Fy

0540

UNION CARBIDE

UNION CARBIDE CORPORATION
CHEMICALS AND PLASTICS
P. O. BOX 8361, SOUTH CHARLESTON, W. VA. 25303

RECEIVED
1979 FEB 14 AM 11 54

256337 2350 Renewal FEB 1 1979 Brown (Ck returned 2/14 by distributing to Union Carbide Divisions only)

Reference File Number: 7915970
Date: February 9, 1979

RECEIVED BY LMB FEB 15 1979 Feb Pg 4 Renewal Brown 2/23/79

See Aug 78 - Rec for renewal fee

U. S. Nuclear Regulatory Commission
Office of Nuclear Material Safety and Safeguards
Division of Fuel Cycle and Material Safety
License Management Branch
Washington, DC 20555

ATTENTION MR. PAUL R. GUINN

Gentlemen:

Mail Control No. 95757

This letter contains an application for renewal of our By-Product License 47-00260-02, requesting re-classification of this license to a Type A Specific License of Broad Scope. All radioactive material used under this license will be in sealed source form, to be used in our process measurement and control program.

To assure that all governmental regulations are followed and that employee and public safety is assured, the Technical Center has an established, stringently enforced Radiation Protection Program. This program is described in the enclosed Technical Center Radiological Control Manual. see -09 for Copy of Manual

All aspects of control measures concerning this license will be coordinated by our Radiation Safety Committee. A list of current Radiation Safety Committee Members and their training and experience is contained in Attachment 2. Also in Attachment 2 are training requirements for users of radioactive material controlled by this license. Specific functions of the Radiation Safety Committee are outlined in Chapter I of the Radiological Control Manual.

Also enclosed is NRC Form 313 I and supplementary attachments. A check for $350.00 is enclosed to cover the remainder of the $460.00 license fee (a check for $110.00 was mailed with our application dated July 27, 1978).

I regret any inconvenience caused to you by the delay of this application. If there are any questions, or if further information is required, please contact me at (304) 747-4918.

COPIES SENT TO OFF. OF INSPECTION AND ENFORCEMENT

Very truly yours,

Fred P. Straccia

F. P. Straccia
Alternate Radiation Protection Officer

tps:ctl

Enclosures

cc: Mr. J. H. Brubaker - UCC - 511

D-4

FORM NRC-313 I (6-78) 10 CFR 30 — U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

See attached instructions for details.

Completed applications are filed in duplicate with the Division of Fuel Cycle and Material Safety, Office of Nuclear Material Safety, and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555 or applications may be filed in person at the Commission's office at 1717 H Street, NW, Washington, D. C. or 7915 Eastern Avenue, Silver Spring, Maryland.

APPLICATION FOR: *(Check and/or complete as appropriate)* 0540

	a. NEW LICENSE
	b. AMENDMENT TO: LICENSE NUMBER
X	c. RENEWAL OF: LICENSE NUMBER 47-00260-02

2. APPLICANT'S NAME *(Institution, firm, person, etc.)*
Union Carbide Corp., Chemicals & Plastics
Measurement & Control Technology
TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
(304) 747-5333

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION
Frederick P. Straccia
TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
(304) 747-4918

4. APPLICANT'S MAILING ADDRESS *(Include Zip Code)*
P. O. Box 8361
South Charleston, WV 25303

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED *(Include Zip Code)*
Technical Center
Kanawha Turnpike
So. Chas., WV 25303 (See Attachment 1)

(IF MORE SPACE IS NEEDED FOR ANY ITEM, USE ADDITIONAL PROPERLY KEYED PAGES.)

6. INDIVIDUAL(S) WHO WILL USE OR DIRECTLY SUPERVISE THE USE OF LICENSED MATERIAL
(See Items 16 and 17 for required training and experience of each individual named below)

	FULL NAME	TITLE
a.	To be used by individuals designated by the Radiation Safety Committee,	
b.	Jay H. Brubaker,	Chairman
c.		

7. RADIATION PROTECTION OFFICER
Jay H. Brubaker (RPO)
Frederick P. Straccia (Alt. RPO)
Dianne G. Allport (Alt. RPO)

Attach a resume of person's training and experience as outlined in Items 16 and 17 and describe his responsibilities under Item 15.

8. LICENSED MATERIAL

LINE NO.	A ELEMENT AND MASS NUMBER	B CHEMICAL AND/OR PHYSICAL FORM	C NAME OF MANUFACTURER AND MODEL NUMBER *(If Sealed Source)*	D MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME
(1)	Any byproduct material with atomic numbers			
	1-83, excluding alpha emitters	Sealed Sources		300 Curies
(2)	Americium-241	Sealed Sources		25 Curies
		Total	Possession Limit =	325 Curies

E DESCRIBE USE OF LICENSED MATERIAL

(1) All radioactive material will be in the form of sealed sources, to be used for
(2) 1) development, application, installation, & maintenance of measurement and
(3) control devices, 2) sample analysis in gas chromatography units, and
(4) 3) instrument calibration.

0540

INFORMATION REQUIRED FOR ITEMS 15, 16 AND 17

Describe in detail the information required for Items 15, 16 and 17. Begin each item on a separate page and key to the application as follows:

15. RADIATION PROTECTION PROGRAM. Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures *(If needed)*, day-to-day general safety instruction to be followed, etc. If the application is for sealed source's also submit leak testing procedures, or if leak testing will be performed using a leak test kit, specify manufacturer and model number of the leak test kit.

See Technical Center Radiological Control Manual

16. FORMAL TRAINING IN RADIATION SAFETY. Attach a resume for each individual named in Items 6 and 7. Describe individual's formal training in the following areas where applicable. Include the name of person or institution providing the training, duration of training, when training was received, etc.

See Attachment 2

a. Principles and practices of radiation protection.

b. Radioactivity measurement standardization and monitoring techniques and instruments.

c. Mathematics and calculations basic to the use and measurement of radioactivity.

d. Biological effects of radiation.

17. EXPERIENCE. Attach a resume for each individual named in Items 6 and 7. Describe individual's work experience with radiation, including where experience was obtained. Work experience or on-the-job training should be commensurate with the proposed use. Include list of radioisotopes and maximum activity of each used.

See Attachment 2

18. CERTIFICATE

(This item must be completed by applicant)

The applicant and any official executing this certificate on behalf of the applicant named in Item 2, 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.

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.

a. LICENSE FEE REQUIRED *(See Section 170.31, 10 CFR 170)* $460.00	b. CERTIFYING OFFICIAL *(Signature)*
	c. NAME *(Type or print)* R. D. Stief
(1) LICENSE FEE CATEGORY: 3A	d. TITLE Director of Engineering
(2) LICENSE FEE ENCLOSED: $ $350.00	e. DATE February 8, 1979

FORM NRC-313 I (6-78)

LIST OF ATTACHMENTS SENT TO U. S. Nuclear Regulatory Commission

Application for Byproduct Material License

Attachment 1
Attachment 2: Radiation Safety Committee & User Training
J. H. Brubaker - history
F. P. Straccia - history
D. G. Allport - history
C. R. Landfried - history
M. L. Green - history
H. C. Cavender - purchasing

Technical Center Radiological Control Manual dated 1/1/79

Radiation Protection Officers - Training Manual (with Course Schedule & Materials used)

ATTACHMENT 1

Union Carbide Corporation, Technical Center, Kanawha Turnpike, South Charleston, West Virginia 25303, and at temporary job sites of the licensee anywhere in the United States where the USNRC maintains jurisdiction for regulating the use of by-product material. This condition does not prohibit use in agreement states (as defined in Section 30.4(c), 10 CFR 30) under reciprocity procedures which may be established by those states.

FPStraccia
February 8, 1979

ATTACHMENT 2

RADIATION SAFETY COMMITTEE

The following people are current members of the Radiation Safety Committee. An amendment to this license will be necessary to alter this list.

J. H. Brubaker	(RPO)	Management
F. P. Straccia	(Alt. RPO)	Radiation Safety
D. G. Allport	(Alt. RPO)	Radiation Safety
C. R. Landfried		Nucleonics Applications
M. L. Green		Nucleonics Applications
H. C. Cavender		Purchasing

Each person's training and experience are on the following pages.

USER TRAINING

Proposed users of radioactive material controlled by this license must complete the Technical Center Radiation Protection Office's Training Course. Completion of the course and successful completion of the subsequent examination is considered an acceptable level of knowledge by the Radiation Safety Committee for an individual to assume user duties.

see 47-260-01 lic no

The RPO Training Course Manual is enclosed for review. Attached to the front cover is a Training Course Schedule, Laboratory Session Writeup, In-Class Problems, and the Final Examination.

FPStraccia
February 8, 1979

J. H. BRUBAKER

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection	Union Carbide Technical Center, WV RPO School	2 Weeks	Yes	Yes
b. Radioactivity measurement standardization and monitoring techniques and instruments	Union Carbide Technical Center, WV RPO School	2 Weeks	Yes	Yes
c. Mathematics and calculations basic to the use and measurement of radioactivity	Union Carbide Technical Center, WV RPO School	2 Weeks	Yes	Yes
	University of Florida	9 Months	No	Yes
d. Biological effects of radiation	Union Carbide Technical Center, WV RPO School	2 Weeks	Yes	Yes

EXPERIENCE

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
^{137}Cs	Curies	Union Carbide Corporation	8 Years	Process Gauging
^{226}Ra	m Curies	Union Carbide Corporation	8 Years	Carbon Detectio

EDUCATION

Degree	College or University	Date Acquired	Major
A.A.	Hershey Junior College		Science
B.S.	University of Florida		Physics
M.S.	University of Florida		Astronomy-Physics

(b)(6)

F. P. STRACCIA

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection	University of Lowell Lowell, MA	4 Years	No	Yes
	CIS Radiopharmaceuticals Bedford, MA	1.5 Years	Yes	No
	Vermont Yankee Nuclear Power Corporation Vernon, VT	3 Months	Yes	No
b. Radioactivity measurement standardization and monitoring techniques and instruments	Univeristy of Lowell Lowell, MA	4 Years	No	Yes
	CIS Radiopharmaceuticals Bedford, MA	1.5 Years	Yes	No
	Vermont Yankee Nuclear Power Corporation Vernon, VT	3 Months	Yes	No
c. Mathematics and calculations basic to the use and measurement of radioactivity	University of Lowell Lowell, MA	4 Years	No	Yes
	CIS Radiopharmaceuticals Bedford, MA	1.5 Years	Yes	No
	Vermont Yankee Nuclear Power Corporation Vernon, VT	3 Months	Yes	No
d. Biological effects of radiation	University of Lowell Lowell, MA	4 Years	No	Yes
	CIS Radiopharmaceuticals Bedford, MA	1.5 Years	Yes	No
	Vermont Yankee Nuclear Power Corporation Vernon, VT	3 Months	Yes	No

EXPERIENCE

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
^{226}Ra, ^{137}Cs, Mixed Fission Products	m Curies	University of Lowell	3 Years	School Labs
^{99m}Tc, ^{131}I, ^{3}H, ^{14}C, ^{99}Mo	Curies	CIS Radiopharmaceuticals	1.5 Years	Preparing Radioisotopes
Mixed Fission Products	Curies	Vermont Yankee Nuclear Power Corporation	3 Months	Contamination Control HP Monitoring
^{137}Cs, ^{226}Ra, ^{60}Co	Curies	Union Carbide Corporation	18 Months	Process Gauging
^{241}Am-Be	Curies	" " "	2 Months	Carbon Detectio

EDUCATION

B.S. [redacted] - Radiological Health Physics University of Lowell, Lowell, Massachusetts

(b)(6) Mr. Straccia also participates in instructing a one-week short course in radiation protection for Union Carbide Corporation.

D. G. ALLPORT

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection	Georgia Institute of Technology	2 Weeks	No	Yes
	Union Carbide Technical Center, WV RPO School	1 Week	Yes	Yes
	Morris Harvey College, Charleston, WV	4 Years	No	Yes
b. Radioactivity measurement standardization and monitoring techniques and instruments	Georgia Institute of Technology	2 Weeks	No	Yes
	Union Carbide Technical Center, WV RPO School	1 Week	Yes	Yes
	Morris Harvey College, Charleston, WV	4 Years	No	No
c. Mathematics and calculations basic to the use and measurement of radioactivity	Georgia Institute of Technology	2 Weeks	No	Yes
	Union Carbide Technical Center, WV RPO School	1 Week	Yes	Yes
	Morris Harvey College, Charleston, WV	4 Years	Yes	No
d. Biological effects of radiation	Georgia Institute of Technology	2 Weeks	No	Yes
	Union Carbide Technical Center, WV RPO School	1 Week	Yes	Yes
	Morris Harvey College, Charleston, WV	4 Years	Yes	No

EXPERIENCE

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
^{137}Cs, ^{226}Ra, ^{60}Co, AmBe, ^{14}C, ^{63}Ni	Curies	Union Carbide Corporation	2.5 Years	Process Gauging

EDUCATION

B.S. [redacted] - Biology - Morris Harvey College, Charleston, West Virginia

Ms. Allport also participates in instructing a one-week short course in radiation protection for Union Carbide Corporation.

(b)(6)

C. R. LANDFRIED

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection	Union Carbide Corporation	15 Years	Yes	No
b. Radioactivity measurement standardization and monitoring techniques and instruments	Union Carbide Corporation	15 Years	Yes	No
c. Mathematics and calculations basic to the use and measurement of radioactivity	Union Carbide Corporation	15 Years	Yes	No
d. Biological effects of radiation	Union Carbide Corporation	15 Years	Yes	No

EXPERIENCE

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
^{137}Cs	Curies	Union Carbide Corporation	18 Years	Density and Leve Gauge Tracer
^{60}Co	Curies	Union Carbide Corporation	18 Years	Density and Leve Gauge
^{226}Ra and Daughters	m Curies	Union Carbide Corporation	18 Years	Density and Leve Gauge, R&D
^{14}C	m Curies	Union Carbide Corporation	10 Years	R&D Tracer
^{3}H	m Curies	Union Carbide Corporation	8 Years	Tracer
^{133}Xe	m Curies	Union Carbide Corporation	12 Months	Tracer
^{79}Kr	m Curies	Union Carbide Corporation	5 Months	Tracer
^{210}Po-Be	Curies	Union Carbide Corporation	2 Years	Gauging
^{90}Sr	m Curies	Union Carbide Corporation	15 Years	R&D
^{241}Am-Be	Curies	Union Carbide Corporation	3 Years	Gauging

Mr. Landfried also participates in instructing a one-week short course in radiation protection for Union Carbide Corporation.

M. L. GREEN

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB	FORMAL COURSE
a. Principles and practices of radiation protection	University of Kentucky	9 Months	No	Yes
	University of Kentucky	3 Months	Yes	No
	Mound Lab. (AEC)	39 Months	Yes	No
	University of Cincinnati	8 Months	No	Yes
	Union Carbide Corporation	6 Months	Yes	No
b. Radioactivity measurement standardization and monitoring techniques and instruments	University of Kentucky	9 Months	No	Yes
	University of Kentucky	3 Months	Yes	No
	Mound Lab. (AEC)	39 Months	Yes	No
	University of Cincinnati	8 Months	Yes	No
	Union Carbide Corporation	6 Months	Yes	No
c. Mathematics and calculations basic to the use and measurement of radioactivity	University of Kentucky	9 Months	No	Yes
	University of Cincinnati	8 Months	No	Yes
	Union Carbide Corporation	3 Months	Yes	No
d. Biological effects of radiation	University of Kentucky	5 Days	No	Yes
	Mound Lab. (AEC)	39 Months	Yes	No

EXPERIENCE

ISOTOPE	MAXIMUM AMOUNT	WHERE EXPERIENCE GAINED	DURATION OF EXPERIENCE	TYPE OF USE
^{238}U	Kilograms	University of Kentucky	3 Months	Sub-Critical Reactor
Classified	Classified	Monsanto Research Corporation	39 Months	Classified
^{137}Cs	Curies	Union Carbide Corporation	3 Years	Gauging
^{226}Ra	m Curies	Union Carbide Corporation	3 Years	Gauging
^{133}Xe	m Curies	Union Carbide Corporation	6 Months	Tracer
^{137}Cs	m Curies	Union Carbide Corporation	6 Months	Tracer

EDUCATION

B.S. [redacted] - Physics - University of Kentucky

(b)(6)

H. C. CAVENDER

Mr. Cavender has no formal training or experience with radioactive materials. His sole purpose for sitting on the Committee is to provide a direct link between the Committee and the Purchasing Department. He has all responsibility for processing purchase orders for radioactive material controlled by this license.

□