Ohmart LASR source holder.
2. Ohmart density gauge to measure specific gravity of a phosphoric acid solution between 70°C and 100°C. Ohmart HM-8 source holder.

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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	Ohmart Engineer when installed		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
		Instruction on operation and leak test procedure on gauge holder by Ohmart Engineer at installation.		
		Wipe test service contract in effect since 1963.		

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)
None required.					

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

None required.

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

None required.

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

None required.

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 attachment.

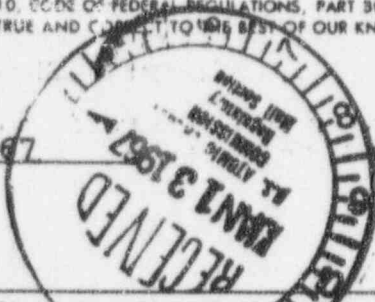
15. WASTE DISPOSAL If a commercial waste disposal service is employed, specify name of company. Otherwise, submit detailed description of methods which will be used for disposing of radioactive wastes and estimates of the type and amount of activity involved.

See attachment.

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 January 11, 1967



Monsanto Company

Applicant named in item 1

E. R. Billen

E. R. Billen

Maintenance Superintendent

Title of certifying official

WARNING.—18 U. S. C., Section 1001, Act of June 25, 1948; 62 Stat. 1119; makes it a criminal offense to make a willfully false statement or representation to any department or agency of the United States or to any officer or employee thereof within its jurisdiction.

ITEM 14

- A. Control Measures - If process is shut down and pipe is empty, source holder will be placed in CLOSED position. If source holder is removed from pipe, it will be placed in the CLOSED POSITION before removal.
- B. Initial radiation survey was made by the Ohmart field engineer at the time of installation of the gage. A copy of the radiation survey are on file for future reference.
- C. If maintenance or repair of the source holder is required, it will be returned to the Ohmart Corporation in the CLOSED position. The Ohmart Corporation will be contacted for detailed shipping instructions.

The Ohmart Corporation, the Local Public Health agency, the regional Operation Office of the AEC, or other qualified agency will be contacted immediately in the event of an emergency involving the source holder. (Such emergency might be a fire or explosion involving the source holder or damage to the source holder which would prevent placing it in the CLOSED position.) In the event of an emergency, the area in the vicinity of the source holder will be barricaded until inspected by a qualified person.

- D. Leak Test Procedure - A test is performed on the surface of the source holder every six months by W.S. Henderson, Maintenance Department Supervisor, to assure that there has been no leakage of radioactive material from the source container in the source holder. The leak test materials are supplied and analyzed by the Ohmart Corporation. The Ohmart Corporation standard "Leak Test Procedure for Sealed Sources (6-58) - Sealed Sources in Ohmart Source Holders" will be followed.

ITEM 15

Whenever the source holder is not needed, it will be returned to The Ohmart Corporation. The Ohmart Corporation will be contacted for detailed shipping instructions.



Maintenance

Our intentions here are probably within the restrictions of our present license with one exception. We in no way desire the privilege of tampering with the sealed source. Maintenance is meant to apply only to the electronic end of the unit and perhaps in extreme conditions removal of the unit from the pipeline for cleanout purposes.

Repair

Repair to us means the same as maintenance. Again we emphasize that we wish only to troubleshoot and repair the electronic end of the units.

The units we have are pipeline units; by this we mean they are a 3" diameter, Z shaped section of pipe, lead shielded with CS-137 encapsulated inside. The source being completely sealed and shielded affords maximum protection for personnel involved in its handling. There is no opening or closing devices on the units. Radiation is directed down the center section of the Z shaped pipe. High radiation levels do exist within the pipe itself, but barring destruction of the unit this area is inaccessible.

We have in our plant an instrument engineer, N.L. Marsh, who has worked with both Ohmart and Accurray radioactive devices in the past through Monsanto. He has had briefing by qualified employees of these companies on the installation and general handling precautions of such devices. Both myself and Mr. Henderson have been briefed by qualified Ohmart personnel in this regard since obtaining our units.

We have the highest respect for our units. We are aware of the potential hazard they represent. Areas of installation are posted; our personnel are all informed as to the normal precautions and emergency procedures to follow. We do, however, feel that we are qualified and capable of performing the work requested by the amendment. As stated in our original letter, the restrictions placed on us by our present license wording is an inconvenience to us which seems unnecessary. If there is a possibility of removing these restrictions via an amendment we are most anxious to receive such action. Your cooperation is appreciated.

Yours very truly,

MONSANTO COMPANY

E. R. Billen
Engineering Superintendent

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