

APPLICATION FOR BYPRODUCT MATERIAL LICENSE

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)	
Envirodyne Engineers 12161 Lackland Road St. Louis, Missouri 63141		Envirodyne Engineers 12160 Lackland Road St. Louis, Missouri 63141	
2 DEPARTMENT TO USE BYPRODUCT MATERIAL  Laboratory		3. PREVIOUS LICENSE NUMBER(S). (If this is an application for renewal of a license, please indicate and give number.) Application for renewal; License #24-17152-01 <i>Amend.</i>	
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.) D. C. Kennedy, Dir. of Laboratories F. T. Hammer, Mgr., Analytical Operations C. A. Hammer, Sr. Env. 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.)	
6 (a) BYPRODUCT MATERIAL (Elements and mass number of each)  Nickel 63		(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.)  Hewlett-Packard Linear E C Detector Model 18713-A, containers Hewlett-Packard Source #18713-80020, 45 millicuries  Tracor High Temperature E C Detector Model 12002, 15 millicuries (model 113027-3200)  Sealed Sources Varian Instrumental Company 2 ea., 8 millicurie 02-001972-00 01-001208-00 DETECTOR CELL	
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.)  Hewlett-Packard 5830A Gas Chromatograph Hewlett-Packard 5840A Gas Chromatograph Tracon Microtek 220 Gas Chromatograph Varian Model 3700 Dual EC Gas Chromatograph			

(Continued on reverse side)

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

TYPE OF TRAINING	WHERE TRAINED	DURATION OF TRAINING	ON THE JOB (Circle answer)	FORMAL COURSE (Circle answer)
a. Principles and practices of radiation protection	D. C. Kennedy, AEC, Ames Lab. F. T. Hammer, Phoenix Memorial Lab.	3 yrs. 2 yrs.	Yes No	Yes No
b. Radioactivity measurement standardization and monitoring techniques and instruments	C. A. Hammer, Savannah River Lab. D. C. Kennedy, AEC, Aiken, SC F. T. Hammer, Phoenix Memorial Lab.	3 mos.	Yes No	Yes No
c. Mathematics and calculations basic to the use and measurement of radioactivity	C. A. Hammer D. C. Kennedy	6 mos.	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

## 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)
None required with this instrument					

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

None required with this instrument

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

None required with this instrument

## 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 Effluent gas will be piped into a fume hood

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. Perform leak test with Hewlett-Packard Model P6761 leak test kit at 6-month intervals.

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. If necessary, units will be returned to manufacturer.

## 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.

ENVIRODYNE ENGINEERS

Date January 31, 1979

Applicant named in item 1  
By: James W. Irvin  
James W. Irvin  
Vice President  
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.

# MATERIALS DATA INPUT INDUSTRIAL

5 - INDUSTRIAL BYPRODUCT  
REFERENCE COPY 23

## A. TYPE OF ACTION AND IDENTIFICATION CODES

<input type="checkbox"/> NEW LICENSE	<input type="checkbox"/> AMENDMENT TO RENEW LICENSE	<input type="checkbox"/> AMENDMENT TO TERMINATE	<input type="checkbox"/> VOID	DOCKET NUMBER	MAIL CONTROL NUMBER	CHANGE NAME ADDRESS
<input type="checkbox"/> NEW LICENSE AND NEW LICENSEE	<input checked="" type="checkbox"/> OTHER AMENDMENT	<input type="checkbox"/> CLERICAL CHANGE NO AMENDMENT	4	030-12280	01312	<input type="checkbox"/>

## B. INDICATIVE INFORMATION:

LICENSEE'S INDIVIDUAL	NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
	NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
	NAME (LAST, FIRST, MIDDLE)	NAME (LAST, FIRST, MIDDLE)
ORGANIZATION'S DEPARTMENT OR BUREAU	ORGANIZATION NAME (ALPHABETIC SEQUENCE)	
	Raytheon Engineers	
ADDRESS	BUILDING, STREET	CITY
	12161 Lockland Road	St. Louis
TYPE OF APPLICANT	STATE	ZIP CODE
	Mo.	63141
DATE REQUEST RECEIVED	INSTITUTION CODE	PENDING PROG. CODE
	2-9-79	17152
ACTUAL PROG. CODE	03120	
	SECONDARY PROGRAM CODES AS REQUIRED:	
#1	#2	#3
LICENSE NUMBER	DATE LICENSE ISSUED	EXPIRATION DATE
24-17152-01	9-08-81	
BYPRODUCT	ONE COPY OF PHYSICAL FORM	POSSESSION LIMIT
	1982	

MAIL TO: ATTN: DR JAMES W. IRVIN  
VICE PRESIDENT

DATE MAILED: REVIEWER: PETT, JOHN

DATE COMPLETED: 2-14-79

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