

FORM NRC-313 I (3-80) 10 CFR 30		U.S. NUCLEAR REGULATORY COMMISSION		1. APPLICATION FOR: <i>(Check and/or complete as appropriate)</i>	
<b>APPLICATION FOR BYPRODUCT MATERIAL LICENSE INDUSTRIAL</b>				a. NEW LICENSE	
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.				b. AMENDMENT TO: LICENSE NUMBER	
				c. RENEWAL OF: LICENSE NUMBER 29-09009-7	
2. APPLICANT'S NAME <i>(Institution, firm, person, etc.)</i>  <u>CIBA-GEIGY CORPORATION</u> TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION (201) 349-5200 Ext. 2546			3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION <u>Louis Antonio Ortiz</u> TELEPHONE NUMBER: AREA CODE - NUMBER EXTENSION (201) 349-5200 Ext. 2546		
4. APPLICANT'S MAILING ADDRESS <i>(Include Zip Code)</i> <i>(Address to which NRC correspondence, notices, bulletins, etc., should be sent.)</i>  P.O. Box 71 Toms River, New Jersey 08753			5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED <i>(Include Zip Code)</i>  Route #37 Toms River, New Jersey 08753		
(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 <i>(See Items 16 and 17 for required training and experience of each individual named below)</i>					
FULL NAME			TITLE		
a. <u>Louis A. Ortiz</u>			<u>Senior Industrial Hygienist (C.I.H.)</u>		
b.					
c.					
7. RADIATION PROTECTION OFFICER			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.	ELEMENT AND MASS NUMBER	CHEMICAL AND/OR PHYSICAL FORM	NAME OF MANUFACTURER AND MODEL NUMBER <i>(If Sealed Source)</i>	MAXIMUM NUMBER OF MILLICURIES AND/OR SEALED SOURCES AND MAXIMUM ACTIVITY PER SOURCE WHICH WILL BE POSSESSED AT ANY ONE TIME	
	A	B	C	D	
(1)	Nickel 63	Plated sources contained in Hewlett-Packard Models 18713A or 18803-60520 Detector Cells		Not to exceed 15 millicuries per source	
(2)			New England Nuclear Model #570	Not to exceed 100 millicuries per source	
(3)	Cesium 137	Sealed sources	Texas Nuclear Model #570-57157C	Not to exceed 200 millicuries per source	
(4)	Cesium 137	Sealed sources			
DESCRIBE USE OF LICENSED MATERIAL E					
(1)	To be used in gas chromatographs for sample analysis.				
(2)	Density measurement on pipes.				
(3)	Density measurement on pipes.				
(4)					

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 29-09009-02 PDR

9. STORAGE OF SEALED SOURCES			
LINE NO.	CONTAINER AND/OR DEVICE IN WHICH EACH SEALED SOURCE WILL BE STORED OR USED. A.	NAME OF MANUFACTURER B.	MODEL NUMBER C.
(1)	Gas chromatograph detector cells	Hewlett-Packard Model 5713A Hewlett-Packard Model 5840A	18713A 18803-60520
(2)	Serial #7756 Source Holder	Kay-Ray	7050B
(3)	Serial #B2278 Source Holder	Texas Nuclear	5190
(4)			

10. RADIATION DETECTION INSTRUMENTS						
LINE 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)	Geiger-Muller	Victoreen Inc.	6B	1	Beta/Gamma	0-50 mr/hr.
(2)						
(3)						
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10	
<input type="checkbox"/> a. CALIBRATED BY SERVICE COMPANY NAME, ADDRESS, AND FREQUENCY Dosimeter Corporation of America 6106 Interstate Circle Cincinnati, Ohio 45242	<input type="checkbox"/> b. CALIBRATED BY APPLICANT <i>Attach a separate sheet describing method, frequency and standards used for calibrating instruments.</i>

12. PERSONNEL MONITORING DEVICES		
TYPE (Check and/or complete as appropriate.) A.	SUPPLIER (Service Company) B.	EXCHANGE FREQUENCY C.
<input type="checkbox"/> (1) FILM BADGE n/a <input type="checkbox"/> (2) THERMOLUMINESCENCE DOSIMETER (TLD) <input type="checkbox"/> (3) OTHER (Specify): _____	n/a	<input type="checkbox"/> MONTHLY <input type="checkbox"/> QUARTERLY n/a <input type="checkbox"/> OTHER (Specify): _____

13. FACILITIES AND EQUIPMENT (Check where appropriate and attach annotated sketch(es) and description(s).)	
<input checked="" type="checkbox"/> a. LABORATORY FACILITIES, PLANT FACILITIES, FUME HOODS (Include location, if any), ETC. See attached sketches.	
<input type="checkbox"/> b. STORAGE FACILITIES, CONTAINERS, SPECIAL SHIELDING (fixed and/or temporary), ETC.	
<input type="checkbox"/> c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.	
<input type="checkbox"/> d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC.	

14. WASTE DISPOSAL	
a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED No waste disposal involved. If gauges are damaged or its use discontinued, we will notify manufacturers for removal and return **	
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.	
**gauges for repair or disposal.	

# 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:

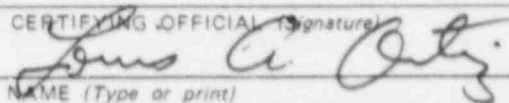
15. RADIATION PROTECTION PROGRAM. Describe the radiation protection program as appropriate for the material to be used including the duties and responsibilities of the Radiation Protection Officer, control measures, bioassay procedures (if needed), day-to-day general safety instruction to be followed, 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 applicable. 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.

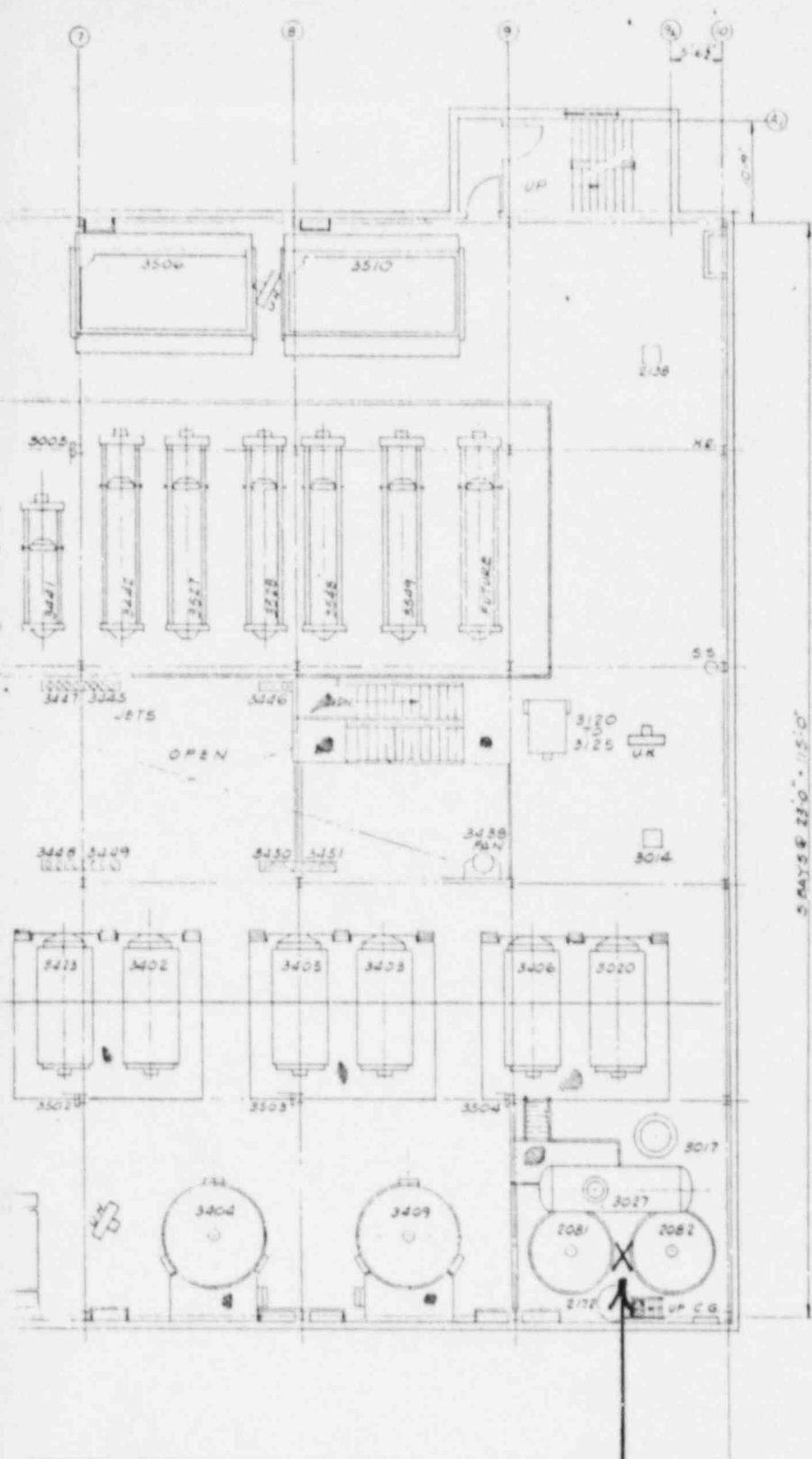
## 18. CERTIFICATE

(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 r. RED (See Section 170.31, CFR 170)	b. CERTIFYING OFFICIAL (Signature) 
\$110.00	c. NAME (Type or print) Louis A. Ortiz
(1) LICENSE FEE CATEGORY: 3L	d. TITLE Senior Industrial Hygienist (C.I.H.)
(2) LICENSE FEE ENCLOSED: \$ 110.00	e. DATE 5/5/82

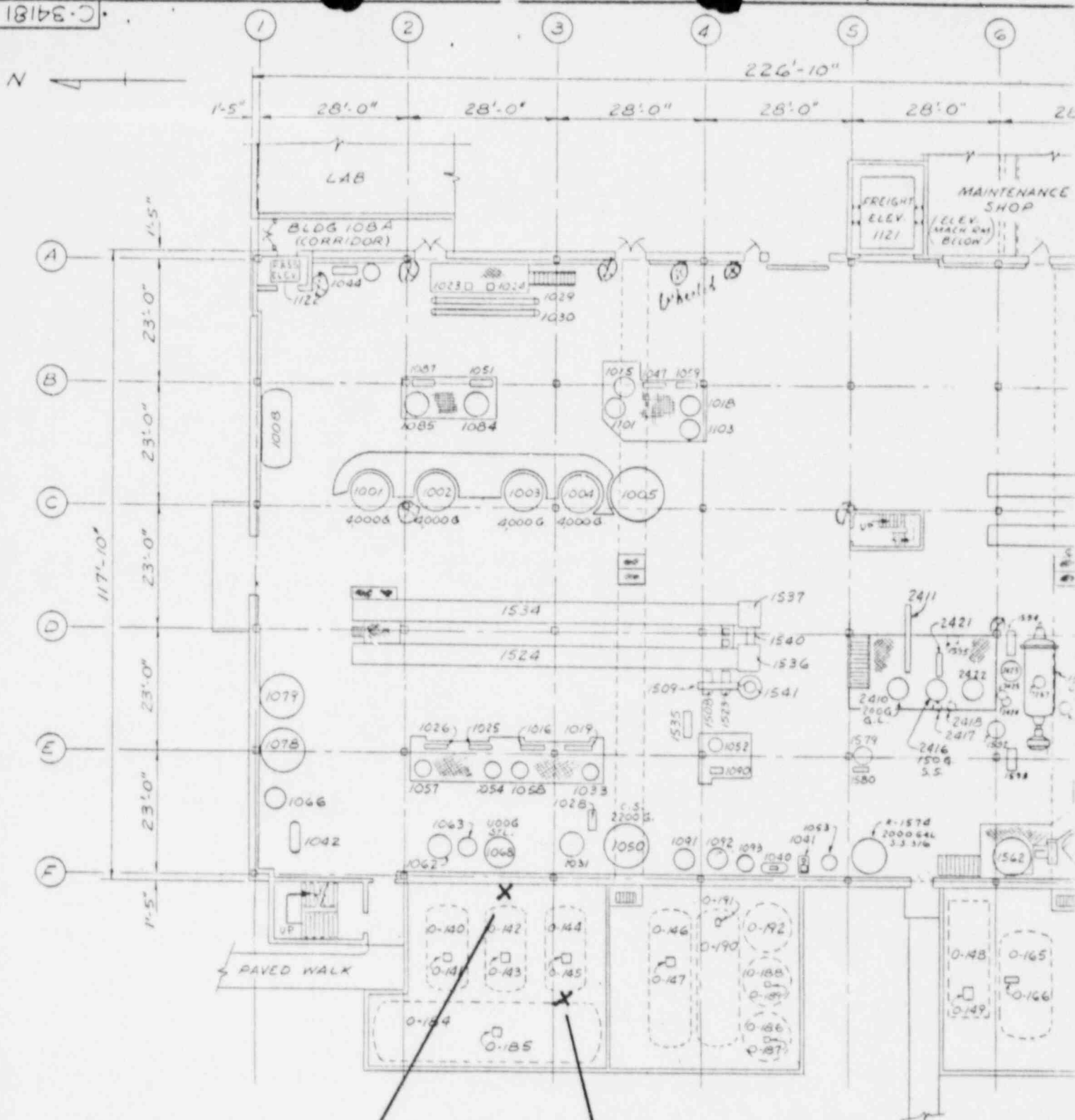


KEY  
 CG - CONTROL GROUP  
 SS - SAFETY SHOWER  
 HR - HOSE REEL

4-5 feet above floor level between  
 kettle apparatus #2081 and 2082.  
 KayRay Unit - 100 millicuries

6	GENERAL REVISION	WFS	6/1/72	62
7	REMOVED STAIRWELL APPROX. 10' X 10' STAIRS AND FREIGHT ELEVATOR	WFS	7/1/72	63
8	BROUGHT UP TO DATE	RJ	8-1-72	64
9	REDRAWN	FB		65
10	REVISION	WFS	DATE	REV.

<b>TRE</b> TOMB RIVER CHEMICAL CORPORATION TOMB RIVER, NEW JERSEY			
DRAWN BY	DATE	SCALE	1" = 10'
CHECKED BY	DATE		
APPROVED BY	DATE		
APPARATUS LAYOUT THIRD FLOOR			
BLDG. 102			
DWG. NO. D-34678	REV. NO. 5		



2 ft above ground  
Texas Nuclear  
Serial #B2510  
200 millicuries

2 ft. above ground  
Texas Nuclear  
Serial #B2278  
200 millicuries

Texas Nuclear

Serial #B2278

200 millicuries

1ST FLOOR PLAN

H. P. ELEVATION 62'.6"

10	BROUGHT UP TO C
9	REVISED FOR C 4989
NR	REVISION

9	REVISED FOR C-6989
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NR	REVISION
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RADIATION PROTECTION PROGRAM

The Radiation Protection Program at CIBA-GEIGY Corporation/Toms River Plant will continue to be the same as under the Radiation Safety Officer, Mr. Louis A. Ortiz. For density gauging equipment:

- 1) The enclosed sketches give the specifics of the installation. All equipment was located and mounted by the manufacturers.
- 2) Personnel Monitoring Devices

CIBA-GEIGY believes that personnel monitoring devices are not necessary for removing and installing the Kay-Ray and Texas Nuclear gauges since radiation surveys have shown that the levels are below 100 mr/hr. (level prescribed by 10 CFR 20) when the shutter is closed. Refer to surveys submitted with application. See the procedure below which will be followed when removing and installing gauges. Mr. Louis A. Ortiz is the Radiation Safety Officer (RSO). See Item #16 of the renewal application for his education and experience in radiation safety.

Surveying Operations

The operations to be performed will be only removal of source head and detector (Kay-Ray and Texas Nuclear Units) from one pipe system and relocation on other pipe systems. The procedure below will be followed.

- a) The RSO will review this procedure with all affected employees before the operation takes place. The RSO will directly supervise the operation to assure complete radiation safety.
- b) The RSO will lock the source shutter closed. He will keep the key to the lock. A radiation survey will be done on the unit to insure that the radiation levels are below 100 mr/hr. If above 100 mr/hr., no further work will be done until self-reading pocket dosimeters are obtained for the employees.
- c) The employees will remove the source head and detector and relocate.
- d) After completion of the work, the RSO will do another radiation survey plus a leak test.
- e) When the results of the survey and leak tests have shown radiation levels within acceptable limits, the shutter will be unlocked by the RSO.

- f) All records of surveys and leak tests will be kept by the RSO.
- 3) Initial radiation survey, servicing, and location of the source holder was performed by the manufacturers. This is being requested so that our employees can repair the instrumentation and not work on the source holder. We are also requesting approval to remove and install these gauges (Kay-Ray and Texas Nuclear). The RSO will supervise any work on these gauges. Of course, any work on the source holder and detector will require that the shutter be closed and locked before work can proceed.
  - 4) If maintenance is required around the pipe, no special precautions need be taken because of the tightly collimated beam of the source. Maintenance on the detector would require that the source be in the "closed" position and locked by the RSO.
  - 5) CIBA-GEIGY will perform the leak testing on the source holder. The leak test kit used by CIBA-GEIGY is Kay-Ray's Model A Kit. The analysis of the leak test will be done by Kay-Ray, Inc. We wish to have our license worded to allow a three-year source wipe interval on these devices. An extension has been granted to Kay-Ray and Texas Nuclear allowing a three-year interval for source wiping, and we wish to have our license reflect this extended test period.
  - 6) The following procedure will be followed in the event of a mishap to the source.

EMERGENCY PROCEDURE TO BE FOLLOWED AFTER

DAMAGE TO SOURCE HOLDERS

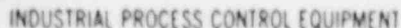
- 1) This procedure applies to all instances where damage is incurred by the source holder due to such action as fire, etc.
- 2) Immediately rope off the area around the source holder.
- 3) Inform plant radiation safety officer or person responsible for the use of the source as to the situation.
- 4) Inform by phone or telegram the proper regional NRC office of the accident.
- 5) Notify manufacturer(s) (Kay-Ray Inc., or Texas Nuclear) if their assistance is desired.



- 6) Limit access to source head until a radiation survey and source wipe can be performed by specifically licensed personnel or a representative of the manufacturer(s).
- 6) Attached are copies of initial radiation surveys and leak tests done by Kay-Ray and Texas Nuclear, respectively.

For gas chromatograph detector cells:

- a) Each chromatograph detector containing Nickel 63 shall be tested for leakage and/or contamination at intervals not to exceed six months.
- b) If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the foil from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Commission regulations. A report shall be filed within five days of the test with the U.S. Nuclear Regulatory Commission, Region I, Office of Inspection and Enforcement, 631 Park Avenue, King of Prussia, Pennsylvania 19406, describing the equipment involved, the test results, and the corrective action taken.
- c) Tests for leakage and/or contamination shall be performed by the licensee or by other persons specifically authorized by the Commission or an Agreement State to perform such services.



516 West Campus Drive, Arlington Heights, Illinois 60004  
Phone: (312) 259-5600 Cable Address: KAYRAY Telex 28 2536

# LEAK TEST CERTIFICATE

To: TOMS RIVER CHEMICAL CO.  
P. O. Box 71  
Toms River, New Jersey 08753

Attn: Mr. John Bauerlin

Date: June 21, 1978  
Ref: 1E 60387  
KR Job No: 1391

This certifies that the source(s) listed below have been leak tested according to prevailing NRC standards, and radioactive contamination found to be less than .005uCi of Cesium 137.

Please retain this certificate for your files.

CERTIFICATION:

By: A. Hillon

Title: Field Engineering Services

Date: June 21, 1978

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<u>Leak Test</u> <u>Serial No.</u>	<u>Source Holder</u> <u>Manufacturer</u>	<u>Source Holder</u> <u>Model No.</u>	<u>Source Holder</u> <u>Serial No.</u>	<u>Activity</u> <u>(mCi)</u>	<u>Date</u>	<u>By</u>
6257	Kay-Ray	7050B	7756	100	6-13-78	M.W.

# DENSITY AND LEVEL GAUGE LEAK TEST CERTIFICATE

- NOTES
- 1) REDDING POINTS INDICATE AREAS TO BE WIPED FOR LEAK TEST.
  - 2) SHUTTER COUNTED, DATA AND SIGNS, THIS CERTIFICATE SHOULD BE MAINTAINED AS A PERMANENT RECORD.
  - 3) CHECK OPERATION OF SHUTTER WHEN LEAK TEST IS PERFORMED.

GAUGE LOCATION

SOURCE HEAD NO. 5120

TAG NO. OX 4015

SOURCE HEAD SER. NO. A2512

ACTIVITY 200 ☒ CS37, ☐ CS38, ☐ CS39

MEASURING INSTRUMENT TND 2650 SN124

LEAK TEST TIME

TEST OPERATOR

TESTING LOCATION

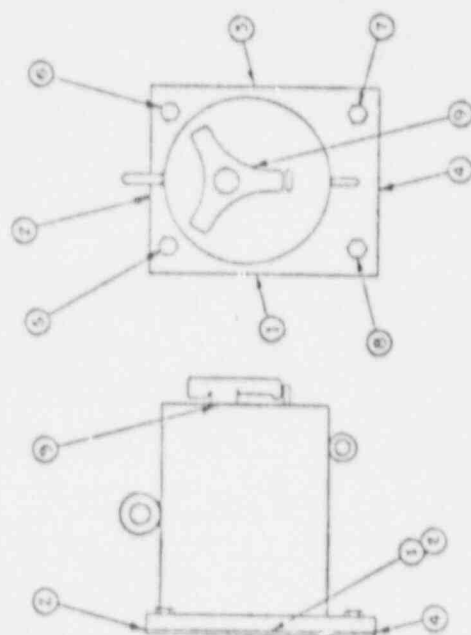
DATE

Texas Nuclear Division

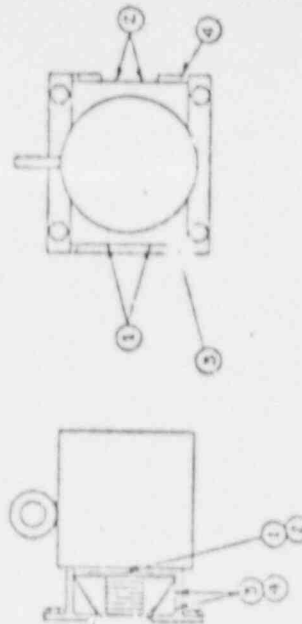
9101 Research Blvd., P.O. Box 9267

Austin, TX 78766

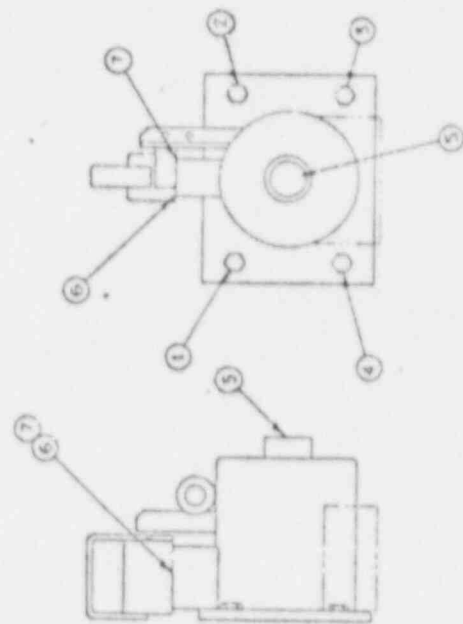
WITHIN 60 DAYS OF LEAK TEST DATE, MARK TO:  
 TND 2650 SN124  
 TND 2650 SN124  
 TND 2650 SN124



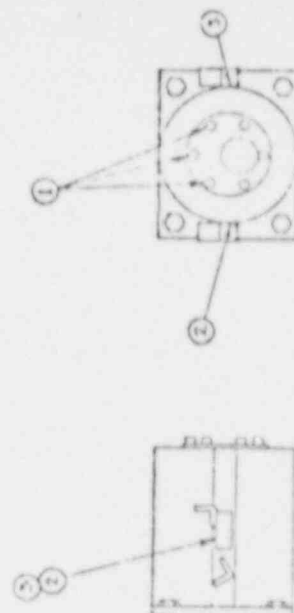
1, 2, 3, 4 - WIPER ALL AROUND GASKET  
 9 - WIPER ALL AROUND SHUTTER HANDLE  
 SOURCE HEAD NO. 5124, 5125, 5126



1, 2 - WIPER UP AND DOWN SHUTTER (AND/OR INSIDE EDGE OF HEAD IF EXPOSED)  
 3, 4 - WIPER ALL AROUND INSIDE EDGE  
 SOURCE HEAD NO. 5120, 5121, 5122, 5123, 5124



3 - WIPER ALL AROUND PLUNGER (EXCEPT ON 5126 OR 5128)  
 4, 7 - WIPER ALL "ROUND SHUTTER"  
 SOURCE HEAD NO. 5127, 5128, 5129, 5130, 5131, 5132



1 - WITH SHUTTER CLOSED, WIPER ALL AROUND SEAM AND BOX TO THE EXTENT THAT THEY ARE ACCESSIBLE  
 2, 3 - WIPER ALL AROUND BOTH SHUTTER HANDLES  
 SOURCE HEAD NO. 5128

# DENSITY GAUGE RADIATION SURVEY CERTIFICATE

TS  
SURVEY LETTERED POINTS AT ONE FOOT FROM THE SURFACE  
AND OR AT THE SURFACE.

SOME CRISTAL TYPE SURVEY METERS MAY NOT HAVE  
SUFFICIENT RANGE TO TAKE SURFACE READINGS ON SOME  
MATERIALS. IN SUCH CASES, USE ION CHAMBER TYPE  
SURVEY METER OR TAKE READINGS AT ONE FOOT.

ONCE COMPLETED, DATED AND SIGNED, THIS CERTIFICATE  
SHOULD BE MAINTAINED AS A PERMANENT RECORD.

5-6-81  
LOCATION: 7220 R. Jones Rd  
HEAD NO. 5190  
NO. DX 3384  
SER. NO. B 2278  
RANGE 200 -C ☒ C1337, CO60  
INSTRUMENT IND 2650 5M221

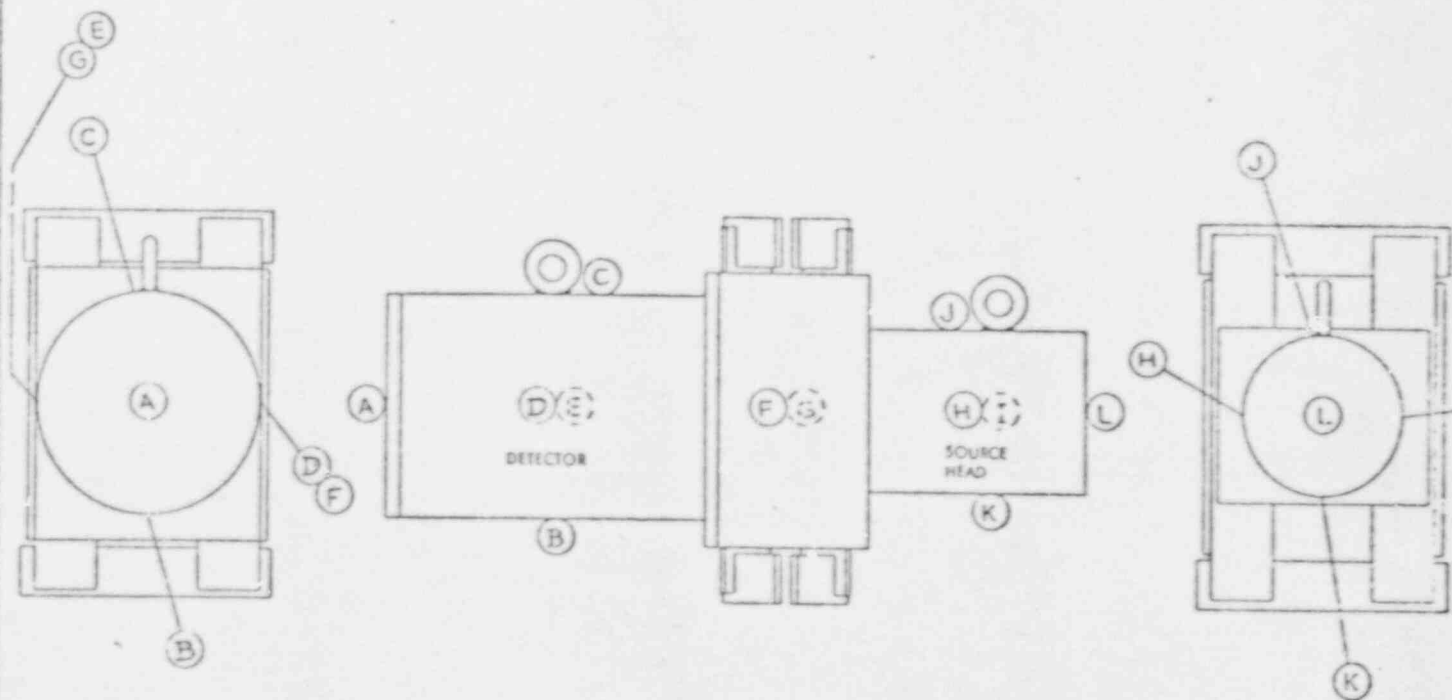
READINGS TAKEN ☒ AT SURFACE, ☐ AT ONE FOOT

DATE 5-6-81  
TIME 11:15  
ONLY AFTER RESULTS RECORDED

Texas-Nuclear Division

101 Research Blvd., P.O. Box 9267

AUSTIN, TX 78766



mR/h

SIDE SHIELDS IN PLACE.

SHUTTER	A	B	C	D	E	F	G	H	I	J	K	L
OPEN	2.0	3.5	3.5	6.0	5.2	8.0	3.5	8.0	8.5	28	6	1/2
CLOSED	.05	.2	.15	.5	.3	2.0	2.5	2.2	9.2	9.0	7.2	.3

PIPE FULL ☐

PIPE EMPTY ☒

NOTES:

- 1) NUMBERED POINTS INDICATE AREAS TO BE WIPE FOR LEAK TEST.
- 2) ONCE COMPLETED, DATED AND SIGNED, THIS CERTIFICATE SHOULD BE MAINTAINED AS A PERMANENT RECORD.
- 3) CHECK OPERATION OF SHUTTER WHEN LEAK TEST IS PERFORMED.

# DENSITY AND LEVEL GAUGE LEAK TEST CERTIFICATE

GAUGE LOCATION TWO RUN CRIMINAL

SOURCE HEAD MOD. NO. 5170

TAG NO. DX 4024

SOURCE HEAD SER. NO. 5170

ACTIVITY 200 -CI ☒ CS137, ☐ COMB

MEASURING INSTRUMENT TWO 2150 T-2241

LEAK TEST TYPE DTIS

OPERATION - ☒ OR

NEGATIVE ☐ POSITIVE ☒ <.00045 -CI

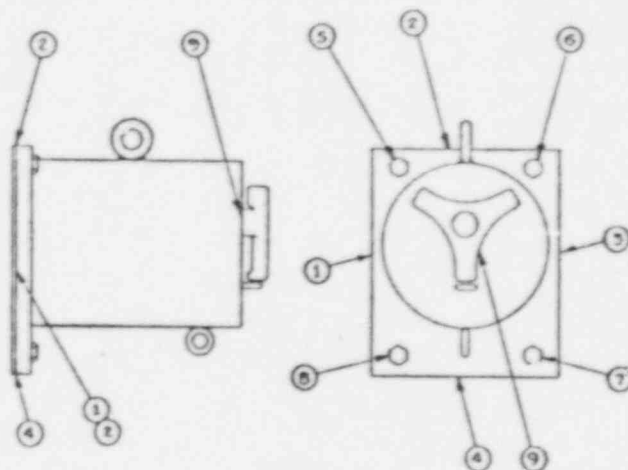
SIGNATURE (SIGN ONLY AFTER RESULTS ARE FILLED IN) DATE

Texas Nuclear Division

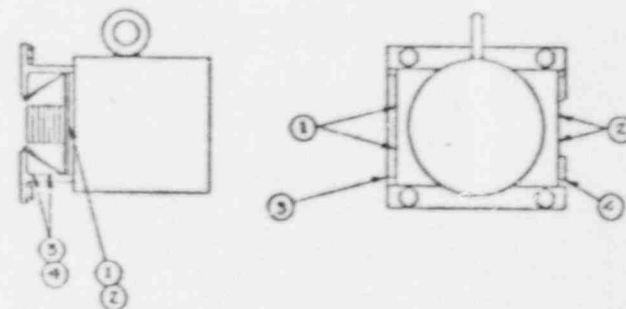
9101 Research Blvd., P.O. Box 9267

Austin, TX 78766

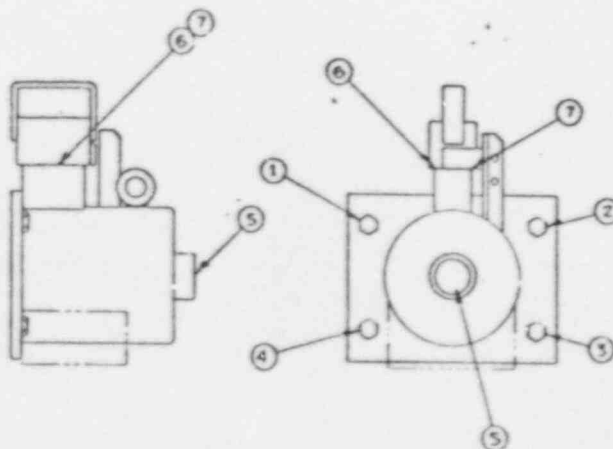
WITH AVAILABLE LEAK TEST KIT, MAIL TO:  
TEXAS NUCLEAR  
9101 RESEARCH BLVD., AUSTIN TEXAS 78766  
PHONE (512) 836-0825; TELEEX 77-6413



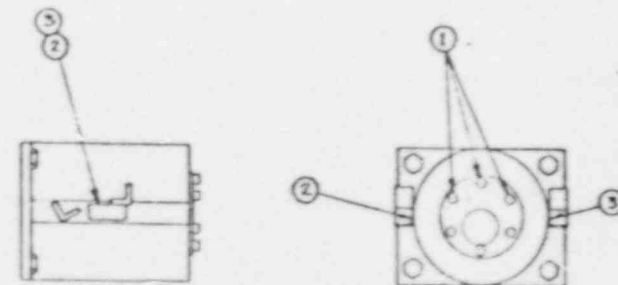
1, 2, 3, 4 - WIPE ALL AROUND GASKET  
9 - WIPE ALL AROUND SHUTTER HANDLE  
SOURCE HEAD NO. 5174, 5175, 5176



1, 2 - WIPE UP AND DOWN SHUTTER (AND/OR INSIDE EDGE OF HEAD IF EXPOSED).  
3, 4 - WIPE ALL ALONG INSIDE EDGE.  
SOURCE HEAD NO. 5187, 5190, 5191, 5192, 5193, 5199



5 - WIPE ALL AROUND PLUG (EXCEPT ON 5178 OR 5181).  
6, 7 - WIPE ALL AROUND SHUTTER.  
SOURCE HEAD NO. 5178, 5179, 5180, 5181, 5182, 5183



1 - WITH SHUTTER CLOSED, WIPE ALL AROUND SEAM AND BOLTS TO THE EXTENT THAT THEY ARE ACCESSIBLE.  
2, 3 - WIPE ALL AROUND BOTH SHUTTER HANDLES.  
SOURCE HEAD NO. 5188

## NOTES

- 1) SURVEY LETTERED POINTS AT ONE FOOT FROM THE SURFACE AND/OR AT THE SURFACE.
- 2) SOME OTHER TYPE SURVEY METERS MAY NOT HAVE SUFFICIENT RANGE TO TAKE SURFACE READINGS ON SOME APPLICATIONS. IN SUCH CASES, USE ION CHAMBER TYPE SURVEY METER OR TAKE READINGS AT ONE FOOT.
- 3) ONCE COMPLETED, DATED AND SIGNED, THIS CERTIFICATE SHOULD BE MAINTAINED AS A PERMANENT RECORD.

DATE 5-6-81  
 USER Tom Brown  
 GAUGE LOCATION Tom Brown 11/2  
 SOURCE HEAD NO. 5190  
 TAG NO. DX 4216  
 SOURCE HEAD SER. NO. B 2511  
 ACTIVITY 200 ☒ CS137 ☐ CO60  
 MEAS. INSTRUMENT T10 2650 72261

READINGS TAKEN: ☒ AT SURFACE, ☐ AT ONE FOOT

SIGNATURE (ONLY AFTER RESULTS RECORDED)

DATE

Texas Nuclear Division

COMPANY NAME

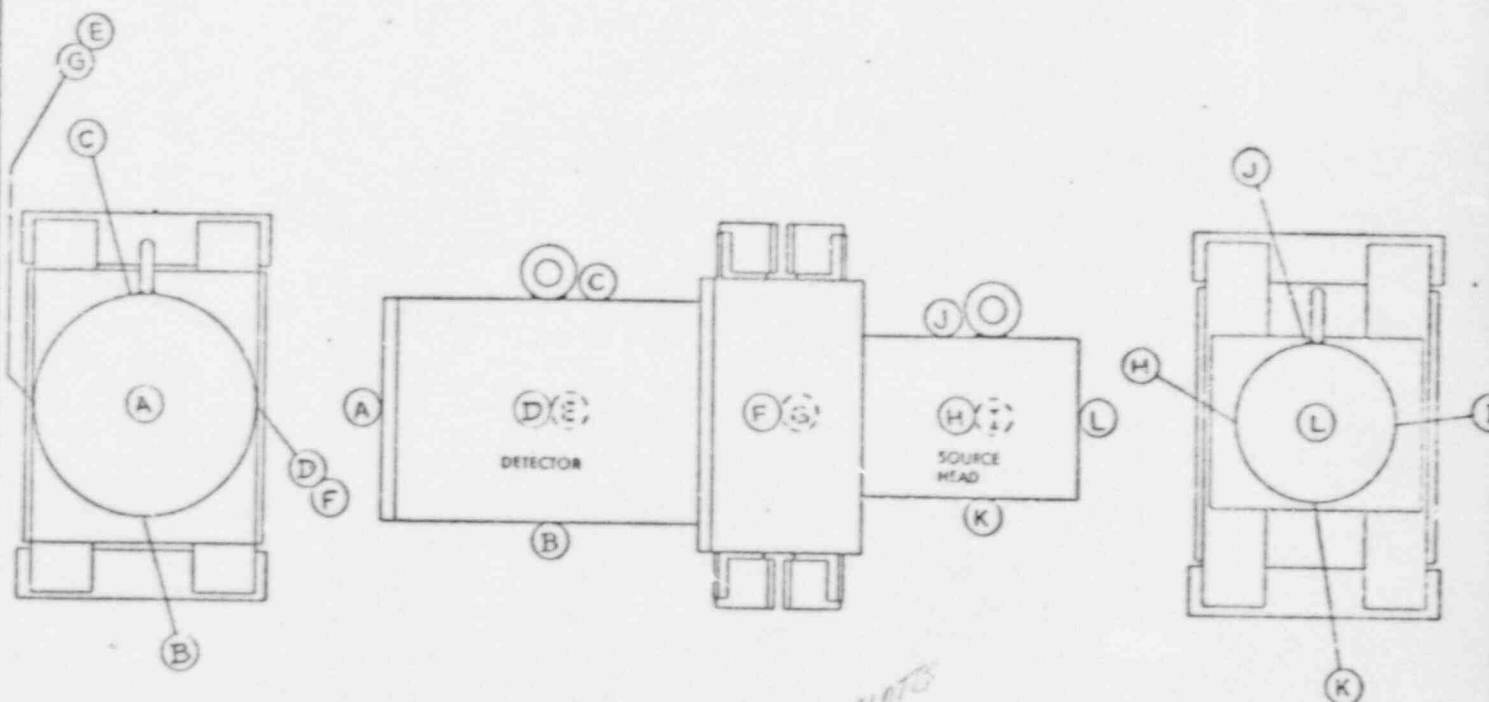
9101 Research Blvd., P.O. Box 9267

COMPANY ADDRESS

Austin, TX 78766

TEXAS NUCLEAR  
 9101 RESEARCH BLVD., AUSTIN TEXAS 78766  
 PHONE (512) 226-9401, TELEX 77-4413

## DENSITY GAUGE RADIATION SURVEY CERTIFICATE



mR/h

SHUTTER	A	B	C	D	E	F	G	H	I	J	K	L
OPEN	2.8	5.9	5.5	4.5	3.5	3.2	5.6	4.1	4.9	5.0	4.5	1.0
CLOSED	2.3	4.5	3.5	1.5	1.4	2.0	2.7	5.0	4.8	5.2	4.1	1.0

PIPE FULL ☐

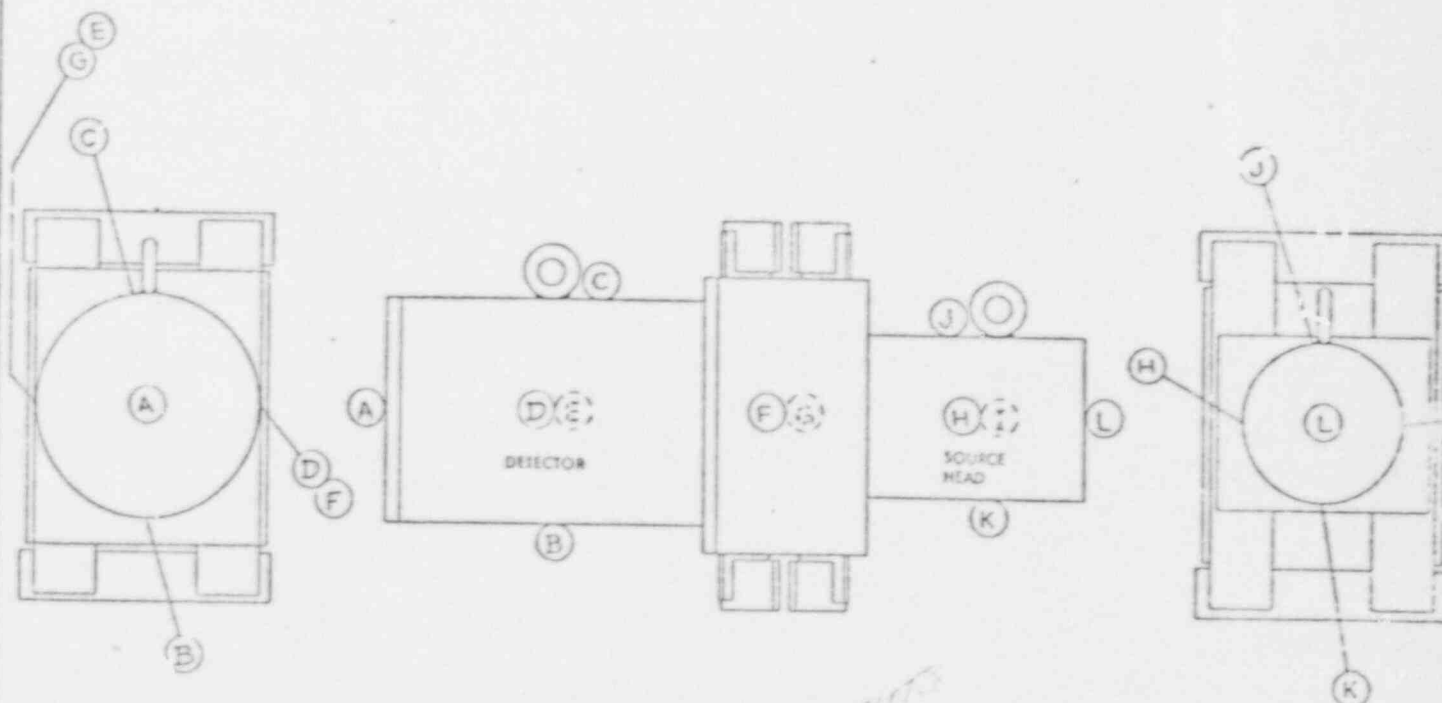
PIPE EMPTY ☒

# DENSITY GAUGE RADIATION SURVEY CERTIFICATE

SURVEY LETTTERED POINTS AT ONE FOOT FROM THE SURFACE AND, OR AT THE SURFACE.

SOME CRISTAL TYPE SURVEY METERS MAY NOT HAVE SUFFICIENT RANGE TO TAKE SURFACE READINGS ON SOME APPLICATIONS. IN SUCH CASES, USE ION CHAMBER TYPE SURVEY METER OR TAKE READINGS AT ONE FOOT.

ONCE COMPLETED, DATED AND SIGNED, THIS CERTIFICATE SHOULD BE MAINTAINED AS A PERMANENT RECORD.



mR/h

SHUTTER	A	B	C	D	E	F	G	H	I	J	K	L
OPEN	2.8	5.9	5.5	4.6	2.5	3.2	1.6	4.1	4.9	5.0	4.5	1.0
CLOSED	2.3	4.5	3.5	1.5	1.4	2.0	2.8	5.0	4.8	5.2	4.1	1.0

PIPE FULL ☐ PIPE EMPTY ☒

DATE 5-6-21  
 TIME 10:00 AM  
 NAME LOCATION Truck Stop  
 SURVEY READINGS, NO. 5790  
 G. NO. 101  
 SOURCE HEAD SER. NO. 62511  
 DATE 2-2-21 CS13P COMO  
 INSTRUMENT 7100 2150 7121  
 READINGS TAKEN ✓ AT SURFACE, ✓ AT ONE FOOT  
 DATE 5-6-21  
 TEXAS Nuclear Division  
 101 Research Blvd., P.O. Box 9267  
 Austin, TX 78766



# DENSITY GAUGE RADIATION SURVEY CERTIFICATE

73-  
DENSITY EXTENSION POINTS AT ONE FOOT FROM THE SURFACE AND 0' AT THE SURFACE.

SOME CRACKER TYPE TYPE SURVEY Meters MAY NOT HAVE SUFFICIENT RANGE TO TEST SURFACE READINGS ON SOME CRACKER TYPES. IN SUCH CASES, USE 1/2 IN. CRACKER TYPE SURVEY METER OR TAKE READINGS AT ONE FOOT.

ONCE COMPLETED, DATED AND SIGNED, THIS CERTIFICATE SHOULD BE MAINTAINED AS A PERMANENT RECORD.

5-6-81

DATE OF SURVEY

CALCULATION Type

TR HEAD NO. 5190

NO. 1 X 4214

TR HEAD SER. NO. 2210

DATE 2-23-80

INSTRUMENT TND 2650 SN 221

NOTES TAKEN AT SURFACE, AT ONE FOOT

DATE 5-1-81

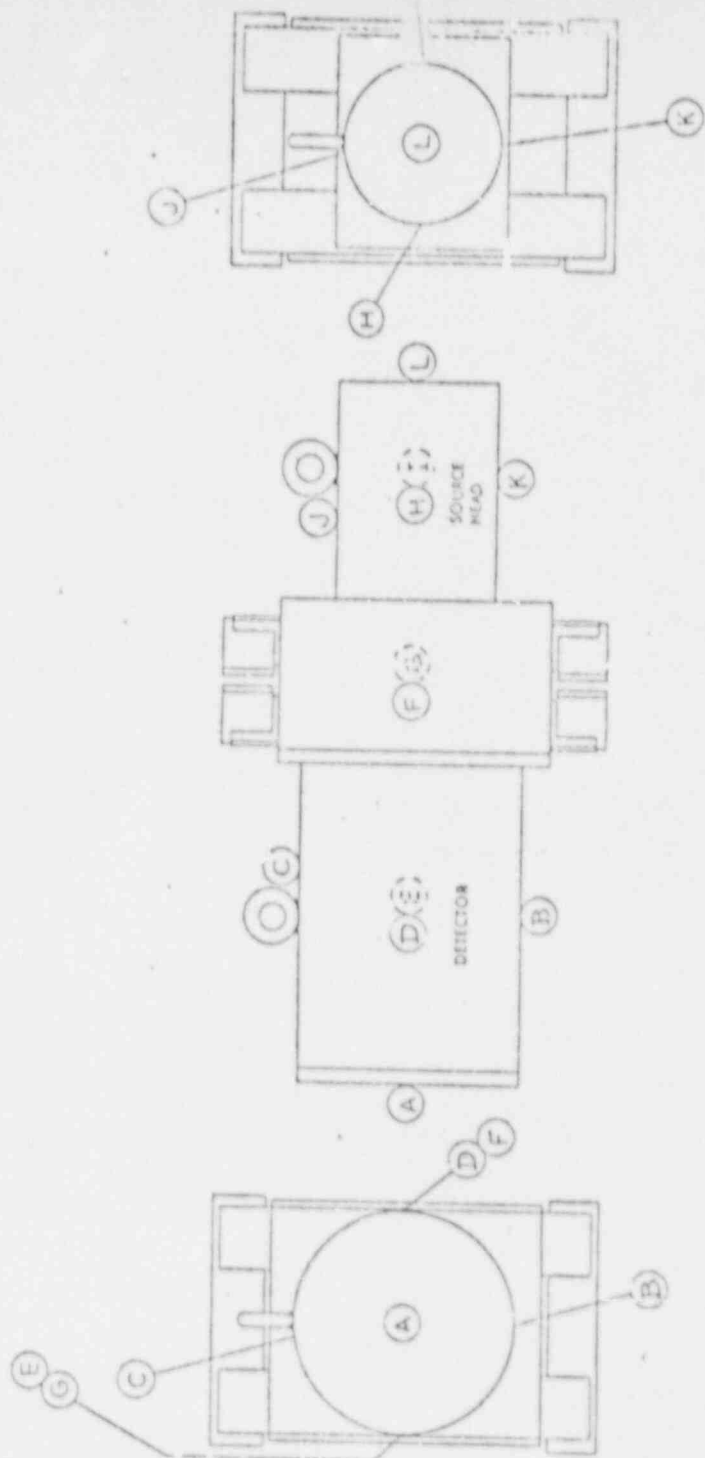
DATE

Gas Nuclear Division

01 Research Blvd., P.O. Box 9267

tin, TX 78766

DATE OF SURVEY



mR/h

SHUTTER	A	B	C	D	E	F	G	H	I	J	K	L
OPEN	1.2	4.6	1.3	5.5	4.7	5.5	5.5	5.5	5.7	6.0	6.5	7.0
CLOSED	0.4	2.0	2.2	2.0	2.5	5.5	7.5	6.2	5.5	5.5	5.7	1.1

PIPE FULL ☒ PIPE EMPTY ☐

NOTES

- 1) NUMBERED POINTS INDICATE AREAS TO BE WIRED FOR LEAK TEST.
- 2) ONCE COMPLETED, DATES AND SIGNED, THIS CERTIFICATE SHOULD BE MAINTAINED AS A PERMANENT RECORD.
- 3) CHECK ORIENTATION OF SHUTTER WHEN LEAK TEST IS PERFORMED.

*Trans. Type. Channel*

GASIFICATION *on the floor* *MS*

SOURCE HEAD NO. *5183*

TAG NO. *7-1-20*

SOURCE HEAD SER. NO. *0-2-34*

ACTIVITY *2-03* *MS* *0312* *CONF*

MEASURING INSTRUMENT *5110* *0-100* *5112*

LEAK TEST TIME *10-1*

DENSITY CHAMBER *OK*

NEGATIVE *POSITIVE* *MS* *0312* *CONF*

EXPOSURE SIGNATURE AND DATE *10-1-1954* *10-1-1954*

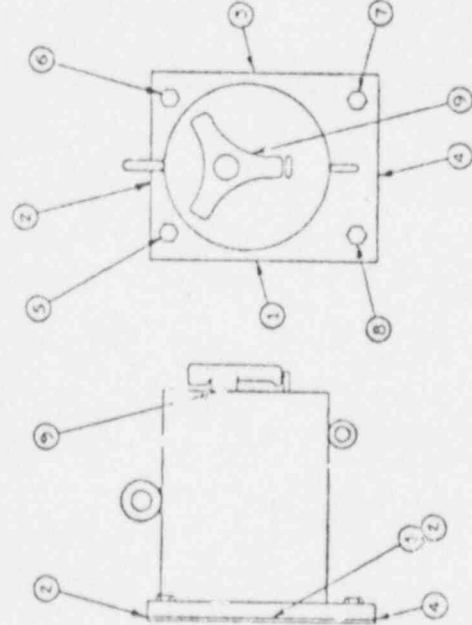
Texas Nuclear Division

2101 Research Blvd., P.O. Box 9267

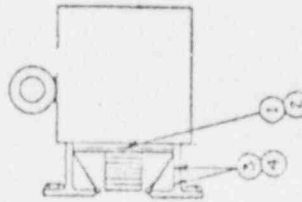
Austin, TX 78766

WITH GASABLE LEAK TEST KIT, MAIL TO:  
TEXAS NUCLEAR  
1111 W. 44th ST., AUSTIN, TEXAS 78748  
PHONE 312-540-3000, TELETYPE 37-443

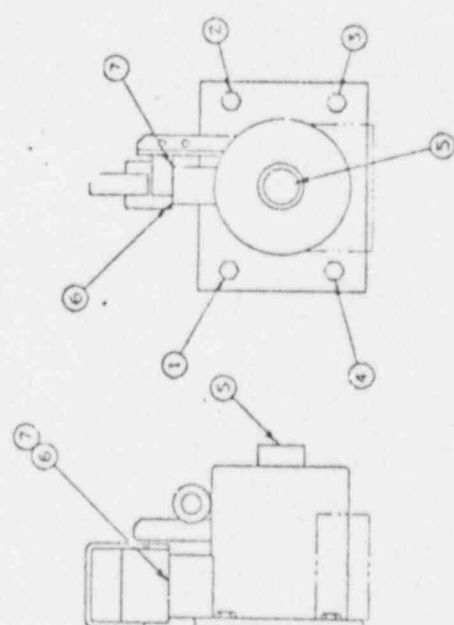
# DENSITY AND LEVEL GAUGE LEAK TEST CERTIFICATE



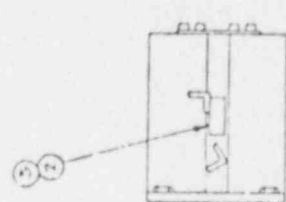
1, 2, 3, 4 - WIPE ALL AROUND GASKET  
5 - WIPE ALL AROUND SHUTTER HANDLE  
SOURCE HEAD NO. 5174, 5175, 5176



1, 2 - WIPE UP AND DOWN SHUTTER (AND/OR INSIDE EDGE OF HEAD IF EXPOSED)  
3, 4 - WIPE ALL ALONG INSIDE EDGE  
SOURCE HEAD NO. 5188, 5190, 5191, 5192, 5193, 5194



3 - WIPE ALL AROUND PLUG (EXCEPT ON 5178 OR 5181)  
4, 7 - WIPE ALL AROUND SHUTTER  
SOURCE HEAD NO. 5178, 5179, 5180, 5181, 5182, 5183



1 - WITH SHUTTER CLOSED, WIPE ALL AROUND SEAM AND BOLTS TO THE EXTENT THAT THEY ARE ACCESSIBLE.  
2, 3 - WIPE ALL AROUND BOTH SHUTTER HANDLES  
SOURCE HEAD NO. 5185

LEAK TEST CERTIFICATE FOR DENSITY AND LEVEL GAUGES - KID-BU-7114

NOTES:

- 1) NUMBERED POINTS INDICATE AREAS TO BE WIPED FOR LEAK TEST.
- 2) ONCE COMPLETED, DATED AND SIGNED, THIS CERTIFICATE SHOULD BE MAINTAINED AS A PERMANENT RECORD.
- 3) CHECK OPERATION OF SHUTTER WHEN LEAK TEST IS PERFORMED.

Gauge Location: Top of Head

Source Head No. 5120

Tag No. OX 4015

Source Head Ser. No. B2512

Activity 200 - CI ☒ C137, ☐ C040

Measuring Instrument TND 2650 SN124

Leak Test Type DEFB

Result OK

Negative POSITIVE 0.00045 uCi

Source Region Only After Results Are Filled In

Texas Nuclear Division

9101 Research Blvd., P.O. Box 9267

Austin, TX 78766

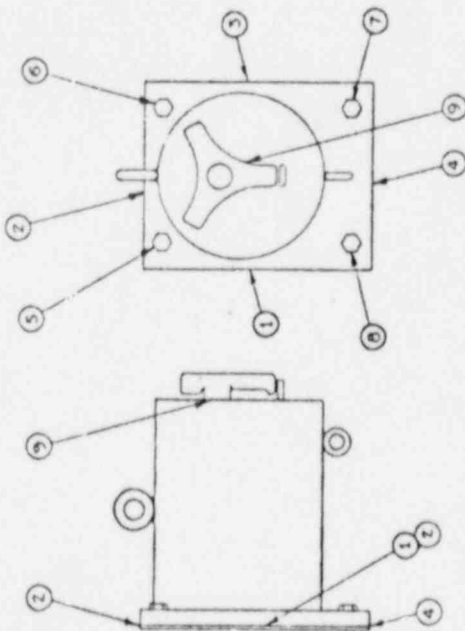
WITH AVAILABLE LEAK TEST KIT. MAIL TO:

TEXAS NUCLEAR

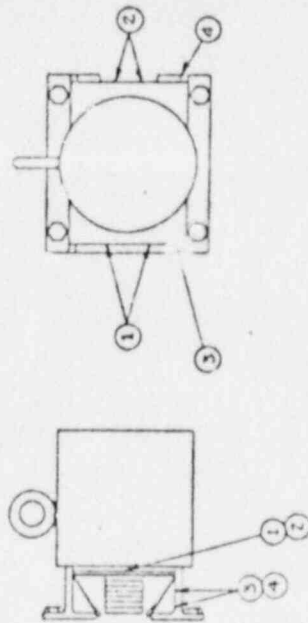
9101 RESEARCH BLVD., AUSTIN, TEXAS 78766

PHONE (512) 546-3811; TELEFAX (512) 546-3812

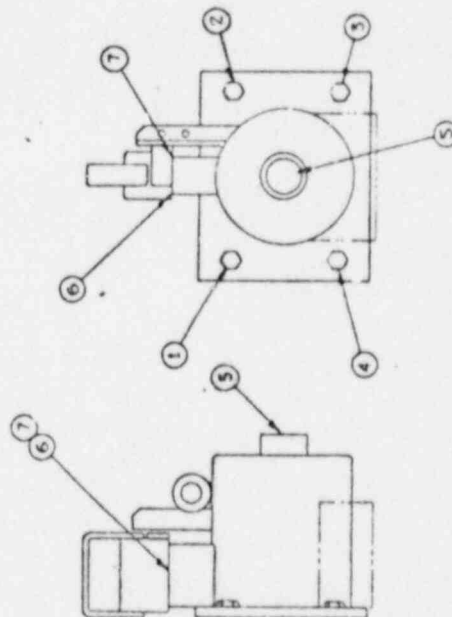
# DENSITY AND LEVEL GAUGE LEAK TEST CERTIFICATE



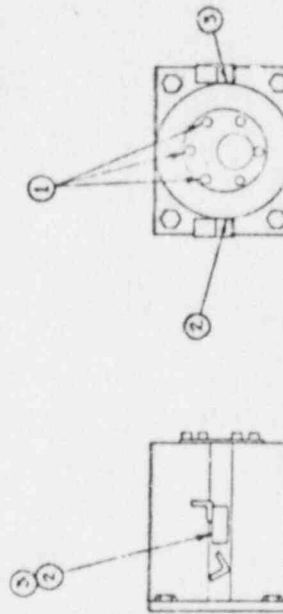
- 1, 2, 3, 4 - Wipe all around gasket
  - 9 - Wipe all around shutter handle
- SOURCE HEAD NO. 5174, 5175, 5176



- 1, 2 - Wipe up and down shutter (and/or inside edge of head if exposed)
  - 3, 4 - Wipe all along inside edge
- SOURCE HEAD NO. 5180, 5181, 5182, 5183, 5184



- 3 - Wipe all around plug (except on 5178 or 5181)
  - 4, 7 - Wipe all around shutter
- SOURCE HEAD NO. 5178, 5179, 5180, 5181, 5182, 5183



- 1 - With shutter closed, wipe all around seam and bolts to the extent that they are accessible
  - 2, 3 - Wipe all around both shutter handles
- SOURCE HEAD NO. 5188

Texas Nuclear  
Division

Ramsey Engineering Company  
Box 9267  
Austin, Texas 78766 USA  
Telephone (512) 836-0801  
Telex 77-6413

February 12, 1980

Toms River Chemical Corporation  
Route 37  
P.O. Box 71  
Toms River, NJ 08753

*Rec 2/19/80  
JAO*

ATTN: Louis A. Ortiz

License Number G.L. 6-1105

Purchaser TOMS RIVER CHEMICAL CORPORATION

P.O.# 1-E-76616 S.O.# T4788G

Gentlemen:

Your order is now being prepared for shipment. We are, therefore, enclosing a number of items associated with the instrument(s) which should be maintained in the files of the person responsible for radioactive material in your plant.

Enclosed are:

- 1 set(s) of Keys for the Model(s) 5190 source head(s)
- 1 Leak Test Certification(s)
- 1 Calibration Curve(s) (if applicable)
- 1 Sales Order Detail Form(s) (this information is necessary for installation)
- 1 Excerpts from Texas Regulations for Control of Radiation, Licensure, G.L. 6-1105, October, 1977, Revision (if applicable)

*TO SUTCLIFF*

Please let me know if we

Sincerely,

*Ms. Karen Ottis*  
Ms. Karen Ottis  
Customer Service

Enclosure(s)

LEAK-TEST CERTIFICATION

T4788G

This is to certify that the product identified below was tested for radioactive leakage as shown:

Customer TOMS RIVER CHEMICAL CORPORATION  
Product 5190  
Isotope Cs-137 Serial No. B2278  
Source Ser. No. MA-6604 Amount 200 mCi  
Result ☐ Positive, ☒ Negative ≤ 0.001 μCi  
Date 2-01-80 Signature W. Hendrick

This certificate should be maintained as a permanent record of the leak-test of this product.

TEXAS NUCLEAR DIVISION  
RAMSEY ENGINEERING CO.  
9101 HIGHWAY 183  
AUSTIN, TEXAS 78766

500107

## LEAK-TEST CERTIFICATION

This is to certify that the product identified below was tested for radioactive leakage as shown:

Customer TOMS RIVER CHEMICAL CORPORATION  
 Product 5190 Serial No. B2512  
 Isotope Cs-137 Amount 200 mCi  
 Source Ser. No. MA-7688 Test Type A  
 Result - ☐ Positive, ☒ Negative 0.001 <sup>uCi</sup>  
 Date 8/12/80 Signature W. Hendrick

This certificate should be maintained as a permanent record of the leak test of this product.

TEXAS NUCLEAR DIVISION  
 RAMSEY ENGINEERING CO.  
 9101 HIGHWAY 183 AUSTIN, TEXAS 78766

August 22, 1980

Toms River Chemical Corporation  
 Route 37  
 P. O. Box 71  
 Toms River, New Jersey 08753

Attn.: Louis Ortiz, Radiation Safety Officer

License Number GL 6-1105Purchaser Toms River Chemical Corp.P.O.# E-79276 S.O.# 500107

Gentlemen:

Your order is now being prepared for shipment. We are, therefore, enclosing a number of items associated with the instrument(s) which should be maintained in the files of the person responsible for radioactive material in your plant.

Enclosed are:

- 3 set(s) of Keys for the Model(s) 5190 source head(s)
- 3 Leak Test Certification(s)
- 3 Calibration Curve(s) (if applicable)
- 1 Sales Order Detail Form(s) (this information is necessary for installation)
- 1 Excerpts from Texas Regulations for Control of Radiation, License No. 6-1105, October, 1977, Revision 1.1 (if applicable)

500107

## LEAK-TEST CERTIFICATION

This is to certify that the product identified below was tested for active leakage as shown:

Customer TOMS RIVER CHEMICAL CORPORATION  
 Product 5170 Serial No. B2511  
 Isotope Cs-137 Amount 200 mCi  
 Source Ser. No. MA-7623 Test Type A  
 Result - ☐ Positive, ☒ Negative 0.001  
 Date 8/8/80 Signature W. Hendrick

This certificate should be maintained as a permanent record of test of this product.

TEXAS NUCLEAR DIVISION  
 RAMSEY ENGINEERING CO.  
 9101 HIGHWAY 183 AUSTIN, TEXAS 78766

500107

## LEAK-TEST CERTIFICATION

This is to certify that the product identified below was tested for active leakage as shown:

Customer TOMS RIVER CHEMICAL CORP.  
 Product 5190 Serial No. B2510  
 Isotope Cs-137 Amount 200 mCi  
 Source Ser. No. MA-7635 Test Type A  
 Result - ☐ Positive, ☒ Negative 0.001  
 Date 8/12/80 Signature W. Hendrick

This certificate should be maintained as a permanent record of test of this product.

TEXAS NUCLEAR DIVISION  
 RAMSEY ENGINEERING CO.  
 9101 HIGHWAY 183 AUSTIN, TEXAS 78766

ITEM #16

RESUME OF LOUIS ANTONIO ORTIZ

RADIATION SAFETY TRAINING

Rutgers University

In pursuit of a BA in Chemistry during 1965-1969, Mr. Ortiz received approximately three months of training in:

- a) Radioactivity measurement standardization and monitoring techniques and instruments.
- b) Mathematics and calculations basic to the use and measurements of radioactivity.

National Institute for Occupational Safety and Health (NIOSH)

Mr. Ortiz attended courses given by NIOSH on Industrial Hygiene Measurements (2 weeks - 1975) and Recognition of Occupational Health Hazards (1 week - 1976) which covered the various aspects of radiation as mentioned on NRC Form 313(1).

Kay-Ray Inc.

Mr. Ortiz attended a 5-day course in March, 1979, given by Kay-Ray Inc. on "Installation and Nuclear Radiation Safety". Attached is an outline of that course.

Certification

Mr. Ortiz is certified in the comprehensive practice of industrial hygiene by the American Board of Industrial Hygiene.





KAY-RAY INC.

INDUSTRIAL PROCESS CONTROL EQUIPMENT

516 West Campus Drive • Arlington Heights, Illinois 60004 • (312) 259-5600 • TELEX: 281-085 • CABLE: KAYRAY

## INSTALLATION AND NUCLEAR RADIATION SAFETY COURSE

FIVE DAY COURSE - \$400 per student

Kay-Ray provides all materials needed for the course and lunch each day for the students. All other expenses (travel, lodging, other meals, etc.) are to be provided by the student. At the successful completion of this course, each participant is awarded a certificate and letter certifying the nature of training.

### OUTLINE

#### FIRST DAY (1:00 p.m. to 5:00 p.m.):

- I Orientation
- II Basic Nuclear Phenomenon
- III Requirements for obtaining or amending  
NRC license

#### SECOND DAY:

- I Radioactivity
- II Radiation Detection
- III Nuclear Gauging
- IV Dosimetry - Personnel Monitoring
- V Radiation Safety

#### THIRD DAY:

- I Nuclear Radiation Classification
- II Radiation Decay
- III NRC Rules and Regulations
- IV Procedures and Testing
- V Detailed Discussion
- VI Test

#### FOURTH DAY:

- I Test Review
- II Handler's Responsibilities
- III Installation of Source Housing
- IV Discussion of Customer Specific Installation  
and Construction

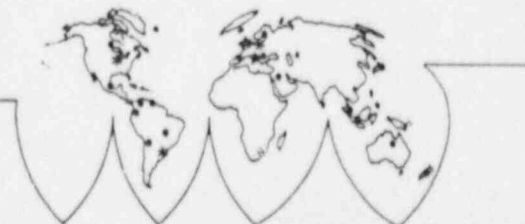
#### FIFTH DAY (at Kay-Ray):

- I Hands-On Examples
- II Team Problems
- III Question/Answer Period

SERVICE TELEPHONE NUMBER: (312) 259-9244

#### WORLDWIDE SALES AND SERVICE OFFICES:

Africa • Argentina • Australia • Benelux • Brazil • Canada • Chile • Columbia • France  
Germany • Indonesia • Italy • Japan • Mexico • New Zealand • Peru • Scandinavia • Spain  
South Africa • United Kingdom • Venezuela





ITEM #17

EXPERIENCE OF MR. L. ORTIZ

Mr. Ortiz has been the Industrial Hygienist at CIBA-GEIGY Corporation/ Toms River Plant since November 1975. Through his experience in monitoring the workplace for occupational health hazards and training at various NIOSH courses, he has shown the ability to be Radiation Safety Officer and to supervise the Radiation Protection Program at CIBA-GEIGY. Mr. Ortiz is a Certified Industrial Hygienist (C.I.H.).

BETWEEN: William O. Miller, Chief,  
License Fee Management Branch  
Office of Administration

John E. Glenn, Chief  
Nuclear Materials Section B  
Division of Engineering and  
Technical Programs

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

Applicant/Licensee: Ciba-Geigy

Application Dated: 6-29-87

Control No.: 107495

License No.: 29-09009-02

2. FEE ATTACHED

Amount: \$120<sup>00</sup>

Check No.: 900110

3. COMMENTS

Signed M. Weisenberger

Date 7-9-87

B. LICENSE FEE MANAGEMENT BRANCH

1. Fee Category and Amount: 3P \$120

2. Correct Fee Paid. Application may be processed for:

Amendment                     

Renewal                     

License                     

Signed S. Kemberly

Date 7/14/87