Re ltr Comp ltr 3/11/82

FORM NRC-313 I (3-80) 10 CFR 30 — U.S. NUCLEAR REGULATORY COMMISSION

APPLICATION FOR BYPRODUCT MATERIAL LICENSE
INDUSTRIAL

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

03120

X a. NEW LICENSE

b. AMENDMENT TO: LICENSE NUMBER 30-19638

c. RENEWAL OF: LICENSE NUMBER L & L 19991

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.)*

Kaiser Engineers of Pennsylvania

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
412-479-3505

3. NAME AND TITLE OF PERSON TO BE CONTACTED REGARDING THIS APPLICATION

Nicholas Hoffman, Instrumentation Tech.

TELEPHONE NUMBER: AREA CODE – NUMBER EXTENSION
412-479-3505

4. APPLICANT'S MAILING ADDRESS *(Include Zip Code)*
(Address to which NRC correspondence notices, bulletins, etc., should be sent.)

P.O. Drawer H
Homer City, PA 15748

5. STREET ADDRESS WHERE LICENSED MATERIAL WILL BE USED *(Include Zip Code)*

Electric Power Research Institute
Coal Cleaning Test Facility
Homer City, PA 15748

(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.	Nicholas Hoffman	Instrumentation technician
b.	Anthony T. Materkowski	Instrumentation technician
c.		

7. RADIATION PROTECTION OFFICER

Nicholas Hoffman

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)	Cessium 137	Sealed source's	Kay Ray Model 7062P	not to exceed 100 millicurios
(2)				
(3)				
(4)				

8709030375 870414
REG1 LIC30
37-19991-01 PDR

E DESCRIBE USE OF LICENSED MATERIAL

(1) 6 each Kay Ray Model 7062P source holders. The source holders are a
(2) complete storage container for the source, both prior and subsequent
(3) to installation of the gauge these devices are to be used to measure
(4) the specific gravity of coal/water slurry and magnetite flowing in a pipe.

10592

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)	Source holders	Kay Ray, Inc.	7062P
(2)	(see attachment)		
(3)			
(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)	Texas Nuclear	Texas Nuclear	2652	1	alpha, beta, gamma	.1 to 100 milliroentgens/hour
(2)			SN#B336			150 to 150,000 counts per minute
(3)	(see attached manufacturer's specifications and calibration certificate.)					
(4)						

11. CALIBRATION OF INSTRUMENTS LISTED IN ITEM 10

☐ a. CALIBRATED BY SERVICE COMPANY

NAME, ADDRESS, AND FREQUENCY

Texas Nuclear
Austin, Texas

☐ b. CALIBRATED BY APPLICANT

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

12. PERSONNEL MONITORING DEVICES

TYPE (Check and/or complete as appropriate.) A	SUPPLIER (Service Company) B	EXCHANGE FREQUENCY C
☐ (1) FILM BADGE	None, See Attachments	☐ MONTHLY
☐ (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.

☐ c. REMOTE HANDLING TOOLS OR EQUIPMENT, ETC.

☐ d. RESPIRATORY PROTECTIVE EQUIPMENT, ETC. See Attachment.

14. WASTE DISPOSAL

a. NAME OF COMMERCIAL WASTE DISPOSAL SERVICE EMPLOYED

See Attachment.

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.

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.

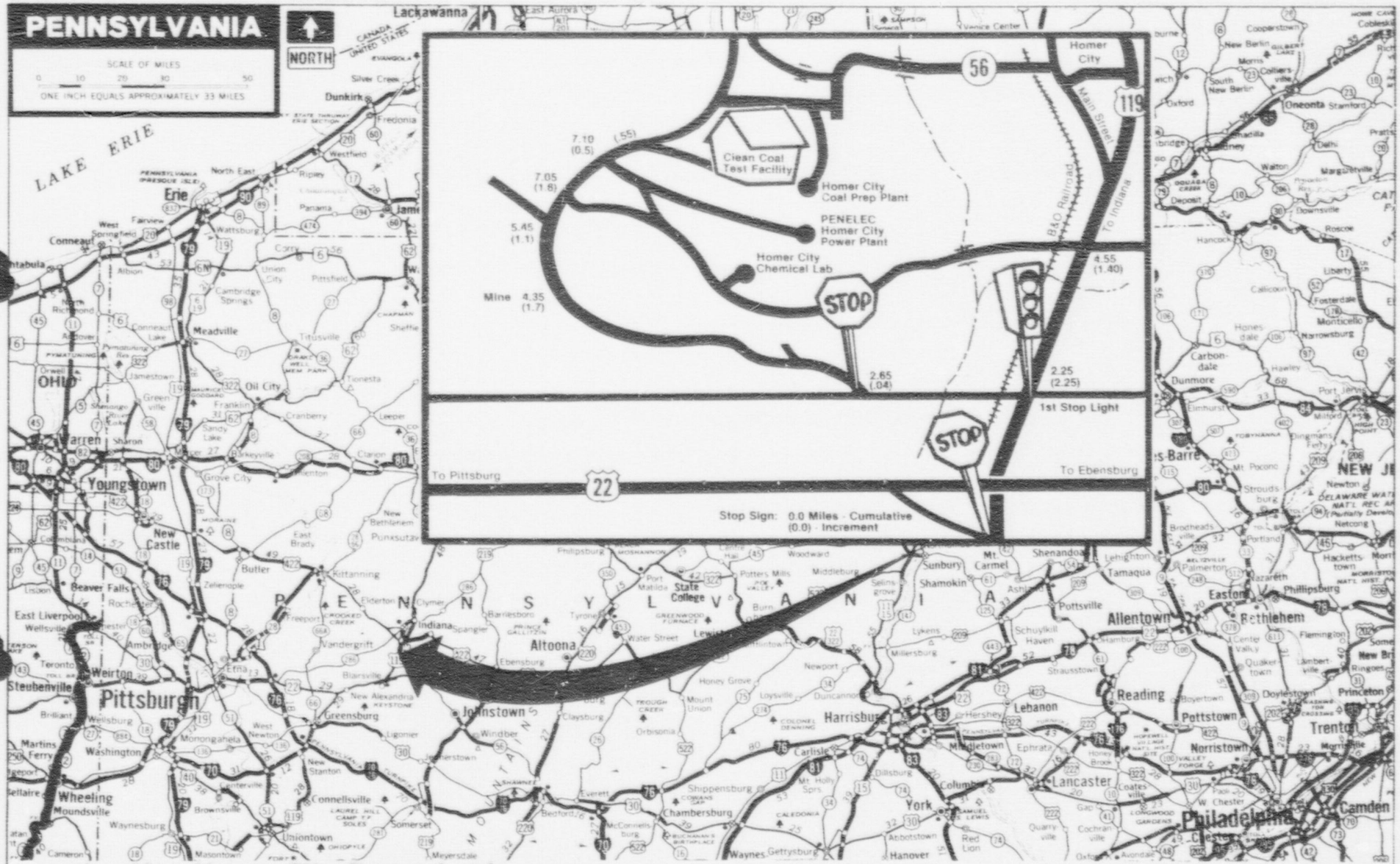
a. LICENSE FEE REQUIRED *(See Section 170.31, 10 CFR 170)*	b. CERTIFYING OFFICIAL *(Signature)* William L Hadden
	c. NAME *(Type or print)* William L. Hadden
(1) LICENSE FEE CATEGORY: I	d. TITLE Plant Manager
(2) LICENSE FEE ENCLOSED: $ 110.00	e. DATE March 2, 1982

FORM NRC-313 I (3-80)

GPO 866 632

ITEM #5

4 miles southwest of Homer City, PA., adjacent to Pennsylvania Electric Company, Homer City Power Station.



Location Map Homer City, Pennsylvania

EPRI CCTF Electric Power Research Institute
Coal Cleaning Test Facility

KAISER ENGINEERS

ITEM #6

Individual Users: Nicholas Hoffman & Anthony Materkowski

Nicholas Hoffman is an electrical and instrumentation technician who has been certified by Kay-Ray, Inc., during a one week training course on handling and leak testing of Kay-Ray equipment (mode numbers 7062; 7062P; 7063; 7063P). A copy of the training curriculum and letter of certification are enclosed.

Mr. Hoffman also holds a letter of certification for leak testing and handling of nuclear materials from Texas Nuclear, and has 4 years of experience in handling and leak testing from his previous work experience with the Iselin Preparation company.

Anthony T. Materkowski is an electrical instrumentation technician who has been certified by Kay-Ray, Inc, during a one week training course on leak testing and handling of Kay-Ray equipment (model numbers 7062; 7062P; 7063; 7063P).

Mr. Materkowski also holds an Associate degree in chemical technology and a B.S. in Education with 4 years experience of teaching chemistry and mathematics at the high school level.

ITEM #7

Mr. Nicholas Hoffman has been appointed to the position of Radiation Officer. His background and qualifications are listed in Item #6 under individual users.

a. Mr. Hoffman will oversee the use of the 6 7062P Kay-Ray, Inc. nuclear devices that were installed to measure coal/water slurry densities in 3" to 4" schedule 80 pipes. The devices are sealed Cesium 137 sources of not more than 100 millicurries each.

b. Mr. Hoffman and Mr. Materkowski will be the authorized personnel to supervise and service nuclear devices. We believe that the above personnel are sufficient for safe continuous operation of the nuclear devices, as we are a small research facility with a total employment of about 10 operating personnel.

c. Periodic leak tests of sealed sources will be performed to conform to the manufacturers recommendation of once every three years for leakage of radioactive material. Also, if there is an indication of failure or damage to the source housing or shutter mechanism leak test will be performed for leakage of the source.

d. Due to the fact that when the source is in its holder it is impossible for any individual to be exposed to the beam, the lockout procedure will be to insure that the shutter is closed during servicing of the nuclear devices. To insure that the shutter remains closed during servicing, the authorized personnel will padlock the shutter in the closed position. Only the authorized personnel will have keys to unlock the padlocked shutter.

e. Individual training is listed under item #6 - individual users. The authorized individual to perform any servicing on the nuclear devices shall mean Nicholas Hoffman and Anthony T. Materkowski.

Use of radiation survey meter for radiation leakage was demonstrated with hands on experience. The procedure to follow before doing a survey test is outlined on attached sheet labeled Radiation Survey Continuous Level.

Wipe testing for a sealed source was also demonstrated with hands on experience. The procedure is outlined on attached sheet, Figure 5-2.

During any service operation such as wipe testing, survey radiation testing, removal for maintenance of piping or relocation, the source shutter will be padlocked closed and only authorized personnel will have access to keys to open shutters. Due to the installation of the nuclear devices it is impossible

for any individual to be exposed to the beam when the source is in its holder. And based upon physical location and working condition, it is estimated that any one individual will receive far less than 100mR. Therefore, there is no need for a personnel monitoring program.

All non authorized persons will be instructed not to open any shutter, under any condition, and to leave all maintenance and operation to Mr. Hoffman and Mr. Materkowski.

Under no condition will a sealed source be opened upon these premises for any reason, other than by Kay-Ray personnel.

In the event that some catastrophic emergency in which these devices occurs, we will notify the NRC and Kay Ray, Inc. for instructions on proper handling.

ITEM #8

Six each Kay-Ray model 7062P source holders. The source holders are a complete storage container for the source, both prior and subsequent to Installation of the gauge. These devices are to be used to measure the specific gravity of coal/water slurry and magnetite flowing in a pipe.

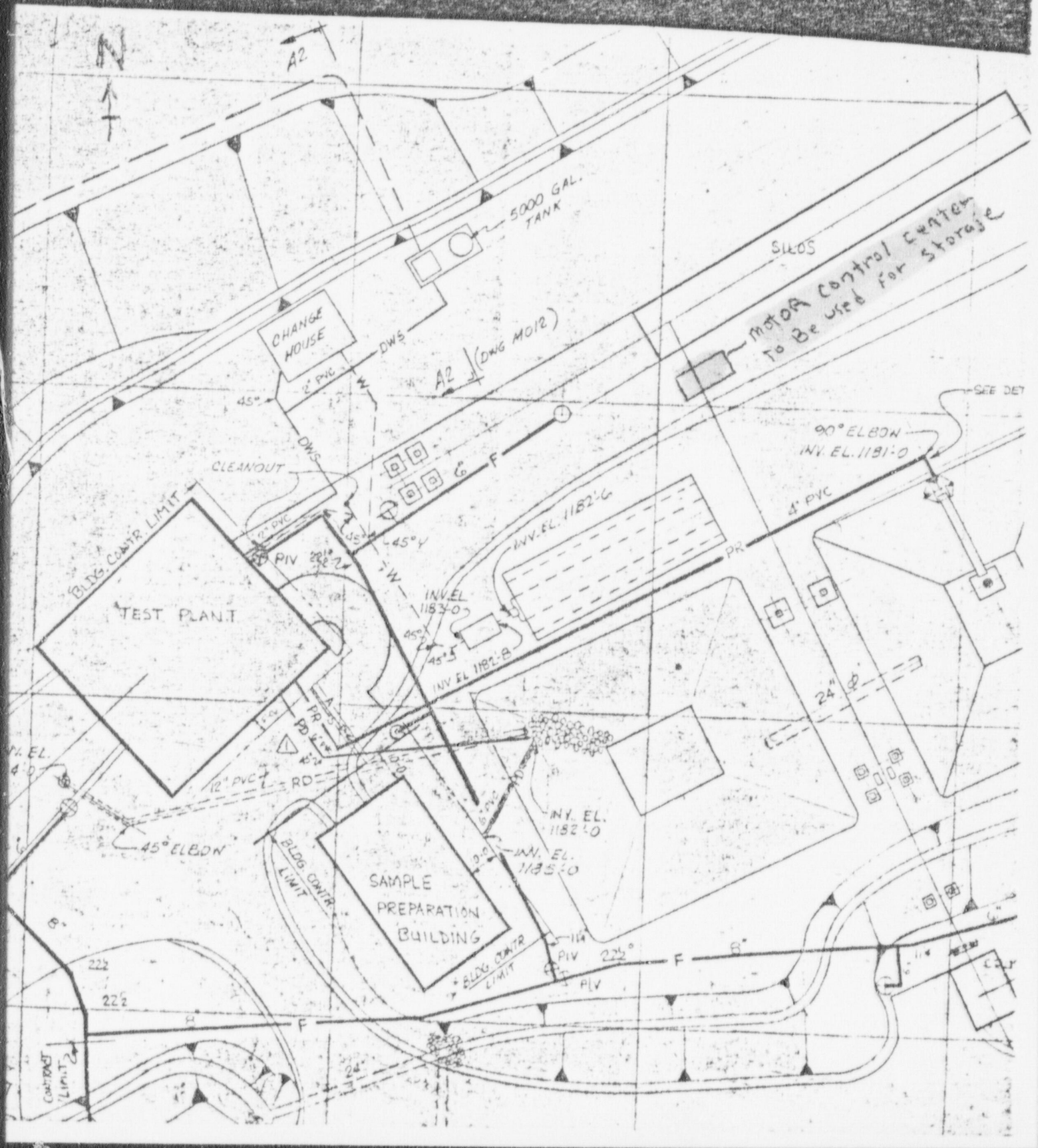
8A	8B	8C
Cesium - 137	Sealed Sources	Kay-Ray, Inc. Model 7062P

8D	8E
Not to Exceed 100 millicurries per source	For use in Kay-Ray model 7062P Source Holders. To measure specific gravity of Coal/Water slurry in a pipe.

ITEM #9

In the event that sources are removed, they will be stored in a remote motor control center. This location was chosen because of its remote location and the limited accessibility by other plant personnel.

The Sources will be stored with the shutters in a closed position and Padlocked. Due to the mechanical integrity of the source holders this should be sufficient.


N
A2
5000 GAL. TANK
SILOS
Motor control center To Be used for storage
CHANGE HOUSE
DWS
A2 (DWG M012)
SEE DET
90° ELBOW
INV. EL. 1181.0
4" PVC
CLEANOUT
BLDG. CONTR. LIMIT
TEST PLANT
PIV
INV. EL. 1182.6
INV. EL. 1183.0
INV. EL. 1182.8
PR
24" ϕ
12" PVC
RD
45° ELBOW
INV. EL. 1182.0
INV. EL. 1185.0
SAMPLE PREPARATION BUILDING
BLDG. CONTR. LIMIT
22½°
8"
CONTRACT LIMIT

ITEM #10

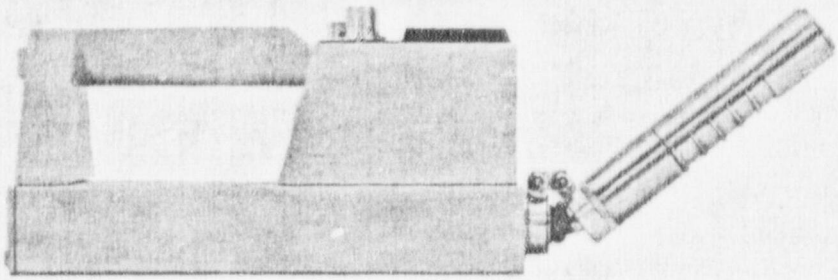
Survey Meter Data

Texas Nuclear
A Division of Ramsey Engineering Company

Models 2651 and 2652

Alpha-Beta-Gamma Survey Meters

Technical Specifications



2651

2652

PORTABLE ALPHA-BETA-GAMMA SURVEY METERS

Models 2651 and 2652

- Highly sensitive and reliable.
- Solid-state circuitry.
- Seven overlapping ranges to 100 mr/hr.
- Selectable time constants.
- Powered by readily available, standard flashlight cells—300 hour operating life.
- Interchangeable probes.
- Miniature earphone for aural monitoring.
- Lightweight all-metal construction.

The Texas Nuclear Models 2651 and 2652 are portable Geiger-type survey meters for measuring alpha, beta, and gamma radiation of low and medium energies. They are exceptionally useful for general monitoring applications such as checking supposedly contaminated areas, contamination prevention, checking isotope shipments and packing material, and in other radiological and health physics applications. These survey meters are also suitable for civil defense work.

Model 2651 Survey Meter consists of a basic monitoring unit and Model 2660 side-window probe for hard beta and gamma measurements. This probe has a revolving beta shield which permits the detector tube to cover a 180° angle. When closed, the shield effectively stops beta radiation.

Model 2652 Survey Meter incorporates the basic monitoring unit and Model 2661 end-window probe for alpha, soft beta, and gamma measurements. The probe cap shields out beta radiation and permits gamma surveying only. When the cap is removed, the thin mica window of the Geiger tube is exposed, allowing measurement of alpha and beta radiation with energies as low as 40 keV.

Either probe may be purchased separately and used interchangeably with the basic monitoring unit.

The sturdy, lightweight instruments have solid-state circuitry and provide excellent operating stability. Seven overlapping ranges cover readings up to 100 milliroentgens per hour. The survey meters are powered by readily available, "D" size flashlight cells which can be replaced without tools or special procedures.

The survey meters are entirely self-contained. They use long-lived halogen quenched Geiger detector tubes, along with a five-transistor monitoring and power circuit. Radiation can be measured on seven overlapping mr/hr ranges and displayed on a 3 1/2 inch meter with color coded scales. An additional meter scale is provided for cpm readings. Selectable time constants on the most sensitive ranges allow the fastest response times consistent with good accuracy.

All operating power for the instrument is supplied by four "D" size cells that can be replaced without exposing circuitry. Printed wiring and plug-

Texas Nuclear
A Division of Ramsey Engineering Company

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

in circuit cards simplify field repairs. The detector high voltage supply is well regulated and circuits are provided for checking and adjusting the power supply voltage. Good stability and accuracy can thus be maintained over the full life of the batteries.

The hinged swivel-type probe mount permits the operator to easily manipulate the detector probe in all survey situations (i.e., surveying bench tops, spills, hands, clothing, etc.). The probe can be positioned straight out from the instrument case or folded downward for measurements of vertical or horizontal surface areas, while at the same time keeping the monitoring unit in a horizontal position for ease of manipulating the controls or reading the meter. When not in use, the probe can be folded back against the instrument case. The probe can be extended up to 40 inches away from the monitoring unit to permit measurements in confined areas. The coiled probe connecting cable retracts completely into the instrument case.

The physical construction of the survey meters assures proper balance for hand-held operation. The instruments are equipped with four plastic glide feet and the case is sturdily constructed of light-weight aluminum.

A magnetic earphone for aural monitoring of the count rate and a low activity source for checking calibration are also supplied. Both the earphone and the check source can be stored in a small compartment at the rear of the monitoring unit.

Models 2651 and 2652 are carefully calibrated at the factory in terms of gamma rays from cesium-137, which is radium equivalent for these instruments. If necessary, they can be recalibrated by the operator by means of a screwdriver adjustment and the calibration source.

SPECIFICATIONS

ranges—Seven overlapping ranges of 0.1, 0.3, 1.0, 3.0, 10, 30, and 100 milliroentgens per hour and 150, 1500, 15,000 and 150,000 counts per minute. All full scale.

time constants—Selectable, 4 or 8 seconds on the 0.1, 0.3, and 1.0 mr/hr ranges. The 3 and 10 mr/hr ranges are fixed at 4 seconds. The 30 and 100 mr/hr ranges are fixed at 2 seconds.

accuracy—±10% of full scale on all ranges. Agreement between ranges is within 5%.

zero drift—Negligible.

warm up time—None.

calibration—Factory calibrated with gamma rays from a cesium-137 source which is radium equivalent for this instrument.

display—mr/hr and cpm indicated on color coded meter scales.

electronic circuit—Four transistor monitoring circuit consists of an emitter-coupled monostable multivibrator triggered by an emitter follower amplifier, and a buffer amplifier for the magnetic earphone. The high voltage supply is a single-transistor oscillator with corona regulated output.

detector tube—Model 2660 probe uses a side-window Geiger tube. Model 2661 probe uses an end-window Geiger tube. Both detectors are halogen quenched, hermetically sealed.

operating temperature range—0°C to + 50°C.

detector operating voltage—+600 volts.

window material—Model 2660 probe, stainless steel. Model 2661 probe, mica.

window thickness—Model 2660 probe, 30 mg/cm² (cathode wall). Model 2661 probe, 1.5 to 2 mg/cm².

cathode material—Stainless steel for both probes.

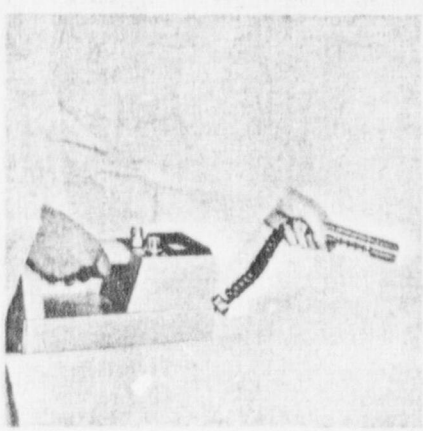
dead time—Model 2660 probe: 100usec. max. Model 2661 probe: 200usec. max.

power requirements—Four 1.5 volt "D" size (standard flashlight) cells. Battery life is better than 300 hours at 8 hours per day operation.

dimensions—5 in. high x 4 in. wide x 12 in. long with probe in retracted position. Length with probe in extended position is 16 1/4 in. for Model 2651 and 15 in. for Model 2652.

weight—4 1/2 lbs. net, including probe. Shipping weight, 7 1/2 lbs.

supplied with—Probe and detector as specified, batteries, earphone, calibration source, and instruction manual.



Model 2651 is supplied with a probe containing a side-widow G-M tube for detection of gammas and hard betas. The probe has a revolving beta shield.

Texas Nuclear
Division

Ramsey Engineering Company
Box 9267
Austin, Texas 78766 USA
Telephone (512) 836-0001
Telex 77-6413

CERTIFICATE OF INSTRUMENT CALIBRATION

This is to certify that the product described below was calibrated on the date shown below by a qualified Service Technician of the Texas Nuclear Division.

MODEL NO: 2652 SERIAL NO: B336

CALIBRATION DATA:

Calibrated & checked on all ranges against a calibrated 1 curie Cs 137 source. All ranges agree ±10%.

DATE: 2-17-82 NEXT DUE: 8-17-82

SIGNATURE: J D Sluckus

This is our certification to you that your product was calibrated within three (3) days prior to its shipment.

TEXAS NUCLEAR DIVISION

SERVICE DEPT.

ITEM #11

Instrumentation will be calibrated by Texas Nuclear any time the check source readings lead me to believe the instrument needs repair or calibration, or once a year.

ITEM #12

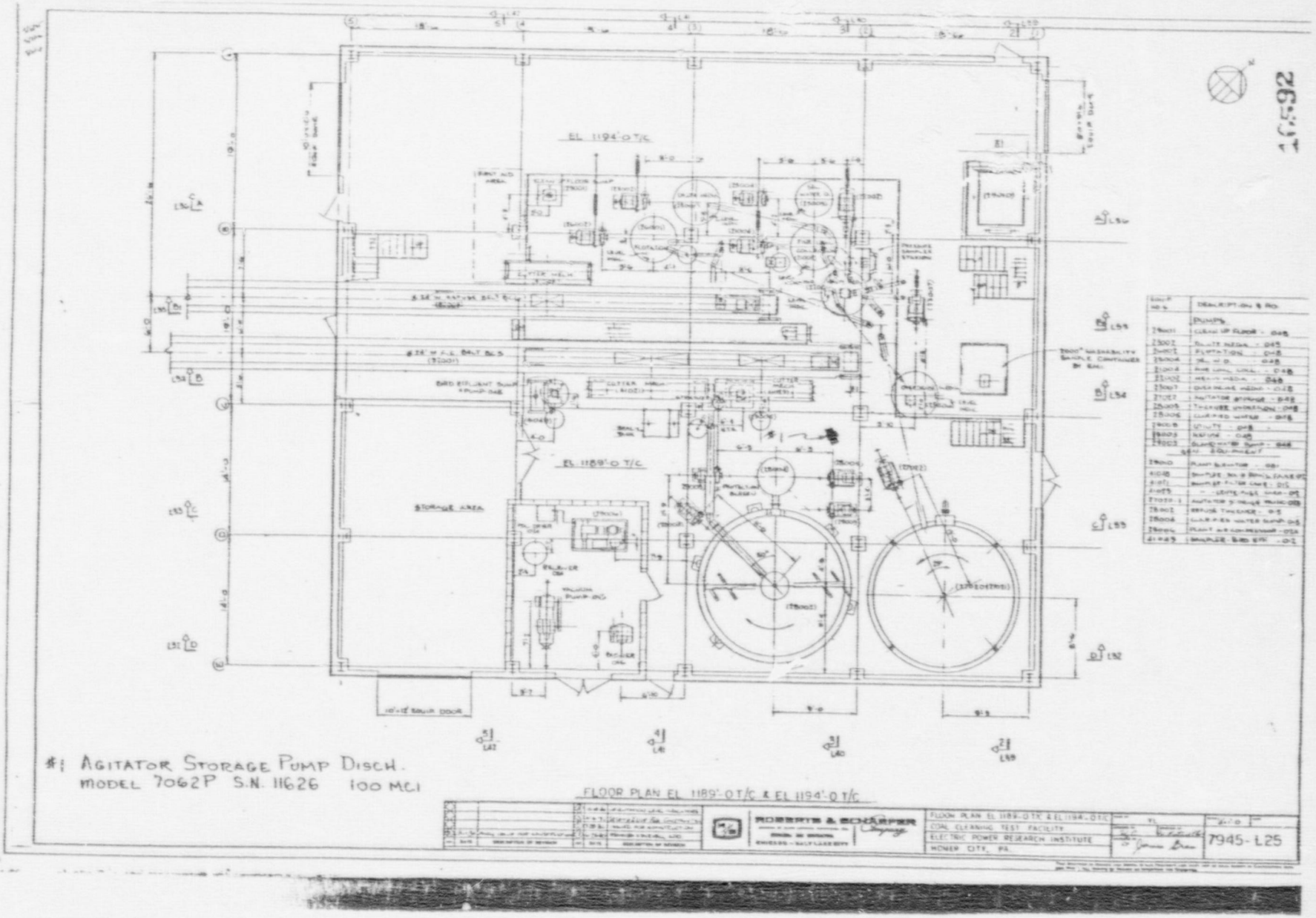
No Additional personnel monitoring divices need be utilized due to the presence of these gauging devices. The source holder(s) are designed such that radiation levels will be less than 5 Mr/Hr. One foot from any accessible surface at the maximum source loading (100 millicures) with the device in the OFF position. When these devices are installed in their designed configuration on the pipes and the shutter(s) opened, the radiation levels will still be less than 5 Mr/Hr. one foot from any accessible surface. It is not likely, when consideration is given to the totally enclosed radiation beam and to the precautions given in Item #13, that any Individual will receive a radiation exposure in excess of .125 rem per calendar quarter.

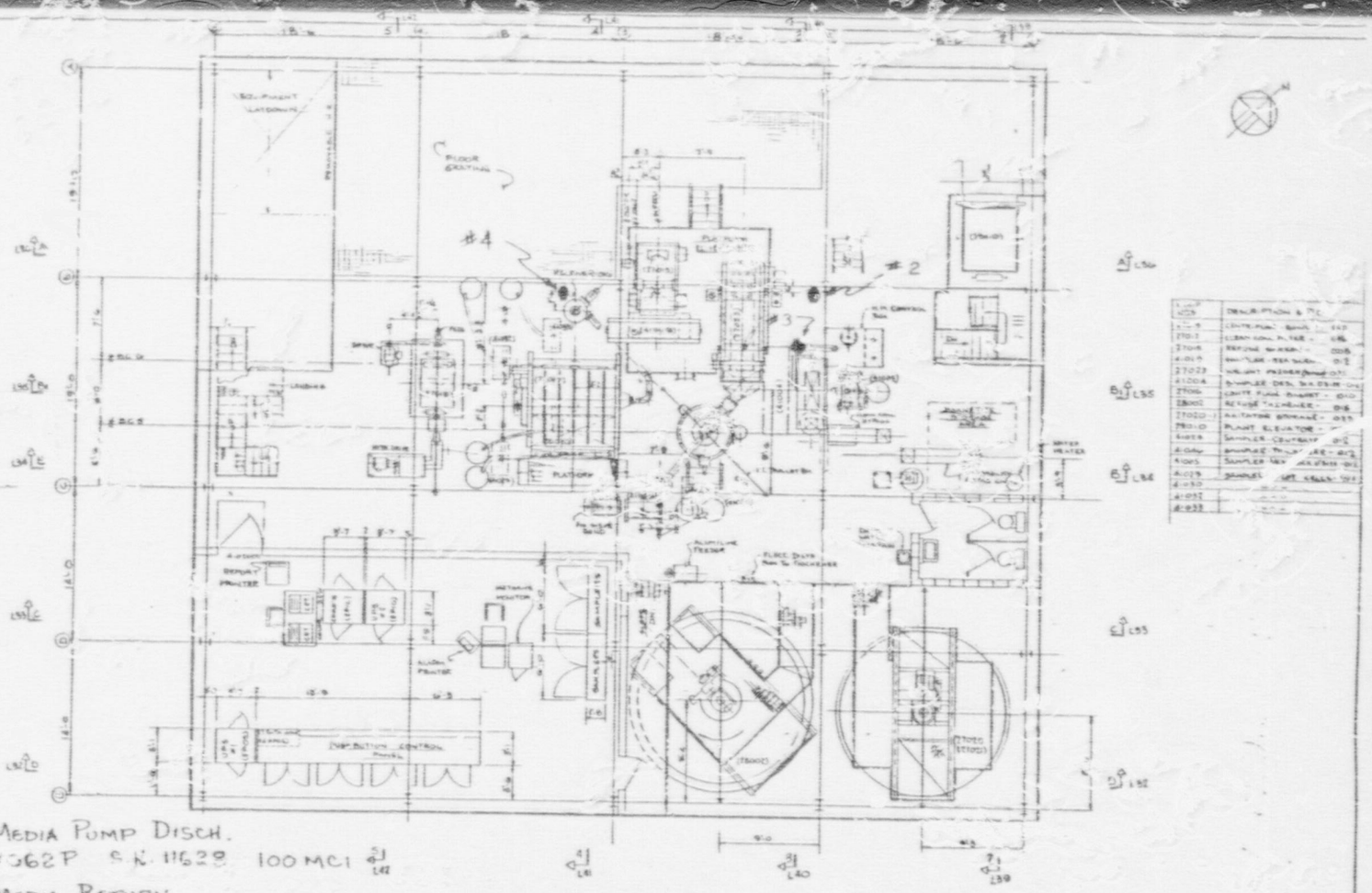
ITEM #13

These devices are to be used to measure the specific gravity of coal/water slurry and magnetite flowing in a pipe.

There are no severe environmental condition that can affect the integrity of the source and shielding. All enviromental factors have been presented to the manufacturer for evaluation prior to specifying these devices.

Included are drawings of the physical locations of the gauges.


EL 1194'-0 T/C
EL 1189'-0 T/C
STORAGE AREA
#1 AGITATOR STORAGE PUMP DISCH.
MODEL 7062P S.N. 11626 100 MCI
FLOOR PLAN EL 1189'-0 T/C & EL 1194'-0 T/C
ROBERTS & SCHAEFER
FLOOR PLAN EL 1189'-0 T/C & EL 1194'-0 T/C
COAL CLEANING TEST FACILITY
ELECTRIC POWER RESEARCH INSTITUTE
HOMER CITY, PA.
7945-L25

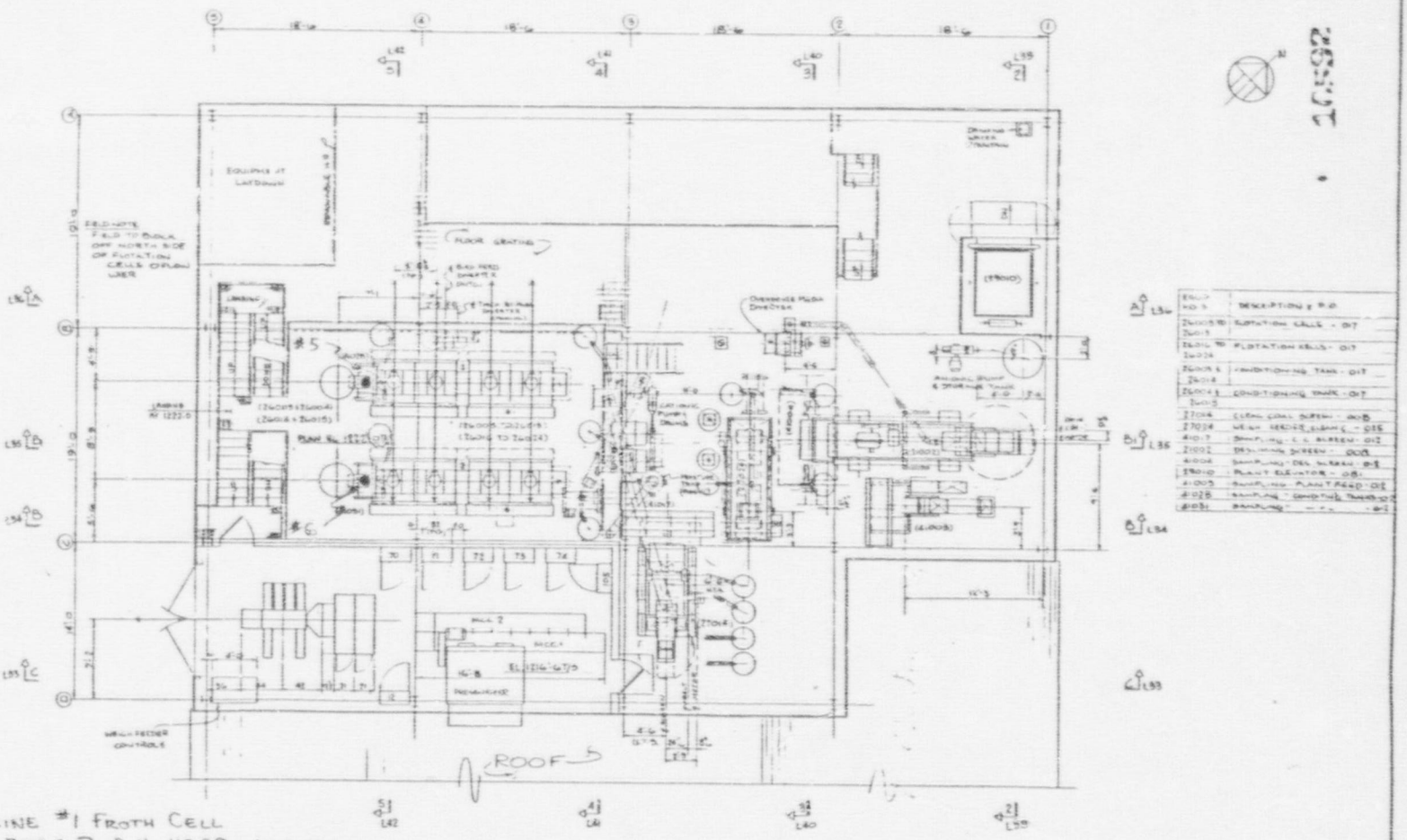


#2 HEAVY MEDIA PUMP DISCH.
MODEL 7062P S.N. 11628 100 MCI

#3 HEAVY MEDIA RETURN
MODEL 7062P S.N. 11627 100 MCI

#4 FLOTATION PUMP DISCH.
MODEL 7062P S.N. 11631 100MCI

FLOOR PLAN EL 1204'-0 T/S



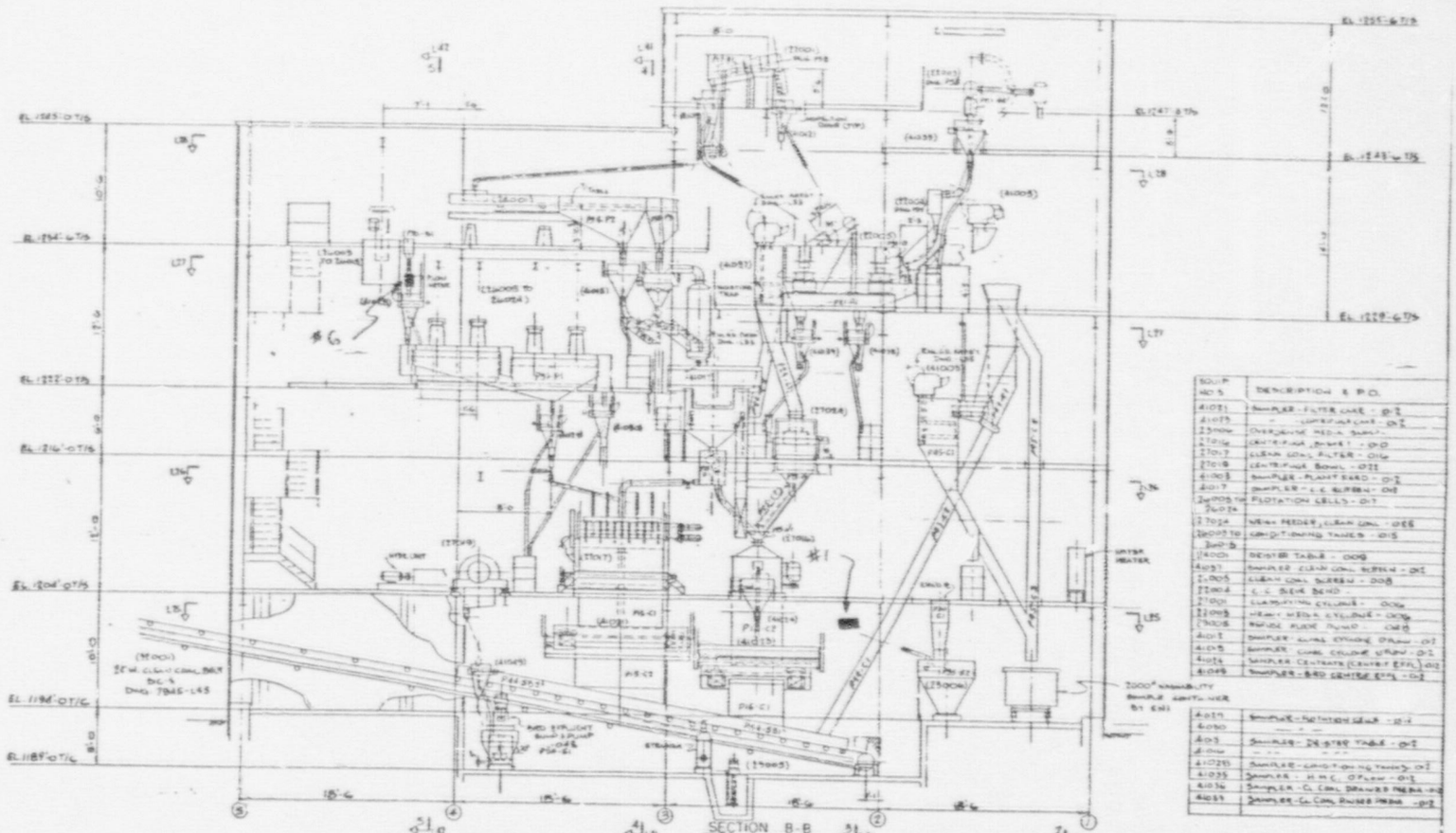
#5 Feed Line #1 Froth Cell
Model 7062 P S.N. 11629 100 MC1

#6 Feed Line #2 Froth Cell
Model 7062 P S.N. 11630 100 MC1

FLOOR PLAN EL 1216'-0 T/S

#1 AGITATOR STORAGE PUMP DISCHARGE
MODEL 7062 P S.N. 11626 100 MCI

#6 FEED LINE #2 FROTH CELL
MODEL 7062 P S.N. 11630 100 MCI



EQUIP NO'S	DESCRIPTION & P.O.
41031	SAMPLER - FILTER CAKE - 012
41073	" - CONCENTRATE LINE - 012
23004	OVERDRIVE MEDIA SUMP -
21016	CENTRIFUGE FEED - 010
27017	CLEAN COAL FILTER - 016
27018	CENTRIFUGE BOWL - 022
41003	SAMPLER - PLANT FEED - 012
41017	SAMPLER - C.C. SCREEN - 012
24005 TO 24024	FLOTATION CELLS - 017
27024	MEDIA FEEDER, CLEAN COAL - 022
24007 TO 24008	CONDITIONING TANKS - 015
24009	
24001	DEWATER TABLE - 009
41037	SAMPLER CLEAN COAL SCREEN - 012
27005	CLEAN COAL SCREEN - 008
23004	C.C. SCREEN SUMP -
27001	CLASSIFYING CYCLONE - 006
27008	MEDIA MEDIA CYCLONE - 009
27008	REFUSE FLUSH PUMP - 009
41011	SAMPLER - MAIN EFFLUENT STREAM - 012
41015	SAMPLER - CLEAN COAL CYCLONE U/FLOW - 012
41016	SAMPLER - CLEAN COAL CYCLONE O/FLOW - 012
41049	SAMPLER - MIDDLINGS (CENTRIFUGE EFFL.) - 012
41048	SAMPLER - MIDDLINGS CENTRIFUGE EFFL. - 012

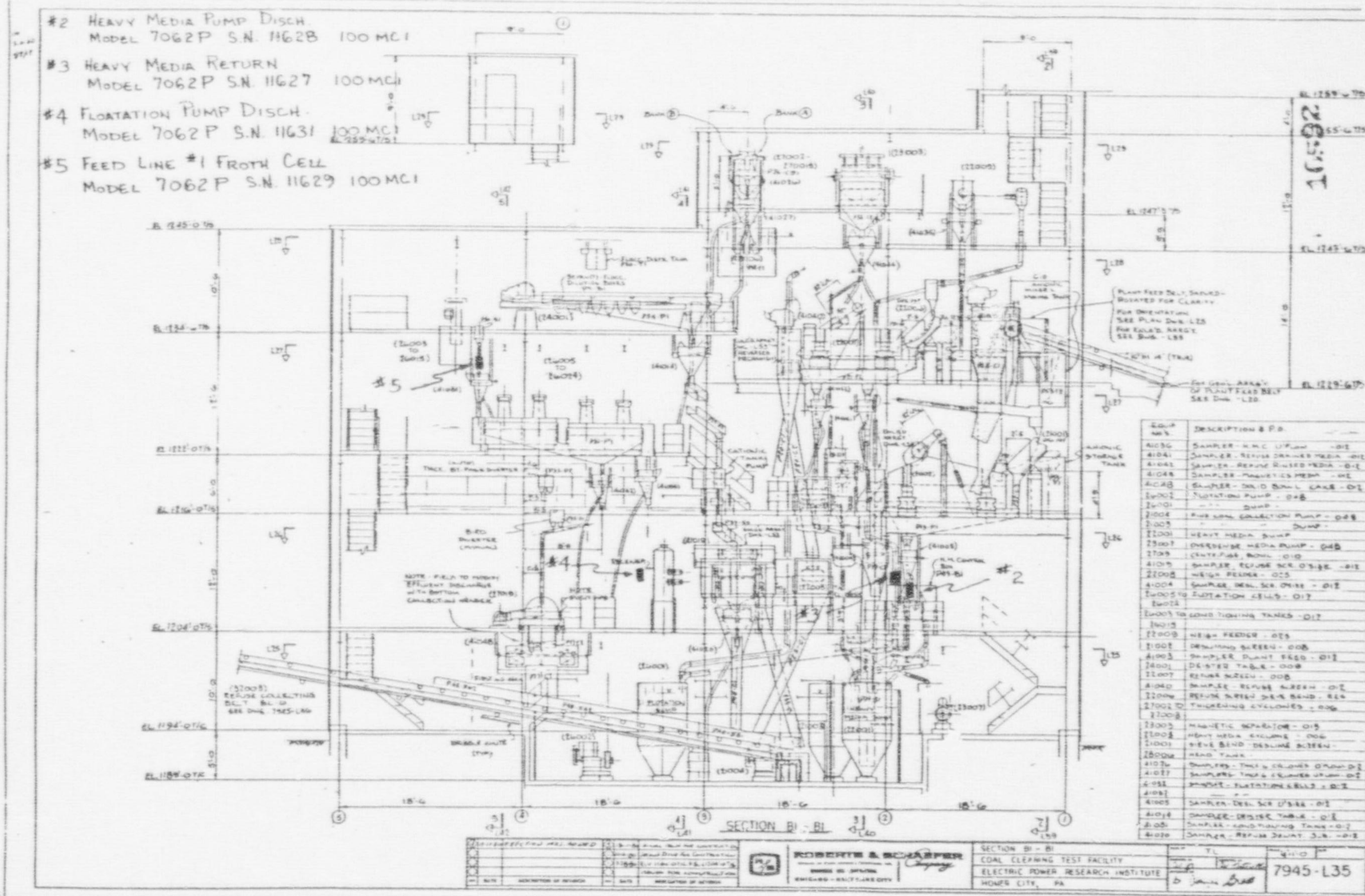
41019	SAMPLER - RECYCLE WATER - 012
41050	" - " - "
41013	SAMPLER - DEWATER TABLE - 012
41014	" - " - "
41028	SAMPLER - CONDITIONING TANKS - 012
41035	SAMPLER - H.M.C. OFLOW - 012
41036	SAMPLER - C. COAL DRAINED MEDIA - 012
41039	SAMPLER - C. COAL RINSED MEDIA - 012

3000# CAPACITY BRIDGE CRANE W/ 5 TON HOIST BY ENG.

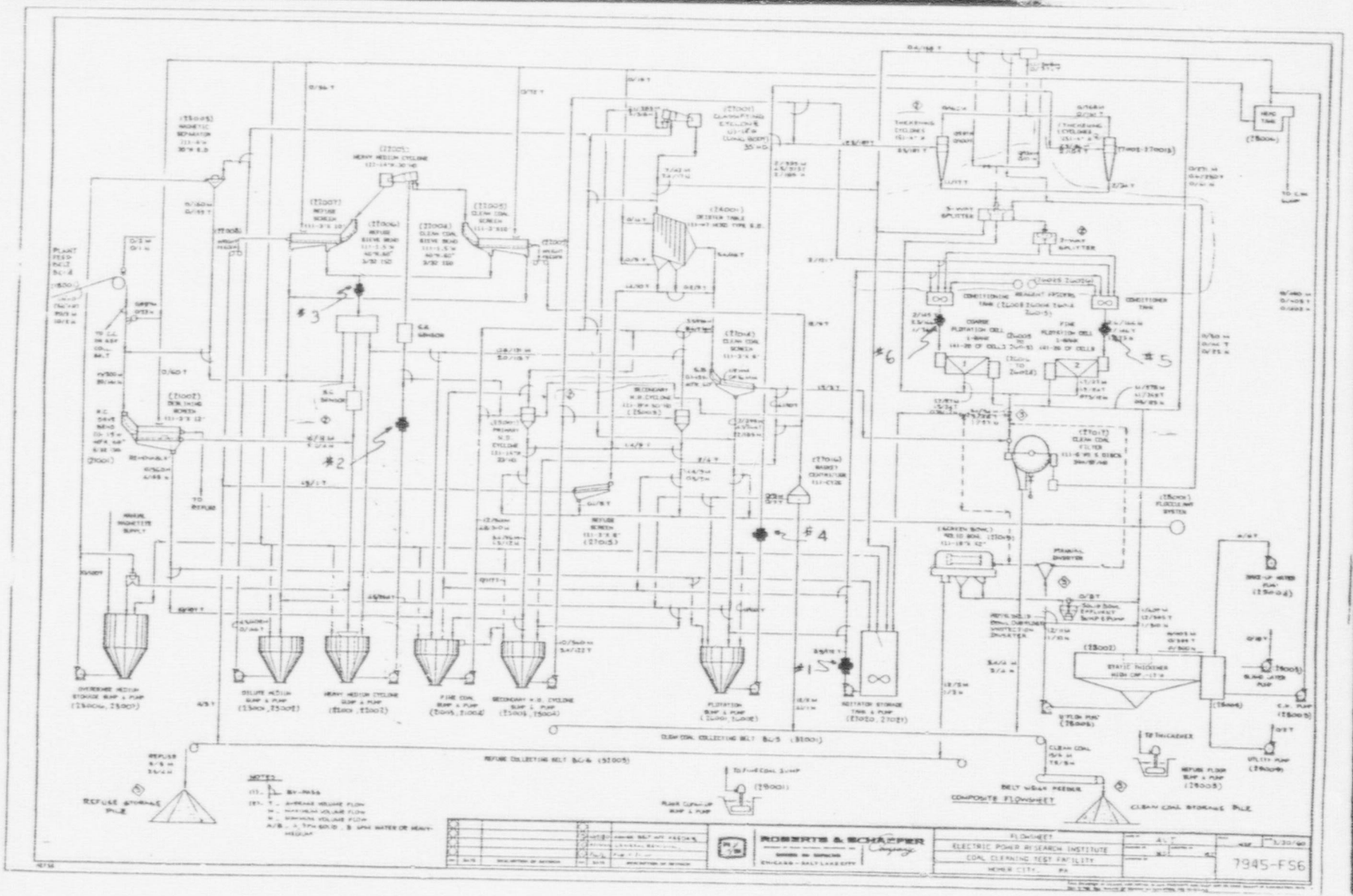
ROBERTS & SCHAEFER Company
CHICAGO - SALT LAKE CITY

SECTION B-B
COAL CLEANING TEST FACILITY
ELECTRIC POWER RESEARCH INSTITUTE
HOMER CITY, PA.

7945-L34



#2 HEAVY MEDIA PUMP DISCH.
MODEL 7062P S.N. 11628 100 MCI
#3 HEAVY MEDIA RETURN
MODEL 7062P S.N. 11627 100 MCI
#4 FLOATATION PUMP DISCH.
MODEL 7062P S.N. 11631 100 MCI
#5 FEED LINE #1 FROTH CELL
MODEL 7062P S.N. 11629 100 MCI
#5
#4
#3
#2
SECTION B1 - B1
ROBERTS & SCHAEFER Company
SECTION B1 - B1
COAL CLEANING TEST FACILITY
ELECTRIC POWER RESEARCH INSTITUTE
HOMER CITY, PA
7945-L35


#1
#2
#3
#4
#5
#6
REFUSE COLLECTION BELT B/G-6 (S1005)
CLEAN COAL COLLECTING BELT B/G-5 (S1001)
COMPOSITE FLOWSHEET
REFUSE STORAGE PILE
CLEAN COAL STORAGE PILE
ROBERTS & SCHAEFER
FLOWSHEET
ELECTRIC POWER RESEARCH INSTITUTE
COAL CLEANING TEST FACILITY
7945-FS6

ITEM #14

No waste disposal is involved. In the event that the gauge is damaged or its use discontinued, we shall notify Kay-Ray for removal and return the gauge for repair, or disposal of the source material.

10592

ITEM #15

Section A

Kaiser Engineers of PA., Inc. - Electric Power Power Research Institute - Coal Cleaning Test Facility, Mr. N. Hoffman and Mr. A. Materkowski, Instrumentation Technicians will conduct servicing operations involving installations , relocations, and removal of the Kay-Ray model 7062P Source Holders. Replacement and disposal or such licensed material is to be performed by Kay-Ray, Inc., personnel.

Section B

Access of By-Product material shall be in accordance with guidelines in Item #7, Section D.

Section C

Nicholas Hoffman and Anthony T. Materkowski shall be responsible for lockout procedure as stated in Item 7, Section D.

Section D

Leak testing of sources shall be performed using Kay-Ray, Inc., Sealed Source wipe test kit Model A. The wipe test kit shall than be returned to Kay-Ray, Inc. for Analysis. Leak testing shall be for a period not to exceed 3 years. Item #7, Section C will also provide further detail of leak testing.

Industrial Device Installation

"Installation" means the placement of, or supervising the placement of, the source containing components of a measurement system in an operable use condition. The installation starts with the shipping containers. Each separate placement or relocation is to be construed as a new installation.

Installation of industrial devices may be conducted only by those persons specifically licensed to perform this work. The installer must be equipped with as appropriate survey meter for the type of source utilized, a source to verify the meter operability and accuracy, calibrated leak test standard, and must be physically present at the site during the entire operation.

1. Survey the shipping box or crate at the storage location to insure that the radiation levels are the same as indicated by the shipping labels. If you find significant differences (e.g., +50%), remove any customer personnel from the immediate area and suspect shipping damage. If you are going to need any equipment to move the head for examination, make sure it i available before proceeding. If it is going to be necessary to work in areas with radiation levels in excess of 100 mrem/h, control the area physically and call Kay-Ray, Inc. before proceeding.

2. Remove the outer cover of the box or shipping crate but do not remove the unit from the base skid. Visibly inspect the unit for transportation damage to the shutter assembly, locking mechanism and correctness of labeling. Verify by radiation survey that the shutter is fully closed.

3. If visible damage is evident, the unit should be leak tested for contamination. Damage or any degree of contamination precludes installation and Kay Ray should be notified immediately. Following this inspection, the device may be transported to job location and mounted.

4. A radiation survey will be made by the installer in accordance with the appropriate survey pattern sheet and the original filed as a permanent record. Generally, all radiation levels measured around an installed device must be less than 5 mR/h one foot from any accessible surface. If this is not the case, evaluate the installation for additional shielding needs and post and restrict the area.

5. The installer will conduct a leak test and complete the appropriate leak test certificate.

Leak Test Procedure Sealed Source Wipe Test Kit - Model "A"

This is designed for use by service people in the field and individuals who have received specific hands-on-training in its application. The gauge should not be dismantled or disassembled in order to leak test. Testing of the external seams, flanges and end plate is adequate.

1. Position the shutter actuator to the closed position. In the event that the shutter actuator is frozen, or appears damaged, notify Kay-Ray, Inc. - 516 West Campus Drive, Arlington Heights, Ill. 60004

2. Refer to "Calculations for Leak Testing" before proceeding. Remove the end cap from the end window of the G.M. Survey Meter, Model 2652, or its equivalent, and with the use of the appropriate certified standard source, calibrate the unit on the proper scale. Insure that the most active side of the source faces the meter (the labeled side).

3. Obtained as many cotton-tipped applicators as indicated on the applicable drawing and slightly moisten with detergent and water mixture from leak test kit.

4. With the shutter closed, wipe the area of the source housing assembly at the locations designated on the appropriate drawings (care should be taken not to touch the Q-tips with the fingers following wiping operation.)

5. Carefully place the swab end of each Q-tip in exactly the same position as the standard source and read the results. The degree of removable contamination may be readily evaluated by the method referenced above. The highest reading obtained should be used in making the calculation.

6. A leak test certificate should be completed and filed as a permanent record of the leak test. Amounts of radioactivity found should be recorded in microcuries (uCi). However, if no radioactivity is detected it is preferable to record the results as (Less Than) the minimum detectable amount as opposed to zero. (e.g., 0.003 Ci).

7. Send the wipes to a Kay-Ray for additional analysis.

Calculations for Leak Testing

The following technique can be used to assess the presence of small amounts of radioactive material necessary during leak testing of gauging devices, using a Texas Nuclear Model 2652 Portable Survey Meter that has the necessary sensitivity to detect 0.005 Ci or less of all gamma emitting isotopes and beta emitting isotopes with Emax greater than 80 KeV.

1. Turn on unit; check battery, verify unit operations an calibration using the supplied check source.

2. Place the appropriate certified standard source disk on a clean flat surface and position the open end of the G.M. Tube over it and as close a possible without damaging the thin window. No fixture is necessary if the source is simply centered under the window. Set the range selector to give an appriximate mid-scale reading. Note and record the observed readings; M_1 (in either c/m or mR/h).

3. Remove the standard source away a few feet. With the G.M. probe in the same position, note and record the background (Bkg.) radiation in the same units as M_1.

4. Each swab end of the cotton-tipped applicators used in wiping the gauge is in turn placed in the same geometrical position as the above-noted standard. Note and record the observed meter reading, M_2. M_1 and M_2 must be taken in the same units.

5. To determine the degree of contamination in microcuries, a simple expression of proportionality is used:

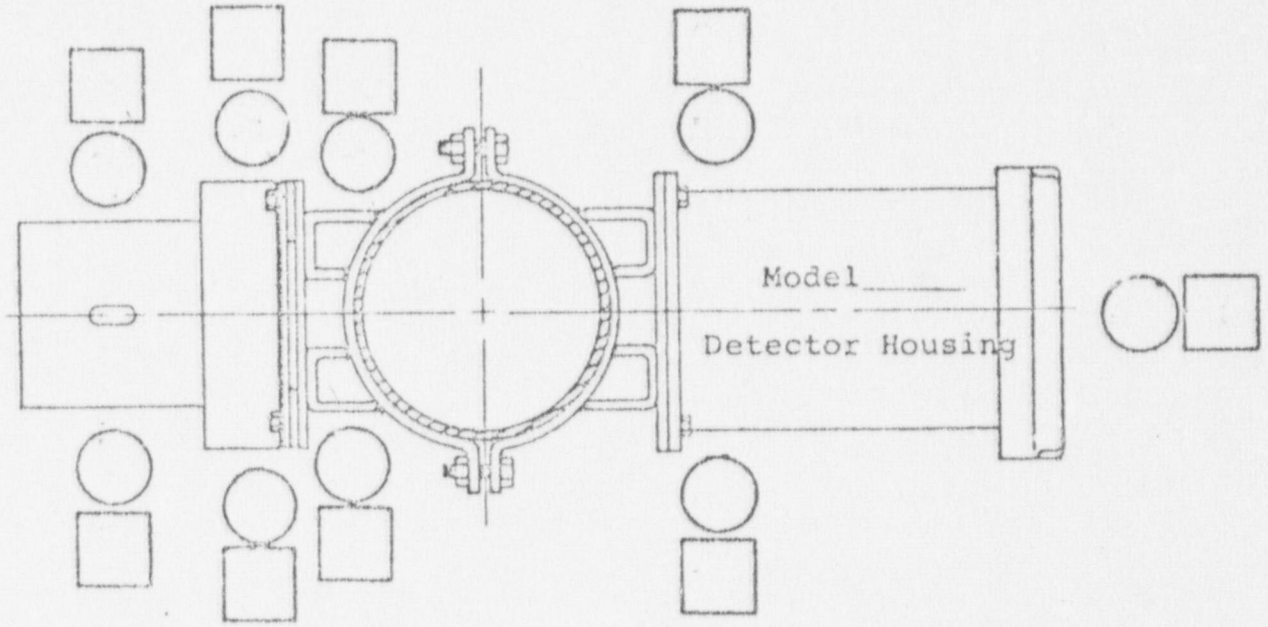
KAY-RAY INC.
INDUSTRIAL PROCESS CONTROL EQUIPMENT
516 West Campus Drive Arlington Heights, Illinois 60004
Phone (312)259-5610 Cable Address KAYRAY Telex 281-095

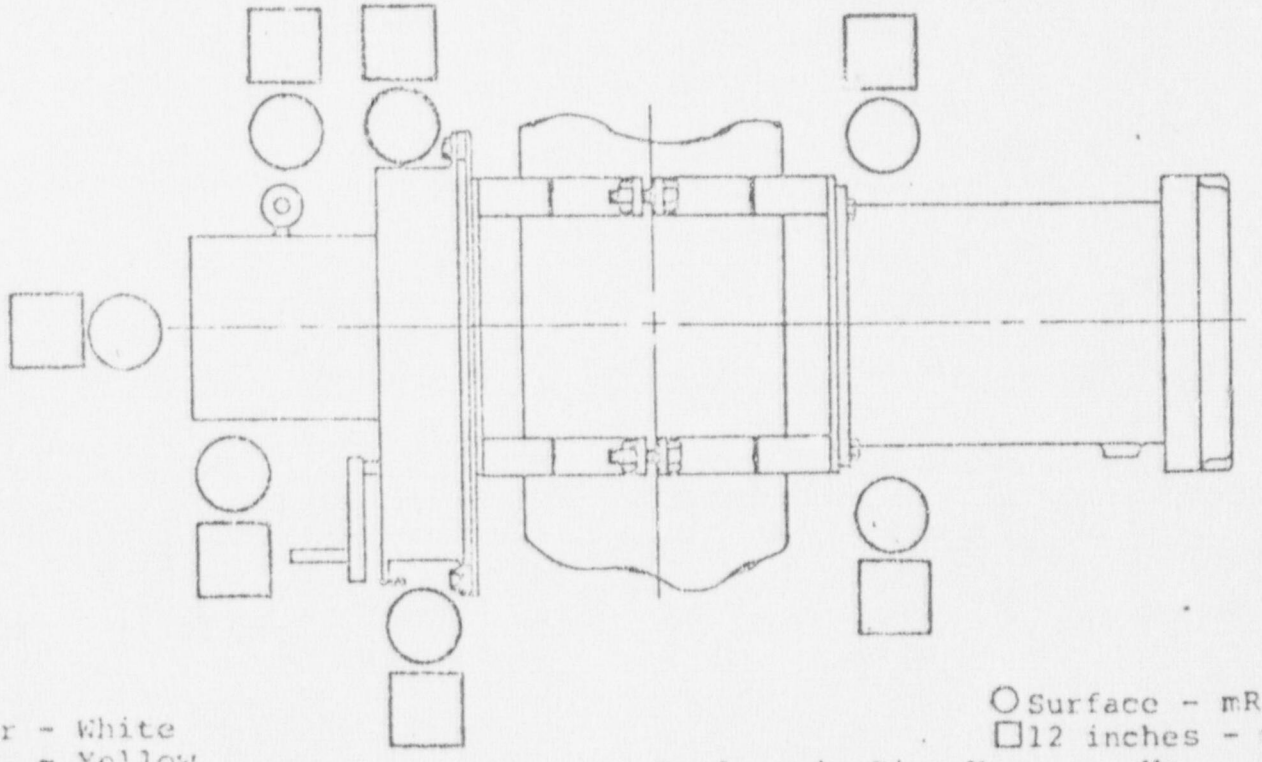
[redacted]T-UP AND RADIATION SURVEY
DENSITY

User _____ Kay-Ray No. _____

Location _____ Date _____

Source in measure unless stated otherwise. Serial No. _____





Customer - White
Engr. - Yellow
FES - Pink
AE - Gold

○ Surface - mR/hr
□ 12 inches - mR/hr

Product in Pipe Yes ____ No ____

Performed by _____

ITEM #16

Formal Training

KAY-RAY® INC.

INDUSTRIAL PROCESS CONTROL EQUIPMENT

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

CERTIFICATION OF TRAINING

Name: Nicholas Hoffman

Company: Kaiser Engineers of Pa.

The above named individual has successfully completed the INSTALLATION AND NUCLEAR RADIATION SAFETY course offered by Kay-Ray, Inc., consisting of the following curriculum:

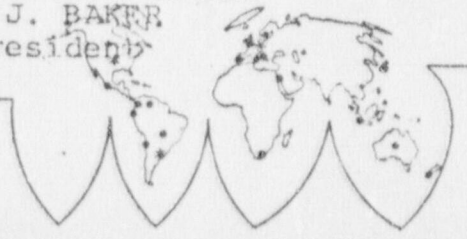
- Principles and practices of radiation protection
- Monitoring radiation levels using Geiger counters
- Radiation exposure limits
- Radiation areas defined
- Calculating radiation levels from known gamma source size and distances
- Calculating dose rates of typical installation
- Leak testing Kay-Ray source housings
- Safety practices required for the use and handling of Kay-Ray source housings
- Installation of source housings demonstration and Hands-On installation

This training course consists of formal discussions, practical applications, leak testing, specific installation discussions, and hands-on installation completion with related forms for record keeping.

Certified on equipment
model 7062,7062P & 7063, & 7063P

Instructor: Rich Phelan
Date: November 13, 1981

ROBERT J. BAKER
Vice President



TRAINING CERTIFICATE

This certifies that

Nicholas Hoffman

has successfully completed factory training in:

Installation and Nuclear Radiation Safety

In accordance with this specific program
this Certificate is issued:

November 13, 1981

KAY-RAY INC.

INDUSTRIAL PROCESS CONTROL EQUIPMENT

SEAL

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

LETTER OF CERTIFICATION

This is to certify that

Nicholas Hoffman
Iselin Preparation Company

has attended and successfully completed a course of instruction, conducted under the auspices of Texas Nuclear Division and described in the attached Course Agenda. The course covers fundamentals of radiation, units of dose and quality of radiation fields, hazards of radiation exposure, detection devices, regulatory controls, industrial devices and specific training on installation and leak testing of Texas Nuclear density, level and weigh gauges.

The said course of instruction, together with prior experience, is structured to qualify persons who complete it to understand and safely perform various operations involving nuclear devices including the installation, relocation and leak testing of such equipment. The operations are to be done in accordance with the rules and regulations of the United States Nuclear Regulatory Commission and/or "Agreement States", and are in all respects subject to such rules and regulations.

This letter cannot be used in lieu of a specific license from or other sanction by an appropriate regulatory agency.

TEXAS NUCLEAR DIVISION
Ramsey Engineering Company

W. G. Hendrick
Health Physicist

10:92

RECORD OF PERFORMANCE

Nicholas Hoffman
Iselin Preparation Company

Quiz I	Quiz II	Exam	Final Grade
100	100	78	82

Class Average - 86.3%

Certificate Of Training

This is to certify that

NICHOLAS HOFFMAN

Has Successfully Completed a Radiation Safety Training Course sponsored by Texas Nuclear Division.

Issued 25th Day Of January 19 80

Health Physicist

President

Texas Nuclear
Division

Ramsey Engineering Company

RADIATION SAFETY TRAINING COURSE

AGENDA

First Day's Session

8:30 - 9:30	Introduction 1. Contents and Purpose of Course 2. Agenda Review of Preparation Material
9:30 -10:00	Atomic Structure 1. Nomenclature 2. Periodic Table
10:00 -10:15	Coffee Break
10:15 -12:00	Radioactive Materials 1. Isotopes 2. Radioactivity 3. Decay 4. Half-Life
12:00 - 1:00	Lunch
1:00 - 3:00	Radiation Interaction with Matter 1. Ionizing Radiation a. electromagnetic b. charged particle c. neutron 2. Specific Ionization
3:00 - 3:15	Coffee Break
3:15 - 4:30	Radiation Dosimetry 1. Definitions and Units of Dose 2. Quality Factor
5:30 - 7:00	HAPPY HOUR

Homework Assignment -

Read over work covered.
Study new definitions and concepts.

Second Day's Session

8:30 - 9:00	Question and Answer Session
9:00 -10:00	Radiation Dosimetry (Continued) 3. Gamma Exposure Rate 4. Neutron Exposure Rate
10:00 -10:15	Coffee Break
10:15 -12:00	Biological Effects 1. Dose Limits 2. Radiation Protection Guides
12:00 - 1:00	Lunch
1:00 - 3:00	Radiation Detection Detection Instruments 1. Basic Operation 2. Ionization Chambers 3. Geiger-Mueller Instruments 4. Neutron Detectors Personnel Dosimetry
3:00 - 3:15	Coffee Break
3:15 - 4:30	Distance, Time, Shielding 1. Inverse Square Law 2. Half-Value Layer Discussion and Review

Homework Assignment -

Complete Part I of Radiation Safety Manual.
Complete Study Quiz I.
Briefly look over Part II of Manual.

Third Day's Session

8:30 - 9:00	Question and Answer Session
9:00 -10:00	Working Definitions
	Licensing 1. Title 10 Code of Federal Regulations 2. Agreement States 3. Specific License
	Radiation Area and Posting
10:00 -10:15	Coffee Break
10:15 -12:00	Device Installation 1. Requirements 2. Format 3. Responsibility
12:00 - 1:00	Lunch
1:00 - 2:45	Shipping Radioactive Material 1. Definitions 2. Classification 3. Labels
2:45 - 3:00	Coffee Break
3:00 - 3:30	Occupational Safety & Health Act
3:30 - 4:30	Emergency Procedures 1. Guidelines 2. Fire or Explosion 3. Incident Report

Homework Assignment -
Read Part II of Radiation Safety Manual.
Complete Study Quiz II on regulations.
Material Review for Exam.

Fourth Day's Session

8:30 - 9:00	Question and Answer Session
9:00 -10:15	Written Test on Lectures and Homework Assignments
10:15 -10:30	Travel to Texas Nuclear
10:30 -12:30	Laboratory Work at Texas Nuclear Corporation 1. Check-out and briefing on use of portable radiation survey meters. 2. Survey density, level and belt weigh devices. 3. Leak test devices using QT/1S procedure a. count swabs b. prepare leak test certificates
	Class Discussion on Remaining Questions
1:00	ADJOURNMENT

RECORD OF PERFORMANCE

Nicholas Hoffman
Iselin Preparation Company

Quiz I	Quiz II	Exam	Final Grade
100	100	78	82

Class Average - 86.3%

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

January 31, 1980

Nicholas Hoffman
Electrical & Instrumentation Foreman
Iselin Preparation Company
P. O. Box 729
Indiana, Pennsylvania 15701

Dear Mr. Hoffman:

This is notification that you have successfully completed the Radiation Safety Training Course offered in January 1980, by Texas Nuclear.

Enclosed are the following:

Record of Performance
Certification of Training
Letter of Certification
Guide For Specific License Amendment
This form letter suggests what may be said to your regulatory agency to obtain the license amendments necessary to conduct installation, relocation, and leak testing on the listed Texas Nuclear industrial devices.
Approved Procedures and Forms
Copies of these procedures and forms should be sent with your license applications, as necessary, and the originals maintained in your files for future use.

Congratulations on your having completed the Radiation Safety Training Course. If we can be of further assistance to you, do not hesitate to let us know.

Sincerely,

TEXAS NUCLEAR DIVISION
Ramsey Engineering Company

W. G. Hendrick
Health Physicist

WGH/bs

Enclosures

KAY-RAY® INC.

INDUSTRIAL PROCESS CONTROL EQUIPMENT

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

CERTIFICATION OF TRAINING

Name: Anthony T. Materkowski

Company: Kaiser Engineers of Pa.

The above named individual has successfully completed the INSTALLATION AND NUCLEAR RADIATION SAFETY course offered by Kay-Ray, Inc., consisting of the following curriculum:

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- Radiation exposure limits
- Radiation areas defined
- Calculating radiation levels from known gamma source size and distances
- Calculating dose rates of typical installation
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- Safety practices required for the use and handling of Kay-Ray source housings
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This training course consists of formal discussions, practical applications, leak testing, specific installation discussions, and hands-on installation completion with related forms for record keeping.

Certified on equipment
model 7062,7062P & 7063, & 7063P

Instructor: Rich Phelan
Date: November 13, 1981

ROBERT J. BAKER
Vice President

TRAINING CERTIFICATE

This certifies that

Anthony T. Materkowski

has successfully completed factory training in:

Installation and Nuclear Radiation Safety

In accordance with this specific program
this Certificate is issued:

November 13, 1981

KAY-RAY INC.

INDUSTRIAL PROCESS CONTROL EQUIPMENT

ITEM #17

Refer to Item #6.