NRC FORM 313
(10-87)
10 CFR 30, 32, 33, 34, 35 and 40

U.S. NUCLEAR REGULATORY COMMISSION
APPROVED BY OMB
3150-0120
Expires 5-31-90

APPLICATION FOR MATERIAL LICENSE

INSTRUCTIONS: SEE THE APPROPRIATE LICENSE APPLICATION GUIDE FOR DETAILED INSTRUCTIONS FOR COMPLETING APPLICATION. SEND TWO COPIES OF THE ENTIRE COMPLETED APPLICATION TO THE NRC OFFICE SPECIFIED BELOW.

APPLICATIONS FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

U.S. NUCLEAR REGULATORY COMMISSION
DIVISION OF FUEL CYCLE AND MATERIAL SAFETY, NMSS
WASHINGTON, DC 20555

ALL OTHER PERSONS FILE APPLICATIONS AS FOLLOWS. IF YOU ARE LOCATED IN:

CONNECTICUT, DELAWARE, DISTRICT OF COLUMBIA, MAINE, MARYLAND, MASSACHUSETTS, NEW HAMPSHIRE, NEW JERSEY, NEW YORK, PENNSYLVANIA, RHODE ISLAND, OR VERMONT, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION I
NUCLEAR MATERIALS SAFETY SECTION B
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406

ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION II
NUCEAR MATERIALS SAFETY SECTION
101 MARIETTA STREET, SUITE 2900
ATLANTA, GA 30323

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION III
MATERIALS LICENSING SECTION
799 ROOSEVELT ROAD
GLEN ELLYN, IL 60137

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
MATERIAL RADIATION PROTECTION SECTION
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TX 76011

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S. TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

U.S. NUCLEAR REGULATORY COMMISSION, REGION V
NUCLEAR MATERIALS SAFETY SECTION
1450 MARIA LANE, SUITE 210
WALNUT CREEK, CA 94596

PERSONS LOCATED IN AGREEMENT STATES SEND APPLICATIONS TO THE U.S. NUCLEAR REGULATORY COMMISSION ONLY IF THEY WISH TO POSSESS AND USE LICENSED MATERIAL IN STATES SUBJECT TO U.S. NUCLEAR REGULATORY COMMISSION JURISDICTION.

1. THIS IS AN APPLICATION FOR *(Check appropriate item)*

- [ ] A. NEW LICENSE
- [ ] B. AMENDMENT TO LICENSE NUMBER _____
- [XX] C. RENEWAL OF LICENSE NUMBER #45-21499-01

2. NAME AND MAILING ADDRESS OF APPLICANT *(Include Zip Code)*

Solv-X USA, Inc.
Eastern Oil Company
5501 Courtney Avenue
Alexandria, Virginia 22304

3. ADDRESS(ES) WHERE LICENSED MATERIAL WILL BE USED OR POSSESSED.

5501 Courtney Avenue
Alexandria, Virginia 22304

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION	TELEPHONE NUMBER
Bernard Snyder	703 370-8124

SUBMIT ITEMS 5 THROUGH 11 ON 8½ x 11" PAPER. THE TYPE AND SCOPE OF INFORMATION TO BE PROVIDED IS DESCRIBED IN THE LICENSE APPLICATION GUIDE.

5. RADIOACTIVE MATERIAL a. Element and mass number, b. chemical and/or physical form, and c. maximum amount which will be possessed at any one time.	6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED.
7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING AND EXPERIENCE.	8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS.
9. FACILITIES AND EQUIPMENT.	10. RADIATION SAFETY PROGRAM.
11. WASTE MANAGEMENT.	12. LICENSEE FEES *(See 10 CFR 170 and Section 170.31)* FEE CATEGORY 3P AMOUNT ENCLOSED $120.00

13. CERTIFICATION. *(Must be completed by applicant)* THE APPLICANT UNDERSTANDS THAT ALL STATEMENTS AND REPRESENTATIONS MADE IN THIS APPLICATION ARE BINDING UPON THE APPLICANT.

THE APPLICANT AND ANY OFFICIAL EXECUTING THIS CERTIFICATION ON BEHALF OF THE APPLICANT, NAMED IN ITEM 2, CERTIFY THAT THIS APPLICATION IS PREPARED IN CONFORMITY WITH TITLE 10, CODE OF FEDERAL REGULATIONS, PARTS 30, 32, 33, 34, 35, AND 40 AND THAT ALL INFORMATION CONTAINED HEREIN, IS TRUE AND CORRECT TO THE BEST OF THEIR 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

SIGNATURE—CERTIFYING OFFICER	TYPED/PRINTED NAME	TITLE	DATE
Bernard Snyder	Bernard Snyder	President	9/15/88

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	COMMENTS	APPROVED BY
Ren	Oct-5-II	3P		M. Knapp
AMOUNT RECEIVED	**CHECK NUMBER**			**DATE**
$120	10775			10/28/88

From: Eastern Oil Company
5501 Courtney Avenue
Alexandria, Virginia 22304

5a. Hydrogen 3
b. Adsorbed on foil
c. Not to exceed 200 millicuries

6. Instrument Development
(AID) Model 510-6007
detector cells

7. Drew K. Frye

11. Through manufacturer

Guinn MS12

SOLV-X PETROLEUM
5501 COURTNEY AVE., ALEXANDRIA, VA 22304 (703) 370-8124

November 25, 1983

Mr. Paul R. Guinn
United States Nuclear Regulatory Commission
Region II
101 Marietta Street, NW, Suite 3100
Atlanta, Georgia 30303

Dear Mr. Guinn:

Requested information for:

7. Detector cells are returned to supplier for cleaning and/or removal and exchange of foil.

8. Foil will be returned to supplier when use has been discontinued.

9. Detector cells are vented through roof outside away from any persons around. They are not radio active.

Sincerely,

William A. Ward

William A. Ward
President

Received 12/1/83
PG

30-20868

FORM NRC-313 I (1-79) 10 CFR 30

U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

1. APPLICATION FOR: (Check and/or complete as appropriate)

X	a. NEW LICENSE
	b. AMENDMENT TO LICENSE NUMBER
	c. RENEWAL OF LICENSE NUMBER 24-21499

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.

2. APPLICANT'S NAME (Institution, firm, person, etc.)
Solv-X USA, Inc.
TELEPHONE NUMBER AREA CODE - NUMBER EXTENSION
(703) 370-8124

3. NAME OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION
Drew K. Frye 03122
TELEPHONE NUMBER AREA CODE - NUMBER EXTENSION
(703) 370-8206

4. APPLICANT'S MAILING ADDRESS (Include Zip Code)
P. O. Box 11477
Alexandria, VA 22312

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED (Include Zip Code)
5501 Courtney Avenue
Alexandria, VA 22304

(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.	Drew K. Frye	Assistant Plant Manager
b.		
c.		

7. RADIATION PROTECTION OFFICER
Drew K. Frye

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

RECEIVED BY FMB
Date 10/28/83
Log Oct 4 II
By Brown
Action Compl

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)	Tritium (H Superior3)	Tritium Tritide	Aid Model 510-6007	Maximum/Source 200
(2)		Foil		millicuries sealed
(3)				source
(4)				

DESCRIBE USE OF LICENSED MATERIAL

(1) Used in Analytical Instrument Development (AID, Inc.) Model 510-6007 Electron
(2) Capture Detector as used in AID Gas Chromatograph
(3)
(4)

Applicant
Check No. 0331
Amount/Fee Category 1110-3L
Type of Fee Application
Date Check Rec'd 10/28/83
Received By Brown

FORM NRC 313 I (1-79)

10.7-11

16062

9. STORAGE OF SEALED SOURCES

ITEM NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Source sealed and contained in Gas Chromatograph as stated in 8.E.1		
(2)			
(3)			
(4)			

10. RADIATION DETECTION INSTRUMENTS

ITEM NO.	TYPE OF INSTRUMENT A	MANUFACTURER'S NAME B	MODEL NUMBER C	NUMBER AVAILABLE D	RADIATION DETECTED (alpha, beta, gamma, neutron) E	SENSITIVITY RANGE (milliroentgens/hour or counts/minute) F
(1)	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(2)			N			
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☐ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

N.A.

☐ b. CALIBRATED BY APPLICANT

(Attach a separate sheet describing method, frequency and standards for calibrating instruments.)

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Name of Company) B	EXCHANGE FREQUENCY C
☐ (1) FILM BADGE N.A	N.A.	☐ MONTHLY N.A.
☐ (2) THERMOLUMINESCENCE DOSIMETER (TLD)		☐ QUARTERLY
☐ (3) OTHER (Specify) _____		☐ OTHER (Specify)
_____		_____
_____		_____

13. FACILITIES AND EQUIPMENT (Check were appropriate and attach annotated sketch(es) and description(s).

- ☐ a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include filtration, if any), ETC.
- ☐ b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC. N.A.
- ☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.
- ☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC. portable instrument

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED

All Serice of sealed Source in 8.C.1 will be performed by AID

b. IF COMMERCIAL WASTE DISPOSAL SERVICE IS NOT EMPLOYED, SUBMIT A DETAILED DESCRIPTION OF METHODS WHICH WILL BE USED FOR DISPOSING OF RADIOACTIVE WASTES AND ESTIMATES OF THE TYPE AND AMOUNT OF ACTIVITY INVOLVED. IF THE APPLICATION IS FOR SEALED SOURCES AND DEVICES AND THEY WILL BE RETURNED TO THE MANUFACTURER, SO STATE.

FORM NRC 313 I (1-79)

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.

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 appliçable. Include the name of person or institution providing the training, duration of training, when training was received, etc.

    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.

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)* 83 JUN 20 P2:29	b. CERTIFYING OFFICIAL *(Signature)* V. William A. Ward
	c. NAME *(Type or print)* William A. Ward
(1) LICENSE FEE CATEGORY: # 2	d. TITLE President
(2) LICENSE FEE ENCLOSED: $ $110.00	e. DATE Sptember 23, 1983

FORM NRC-313 I (1-79)

10 7-13

16062

Informations for Items 15,16, and 17.

15. Radiation Protection Program:

The instrument regarding this application for licence has been certified by NRC. It is a sealed source and it is placed in the instrument,and all of the safety precautions necessary have been taken in the design. The Radiation Protection Officer in the position as Assistant Plant Manager has demonstrated a reliable, responsible attidude in all matters of our recycling plant activities and will at all timesbe aware where the instrument is.

16. Formal Training in Radiation Safety:

Attached is resume of individual who will use the instrument and who also is the Radiation Protection Officer.
In classes he attended an instrument of likewise construction was used for demonstration.

17. Experience:

Though the individual has no particular work experience with radiation, since the item in question is a sealed source and he has some knowledge about the handling of it, also AID provides a manual along with it, and the individual is a very conscientious person in all matters of safety in industrial hygiene activities, there will be sufficient care taken.

PERSONAL DATA SHEET

Title: _____
Employer: _____

Name: First	Middle Initial	Last	Social Security Number:	Check One:
DREW	K.	FRYE	225-90-4167	U.S. Citizen ☒ Perm. Resident ☐ Student Visa ☐

Present Address (Street, City, State, Zip):	Permanent Address (Street, City, State, Zip):
204 W. Eakin St., Blacksburg, VA 24060	3015 Rosemary Lane, Falls Church, VA 22042
Present Phone: 703/552-0898	Permanent Phone: 703/573-5922

Type of Work Desired: Chemical Engineering
pilot plant - process development -
general research - operations

Location Restrictions (State "None" or "Prefer ..."): None

Date Available for Employment: 6/83

COLLEGE INFORMATION:

Name and Location of College(s) Attended	Date (mo/yr) From	Date (mo/yr) To	Degree Expected Or Earned	Completion Date	Field of Study	G.P.A. (1) Major (2) Overall	Grade Basis
Virginia Polytechnic Institute and State University Blacksburg, Va	9/80	6/83	B.S.	6/83	Chemical Eng.	(1) 3.17 (2) 3.50	A = 4
George Mason University Fairfax, VA	9/79	6/80			Chemical Eng.	(1) (2) 3.70	A = 4
						(1) (2)	A =

Honors, Activities, Interests, Organizations and Offices Held, Hobbies:

Member - AIChe
Optical Society of America
VIRGINIA TECH Bike Club
(see attached sheet for high school activities)

Reverse Then

EMPLOYMENT EXPERIENCE (Include Permanent, Cooperative, Intern, Part Time, Summer, Volunteer, Military Service):

Name and Location of Employer(s)	Job Title and Responsibilities	Hours Per Week	Dates (mo/yr) From	Dates (mo/yr) To
ADAPTRONICS, Inc. 1750 Old Meadow Road McLean, VA 22102	Programmer & Eng. Aid (software development & testing for pattern recognition and process optimization)	40	6/81	9/8
Sears, Roebuck & Co. 2800 Wilson Blvd. Arlington, VA	Catalog Dept. - customers, orders on CRT, merchandise handling	25	7/80	9/80
Graphic Comm. Services 810-18th St., N.W. Washington, D. C.	Completely handling the assembling, packaging & mailing of 60,000 to each state	50 50	6/78 6/79	8/78 8/79

Related Information: Skills, Chief Accomplishments, Strengths, Interests

Programming: FORTRAN, BASIC, Assembly Language
Experience in Machine and Mechanical Work
Strong Interest in Research and Development projects

University Placement Services

Name: DREW K. FRYE

Courses Supporting Your Employment Interests

COURSE NAME	Cr.	Gr.
CHEMISTRY		
General Chemistry	3,3,3	AP
General Chemistry Lab	3	AP
Organic Chemistry I	3,3,3	A,A,A
Organic Chemistry Lab	3	A
Physical Chemistry	3,3,3	C,D,_
Physical Chemistry Lab	1	A
Fundamental Inorganic	3	A
General Biochemistry	3	A-
Polymer Chemistry	3	A-
Polymer & Surface Chemistry	3	_
CHEMICAL ENGINEERING		
Principles of CHe	3,3,3	B+,B,B+
Momentum Transfer	5	B
Heat Transfer	3	B
Mass Transfer	3,3	B,A-
Thermodynamics & Kinetics	3,3,3	B+,C,B
Electronics for Scientists	3	A-
Process Controls	3,4	A-,B+
Unit Operations, Practice & Procedure	6,3	B-,B
Process Design	4,4,4	A,B,-
Applied Chemistry	3	B
Process Engineering	3	
Reactor Design	3	C+
Microbial Engineering	3	
Process Materials	3	A
Coal for the Process Ind.	3	A
Undergraduate Research (see note below)	1,3	_,_

COURSE NAME	Cr.	Gr.
ENGINEERING		
Introduction to Engineering	3	
Engineering Computations	3	A
Engineering Graphics	2	A
Statics of Rigid Bodies	3	B+
Dynamics	3	A-
Deformable Bodies	5	A
MATH & SCIENCES		
Physics	3,3,3	AP,A,B
Calculus	4,4,4	A,A,
Calculus	3	B
Elem. Differential Equations	3	B-
Applied Math for CHe	5	C
ECONOMICS		
Principles of Economics	3,3,3	B+,B
Managerial Economics	3	A
Monopoly, Competition, and Cartels	3	A
Environmental Economics	3	A-

Courses marked with red had classes in radioctive materials and their safety practices.

AP = Advanced Placement

Q.C.A. by Year: 1st 3.7 ; 2nd 3.23 ; 3rd 3.11 ; 4th 3.1

(1st year didn't transfer)

COMMENTS and/or ADDITIONAL INFORMATION:

Undergraduate Research - The development of an automated batch distillation column for use on hazardous waste and solvent recovery. This involves analysis of the present system, and the design and testing of instrumentation and hardware for a new system.

16062