

MATERIALS LICENSE

Pursuant to the Atomic Energy Act of 1954, as amended, the Energy Reorganization Act of 1974 (Public Law 93-438), and Title 10, Code of Federal Regulations, Chapter I, Parts 30, 31, 32, 33, 34, 35, 36, 39, 40, and 70, and in reliance on statements and representations heretofore made by the licensee, a license is hereby issued authorizing the licensee to receive, acquire, possess, and transfer byproduct, source, and special nuclear material designated below; to use such material for the purpose(s) and at the place(s) designated below; to deliver or transfer such material to persons authorized to receive it in accordance with the regulations of the applicable Part(s). This license shall be deemed to contain the conditions specified in Section 183 of the Atomic Energy Act of 1954, as amended, and is subject to all applicable rules, regulations, and orders of the Nuclear Regulatory Commission now or hereafter in effect and to any conditions specified below.

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Licensee		3. License Number 29-30278-01
1. Tosco Refining Company A Division of Tosco Corporation		4. Expiration Date August 31, 2001
2. 1400 Park Avenue Linden, New Jersey 07036		5. Docket or Reference No. 030-34071
6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License
A. Cesium 137	A. Sealed sources	A. See Item 9.A., not to exceed 10 curies total
B. Americium 241	B. Sealed neutron source (Gammatron Inc. Model No. AN-HP)	B. 200 millicuries
9. Authorized use		
A. For possession and use in Kay Ray, Accuray, Ohmart, LFE, Berthold System, Inc., Data Measurement Corp., Flow Measurement Systems, Ronan Engineering or Texas Nuclear devices which have been evaluated and approved for licensing purposes and authorized for distribution under a license issued by the U.S. Nuclear Regulatory Commission or an Agreement State.		
B. Storage only of Fisher Controls LLD 2220 neutron backscatter device.		

CONDITIONS

10. A. Licensed material may be used only at the licensee's facilities located at 4101 Post Road, Trainer, Pennsylvania.
- B. The licensee may not possess and use materials authorized in Items 6, 7, and 8, until: (1) the licensee has constructed the facilities and obtained the equipment described in the application and supporting documentation; and (2) the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406 has been notified in writing that activities authorized by the license will be initiated.

In accordance with the requirements set forth in 10 CFR 30.36(b), 40.42(b), and 70.38(b), the licensee shall promptly notify the Nuclear Regulatory Commission, in writing, of a decision not to complete the facility, acquire equipment, or possess and use authorized material.

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**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

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11. A. Licensed material shall be used by, or under the supervision of, Bill Carnall, Michael J. Mogar, Michael Racine, or Joseph Schmidt, Jr..
B. The Radiation Safety Officer for this license is Joseph Schmidt, Jr..
12. A. Sealed sources and detector cells containing licensed material shall be tested for leakage and/or contamination at intervals not to exceed six months or at such other intervals as are specified by the certificate of registration referred to in 10 CFR 32.210, not to exceed three years.
B. Notwithstanding Paragraph A of this Condition, sealed sources designed to emit alpha particles shall be tested for leakage and/or contamination at intervals not to exceed three months.
C. In the absence of a certificate from a transferor indicating that a leak test has been made within six months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
D. Each sealed source fabricated by the licensee shall be inspected and tested for construction defects, leakage, and contamination prior to any use or transfer as a sealed source.
E. Sealed sources and detector cells need not be leak tested if:
 - (i) they contain only hydrogen-3; or
 - (ii) they contain only a radioactive gas; or
 - (iii) the half-life of the isotope is 30 days or less; or
 - (iv) they contain not more than 100 microcuries of beta and/or gamma emitting material or not more than 10 microcuries of alpha emitting material; or
 - (v) they are not designed to emit alpha particles, are in storage, and are not being used. However, when they are removed from storage for use or transfer to another person, and have not been tested within the required leak test interval, they shall be tested before use or transfer. No sealed source or detector cell shall be stored for a period of more than 10 years without being tested for leakage and/or contamination.
F. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. If the test reveals the presence of 0.005 microcurie or more of removable contamination, a report shall be filed with the U.S. Nuclear Regulatory Commission and the source or detector cell shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within five days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406. The report shall specify the source or detector cell involved, the test results, and corrective action taken.

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(License Condition 12. continued)

- G. The licensee is authorized to collect leak test samples for analysis by Ohmart Corporation. Alternatively, tests for leakage and/or contamination may be performed by persons specifically licensed by the Commission or an Agreement State to perform such services.
13. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
14. The licensee shall conduct a physical inventory every six months to account for all sealed sources and devices containing licensed material received and possessed under the license.
15. The licensee shall not acquire licensed material in a sealed source or device unless the source or device has been registered with the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.210 or equivalent regulations of an Agreement State.
16. Each gauge shall be tested for the proper operation of the on-off mechanism and indicator, if any, at no longer than six-month intervals or at such longer intervals as specified by the manufacturer and approved by the Commission or an Agreement State in a registration certificate referred to in 10 CFR 32.210.
17. Installation, initial radiation survey, relocation, removal from service, maintenance, and repair of devices containing sealed sources shall be performed by persons specifically licensed by the Commission or an Agreement State to perform such services. Installation, replacement, and disposal of sealed sources shall be performed only by persons specifically licensed by the Commission or an Agreement State to perform such services.
18. Prior to initial use and after installation, relocation, dismantling, alignment, or any other activity involving the source or removal of the shielding, the licensee shall assure that a radiological survey is performed to determine radiation levels in accessible areas around, above, and below the device with the shutter open. This survey shall be performed only by persons authorized to perform such services by the Commission or an Agreement State.
19. The licensee shall operate each device containing licensed material within the manufacturer's specified temperature and environmental limits such that the shielding and shutter mechanism of the source holder are not compromised.
20. The licensee shall assure that the shutter mechanism of each device is locked in the closed position during periods when a portion of an individual's body may be subject to the direct radiation beam. The licensee shall review and modify as appropriate its "lock-out" procedures whenever a new device is obtained to incorporate the device manufacturer's recommendations.
21. Each portable nuclear gauge shall have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position. The gauge or its container must be locked when in transport, storage or when not under the direct surveillance of an authorized user.

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22. The licensee is authorized to transport licensed material in accordance with the provisions of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material."
23. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents, including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations, and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Application dated March 29, 1996
 - B. Letter dated May 15, 1996
 - C. Letter dated August 8, 1996

AUG 19 1996

Date _____

For the U.S. Nuclear Regulatory Commission

Original Signed By:

Kathleen Dolce

By

Division of Nuclear Materials Safety
Region I
King of Prussia, Pennsylvania 19406

AUG 19 1996

License No. 29-30278-01
Docket No. 030-34071
Control No. 122881

John C. Ponticello, Operations Manager
Tosco Refining Company
A Division of Tosco Corporation
1400 Park Avenue
Linden, New Jersey 07036

Dear Mr. Ponticello:

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify the U.S. Nuclear Regulatory Commission, Region I Office, Licensing Assistance Team, (610) 337-5093 or 5239, so that we can provide appropriate corrections and answers.

Please be advised that your license expires at the end of the day, in the month, and year stated in the license. Until your license is terminated, you must conduct your program involving byproduct materials in accordance with the conditions of your NRC license, representations made in your license application, and NRC regulations. In particular, note that you must:

1. Operate in accordance with NRC regulations 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Not possess and use materials authorized in Items 6, 7, and 8, on the license until:
 - a. you have constructed the facilities and obtained the equipment described in the license application and supporting documentation; and
 - b. you have notified the U.S. Nuclear Regulatory Commission, Region I, ATTN: Chief, Nuclear Materials Safety Branch, 475 Allendale Road, King of Prussia, Pennsylvania 19406 in writing, that activities authorized by the license will be initiated.
3. Notify NRC, in writing, within 30 days:
 - a. when an authorized user or Radiation Safety Officer, permanently discontinues performance of duties under the license or has a name change; or

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- b. when the mailing address on the license changes (no fee is required if the location of byproduct material remains the same).
- 4. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license:
 - a. when you decide to terminate all activities involving materials authorized under the license; or
 - b. if you decide not to complete the facility, acquire equipment, or possess and use authorized material.
- 5. Request and obtain a license amendment before you:
 - a. permit anyone to work as an authorized user under the license;
 - b. change Radiation Safety Officer;
 - c. order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
 - d. add or change the areas of use, or address or addresses of use identified in the license application or on the license; or
 - e. change ownership of your organization.
- 6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. A license will not normally be renewed, except on a case-by-case basis, in instances where licensed material has never been possessed or used.

In addition, please note that NRC Form 313 requires the applicant, by his/her signature, to verify that the applicant understands that all statements contained in the application are true and correct to the best of the applicant's knowledge. The signatory for the application should be the licensee or a certifying official of the licensee rather than the Radiation Safety Officer or a consultant.

You will be periodically inspected by the NRC. Failure to conduct your program in accordance with NRC regulations, license conditions, and representations made in your license application and supplemental correspondence with NRC will result in enforcement action against you. This could include issuance of a notice of violation, or imposition of a civil penalty, or an order suspending, modifying or revoking your license as specified in the "General Statement of Policy and Procedure for NRC Enforcement Actions," (Enforcement Policy), NUREG 1600.

J. C. Ponticello
Tosco Refining Company

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Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken when dealing with licensees who do not achieve the necessary meticulous attention to detail and the high standard of compliance which NRC expects of its licensees.

Thank you for your cooperation.

Sincerely,

Original Signed By:
Kathleen Dolce

Kathleen Dolce
Division of Nuclear Materials Safety

License No. 29-30278-01
Docket No. 030-34071
Control No. 122881

Enclosures:

1. License No. 29-30278-01
2. 10 CFR Parts 2, 19, 20, 21, 30, and 170
3. NRC Forms 3 and 313

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Tosco Refining Company
A Division of Tosco Corporation
1400 Park Avenue
Linden, New Jersey 07036

MS-16
P-3

August 8, 1996

Docket No. 030-34071
Control No. 122881

Licensing Assistant Section
Nuclear Materials Safety Branch
U. S. Nuclear Regulatory Commission Region 1
475 Allendale Rd.
King of Prussia, PA 19406-1415

Dear Sir:

In response to your July 19, 1996 follow-up letter, we are providing the additional information below.

Our radiation protection program includes a commitment to an annual audit to assure that equipment containing radioactive sources is properly used by trained individuals, that the sources are inspected and/or leak tested on a frequency consistent with NRC requirements, that film badges monitoring and exposure records are proper, that radiation survey meters are properly calibrated and that emergency response plans are current. The results of the audit will be documented along with a corrective actions plan for management review and implementation. The audit results will be communicated to site personnel and shared with other Tosco locations who maintain an NRC license.

The Americium-241 sealed source (Gammatron Inc source Model No. AN-HP) in the Fisher Controls LLD 2220 neutron backscatter device is stored in a secured safe which is located in the Fire Department building inside the refinery. Access to the controls of the safe was transferred to Bruce Iglay at the time of sale, as indicated in the attached correspondence

Yours truly,

John Ponticello
Operations Manager

CFC/db
Attachment

Bayway Refining Company
a subsidiary of Tosco Corporation
1400 Park Avenue
Linden, New Jersey 07036

January 29, 1996

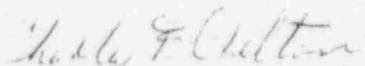
Ms. Mary Wiggins
BP Oil Co.
P. O. Box 428
Marcus Hook, PA 19061

Dear Ms. Wiggins:

I received a copy of your inventory of radioactive source devices which are located at the Marcus Hook refinery in the form of a 11/95 leak test report. The report lists 30 devices of which 27 are identified as fixed level gauges located on equipment. Two portable devices are in the Reliability Instrumental Room and one portable device is located in the Fire House safe.

It is my understanding that the three portable devices will be locked in the safe prior to transfer of ownership of the Marcus Hook facility to Bayway Refining Co. Bruce Iglay has been designated as the Bayway representative who will be responsible for the devices. Please transfer access to the safe and its contents at the time of ownership change to Bruce.

Yours truly,



Charles F. Chelton
Industrial Hygienist

CFC/db

c: Tom Accetta
Don Erdley
Bruce Iglay
John Launchi
Herman Seedorf

JUL 19 1996

Docket No. 030-34071
Control No. 122881

John C. Ponticello, Operations Manager
Tosco Refinery Company
A Division of Tosco Corporation
1400 Park Avenue
Linden, New Jersey 07036

Dear Mr. Ponticello:

This is in reference to your application dated March 29, 1996 and letters dated March 22, 1996 and May 15, 1996 requesting a NRC license. In order to continue our review, we need the following additional information:

1. 10 CFR 20.1101 (c) requires licensees to review their radiation protection program. Submit (1) a description of the scope and extent of the audits, (2) a commitment to conduct audits at intervals not to exceed 12 months and to maintain records of the audits for at least 3 years after the record is made, (3) management's commitment to review the documented results of the audit promptly after the audit's completion, and (4) a commitment to take prompt action to correct deficiencies identified during audits, to inform all personnel (including those at other locations and those working under other licenses) of the deficiencies and the actions management expects its personnel to take to avoid similar deficiencies.
2. BP Oil's NRC license indicates 200 millicuries of americium-241 sealed source (Gammatron Inc. source Model No. AN-HP) in a Fisher Controls LD 2220 neutron backscatter device. Your letter dated May 15, 1996 indicates that this device will remain in storage until it can be transferred to your Linden facility. Indicate where the gauge is stored and the security measures taken to prevent unauthorized access to the gauge.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 122881. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5251.

J. C. Ponticello
Tosco Refining Company

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In order to continue prompt review of your application, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

Sincerely,

ORIGINAL SIGNED BY:

Kathleen Dolce
Division of Nuclear Materials Safety

Docket No. 030-34071
Control No. 122881

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Tosco Refining Company
A Division of Tosco Corporation
1400 Park Avenue
Linden, New Jersey 07036

MS-16
P3

May 15, 1996

Docket No. 030-34071
Control No. 122881

Licensing Assistant Section
Nuclear Materials Safety Branch
U.S. Nuclear Regulatory Commission, Region 1
475 Allendale Rd.
King of Prussia, PA 19406-1415

Dear Sir:

In response to your 4/12/96 follow-up letter, we are providing the additional information below.

- 1) Joseph Schmidt Jr. has been designated as the Radiation Safety Officer. His training was provided by Ohmart, the supplier of our gauges. Documentation of his training was provided with our application.
- 2) The responsibilities of the RSO have been added to our revised safety procedures which are attached.
- 3) The Bayway Refinery in Linden, NJ uses Landauer Inc., 2 Science Rd., Glenview, IL as a source of badges. Badges from Marcus Hook would also be analyzed by Landauer. (NVLAB 100-518-0)
- 4) The attached list is an inventory of the radiation survey meters located at Marcus Hook. The majority of meters were last calibrated just prior to the sale. Applied Health Physics indicated that BP's practice was to recalibrate the instruments every six months as indicated on the instrument labels. Since Marcus Hook is in a shutdown status, the instruments will be calibrated annually as permitted by regulation.
- 5) The radiation survey meters will be recalibrated by Applied Health Physics, Bethel Park, PA (Lic #37-09135-01).
- 6) Radiography is performed by contractors. Page 5 has been removed from our application.
- 7) Page 4 of our procedure has been modified (see attached).

- 8) Page 1 of our procedure has been modified (see attached).
- 9) Our Industrial Hygienist, Charles Chelton, is enrolled in a 40 hour Radiation Safety Officer Course, which will be delivered 5/6/96 by Environmental Training Inc., 1702 Industrial Hwy., Cinnaminson, NJ 08077. A course outline is attached.
- 10) It is our understanding that gauges that are in a shut locked out mode as ours currently are do not require leak testing on a 6 month interval but would require an initial leak test prior to start up of operations. We plan to leak test all of the gauges prior to start up and would return Device No. NR-522-813-S to a six month test program.
- 11) We are currently planning to transfer the Fisher Controls LD 2220 neutron backscatter device to our facility in Linden, NJ. Our Industrial Hygienist will be receiving 40 hour RSO training as mentioned above and we are beginning the process of acquiring training for the individuals who will be using the instrument prior to transferring it. We recognize that we will be required to request an amendment to this license to extend coverage to the Bayway facility in advance of the transfer.

Sincerely,



John Ponticello
Operations Manager

CFC/db

Attachment

RADIATION DETECTION INSTRUMENTS
MARCUS HOOK REFINERY

MAIN SHOP:

Make: Warrington Laboratories Inc.
Test Source: Model 184100 RA 226, 0.9uc
Calibration: 12/16/95 Void after 6/16/96
Meter Serial #: R141
Ranges (MR/HR): 100, 30, 10, 3, 1, .3, .1.
Detector: SWGM
Calibrated by: Applied Health Physics, Inc.
2986 Industrial Blvd.
Bethel Park, PA 15102
(412) 835-9555

AREA 1-2

Make: Dosimeter Corp.
Model: 3009
Calibrated: 12/16/95 Void after 6/16/96
Meter Serial #: 4214 Detector INTGM
Ranges (MR/MR): 100, 10, 1
Calibrated by: Applied Health Physics, Inc.
2986 Industrial Blvd.
Bethel Park, PA 15102
(412) 835-9555

AREA 1-2

Make: Dosimeter Corp.
Model: 3500 Radiation Monitor
Calibrated: 1-3-95 Calibration due 7-3-95
Meter Serial #: 4-1294
Ranges (MR/HR): 100, 10, 1

AREA 1-2

Make: Warrington Laboratories, Inc.
Model:
Calibrated: 12-2-94 Void after 6-2-95
Meter Serial #: WL-069
Test Source: Model 184100 RA 226 0.9uc
Calibrated by: Applied Health Physics, Inc.
2986 Industrial Blvd.
Bethel Park, PA 15102
(412) 835-9555

AREA 3-4

Make: Thyac III Victoreen
Model: 489-4
Calibrated: 12-16-96 Void after 6-16-96
Meter Serial #: 5363
Ranges (MR/HR): 1000, 100, 10, 1
Calibrated by: Applied Health Physics, Inc.
2986 Industrial Blvd.
Bethel Park, PA 15102
(412) 835-9555

Safety Department---3 detectors, same make, model and range

Make: Nuclear Associates
Model: Minimonitor 2 05-571
Calibrated: 12/95, 12/94, 12/95 Void after 6/16/96, ????, 6/16/96
Meter Serial #: C567, 1770, C565, respectively
Ranges (MR/HR): 100, 10, 1
Calibrated by: Applied Health Physics, Inc.
2986 Industrial Blvd.
Bethel Park, PA 15102
(412) 835-9555

NUCLEAR RADIATION GAUGING DEVICES

(Revised Procedure for 1-0140 for Long Term Shutdown Refinery Status
Second Revision 5/96)

Purpose: Safe practices and emergency procedures for working near radiation sources.

Scope: Radiation sources are used to measure level, density, and for non-destructive testing and inspection. Over-exposure to the ionizing radiation from these sources has the potential to alter and even destroy biological cells.

Radiation Protection Principles:

Distance from the source offers the best protection from over-exposure to ionizing radiation. Radiation intensity will decrease proportionately to the distance squared.

Time is a second way to control radiation exposure since the amount of exposure is directly proportional to the time spent in the radiation area. For example, the radiation received in a ten minute exposure is ten times greater than during a one minute exposure.

Shielding is a third way to control radiation exposure. Dense material such as lead, steel, concrete and even water can absorb radiation before the radiation can reach your body.

Planning is a fourth way to control radiation exposure. Plan your work activities around radiation sources so that you spend the shortest time possible near the source. This will ensure your exposures are as low as reasonably achievable.

Permanently mounted radiation level gauges:

On some process units there are instruments which use a radiation source to determine level. The radioactive material is contained in a doubly encapsulated stainless steel assembly which is loaded into a lead lined source holder. The source holder is mounted on a vessel with the shutter opening pointing to a target device which transmits an electronic signal to the Control Center. All radioactive materials are licensed by the Nuclear Regulatory Commission. A list of these devices is included in this procedure which gives the source location, source materials, activity, and isolation distances in case of emergency.

Note: Three of the ERCs (Mike Mogar, Mike Racine and Joe Schmidt) are qualified by training to serve as the "responsible individual" in these procedures as defined by the NRC. The ERCs report to Bruce Iglay. Bruce will provide management oversight with regard to radioactive materials. Joe Schmidt will serve as the Radiation Protection Officer. The RSO responsibilities are outlined below:

- a) To assess radiological hazards and prescribe, and ensure the implementation of, appropriate radiation safety precautions.

- b) To ensure that the use of licensed material is by or under the direct supervision of individuals specifically listed with the NRC.
- c) To ensure that all users (where appropriate) wear personnel monitoring equipment when using licensed materials.
- d) To ensure that licensed materials are properly secured against unauthorized removal at all times when not in use.
- e) To perform routine inspections of all gauges.
- f) To ensure that the terms and conditions of NRC license are met, and that all required records are maintained.

Procedure:

1. Be aware of the location of fixed nuclear gauging devices in your area.
2. Sources are identified by the conventional three bladed radiation symbol. The blades are purple (magenta) on a yellow background.
3. The most common accidental radiation exposure is caused by persons entering a vessel before the radiation source has been turned off or drawn up into its protective housing. For this reason, isolation/blind lists for any vessel with a radiation device mounted on it must include the lockout of all radiation devices.
4. Lockout will be accomplished by the following steps:
 - a. The Maintenance Supervisor will have radiation source locked out by the Instrument Supervisor (Bill Carnall). Once Bill has locked the shutter in a closed position or retracted the source, the operator shall place his lock on the lockout device.
 - b. After the source has been locked out and the vessel opened, but before entry for work is granted, Bill Carnall with a valid entry permit, will use a survey meter to check for radiation in vessel. A safe entry reading is 5 the mR/hr or less at 12 inches from source holder surface. The area operator will witness survey.
 - c. Entry permit must note that radiation source has been locked out and that vessel is free from harmful levels of radiation.
5. When work in the vessel is complete and the vessel closed up, the device may be activated by having the operator remove his lock and then having the instrument mechanic remove his lock and open the shutter.
6. The refinery's Nuclear Regulatory Commission license imposes limits within which we may use nuclear devices. One of the limitations which it imposes is that only those who are specifically licensed by the NRC may remove the source holder from its mounting. No one at the refinery is licensed to remove a radiation source. If a source needs to be taken down

from its mounting brackets, contact Bruce Iglay at Marcus Hook (beeper: 610-907-0144) or the Radiation Safety Officer to arrange for removal by a contractor.

Emergency Procedures:

Fire

1. In case of a fire, handle the immediate emergency first, and inform fire fighting personnel that radioactive sources are in the area. As soon as the immediate emergency is taken care of:
 - a. Isolate the area around the source in all directions using the distances listed in Attachment 1.
 - b. Notify Bruce Iglay, the Emergency Response Coordinator on shift and the Radiation Safety Officer.
 - c. Whoever conducts the radiation survey shall assume the lead shielding has melted. They shall place their survey meter on the lowest scale and approach the nuclear gauge with caution.
 - d. If radiation profile is normal, (less than 5 mR/hr. at 1 foot from the source), the following steps must be followed:
 1. Check the shutter mechanism for proper functioning.
 2. Leak test the unit.
 3. Inspect the source holder for any damage to the mounting hardware.
 - e. If no problems are noted, the gauge may be placed back in service. If problems are noted, Bruce Iglay will make arrangements with the gauge manufacturer for safe removal, packaging, and shipment of the source for repair.
 - f. If radiation field is above normal limits, then the following steps must be followed by the surveyor:
 1. Cordon off and mark the area with radiation hazard signs at the 2 mR/hr. level.
 2. Note the names of all personnel who may have been overexposed.
 3. Contact the gauge manufacturer for assistance in removal, packaging, and disposal.
 4. Leak test the unit for possible contamination.
 5. Test the area around the nuclear gauge for possible contamination.
 6. If tests indicate that the source holder has leakage, use rubber gloves and tongs to place plastic bags over the nuclear gauge to prevent spreading the radioactive material.

7. The Radiation Safety Officer will provide Bruce Iglay with complete records of the incident, including all follow-up done on site and in-hospital to the personnel involved. Bruce will maintain a file of these records.

Fall or Collision

1. Isolate the area around the source 100 feet in all directions.
2. Notify Bruce Iglay, the Emergency Response Coordinators on shift and the Radiation Safety Officer.
3. Survey the source holder to check if the radiation profile is normal. The radiation profile should measure less than 5 mrem/hr. at one foot from the unit with the shutter closed.
4. **IF The survey is normal, the following steps must be followed:**
 - a. Insure the shutter on/off mechanism is functioning properly. If it is, lock it off.
CAUTION: Make sure the radiation beam is pointing away from personnel. If the shutter cannot be turned to the off position, block the opening with shielding material (shielding material is available in the radiation emergency kit in the engine room at the Safety Building).
 - b. Leak test the nuclear gauge for contamination.
 - c. If the radiation is within prescribed limits, the source shutter mechanism is operating properly, and there is no evidence of radioactive material leakage, then the gauge may be placed back in service. Contact Bruce Iglay before moving any source. Remember that our license stipulates that no source may be mounted or dismounted unless it is done under the supervision of someone specifically licensed by the NRC.
5. **IF it appears that the lead shielding has been damaged, regard the source as having a radiation field present above allowable limits.**
 - a. Cordon off and mark the area with radiation hazard signs at the 2 mrem/hr. radiation level.
 - b. Obtain the names of individuals who may have been overexposed.
 - c. The Radiation Safety Officer or one of the ERC will contact the NRC immediately. Bruce Iglay will provide assistance as necessary. That person shall also notify the gauge manufacturer so that arrangements can be made for the safe removal, packaging, and shipment of the source. The ERC's will maintain complete records, including all follow-up done on site and in-hospital to the personnel involved.

Radiation Emergency Kit

In case of a radiation emergency, an emergency kit has been assembled and is located in the engine room of the Safety Building. The kit is equipped with the following:

Radiation warning signs
200' barricade rope
200' radiation hazard flagging
(2) 42" tongs
Wipe test kits

Rubber gloves
Lead sheets
Survey meter (spare batteries)
Plastic bags - rolled plastic
Emergency procedures

Emergency Phone Numbers

Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19405
(215) 337-5000 (24 hours)

Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209
(513) 272-0135 (emergency number)
(513) 272-0131 (business phone)

NRC Ops Center
(301) 816-5100 (off hours)

ATTACHMENT 1

Source/Location	Activity	Isolation Distance
<u>Alky Unit:</u>		
1st Stage Acid Settler PV 2590	80 MCI CS 137	20 Feet
2nd Stage Acid Settler PV 2507	10 MCI CS 137	20 Feet
Acid Regenerator (2) PV 2508	50 MCI CS 137	25 Feet
Acid Regenerator Condenser PV 2555	10 MCI CS 137	10 Feet
Polymer Surge Drum PV 2509	100 MCI CS 137	25 Feet
Liquid Trap PV 2511	50 MCI CS 137	20 Feet
Parallel Poly Surge Drum PV 2628	50 MCI CS 137	20 Feet
<u>Platformer:</u>		
Surge Hopper PV 13-V-15	750 MCI CS 137	45 Feet
#1 Reactor PV 13-R-1	750 MCI CS 137	45 Feet
Disengaging Hopper PV 13-V-15	100 MCI CS 137	25 Feet
Lock Hopper #1 PV 13-V-19	50 MCI CS 137	20 Feet
Lock Hopper #2 PV 13-V-11	50 MCI CS 137	20 Feet
<u>Cat Cracker:</u>		
Fractionator PV 7712	1500 MCI CS 137	65 Feet
Precipitator Hoppers (4)	100 MCI CS 137	25 Feet
<u>Crude/Vac:</u>		
541 Vacuum Tower	375 MCI CS 137	35 Feet
542 Vacuum Tower	375 MCI CS 137	35 Feet
543 Crude Tower	500 MCI CS 137	40 Feet
544 Crude Tower	500 MCI CS 137	40 Feet
544 Vacuum Tower	2000 MCI CS 137	70 Feet



**RADIATION SAFETY OFFICER COURSE
BAYWAY REFINERY
(40 HOUR)**

DAY ONE

Who needs Radiation Safety Training?

- NRC's requirements and regulations
- New Jersey Laws

Why is Safety Training Important?

- What is Occupational Radiation Exposure?
- What is Industrial Radiography
- The beginning of Radiography
- Radiation Hazards
- Causes of Radiation Accidents

What is Radiation?

- A Form of Energy
- The Structure of Matter
- Radiation Dose
- Quantity of Radiation
- How much Radiation are People Exposed to?
 - a) Natural Background
 - b) Nuclear Weapons
 - c) Medical Diagnosis/Therapy
 - d) Occupational Exposure
 - e) Military Test Sites
 - f) Fallout
 - g) Nuclear Reactor Accident
 - 1) Chernobyl



**RADIATION SAFETY OFFICER COURSE
BAYWAY REFINERY**

DAY 1, cont.

Common "Radiation" Terms and their Definitions

- Acute Exposure
- ALARA
- ALI
- Atom Alpha
- Beta
- Body Burden
- Chronic Exposure
- Cosmic Radiation
- Curie
- DAC
- Decay
- Dose: skin/occupational/threshold
- Effective Half life
- Electron
- Fallout
- Gamma
- Genetic Effect
- Half life, Radioactive
- Ionizing Radiation
- Isotope
- Linear Hypotheses
- Man-rem
- Neutron
- Nucieus
- NRC
- Proton
- Radioactivity
- Rem
- Terrestrial Radiation



RADIATION SAFETY OFFICER COURSE BAYWAY REFINERY

DAY 2

What is Radioactivity?

- Radioactive Decay
- Half Life
- Radioactive Sources
 - a) Open Sources
 - b) Sealed Sources
(Bayway Site Specific)
- Types of Radioactive Sources
 - a) Alpha
 - b) Beta
 - c) Gamma
- Using Graphs to Determine Half-Life
- What is Radioactive Contamination?

What are the Harmful Effects of Radiation

- Public Perception of Radiation Risks
 - a) Summary - Genetic Effects of Ionizing Radiation
- Prompt Effects of Radiation (Acute)
 - a) Radiation Burns
 - b) Radiation Sickness
- Delayed Effects of Radiation (Chronic)
 - a) Cancer
 - b) Genetic Defects

How do Time, Distance and Shielding Affect your Dose?

- Time
- Distance
- Shielding
- ALARA Concept



**RADIATION SAFETY OFFICER COURSE
BAYWAY REFINERY**

DAY 3

How Do You Detect and Measure Radiation?

- The Roentgen
- The Rad
- The Rem
- Dose Rate

Survey Meters Measure Dose Rate

- Victoreen Survey Meter Model 290

Dosimeters Measure Your Dose

- Personal Dosimetry Systems

Permanently Installed Alarm Systems

Testing Radiation Sources for Leaks

- Smears (wipe test)

What are the Rules for Transporting Sources?

- Packaging
- Moving the Source to Around the Work Site
 - a) Placards
 - b) Road Accidents
 - c) Postings
 - d) Monitoring



**RADIATION SAFETY OFFICER COURSE
BAYWAY REFINERY**

DAY 4

How are Radioactive Materials used at Bayway?

- Radiography
- Shutter-Type Containers
- Level Gauges
- Portable Gauges
 - a) Thickness
 - b) Density

What are the Basic Rules for Radiography

- NRC Regulations

How can Following Procedures Help You?

- Operating Procedures
- Emergency Procedures
- How Do Accidents Happen?
- A Final Word of Advice

What is Contamination and Decontamination?

- Precautions with Sealed Sources
- Precautions with Open Sources
- Methods for Decontamination



**RADIATION SAFETY OFFICER COURSE
BAYWAY REFINERY**

DAY 5

Respiratory Protection and Radioactive Materials

- Types of Respiratory Protection
- Medical Surveillance

What is Personal Protective Equipment?

- Types for Radiation Protection
- Proper Use
- Disposal

TEST

OFFICIAL RECORD COPY ML 10

122881

APR 12 1996

Docket No. 030-34071
Control No. 122881

John C. Ponticello, Operations Manager
Tosco Refinery Company
A Division of Tosco Corporation
1400 Park Avenue
Linden, New Jersey 07036

Dear Mr. Ponticello:

This is in reference to your application dated March 29, 1996 and letter dated March 22, 1996 requesting a NRC license. In order to continue our review, we need the following additional information:

1. Provide the name of your Radiation Safety Officer. This person should be familiar with the operations of the gauges and have commensurate training.
2. Submit a description of the duties and responsibilities of your Radiation Safety Officer. The typical duties of a Radiation Safety Officer would be:
 - a. To assess radiological hazards and prescribe, and ensure the implementation of, appropriate radiation safety precautions.
 - b. To ensure that the use of licensed material is by or under the direct supervision of individuals specifically listed on your license.
 - c. To ensure that all users (where appropriate) wear personnel monitoring equipment when using licensed materials.
 - d. To ensure that licensed materials are properly secured against unauthorized removal at all times when not in use.
 - e. To perform routine inspections of all gauges.
 - f. To ensure that the terms and conditions of your license are met, and that all required records are maintained.
3. Please provide the name of the NVLAP accredited dosimetry processor you will use.

OFFICIAL RECORD COPY

ML 10

4. Item 4.b on page 2 of the revised safety procedures indicates that an individual will use a survey meter to check for radiation. Please specify the radiation detection instruments that you have available. Include the manufacturer and model number, the number of instruments available, the types of radiation detected, the range (milliroentgens per hour or counts per minute), and the intended use (monitoring, surveying, assaying or measuring).
5. Please describe your instrument calibration procedure and state the frequency (annually is acceptable). If you intend to contract out the calibration of your instruments, you only need to specify the name of the firm and the license number that authorizes the firm to perform calibration services. If you elect to calibrate your survey meter yourself, please submit the information described in "Guide for the Preparation of Licenses for the Use of Radioactive Materials in Calibrating Radiation Survey and Monitoring Instruments" (Task FC 413-4)(enclosed).
6. Page 5 of the revised safety procedures details procedures for contract radiography personnel. This type of service should not be included in your application for an NRC license, unless you wish to perform radiography.
7. The NRC maintains an Operations Center which is open 24 hours a day and seven days a week for emergency notifications. The NRC Ops Center telephone number is (301) 816-5100. Please add this number on page 4 of your revised safety procedures under Emergency Phone Numbers. Please note that the 5000 number will refer licensees to the Ops Center during non-business hours.
8. Page 1 of the revised safety procedures indicates that the NRC regulates x-ray machines. The State actually regulates non-ionizing radiation (i.e., accelerators, naturally occurring radioactive material, x-ray machines, fluoroscopy, etc.). The NRC regulates byproduct, source and special nuclear material. Please make this correction.
9. 10 CFR 20.1101 (c) requires licensees to review their radiation protection program. Submit (1) the name and radiation safety qualifications of the individual who will conduct audits, (2) a description of the scope and extent of the audits, (3) a commitment to conduct audits at intervals not to exceed 12 months and to maintain records of the audits for at least 3 years after the record is made, (4) management's commitment to review the documented results of the audit promptly after the audit's completion, and (5) a commitment to take prompt action to correct deficiencies identified during audits, to inform all personnel (including those at other locations and those working under other licenses) of the deficiencies and the actions management expects its personnel to take to avoid similar deficiencies.

10. Item 10.4 of your letter dated March 22, 1996 requests a 36 month leak test frequency. This is acceptable for most devices except the Model No. SHRH-B. Note that the Registry of Radioactive Sealed Sources and Devices Evaluation Device No. NR-522-813-S requires a 6 month leak test frequency. Please commit to the leak testing the devices in accordance with the registration.
11. BP Oil's NRC license indicates 200 millicuries of americium-241 sealed source (Gammatron Inc. source Model No. AN-HP) in a Fisher Controls LD 2220 neutron backscatter device. Since Tosco has acquired BP Oil, please indicate if this device was transferred or if the device should be added to your license request. If you transferred this device to an authorized recipient, please provide the recipient's NRC or Agreement State license number. If you wish to add this to your license, please provide the following:
 - (a) indicate the person(s) who have been trained to use this device and provide a copy of their training;
 - (b) provide safety procedures for the safe use of this portable gauging device (a copy of BP Oil's procedures are enclosed);
 - (c) indicate where the gauge is stored and the security measures taken to prevent unauthorized access to the gauge;
 - (d) indicate if the gauge will only be used at you facilities located at 4101 Post Road in Trainer, Pennsylvania;
 - (e) indicate the type of training to be provided to portable gauge users prior to use of the device and annually thereafter;
 - (f) confirm that authorized users will have read and understand the operating and emergency procedures for the gauge and be designated in writing by the Radiation Safety Officer;
 - (g) confirm that you will maintain training records (including the date of the training, identity of the instructor, list of attendees, and topics covered) for at least 3 years;
 - (h) describe how the gauge will be controlled by the constant surveillance of authorized users when not in storage;
 - (i) please confirm that you will adhere to a six month leak test frequency for this device;
 - (j) provide the leak test kit model number you will use and the name of the company (and License Number) you will use to analyze the leak test samples;

J. C. Ponticello
Tosco Refining Company

-4-

- (k) commit to performing physical inventories of all sealed sources (portable and non-portable gauges) at frequencies not to exceed 6 months.
- (l) indicate if you or a vendor will service the portable gauge;
- (m) confirm that you will follow DOT regulations when transporting the gauge;
- (n) provide a copy of the operating and emergency procedures and commit to providing these procedures to authorized users;

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 122881. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5251.

In order to continue prompt review of your application, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

Sincerely,

Original Signed By:
Kathleen Dolce

Kathleen Dolce
Division of Nuclear Materials Safety

Docket No. 030-34071
Control No. 122881

Enclosures:

1. 10 CFR Parts 2, 19, 20, 21, 30, 70, and 171
2. Draft Regulatory Guide FC 404-4 *Guide For the Preparation of Applications For Licenses For the Use of Sealed Sources in Nonportable Gauging Devices*
3. Draft Regulatory Guide DG-0008 *Applications For the Use of Sealed Sources in Portable Gauging Devices*
4. Draft Regulatory Guide FC 413-4 *Guide for the Preparation of Licenses for the Use of Radioactive Materials in Calibrating Radiation Survey and Monitoring Instruments*
5. BP Oil's Procedure for Portable Gauge Containing Americium 241

DOCUMENT NAME: R:\WPS\DLTR\D2930278.01

To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	DNMS/RI	N	DNMS/RI				
NAME	Dolce\kadl						
DATE	04/11/96	04/	/96	04/	/96	04/	/96

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(10-94)
10 CFR 30, 32, 33,
34, 35, 36, 39 and 40

APPLICATION FOR MATERIAL LICENSE

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS
INFORMATION COLLECTION REQUEST: 9 HOURS. SUBMITTAL OF THE
APPLICATION IS NECESSARY TO DETERMINE THAT THE APPLICANT IS
QUALIFIED AND THAT ADEQUATE PROCEDURES EXIST TO PROTECT
THE PUBLIC HEALTH AND SAFETY. FORWARD COMMENTS
REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS
MANAGEMENT BRANCH (T-6 F33), U.S. NUCLEAR REGULATORY
COMMISSION, WASHINGTON, DC 20555-0011, AND TO THE
PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF
MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.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.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

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:LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415ALABAMA, FLORIDA, GEORGIA, KENTUCKY, MISSISSIPPI, NORTH CAROLINA, PUERTO
RICO, SOUTH CAROLINA, TENNESSEE, VIRGINIA, VIRGIN ISLANDS, OR WEST VIRGINIA,
SEND APPLICATIONS TO:NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION II
101 MARIETTA STREET, NW, SUITE 2900
ATLANTA, GA 30323-0199

IF YOU ARE LOCATED IN:

ILLINOIS, INDIANA, IOWA, MICHIGAN, MINNESOTA, MISSOURI, OHIO, OR WISCONSIN,
SEND APPLICATIONS TO:MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
801 WARRENVILLE RD.
Lisle, IL 60532-4351ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,
LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA,
OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH,
WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-8064PERSONS 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 JURISDICTIONS.

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

☒

A. NEW LICENSE

☐

B. AMENDMENT TO LICENSE NUMBER _____

☐

C. RENEWAL OF LICENSE NUMBER _____

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

Tosco Refining Company
A Division of Tosco Corporation
1400 Park Ave.
Linden, NJ 07036

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

Tosco Refining Company
4101 Post Rd.
Trainer, PA 19061

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Charles F. Chelton

TELEPHONE NUMBER

(908) 523-5050

SUBMIT ITEMS 5 THROUGH 11 ON 8-1/2 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 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 \$ 530.00

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, 36, 39 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.

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE

X JOHN C. POSTICELLO - OPERATIONS MANAGER

SIGNATURE

X [Signature]

DATE

X 3/29/96

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		

APPROVED BY

DATE

March 22, 1996

Licensing Assistant Section
Nuclear Materials Safety Branch
U.S. Nuclear Regulatory Commission, Region I
475 Allendale Rd.
King of Prussia, PA 19406-1415

*Mark Control #
122881*

Dear Sir:

On February 1, 1996, the Bayway Refining Company (BRC) purchased and took ownership from BP Oil Company of its refinery located in Marcus Hook Pennsylvania. The BP Marcus Hook refinery has been licensed by the NRC (# 3710059-03) to operate using radioactive materials within various measurement devices.

As the new owners of the facility BRC is submitting the attached application for a license along with the attached supporting material. Shortly after the purchase, Tosco Corporation reorganized, and BRC became Tosco Refining Company which is a division of Tosco Corporation. TRC is taking possession of the Marcus Hook facility in a shutdown mode which means that the refining activities have been discontinued. The facility is being manned by former BP employees familiar with the facility operations. TRC has obtained copies of BP's Accident Prevention Program Manual and plans to continue operating under the safety practices outlined therein where applicable.

Items 5 through 11 of the application are answered below.

Item 5 - Radioactive Material

The attached table lists each sealed source and isotope, the source manufacturer and model, and the manufacturer and model number of the source holder.

Item 6 - Purpose of Licensed Material

See the column titled "Purpose" on the attached table.

Item 7 - Responsible Individuals and Their Training

The Marcus Hook gauges will be surveyed, maintained, leak tested and relocated by a specifically licensed contractor. The former owners purchased these services from Ohmart. Since Ohmart is familiar with the devices and facility, they will be used as the TRC contractor.

Three individuals have received the necessary training to be designated as the "responsible individuals". The three individuals are the Emergency Response Coordinators (Mike Mogar, Joe Schmidt, and Mike Racine). They participated in a 3 day Radiation Safety course delivered by Ohmart in 1992. Their training certificates are attached. They report to Bruce Iglay under the refinery's existing organization structure.

Item 8 - Training for Individuals Working in or Frequenting Restricted Area

The Instrument Supervisor (Bill Carnall) received basic gauge user training in 1995. He will lockout the gauges and survey the vicinity of the sources for radiation. His training certificate is attached.

Item 9 - Facilities and Equipment

- 9.1 The attached map indicates the location within the refinery boundaries of the gauges. The refinery is divided into six areas of responsibility. The areas where the gauges are located are included in the attached table in the column marked "Refinery Location". The gauges are physically mounted on specific pieces of process equipment in each area and these are also identified in the column marked "Source/Location" in the table.
- 9.2 The gauges are all mounted on the exterior of the process equipment and are subjected to routine ambient weather changes.
- 9.3 N.A.
- 9.4 N.A.
- 9.5 All of the gauges were inventoried and inspected by Ohmart Corporation on January 29, 1996. All sources were found to be in place and the serial numbers were confirmed. Shutters will be inspected on 6 month intervals by Bruce Carnall and recorded on the attached form.
- 9.6 The revised emergency procedure 1-010 is attached.

Item 10 - Radiation Safety Program

- 10.1 An NRC licensed company will be used for installation, maintenance, leak testing and removal or relocation of any gauges. Ohmart Corporation (4241 Allendorf Drive, Cincinnati, OH 45209, Lic#34-00639-01) supplied similar services to the former owners and are familiar with the devices, as well as, their location in the refinery. TRC will

continue the practice of repairing the electronic equipment not associated with the source or its shielding as BP did.

- 10.2 During normal refinery operations, film badges will be provided to individuals in restricted areas and they will be changed monthly. This is a continuation of the past BP practice. Brude Igley will be responsible for reinstituting this practice at the time of refinery startup. In the current shutdown ~~made~~ all gauges are locked with the shutters closed.
- 10.3 Level gauges will be serviced by Ohmart.
- 10.4 Please specify a 3 year leak test cycle in this license. Ohmart or an equivalently qualified consultant will be used to perform these tests.
- 10.5 Lock out procedures that were developed by the former owner are in place and detailed in the attached revised safety procedures.
- 10.6 N.A.

Item 11 - Waste Management

Waste radioactive material will be transferred to a licensee specifically authorized to possess the radioactive material.

Item 12 - License Fees

A fee of \$530.00 is enclosed.

Sincerely,



John C. Ponticello
Division Manager

CFC/db
C0322962.DOC

Attachment

INVENTORY OF FIXED LEVEL GAUGES

<u>Source/Location</u>	<u>Activity</u>	<u>Source Manuf./Model #</u>	<u>Serial #</u>	<u>Source Holder Manuf./Model #</u>	<u>Purpose</u>	<u>Refinery Location (Area)</u>
<u>Alky Unit:</u>						
1st Stage Acid Settler PV 2590	80 MCI CS 137	Ohmart/A-2102	0-705	Ohmart/AS-2	High level alarm	4
2nd Stage Acid Settler PV 2507	10 MCI CS 137	Ohmart/A-2102	9294GG	Ohmart/MDTS-2	Profile level gauge	4
Acid Regenerator PV 2508	50 MCI CS 137	Ohmart/A-2102	62103	Ohmart/SHRM-PA	High level alarm	4
Acid Regenerator PV 2508	50 MCI CS 137	Ohmart/A-2102	62101	Ohmart/SHRM-PA	Low level alarm	4
Acid Regenerator Condenser PV 2555	10 MCI CS 137	Ohmart/A-2102	61411	Ohmart/SHRM-PA	Low level alarm	4
Polymer Surge Drum PV 2509	100 MCI CS 137	Ohmart/A-2102	61981	Ohmart/HM-8	Level gauge	4
Liquid Trap PV 2511	50 MCI CS 137	Ohmart/A-2102	65918	Ohmart/SHRM-PA	Level gauge	4
Parallel Poly Surge Drum PV 2628	50 MCI CS 137	Ohmart/A-2102	M5808	Ohmart/SH-F1	Level gauge	4
<u>Platformer:</u>						
Surge Hopper PV 13-V-15	750 MCI CS 137	Ohmart/A-5771	67447	Ohmart/SH-F2	Level recorder	1
#1 Reactor PV 13-R-1	750 MCI CS 137	Ohmart/A-5771	M5821	Ohmart/SH-F2	Low level indicator	1

<u>Source/Location</u>	<u>Activity</u>	<u>Source</u> <u>Manuf./Model #</u>	<u>Serial #</u>	<u>Source Holder</u> <u>Manuf./Model #</u>	<u>Purpose</u>	<u>Refinery</u> <u>Location</u> <u>(Area)</u>
Disengaging Hopper PV 13-V-14	100 MCI CS 137	Ohmart/A-2102	M6808	Ohmart/SH-F1	High level alarm	1
Lock Hopper #1 PV 13-V-9	50 MCI CS 137	Ohmart/A-2102	M6630	Ohmart/SH-F2	High level alarm	1
<u>Cat Cracker:</u> Fractionator PV 7712	1500 MCI CS 137	Ohmart/A-2102	70620	Ohmart/SHLG-1	High/low level alarm	4
Precipitator Hoppers	100 MCI CS 137	New England Nuclear/Her670	9913A	Kay Ray/7080	High level alarm	4
Precipitator Hoppers	100 MCI CS 137	New England Nuclear/Her670	9913B	Kay Ray/7080	High level alarm	4
Precipitator Hoppers	100 MCI CS 137	New England Nuclear/Her670	9913C	Kay Ray/7080	High level alarm	4
Precipitator Hoppers	100 MCI CS 137	New England Nuclear/Her670	9913D	Kay Ray/7080	High level alarm	4
<u>Crude/Vac:</u> 541 Vacuum Tower	375 MCI CS 137	Ohmart/A-2020	72450	Ohmart/SH-F2	Level gauge	3
542 Vacuum Tower	375 MCI CS 137	Ohmart/A-2020	72449	Ohmart/SH-F2	Level gauge	3
543 Crude Tower	500 MCI CS 137	Ohmart/A-2020	72442	Ohmart/SHD	Level gauge	3
544 Crude Tower	500 MCI CS 137	Ohmart/A-2020	72443	Ohmart/SHD	Level gauge	3
544 Vacuum Tower	2000 MCI CS 173	Ohmart/A-2020	72172	Ohmart/SHLG-1	Level gauge	3

Certificate of Attendance

Awarded to

Bill Carnall

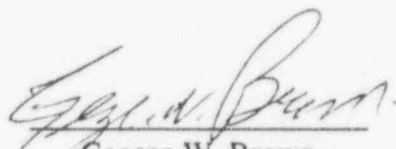
For the successful completion of the

One Day Basic Gauge Users Radiation Safety Program

Conducted by the Ohmart Corporation
at B. P. Oil Company in Marcus Hook, Pennsylvania
October 24, 1995

Subject matter covered:

- ☒ Radiation terminology and measurement
- ☒ Biological effects
- ☒ Standards for protection against radiation
- ☒ Lock - out procedures
- ☒ Handling source holders
- ☒ Emergency procedures



George W. Brown
Training Manager

Duplicate
March 20, 1996

OHMART Corporation

Technical Training Schools
Cincinnati, Ohio 45209



Certificate of Attendance

DUPLICATE

Awarded to

Joseph Schmidt, Jr.

For the successful completion of the

Ohmart Three Day Radiation Safety Course

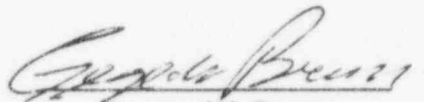
Presented at

B. P. Oil Corporation Marcus Hook, Pennsylvania

September 22-24, 1992

Subject matter covered:

Basic atomic theory
Measurement and monitoring techniques
Exposure calculations
Biological effects of radiation
NRC regulations
Leak test, shutter check
Installation, relocation, and removal procedures
Hands on lab work
Proper disposal practices
Emergency procedures



George W. Brown
Training Manager

DUPLICATE

March 21, 1996

OHMART Corporation

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Cincinnati, Ohio 45209



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Michael Racine

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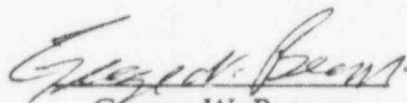
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George W. Brown
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Cincinnati, Ohio 45209



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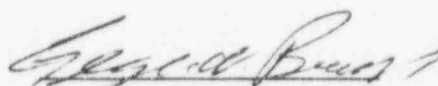
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George W. Brown
Training Manager

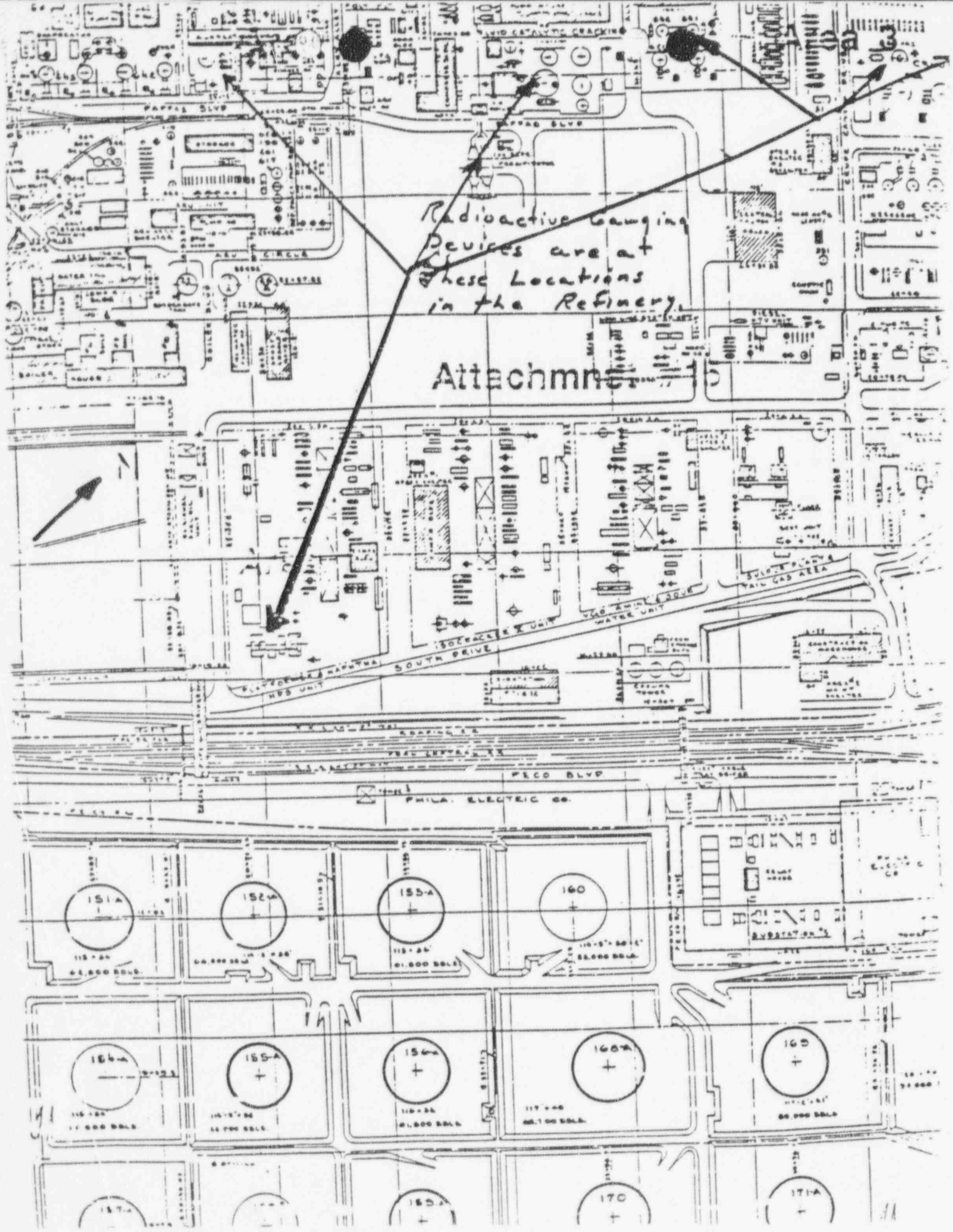
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Radioactive Gauging
Devices are at
these Locations
in the Refinery.

Attachment

Instructions For Leak Testing

When leak testing a sealed source in a source holder, follow these simple instructions:

It is not necessary to disassemble the source holder for the leak test. Testing the external surface of the source holder is all that is required. Be sure shutter is in the closed position prior to conducting the leak test.

Step 1) Take the plastic bag containing the swabstick to the source holder to be tested.

Step 2) Open the plastic bag and grasp the swabstick by the end *opposite* the fiber tip.

Step 3) Wipe the external surface of the source holder with the fiber tipped end. Wipe all seams and *around the shaft of the shutter mechanism*. Replace test swab in plastic bag & seal.

Caution: **Do not touch the fiber tipped end or allow it to touch other objects as this would spread contamination if the source were leaking.**

Step 4) If there is a survey device available, take the plastic bag containing the wipe swab to an area away from known radiation and check for gross contamination.

Step 5) Attach the label provided with the leak test kit. Return to Ohmart for lab test results.

Test Results

Upon receipt, Ohmart will perform a test to determine the presence of radioactive contamination. If the results of the leak test come out negative, the results are returned to you by mail indicating that no contamination was present. If removable contamination is found and it is less than 0.005 microcurie, but is significantly above background, Ohmart will send a new kit for a rewipe. If contamination is evident on the second leak test, although less than 0.005 microcurie, you will be advised to dispose of the source although it technically may not be leaking. You are required to keep all leak test results on file until three years after the next required test or disposal.

Shutter Check

To test the shutter mechanism, move the actuator back and forth several times between the "off" and "on" position. The actuator should move easily but not freely. There will be some resistance to movement due to bearing friction and inertia of the mechanism. **USE ONE OF THE TWO METHODS LISTED BELOW TO INSURE THAT THE SHUTTER MECHANISM IS OPERATIONAL:**

METHOD A) Using a portable radiation survey meter, measure the back of the detector housing. Field intensity should be low when the shutter is in the "off" position. Conversely, when the shutter is "on", the field intensity should increase.

METHOD B) If a survey meter is not available, use your electronics and monitor the front panel display or use an auxiliary monitor, (i.e. recorder) and turn shutter to the "off" position. Indication should go to the high process value on display or recorder. Open shutter and reading should return to normal.

As a reminder, Ohmart offers a comprehensive course in Radiation Safety each and every month. The course is 30 hours and covers timely subjects which include the latest regulations and how they apply to nuclear instruments, proper licensing procedures, application submission, nuclear safety, proper handling procedures, periodic maintenance, and leak testing. Call us today for further information.

Nuclear Radiation GaugesMonthly InspectionLocation of Radiation Gauges (Check Ones in your Area)

<u>Platformer</u>	- Top of #1 Reactor	_____	
	Surge Hopper	_____	
	Disengaging Hopper	_____	Area #1
	Cat. Addition Lock Hopper	_____	
	Lock Hopper #2	_____	
<u>Crude</u>	- 543 Tower	_____	
	544 Tower	_____	
	544 Vacuum Tower	_____	Area #3
<u>Vacuum</u>	- 541 Tower	_____	
	542 Tower	_____	
<u>FCC</u>	- Fractionator	_____	
	Precipitators (4 gauges)	_____	
<u>Alky</u>	- Acid Settler	_____	
	Acid Regen. (2 gauges)	_____	Area #4
	Acid Regen. Condenser	_____	
	Liquid Trap	_____	
	Polymer Surge Drum	_____	
	1st Stage Settler	_____	

Radiation source corresponding to gauge in proper location. _____

Radiation source properly identified with RADIATION sign. _____Access to vessel identified with RADIATION sign. _____Radiation information visible on source (intensity,
serial #, etc.) _____Any following remarks, discrepancies reported to Safety
Department:

Supervisor _____ Area _____ Date _____ for Month of _____

ETD:CS
8/3/87

NUCLEAR RADIATION GAUGING DEVICES

(Revised Procedure for 1-0140 for Long Term Shutdown Refinery Status)

Purpose: Safe practices and emergency procedures for working near radiation sources.

Scope: Radiation sources are used to measure level, density, and for non-destructive testing and inspection. Over-exposure to the ionizing radiation from these sources has the potential to alter and even destroy biological cells.

Radiation Protection Principles:

Distance from the source offers the best protection from over-exposure to ionizing radiation. Radiation intensity will decrease proportionately to the distance squared.

Time is a second way to control radiation exposure since the amount of exposure is directly proportional to the time spent in the radiation area. For example, the radiation received in a ten minute exposure is ten times greater than during a one minute exposure.

Shielding is a third way to control radiation exposure. Dense material such as lead, steel, concrete and even water can absorb radiation before the radiation can reach your body.

Planning is a fourth way to control radiation exposure. Plan your work activities around radiation sources so that you spend the shortest time possible near the source. This will ensure your exposures are as low as reasonably achievable.

Permanently mounted radiation level gauges:

On some process units there are instruments which use a radiation source to determine level. The radioactive material is contained in a doubly encapsulated stainless steel assembly which is loaded into a lead lined source holder. The source holder is mounted on a vessel with the shutter opening pointing to a target device which transmits an electronic signal to the Control Center. All radioactive materials and X-ray machines are licensed by the Nuclear Regulatory Commission. A list of these devices is included in this procedure which gives the source location, source materials, activity, and isolation distances in case of emergency.

Note: The ERC's (Mike Mogar, Mike Racine and Joe Schmidt) are qualified by training to serve as the "responsible individual" in these procedures as defined by the NRC. The ERC's report to Bruce Iglay. Bruce will provide management oversight with regard to radioactive materials.

Procedure:

1. Be aware of the location of fixed nuclear gauging devices in your area.

2. Sources are identified by the conventional three bladed radiation symbol. The blades are purple on a yellow background.
3. The most common accidental radiation exposure is caused by persons entering a vessel before the radiation source has been turned off or drawn up into its protective housing. For this reason, isolation/blind lists for any vessel with a radiation device mounted on it must include the lockout of all radiation devices.
4. Lockout will be accomplished by the following steps:
 - a. The Maintenance Supervisor will have radiation source locked out by the Instrument Supervisor (Bill Carnall). Once Bill has locked the shutter in a closed position or retracted the source, the operator shall place his lock on the lockout device.
 - b. After the source has been locked out and the vessel opened, but before entry for work is granted, Bill Carnall with a valid entry permit, will use a survey meter to check for radiation in vessel. A safe entry reading is 5 mrem/hr or less at 12 inches from source holder surface. The area operator will witness survey.
 - c. Entry permit must note that radiation source has been locked out and that vessel is free from harmful levels of radiation.
5. When work in the vessel is complete and the vessel closed up, the device may be activated by having the operator remove his lock and then having the instrument mechanic remove his lock and open the shutter.
6. The refinery's Nuclear Regulatory Commission license imposes limits within which we may use nuclear devices. One of the limitations which it imposes is that only those who are specifically licensed by the NRC may remove the source holder from its mounting. No one at the refinery is licensed to remove a radiation source. If a source needs to be taken down from its mounting brackets, contact Bruce Iglay at Marcus Hook (beeper: 610-907-0144) or Charles Chelton at Bayway (908-523-5050) to arrange for removal by a contractor.

Emergency Procedures:

Fire

1. In case of a fire, handle the immediate emergency first, and inform fire fighting personnel that radioactive sources are in the area. As soon as the immediate emergency is taken care of:
 - a. Isolate the area around the source in all directions using the distances listed in Attachment 1.
 - b. Notify Bruce Iglay and the Emergency Response Coordinators on shift.

- c. Whoever conducts the radiation survey shall assume the lead shielding has melted. They shall place their survey meter on the lowest scale and approach the nuclear gauge with caution.
- d. If radiation profile is normal, (less than 5 mrem/hr. at 1 foot from the source), the following steps must be followed:
 - 1. Check the shutter mechanism for proper functioning.
 - 2. Leak test the unit.
 - 3. Inspect the source holder for any damage to the mounting hardware.
- e. If no problems are noted, the gauge may be placed back in service. If problems are noted, Bruce Iglay will make arrangements with the gauge manufacturer for safe removal, packaging, and shipment of the source for repair.
- f. If radiation field is above normal limits, then the following steps must be followed by the surveyor:
 - 1. Cordon off and mark the area with radiation hazard signs at the 2 mrem/hr. level.
 - 2. Note the names of all personnel who may have been overexposed.
 - 3. Contact the gauge manufacturer for assistance in removal, packaging, and disposal.
 - 4. Leak test the unit for possible contamination.
 - 5. Test the area around the nuclear gauge for possible contamination.
 - 6. If tests indicate that the source holder has leakage, use rubber gloves and tongs to place plastic bags over the nuclear gauge to prevent spreading the radioactive material.
 - 7. Bruce Iglay will maintain complete records of the incident, including all follow-up done on site and in-hospital to the personnel involved.

Fall or Collision

- 1. Isolate the area around the source 100 feet in all directions.
- 2. Notify Bruce Iglay and the Emergency Response Coordinators on shift.
- 3. Survey the source holder to check if the radiation profile is normal. The radiation profile should measure less than 5 mrem/hr. at one foot from the unit with the shutter closed.
- 4. **IF The survey is normal, the following steps must be followed:**
 - a. Insure the shutter on/off mechanism is functioning properly. If it is, lock it off.
CAUTION: Make sure the radiation beam is pointing away from personnel. If the shutter cannot be turned to the off position, block the opening with shielding material

bc: T. Accetta
B. Carnall
C. Chelton
D. Erdley
B. Igley
J. Launchi
T. Parker

(shielding material is available in the radiation emergency kit in the engine room at the Safety Building).

- b. Leak test the nuclear gauge for contamination.
 - c. If the radiation is within prescribed limits, the source shutter mechanism is operating properly, and there is no evidence of radioactive material leakage, then the gauge may be placed back in service. Contact Bruce Iglay before moving any source. Remember that our license stipulates that no source may be mounted or dismounted unless it is done under the supervision of someone specifically licensed by the NRC.
5. **IF** it appears that the lead shielding has been damaged, regard the source as having a radiation field present above allowable limits.
- a. Cordon off and mark the area with radiation hazard signs at the 2 mrem/hr. radiation level.
 - b. Obtain the names of individuals who may have been overexposed.
 - c. Bruce Iglay or Charles Chelton will contact the NRC immediately. That person shall also notify the gauge manufacturer so that arrangements can be made for the safe removal, packaging, and shipment of the source. The ERC's will maintain complete records, including all follow-up done on site and in-hospital to the personnel involved.

Radiation Emergency Kit

In case of a radiation emergency, an emergency kit has been assembled and is located in the engine room of the Safety Building. The kit is equipped with the following:

Radiation warning signs	Rubber gloves
200' barricade rope	Lead sheets
200' radiation hazard flagging	Survey meter (spare batteries)
(2) 42" tongs	Plastic bags - rolled plastic
Wipe test kits	Emergency procedures

Emergency Phone Numbers

Nuclear Regulatory Commission	Ohmart Corporation
475 Allendale Road	4241 Allendorf Drive
King of Prussia, PA 19405	Cincinnati, OH 45209
(215) 337-5000 (24 hours)	(513) 272-0135 (emergency number)
	(513) 272-0131 (business phone)

Radiographic Inspection:

1. Any radiographic inspection work performed in refinery must be coordinated by Bruce Iglay or his designee. He will coordinate scope of work, timing, and work location with appropriate operating and maintenance supervisors, radiographic inspection contractor, and other departments.
2. Any radiographic inspection contractor employed by the company must be licensed by the Nuclear Regulatory Commission. The contractor must abide by the rules and regulations of the NRC and Commonwealth of Pennsylvania.
3. The radiation area is to be roped off or barricaded. The area barricades shall extend far enough away from the source that exposures will be less than 2 mrem/hr. outside of the roped off area.
4. The radiographic inspection contractor shall ensure the radiation area is clear of all other personnel prior to each exposure of the radiation source. The radiographer shall patrol the perimeter of the radiation area to ensure that personnel are observing the radiation warning signs. The radiographer shall have a survey meter with him/her to monitor exposure levels to ensure they are below 2 mrem/hr.
5. Personnel will wear a film badge and personal dosimeter throughout the time that they are in the vicinity of the radiography work. These can be obtained from Bruce Iglay.
6. Whenever possible, position of the source shall be such that the beam of radiation will be away from areas occupied by people. Beamspread shall be kept as small as possible by the use of shields.
7. All radiation source containers must be marked with conventional radiation symbol. Sources must be locked in a secure location when not under the direct control of the radiographic technician.
8. The radiographic inspection contractor is responsible for all material brought on site. The contractor must see to it that all material has been properly disposed of before leaving the job site.
9. The Control Center should be notified before any radiography is conducted in an area where nuclear gauges are used for level detection.
10. No one shall enter a radiation area if an operating emergency exists until the radiographic inspection contractor has ceased operations and retracted his source so that the emergency can be handled. It is imperative that exposures be kept as low as reasonably achievable. One exception is the case where an NRC Inspector may enter a radiation area for inspection purposes. The inspector must present identification, have a film badge, survey meter and dosimeter and be made aware of the radiation field intensity that he is entering.

Emergency Procedure:

1. In an emergency involving a radiographic source, priority must be given to human safety. The radiographic inspection contractor and the ERC shall see that the area is evacuated to a distance at which exposures are below 2 mrem/hr. They shall also take action to stop the spread of contamination and rope off and post signs to establish a safe boundary around the accident site.
2. The contract coordinator will notify Bill Carnall and Bruce Iglay. Depending on levels of exposure, they may have to notify the NRC, DER, or other agencies.
3. Identify and isolate all personnel who might have received high exposures or who could have been contaminated.
4. The Emergency Response Coordinator will maintain complete records of the incident, including all follow-up done on site and in-hospital to the personnel involved.



March 27, 1996

Bayway Refining Company
P.O. Box 726
Linden, NJ 07036-0726

Attn: Charles Chelton

Ref: B.P. Marcus Hook, PA

Dear Mr. Chelton:

Candy Brock has asked me to explain why some of our gauges can be generally licensed and others must be specifically licensed.

The general license is actually issued to the manufactured item. This is done through the device registration which must be reviewed by the NRC or an Agreement State. Most general license devices are designed so that the source holder and detector are mounted together or have interlocks so there is little or no chance of an individual placing a part of his/her body in the radiation beam.

Ohmart density gauges have been approved for distribution as general licensed devices under NRC license No. 34-00639-03G. None of our level gauges have been approved as general licensed devices.

Since you have both types of gauges in your plant I can see no advantage to utilizing both types of licenses. In fact, it may be a disadvantage to use both. Procedures that apply to your specific licensed equipment would not apply to your generally licensed devices and all of the requirements for inventory control, leak testing and shutter checks apply to both types.

I hope that this clarifies these issues for you. Please call me or Candy Brock if you need additional information.

Sincerely,

THE OHMART CORPORATION

A handwritten signature in cursive script, reading "George W. Brown".

George W. Brown
Radiation Safety Officer
Training Manager

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: NR-522-D-895-B

DATE: MAR 16 1992

PAGE: 1 OF 6

DEVICE TYPE: Source Housing

MODEL: SR-1A and SR-A

MANUFACTURER/DISTRIBUTOR:

Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION:

Ohmart Models: A-2100
A-2102

ISOTOPE:

Cesium-137

Cobalt-60

MAXIMUM ACTIVITY:

1562.0 millicuries (SR-1A)

130.0 millicuries (SR-A)

19.0 millicuries (SR-1A)

3.5 millicuries (SR-A)

LEAK TEST FREQUENCY:

36 Months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE:

_____ YES

_____ X _____ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: NR-522-D-893-S

DATE: MAR 10 1992

PAGE: 1 OF 6

DEVICE TYPE: Source Housing

MODEL: SHRM, SHRM-PA, SHRM-2, SHRM-3, SHRM-4, SHRM-BW, SHRM-B

MANUFACTURER/DISTRIBUTOR: Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION: Ohmart Models: A-2100
A-2102
A-5771
A-5772

ISOTOPE:

Cesium-137

Cobalt-60

MAXIMUM ACTIVITY:

100 millicuries (A-2102)
100 millicuries/foot (A-5771)
(strip sources not to exceed
100 mCi per source housing.)
5 millicuries (A-2100)
10 millicuries/foot (A-5772)
(strip sources not to exceed
10 mCi per source housing.)

LEAK TEST FREQUENCY: 36 months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE: _____ YES _____ X _____ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-522-D-813-S

DATE: MAR 16 1992

PAGE 1 OF 5

DEVICE TYPE: Source Housing

MODEL: SHRH-B

MANUFACTURER/DISTRIBUTOR: Ohmart Corporation
4241 Allendale Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION: U. S. Radium Model: Lab-236A

ISOTOPE:

Cesium-137

MAXIMUM ACTIVITY:

750 millicuries

LEAK TEST FREQUENCY: 6 Months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE: _____ YES _____ X _____ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-522-D-891-S

DATE: March 15 1992

PAGE 1 OF 6

DEVICE TYPE: Source Housing

MODEL: MDTs

MANUFACTURER/DISTRIBUTOR:

Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION:

Ohmart Model: A-2102

ISOTOPE:

Cesium-137

MAXIMUM ACTIVITY:

50 millicuries

LEAK TEST FREQUENCY: 36 Months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE: _____ YES _____ X _____ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-522-D-818-B

DATE: MAR 16 1992

PAGE 1 OF 6

DEVICE TYPE: Source Housing

MODEL: HM-8 and HM-10

MANUFACTURER/DISTRIBUTOR: Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION: Ohmart Model: A-2100
A-2102
A-2104

ISOTOPE:

MAXIMUM ACTIVITY:

Cesium-137

5 curies (HM-8)
20 curies (HM-10)

Cobalt-60

150 millicuries (HM-8)
750 millicuries (HM-10)

LEAK TEST FREQUENCY: 36 Months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE: _____ YES _____ X _____ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-522-D-872-S

DATE: MAR 16 1992

PAGE 1 OF 5

DEVICE TYPE: Source Holder

MODEL: AS-1 and AS-2

MANUFACTURER/DISTRIBUTOR: Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION: Ohmart Model: A-2102

ISOTOPE:

Cesium-137

MAXIMUM ACTIVITY:

100 millicuries

LEAK TEST FREQUENCY: 36 Months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE: _____ YES _____ X _____ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: NR-522-D-882-B

DATE: MAR 16 1992

PAGE: 1 OF 6

DEVICE TYPE: Source Housing

MODEL: SHRH-A Series

MANUFACTURER/DISTRIBUTOR:

Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION: Ohmart Models: A-2100
A-2102
A-5771
A-5772
A-33131
Amersham Corporation Model: AMN.PE1

ISOTOPE:

MAXIMUM ACTIVITY:

Cesium-137	750	millicuries (A-2102)
	600	millicuries/foot (A-5771) (not to exceed 6 curies per source housing)
Cobalt-60	35	millicuries (A-2100, A-5772)
Californium-252	0.23	millicuries (A-33131)
Americium-241/Beryllium	260	millicuries (AMN.PE1)

LEAK TEST FREQUENCY: 36 Months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE: _____ YES _____ X _____ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: NR-522-D-892-S

DATE: MAR 16 1992

PAGE: 1 OF 6

DEVICE TYPE: Source Housing

MODEL: SHLG Series
(see description for approved model numbers)

MANUFACTURER/DISTRIBUTOR: Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION: Ohmart Models: A-2100
A-2102
A-2104
Minnesota Mining and Manufacturing Models: 4P6T
4D6P

ISOTOPE:

MAXIMUM ACTIVITY:

Cesium-137	2.4 curies	(SHLG-1)
	9.0 curies	(SHLG-2)
	10.0 curies	(SHLG-3 and -3A)
Cobalt-60	30.0 millicuries	(SHLG-1)
	75.0 millicuries	(SHLG-2)
	750.0 millicuries	(SHLG-3 and -3A)

LEAK TEST FREQUENCY: 36 months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE: _____ YES _____ X _____ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO.: NR-522-D-899-B

DATE: MAR 16 1992

PAGE 1 OF 9

DEVICE TYPE: Source Housing

MODEL: SH-X Series (where X denotes a unique source housing.)
SH-FX Series (where X denotes a unique source housing
and F denotes fireproof.)
(See description for NRC approved models.)

MANUFACTURER/DISTRIBUTOR: Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION: Ohmart Models: A-2100
A-2102

ISOTOPE:

MAXIMUM ACTIVITY:

Cesium-137

120.0 millicuries (SH-F1 and SH-1)
1600.0 millicuries (SH-F2 and SH-2)

Cobalt-60

7.5 millicuries (SH-F1 and SH-1)
16.0 millicuries (SH-F2 and SH-2)

LEAK TEST FREQUENCY: 36 Months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE: _____ YES _____ X _____ NO

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

NO: NR-522-D-896-S

DATE: MAR 16 1992

PAGE: 1 OF 5

DEVICE TYPE: Source Housing

MODEL: SHD

MANUFACTURER/DISTRIBUTOR:

Ohmart Corporation
4241 Allendorf Drive
Cincinnati, OH 45209

SEALED SOURCE MODEL DESIGNATION: Ohmart Model: A-2102

ISOTOPE:

Cesium-137

MAXIMUM ACTIVITY:

500 millicuries

LEAK TEST FREQUENCY: 36 months

PRINCIPAL USE: (D) Gamma Gauge

CUSTOM DEVICE:

_____ YES

____X____ NO

FEB 26 1996

Docket No. 030-34071
Control No. 122881

Charles F. Chelton
Industrial Hygienist
Bayway Refining Company
1400 Park Avenue
Linden, New Jersey 07036

Dear Mr. Chelton:

This is in reference to your application dated February 13, 1996 requesting a NRC License. Your submission does not provide all the information needed to issue a NRC License. Draft Regulatory Guide DG-0008 entitled *Applications For the Use of Sealed Sources in Portable Gauging Devices* and Draft Regulatory Guide FC 404-4 entitled *Guide for the Preparation of Applications For the Use of Sealed Sources in Non-portable Gauging Devices* are enclosed to help you prepare an application for a NRC License. You should follow the format of the regulatory guides. These two guides are provided based upon your need to use and possess fixed and portable gauges.

Your submission includes information about generally licensed devices. Even though you possess generally licensed material, it is not appropriate to interconnect generally licensed material within the application for a specific license. Please focus your submission to those devices requiring a specific NRC License.

In addition, please submit a letter signed by a management representative indicating that management has reviewed the application and concurs in the statements and representations contained therein. Note also that a management representative should sign all future correspondence which request change in your license.

We will continue our review upon receipt of this information. Please reply in duplicate to my attention at the Region I office and refer to Mail Control No. 122881. If you have any technical questions regarding this deficiency letter, please call me at (610) 337-5251.

OFFICIAL RECORD COPY

ML 10

C. F. Chelton
Bayway Refining Company

-2-

In order to continue prompt review of your application, we request that you submit your response to this letter within 30 calendar days from the date of this letter.

Sincerely,

Original Signed By:
Kathleen Dolce

Kathleen Dolce
Division of Nuclear Materials Safety

Docket No. 030-34071
Control No. 122881

Enclosures:

1. 10 CFR Parts 2, 19, 20, 21, 30, 71, and 170
2. Draft Regulatory Guide DG-0008, *Applications For the Use of Sealed Sources in Portable Gauging Devices*
3. Draft Regulatory Guide FC 404-4, *Guide for the Preparation of Applications For the Use of Sealed Sources in Non-portable Gauging Devices*
4. NRC Form 313

DOCUMENT NAME: R:\WPS\DLTR\D2930278.01

To receive a copy of this document, indicate in the box: "C" = Copy w/o attach/encl "E" = Copy w/ attach/encl "N" = No copy

OFFICE	DNMS/RI	N	DNMS/RI				
NAME	Dolce\kadl						
DATE	02/22/96	02/	/96	02/	/96	02/	/96

OFFICIAL RECORD COPY

Bayway Refining Company
a subsidiary of Tosco Corporation
1400 Park Avenue
Linden, New Jersey 07036

LAL 30278
030-34071
03121

February 13, 1996

Licensing Assistant Section
Nuclear Materials Safety Branch
U.S. Nuclear Regulatory Commission, Region 1
475 Allendale Rd.
King of Prussia, PA 19406-1415

Dear Sir:

On February 1, 1996, the Bayway Refining Company (BRC) purchased and took ownership from BP Oil Company of its refinery located in Marcus Hook Pennsylvania. The BP Marcus Hook refinery has been licensed by the NRC (# 3710059-03) to operate using radioactive materials within various measurement devices.

As the new owners of the facility BRC is submitting the attached application for a license along with the attached supporting material. BRC is taking possession of the Marcus Hook facility in a shutdown mode which means that the refining activities have been discontinued. The facility is being manned by former BP employees familiar with the facility operations. BRC has obtained copies of BP's Accident Prevention Program Manual and plans to continue operating under the safety practices outlined therein where applicable.

Items 5 through 11 of the application are answered below.

Item 5 - Radioactive Material

BP has provided us with an inventory of devices on site in the form of a Field Leak Test report dated 10/26/95; an inventory of fixed level gauges; and a field service report dated 1/29/96 in which OHMART verifies the location of the devices listed. (OHMART is the manufacturer of the fixed level gauges and a contract service provider.) The total radioactivity found in fixed level gauges is 7.5 curie for Cesium 137. I've attached an inventory listing the location of the gauges and I've keyed them to the wipe test report in the right hand column. In addition, there are four hydrogen fluoride detectors which contain sealed sources of Ni63. Each source contains less than 15mCi of radioactivity. These are registered under a General License to Sensidyne from the state of Florida (attached). We are contacting Sensidyne to notify them of the change in ownership. There is also a portable gauge containing Americium 241 with 200mCi radioactivity. This instrument will be locked in a safe located in the Firehouse. In addition, two portable alloy

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ML 10

122881

FEB 13 1996

analyzers which are registered under a General License to TNTechnologies in Texas that formerly were located in the Reliability Instrument Room have been moved to the safe in the Firehouse. Each analyzer contains 5mCi of Cd109 and 45mCi of Fe55. Stewardship for these 3 portable devices transfers to our representative, Bruce Iglay, with BRC's possession of the refinery as indicated in the attached memo.

Item 6 - Purpose of Licensed Material

The fixed level gauges are used to measure the flow, level or density of process materials. The TNTechnologies Alloy Analyzers identify metal composition. The Ni63 sources are contained in devices that measure hydrogen fluoride gas. The Americium 241 is in a Fischer Control neutron backscatter detector used as a portable level gauge.

Item 7 - Responsible Individuals and Their Training

I, Charles Chelton will be the Bayway Refining Co. Radiation Safety Officer. My office is at BRC's Linden, NJ location. I am a certified industrial hygienist with 20 years of experience in the field, and have a Bachelor of Science and Master of Science degree in Chemistry and a Master of Science in Industrial Hygiene. I am certified by the American Board of Industrial Hygiene in the comprehensive practice of Industrial Hygiene.

Bruce Iglay is the responsible individual for radiation safety at the Marcus Hook refinery. Bruce has a degree in Chemical Engineering and has been employed by BP since 1974. Bill Carnall, an Instrument Maintenance Supervisor reporting to Bruce at the refinery, has been trained by OHMART, the supplier of the fixed gauge devices, in the use and operation of the gauges.

The Bayway Refining Company intends to obtain licensed contract services for all leak testing, gauge relocation and removal from service of the fixed level gauges.

Item 8 - Training for Individuals Working in or Frequenting Restricted Area

In a shutdown mode, no other individuals other than Bill Carnall will be involved in the operation or use of these devices. Former BP unit supervisors will be manning the units where the fixed gauges are installed. They have been recipients of BP's ongoing safety training program and will continue to operate within the procedures outlined in BP's Accident Prevention Program Manual.

Item 9 - Facilities and Equipment

Schematic diagrams identifying the location of the fixed level gauges are attached. The four Ni63 sources are located in Sensidyne hydrogen fluoride monitors located on the HF unit. The three portable devices are locked in a safe in the Firehouse.

February 13, 1996

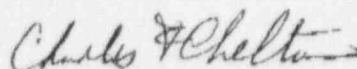
Item 10 - Radiation Safety Program

Procedure 1-010 "Nuclear Radiation Gauging Devices" from the Accident Prevention Plan is attached.

Item 11 - Waste Management

Waste radioactive material will be transferred to a licensee specifically authorized to possess the radioactive material.

Sincerely,



Charles F. Chelton
Industrial Hygienist

CFC/db
C0201962 DOC

Attachment

February 13, 1996

bc: T. Accetta
B. Carnall
D. Erdley
B. Iglay
J. Launchi
T. Parker
J. Ponticello

NRC FORM 313

(10-84)
10 CFR 30, 32, 33
34, 35, 38, 39 and 40

U. S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 2150-0120
EXPIRES 6-30-86

APPLICATION FOR MATERIAL LICENSE

ESTIMATED BURDEN PER RESPONSE TO COMPLY WITH THIS INFORMATION COLLECTION REQUEST: 8 HOURS. SUBMITTAL OF THE APPLICATION IS NECESSARY TO DETERMINE THAT THE APPLICANT IS QUALIFIED AND THAT ADEQUATE PROCEDURES EXIST TO PROTECT THE PUBLIC HEALTH AND SAFETY. FORWARD COMMENTS REGARDING BURDEN ESTIMATE TO THE INFORMATION AND RECORDS MANAGEMENT BRANCH (T-8 F33), U.S. NUCLEAR REGULATORY COMMISSION, WASHINGTON, DC 20555-0001, AND TO THE PAPERWORK REDUCTION PROJECT (3150-0120), OFFICE OF MANAGEMENT AND BUDGET, WASHINGTON, DC 20503.

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.

APPLICATION FOR DISTRIBUTION OF EXEMPT PRODUCTS FILE APPLICATIONS WITH:

DIVISION OF INDUSTRIAL AND MEDICAL NUCLEAR SAFETY
OFFICE OF NUCLEAR MATERIALS SAFETY AND SAFEGUARDS
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001

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:

LICENSING ASSISTANT SECTION
NUCLEAR MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION I
475 ALLENDALE ROAD
KING OF PRUSSIA, PA 19406-1415

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

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION II
101 MARIETTA STREET, NW, SUITE 2900
ATLANTA, GA 30333-0169

IF YOU ARE LOCATED IN:

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

MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION III
801 WARRENVILLE RD.
LIBLE, IL 60532-4351

ALASKA, ARIZONA, ARKANSAS, CALIFORNIA, COLORADO, HAWAII, IDAHO, KANSAS,
LOUISIANA, MONTANA, NEBRASKA, NEVADA, NEW MEXICO, NORTH DAKOTA,
OKLAHOMA, OREGON, PACIFIC TRUST TERRITORIES, SOUTH DAKOTA, TEXAS, UTAH,
WASHINGTON, OR WYOMING, SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
811 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 78011-0064

L&L 30278
030-34071
03121

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 JURISDICTIONS.

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

☒
☐
☐

A. NEW LICENSE

B. AMENDMENT TO LICENSE NUMBER _____

C. RENEWAL OF LICENSE NUMBER _____

2. NAME AND MAILING ADDRESS OF APPLICANT (include Zip code)

Bayway Refining Co.
1400 Park Ave.
Linden, NJ 07036

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

Bayway Refining Co.
Smith St., Gate Post Rd.
Marcus Hook, PA 19061

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Charles F. Chelton

TELEPHONE NUMBER

(908) 523-5050

SUBMIT ITEMS 5 THROUGH 11 ON 6-1/2 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. Attachment

6. PURPOSE(S) FOR WHICH LICENSED MATERIAL WILL BE USED

Attachment

7. INDIVIDUAL(S) RESPONSIBLE FOR RADIATION SAFETY PROGRAM AND THEIR TRAINING EXPERIENCE

Attachment

8. TRAINING FOR INDIVIDUALS WORKING IN OR FREQUENTING RESTRICTED AREAS

Attachment

9. FACILITIES AND EQUIPMENT

Attachment

10. RADIATION SAFETY PROGRAM

Attachment

11. WASTE MANAGEMENT

Attachment

12. LICENSEE FEES (See 10 CFR 170 and Section 170.31)

FEE CATEGORY AMOUNT
ENCLOSED \$ 530.00

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, 38, 39 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 82 STAT. 748 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.

CERTIFYING OFFICER - TYPED/PRINTED NAME AND TITLE

CHARLES CHELTON

Industrial Hygienist

SIGNATURE

Charles F. Chelton

DATE

2/13/96

FOR NRC USE ONLY

TYPE OF FEE	FEE LOG	FEE CATEGORY	AMOUNT RECEIVED	CHECK NUMBER	COMMENTS
			\$		
APPROVED BY				DATE	

122881

PRINTED ON RECYCLED PAPER

NRC FORM 313 (10-84)

OFFICIAL RECORD COPY ML 10

INVENTORY OF FIXED LEVEL GAUGES

10/25/95 WIPE TEST REPORT

<u>SOURCE/LOCATION</u>	<u>ACTIVITY</u>	<u>ISOLATION DISTANCE</u>	<u>WIPE #</u>
<u>Alky Unit:</u> 1st Stage Acid Settler PV 2590	80 MCI CS 137	20 feet	11
2nd Stage Acid Settler PV 2507	10 MCI CS 137	20 feet	12
Acid Regenerator (2) PV 2508	50 MCI CS 137	25 feet	15 & 16
Acid Regenerator Condenser PV 2555	10 MCI CS 137	10 feet	13
Polymer Surge Drum PV 2509	100 MCI CS 137	25 feet	14
Liquid Trap PV 2511	50 MCI CS 137	20 feet	17
Parallel Poly Surge Drum PV 2628	50 MCI CS 137	20 feet	18
<u>Platformer:</u> Surge Hopper PV 13-V-15	750 MCI CS 137	45 feet	3
#1 Reactor PV 13-R-1	750 MCI CS 137	45 feet	1
Disengaging Hopper PV 13-V-15	100 MCI CS 137	25 feet	2
Lock Hopper #1 PV 13-V-19	50 MCI CS 137	20 feet	5
Lock Hopper #2 PV 13-V-11	50 MCI CS 137	20 feet	4
<u>Cat Cracker:</u> Fractionator PV 7712	1500 MCI CS 137	65 feet	6
Precipitator Hoppers (4)	100 MCI CS 137	25 feet	7,8,9,10
<u>Crude/Vac:</u> 541 Vacuum Tower	375 MCI CS 137	35 feet	23
542 Vacuum Tower	375 MCI CS 137	35 feet	22
543 Crude Tower	500 MCI CS 137	40 feet	20
544 Crude Tower	500 MCI CS 137	40 feet	21
544 Vacuum Tower	2000 MCI CS 173	70 feet	19

ohmart

Field Service Report

Phone 513-272-0131
Fax 513-272-0133
Emergencies 513-272-0135

Field Service #

MA 16-120-0743

C.O. #

Service P.O. #

w/c

Visit Date(s)

29 JAN 96

Page 1 of 1

4241 Allendorf Drive - Cincinnati, OH - 45209

INVOICE ADDRESS BP OIL PO Box 428 Post Rd MARCUS Hook PA		SERVICE LOCATION		Radiation Safety Training		Yes	No	Initial
				Leak Test				
				Radiation Survey				
Visit Purpose		Revisit		Customer Contact				
				MARY WIGGINS Safety Dir				
Calibration Date				Phone #				
				610 999 7364				

TRAVEL CHATT. TN → SITE Monday 29 JAN 96
to Perform a COMPLETE INVENTORY OF ALL NUCLEAR SOURCES.

UPON ARRIVAL, CONTACTED Mary Wiggins, RSO.
SHE PROVIDED A LEAK TEST REPORT STATING SERIAL #'S
AND LEAK TEST RESULTS from 26 OCTOBER 95.

ALL SOURCES WERE INVENTORIED AND found to
BE IN PLACE. S/N'S WERE VERIFIED EXCEPT Wipe #17.
ON THIS LEAK TEST form, SERIAL NUMBERS MARKED WITH
"OPEN" AND a "✓" were OPEN... ALL OTHERS WERE
CLOSED. ADVISED M. Wiggins to LOCK them CLOSED.
Wipe #17... 50 mCi, SHRM-PA S/N 65918... THIS VESSEL
WAS WRAPPED tightly with TARPS & MUCH STEAM WAS
PRESENT. SOURCE PRESENCE VERIFIED BY SURVEY METER
AND S/N DETERMINED THROUGH PROCESS OF ELIMINATION.

The Ohmart Corporation believes strongly in the safe use of radioactive material by applying the ALARA principles. No comments written or verbal by any Ohmart employee should be considered as a deviation from that philosophy nor as permission to violate any regulation or condition of your license. Compliance with your license requirements and the appropriate regulations is your responsibility.

Mary Wiggins

Service Representative

P. D. AUBREY 29 JAN

FIELD LEAK TEST REPORT

Customer B.P. OIL COMPANY

Address P.O. BOX 428

MARCUS HOOK, PA 19061

Purchase order No. _____

Attn: MARY WIGGINS

NOTE: A source which tests OK has

an activity of less than 0.005 microCi.

WIPE NO.	SHOP ORDER	ISOTOPE	SERIAL #	mCi	SOURCE HOLDER	SHIP DATE	CUSTOMER LOCATION	PLANT AREA	TEST DATE	TESTED BY	ANALYSIS DATE	ANALYZED BY	SOURCE OK	DEFECTIVE	REWIPE
1	W-2010-02008	CS-137	M-5621	600	SH-F2	Feb-92	#1 REACTOR REDUC. ZONE	1	10/26/95	<i>[Signature]</i>	11-8-95	<i>[Signature]</i>	OK		
2	W-2010-02008	CS-137	M-6808	60	SH-F1	Feb-92	DISENGAGING HOPPER	1	10/26/95	<i>[Signature]</i>	"	"	OK		
3	PA94-020-1284	CS-137	67447	1000	SH-F2	May-94	SURGE HOPPER	1	10/26/95	<i>[Signature]</i>	"	"	OK		
4	W-2010-02008	CS-137	M-6630	50	SH-F1	Feb-92	LOCK HOPPER #2	1	10/26/95	<i>[Signature]</i>	"	"	OK		
5	W-2010-02008	CS-137	M-6629	50	SH-F1	Feb-92	LOCK HOPPER #1	1	10/26/95	<i>[Signature]</i>	"	"	OK		
6	0020-076	CS-137	70620	1500	SHLG-1	Feb-81	FRACTIONATOR	4	10/26/95	<i>[Signature]</i>	"	"	OK		
7	KAY RAY	CS-137	9913-A	100	7080	Mar-78	PREDIPITATOR	4	10/26/95	<i>[Signature]</i>	"	"	OK		
8	KAY RAY	CS-137	9913-B	100	7080	Mar-78	PREDIPITATOR	4	10/26/95	<i>[Signature]</i>	"	"	OK		
9	KAY RAY	CS-137	9913-C	100	7080	Mar-78	PREDIPITATOR	4	10/26/95	<i>[Signature]</i>	"	"	OK		
10	KAY RAY	CS-137	9913-D	100	7080	Mar-78	PREDIPITATOR	4	10/26/95	<i>[Signature]</i>	"	"	OK		
11	7039-10078	CS-137	O-705	80	AS-2	Jun-88	1 STAGE ACID SETTLER	4	10/26/95	<i>[Signature]</i>	"	"	OK		
12	PA93-039-3272	CS-137	3294GG	10	MDTS-2	Feb-94	2 STAGE ACID SETTLER	4	10/26/95	<i>[Signature]</i>	"	"	OK		
13	44114-4	CS-137	61411	10	SHRM-PA	Oct-71	ACID REGEN CONDENSER	4	10/26/95	<i>[Signature]</i>	"	"	OK		
14	44111-3	CS-137	61981	100	HM-8	Oct-71	OLD POLY SURGE DRUM	4	10/26/95	<i>[Signature]</i>	"	"	OK		
15	9410-031-C	CS-137	62103	10	SHRM-PA	Oct-71	ACID REGEN TOP SOURCE	4	10/26/95	<i>[Signature]</i>	"	"	OK		

an activity of less than 0.005 microCi.

Page 3 of 3

JAN 22 '96 10:11 NO.001 P.04

02/13/98 TUE 13:29 FAX

0.25

Bayway Refining Company
a subsidiary of Tosco Corporation
1400 Park Avenue
Linden, New Jersey 07036

January 29, 1996

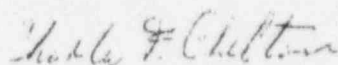
Ms. Mary Wiggins
BP Oil Co.
P. O. Box 428
Marcus Hook, PA 19061

Dear Ms. Wiggins:

I received a copy of your inventory of radioactive source devices which are located at the Marcus Hook refinery in the form of a 11/95 leak test report. The report lists 30 devices of which 27 are identified as fixed level gauges located on equipment. Two portable devices are in the Reliability Instrumental Room and one portable device is located in the Fire House safe.

It is my understanding that the three portable devices will be locked in the safe prior to transfer of ownership of the Marcus Hook facility to Bayway Refining Co. Bruce Iglay has been designated as the Bayway representative who will be responsible for the devices. Please transfer access to the safe and its contents at the time of ownership change to Bruce.

Yours truly,



Charles F. Chelton
Industrial Hygienist

CFC/db

c: Tom Accetta
Don Erdley
Bruce Iglay
John Launchi
Herman Seedorf

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 1 of 4 Pages

RADIOACTIVE MATERIALS LICENSE

Pursuant to Chapter 404, Florida Statutes, and Chapter 10D-91, Florida Administrative Code, and in reliance on statements and representations heretofore made by the licensee designated below, a license is hereby issued authorizing such licensee to receive, acquire, possess and transfer the radioactive material(s) designated below and to use such radioactive material(s) for the purpose(s) and at the place(s) designated below. This license is subject to all applicable rules, regulations and orders of the State of Florida, Department of Health and Rehabilitative Services now or hereafter in effect and to any conditions specified below.

Licensee	
1. Name: SENSIDYN, INC.	3. License Number: 2178-1
2. Address: 16333 Bay Vista Drive Clearwater, FL 34620	4. Expiration date: May 7, 1991
	5. Category: 3G

6. Radioactive material
(element and mass number)

7. Chemical and/or physical form

8. Maximum quantity licensee
may possess at any one time

A. Nickel 63

A. Sealed sources
(New England
Nuclear, Inc.
Model Number
NER-004R Ring
Source)

A. 30 sources; not
to exceed 15
millicuries each

B. Nickel 63

B. Sealed sources
(New England
Nuclear, Inc.
Model Number
NER-004R Ring
Source)

B. 2 sources; not
to exceed 15
millicuries each

9. Authorized Use.

- A. For possession, storage, use and distribution in Environmental Technologies Group, Inc., model FP-IMS, fixed point ion mobility spectrophotometer for distribution to general licensees pursuant to 10D-91.311(4)(a), Florida Administrative Code. Licensee may also demonstrate the device at customer's facilities.

(see Page 2)

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 2 of 4 Pages

License Number 2178-1
(3G) (E96)

9. Authorized Use. (Continued)

10. For possession and use incident to evaluation or demonstration in Environmental Technologies Group, Inc., model FP-IMS, fixed point ion mobility spectrophotometer.

CONDITIONS

10. A. Licensed material described in Items 6, 7, 8, and 9 subitems A and B shall be used at the licensee's facility located at the address in Item 2 above and at temporary job sites throughout the State of Florida.
- B. The authorized place of storage shall be at the licensee's facility located at the address in Item 2 above.
11. Failure to comply with the provisions of this license is a felony of the third degree pursuant to Section 404.161, Florida Statutes. Also, violations may warrant an administrative fine of up to \$1,000.00 per violation per day, pursuant to Section 404.162, Florida Statutes.
12. Licensed material shall be used by, or under the supervision of, Ronald W. Roberson or Ronald R. Harmon.
13. The licensee shall comply with the provisions of Chapter 10D-91, Florida Administrative Code, Part X, "Notices, Instructions and Reports to Workers; Inspections" and Part IV, "Standards for Protection Against Radiation".
14. Sealed sources containing licensed material shall not be opened nor removed from their respective source holders by the licensee.
15. A. (1) Each sealed source containing licensed material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months, except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months. In the absence of a certificate from a transferor, indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.

Page 3)

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 3 of 4 Pages

License Number 2178-1
AMENDMENT NO.
(3G) (E96)

15. B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Department of Health and Rehabilitative Services.
- C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Department of Health and Rehabilitative Services regulations. A report shall be filed within five (5) days of the test with the Office of Radiation Control, Radioactive Materials Program, Department of Health and Rehabilitative Services, 1317 Winewood Boulevard, Tallahassee, Florida 32399-0700 describing the equipment involved, the test method used, the test results and the corrective action taken.
- D. The test sample (smear) shall be taken by the licensee or an approved using an approved leak test kit. Analysis of the test sample for leakage and/or contamination shall be performed by persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.
16. The licensee shall conduct a physical inventory and inspection at intervals not to exceed six months to account for all sealed sources received and possessed under this license. The records of the inventories shall be maintained for three years from the date of the inventory for inspection by the Department of Health and Rehabilitative Services, and shall include the quantities and kinds of radioactive material, location of sealed sources and the date of the inventory.
17. This license authorizes storage and distribution of the radioactive materials listed in Items 6, 7, 8 and 9, Subitem A. These materials may be distributed to general licensees under 10D-91.306(4), F.A.C.
18. Pursuant to Subsection 10D-91.311(4), F.A.C., the licensee is authorized to distribute the sources described in Items 6, 7, 8, Subitem A, contained within an Environmental Technologies Group, Inc., model FP-IMS, fixed point ion mobility spectrophotometer to persons generally licensed pursuant to Subsection 10D-91.306(4), F.A.C., or equivalent provisions of the regulations of the U.S. Nuclear Regulatory Commission or an Agreement State.

see Page 4)

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

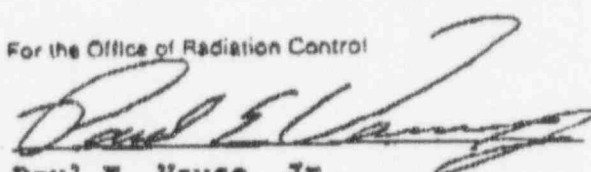
RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 4 of 4 Pages

License Number: 2178-1
(38) (E96)

19. Pursuant to Subsection 10D-91.311(4)(d) 1. and 2., FAC, the licensee shall furnish copies of the general license contained in Subsection 10D-91.306(4), FAC, or equivalent U.S. Nuclear Regulatory Commission or Agreement State regulations, to each person who directly or through an intermediate person transfers a device containing radioactive material for use as described in Subsection 10D-91.306(4), FAC.
20. The licensee shall comply with label requirements as set forth in Subsections 10D-91.311(4)(a)3., F.A.C.
21. The licensee shall file periodic reports as required by Subsection 10D-91.311(4)(d)3. through 5., FAC.
22. This license does not authorize the export of radioactive material outside the United States.
23. The licensee shall not transfer possession and/or control of radioactive material, or products containing radioactive material as a contaminant except:
- A. By transfer to a specifically licensed recipient; or
 - B. As provided otherwise by specific provision of this license pursuant to the requirements of the "Florida Control of Radiation Hazard Regulations", Chapter 10D-91, Florida Administrative Code.
24. A. Except as specifically provided otherwise by this license, the licensee shall possess and use licensed material described in Items 6, 7, 8 and 9 of this license in accordance with statements, representations and procedures contained in the licensee's application dated January 18, 1991, signed by Bryan I. Truex, President, and correspondence dated March 13, 1991, signed by Ron Roberson, Corporate Industrial Hygienist.
- B. The licensee shall comply with all applicable requirements of the "Florida Control of Radiation Hazard Regulations", Chapter 10D-91, Florida Administrative Code, and these Regulations shall supersede the licensee's statements in applications or correspondence, unless the statements are more restrictive than the Regulations.

For the Office of Radiation Control


Paul E. Vause, Jr.
Public Health Physicist

Date May 7, 1991

Licensee - File
Central Files - Canary
U.S.N.R.C. - File
Office - Canary
Field Files - File

MRS Form 177, Jan 87 (Replaces previous editions)

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

Page 1 of 2 Pages

License Number 2178-1
AMENDMENT NO. 1
(3G) (E96)

SENSIDYNE, INC.
16333 Bay Vista Drive
Clearwater, FL 34620

With reference to correspondence dated May 7, 1991, State of Florida
Radioactive Materials License Number 2178-1 is hereby amended as follows:

TO CHANGE ITEM 4 TO READ:

4. Expiration Date: May 31, 1996

TO CHANGE CONDITIONS 15 TO READ:

CONDITIONS

15. A. (1) Each sealed source containing licensed material, other than Hydrogen 3, with a half-life greater than thirty days and in any form other than gas shall be tested for leakage and/or contamination at intervals not to exceed six months, except that each source designed for the purpose of emitting alpha particles shall be tested at intervals not to exceed three months. In the absence of a certificate from a transferor, indicating that a test has been made within six months prior to the transfer, a sealed source received from another person shall not be put into use until tested.
- (2) Notwithstanding the periodic leak test required by this condition, any licensed sealed source is exempt from such leak tests when the source contains 100 microcuries or less of beta and/or gamma emitting material or 10 microcuries or less of alpha emitting material.
- B. The test shall be capable of detecting the presence of 0.005 microcurie of radioactive material on the test sample. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Department of Health and Rehabilitative Services.

See Page 2)

STATE OF FLORIDA
DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES
OFFICE OF RADIATION CONTROL

Page 2 of 2 Pages

RADIOACTIVE MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number 2178-1
AMENDMENT NO. 1
(3G) (E96)

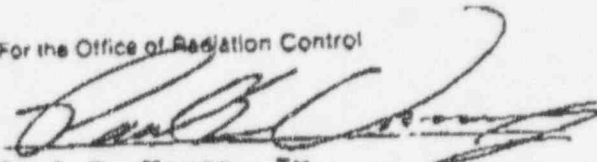
15. C. If the test reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired or to be disposed of in accordance with Department of Health and Rehabilitative Services regulations. A report shall be filed within five (5) days of the test with the Office of Radiation Control, Radioactive Materials Program, Department of Health and Rehabilitative Services, 1317 Winewood Boulevard, Tallahassee, Florida 32399-0700 describing the equipment involved, the test method used, the test results and the corrective action taken.
- D. The test sample (smear) shall be taken by the licensee or an approved person using an approved leak test kit. Analysis of the test sample for leakage and/or contamination shall be performed by persons specifically authorized by the U.S. Nuclear Regulatory Commission or an Agreement State to perform such services.

TO DELETE CONDITION 22

Date May 24, 1991

Licensee - White
Central Files - Canary
U.S.N.R.C. - Pink
Office - Canary
Field Files - Pink

For the Office of Radiation Control


Paul E. Vause, Jr.
Public Health Physicist

HRS Form 177, Jan 87 (replaces previous editions)

OFFICIAL RECORD COPY ML 10

118008

Attachment #2

GAUGING DEVICES

Service: LI 1404

Radioactive Source: *Cesium 137*

Source Rating:

Location:

Vessel:

Profile Level of Acid Settler PV-2507

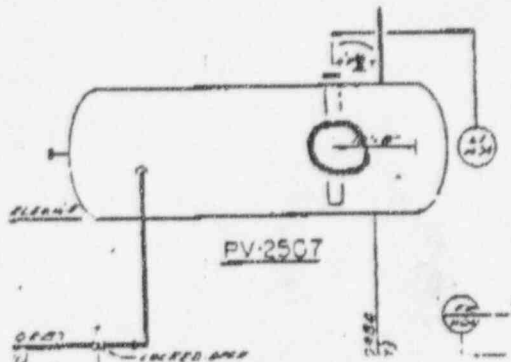
~~Radium 226~~ Source holder IN-VAL-60-B-2025~~45 mCi 10 mCi~~ Model #GE IN-VAL-60-A-00-30A *MDTS*

Alky Unit Acid Area

PV-2507 Acid Settler

MDTS

For Safe Entry: Source has to be removed by Radiation Safety Personnel and stored in holder located at platform on top of Vessel PV-2507. Source is withdrawn from well into source holder. Locking mechanism is then inserted.

*Confirmed on**2/1/96 with**OHMART that**PV2507 has a**Cesium 137 source**Shop Order #**PA 93-039-3272**Records available at**OHMART.*

ALKY UNIT RADIATION

ALARM DEVICE

Service: LSH 1405

Radioactive Source:

Source Rating:

Location:

Vessel:

High Level Alarm PV-2508

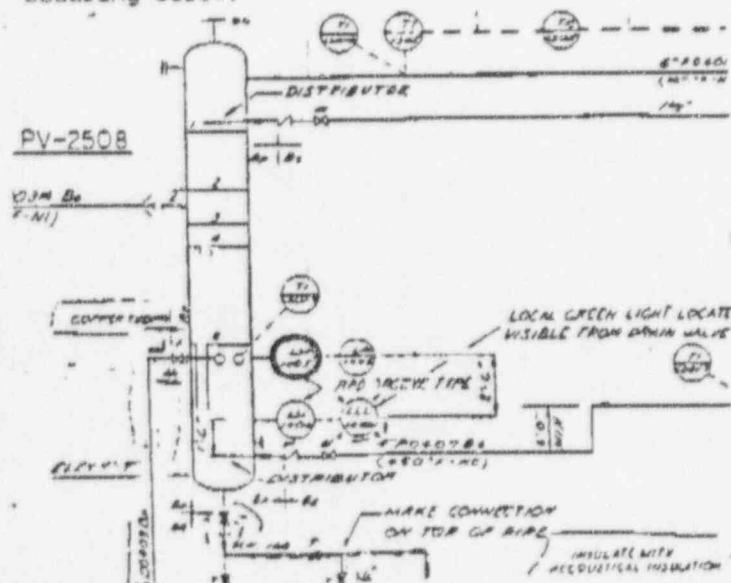
Cesium 137 Source holder Ohmart SHRM/PA

50 mCi Model #Ohmart 2102

Alky Unit Acid Area

PV-2508 Acid Regenerator

For Safe Entry: Source holder has to be locked in closed position by turning handle into the center of the unit and engaging securing screw.

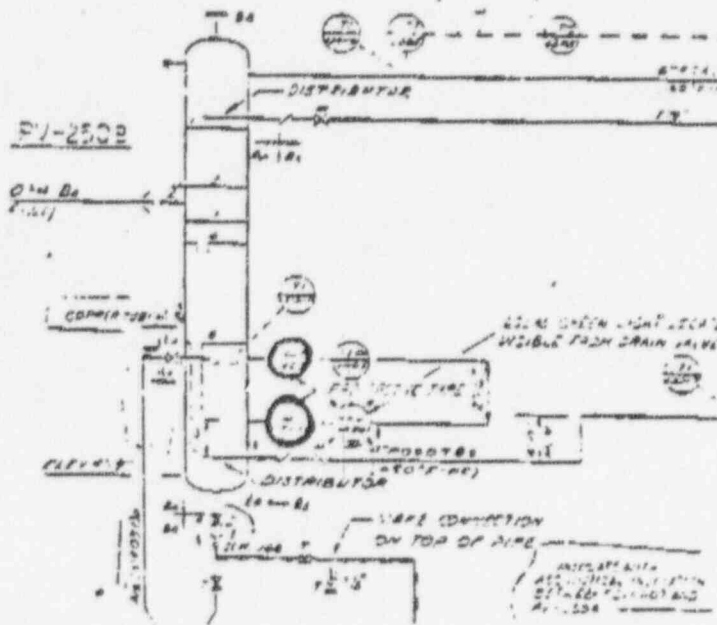


Attachment 3

ALARM DEVICE

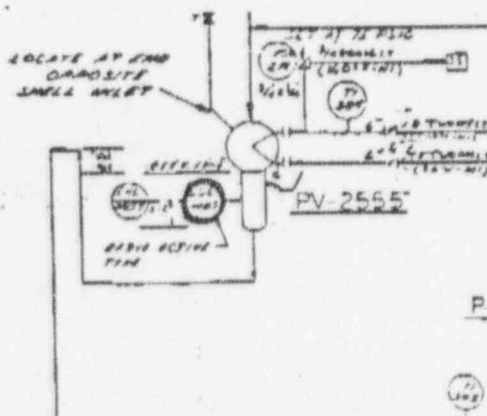
Service: PV-2508
 LSL 1406 - Low Level Alarm, LSL 1405 High Level Alarm
 Radioactive Source: Cesium 137 Source holder Ohmart SHRM/PA
 Source Rating: (2) 50 mCi Model Ohmart 2102
 Location: Alky Unit Acid Area
 Vessel: PV-2508 Acid Regenerator

For Safe Entry: Source holder has to be locked in closed position similar to PV-2508 unit.

ALKY UNIT RADIATIONALARM DEVICE

Service: LSL 1407 Low Level Alarm PV-2555
 Radioactive Source: Cesium 137 Source holder Ohmart SHRM/PA
 Source Rating: 10 mCi Model Ohmart 2102
 Location: Alky Unit Area
 Vessel: PV-2555 Acid Regenerator Condenser

For Safe Entry: Source holder has to be locked in closed position similar to PV-2508 unit.



Service:

Radioactive Source:

Source Rating:

Location:

Vessel:

For Safe Entry:

LI-06207 High Level Alarm PV-2590

Cesium 137 Source Holder Ohmart AS-2

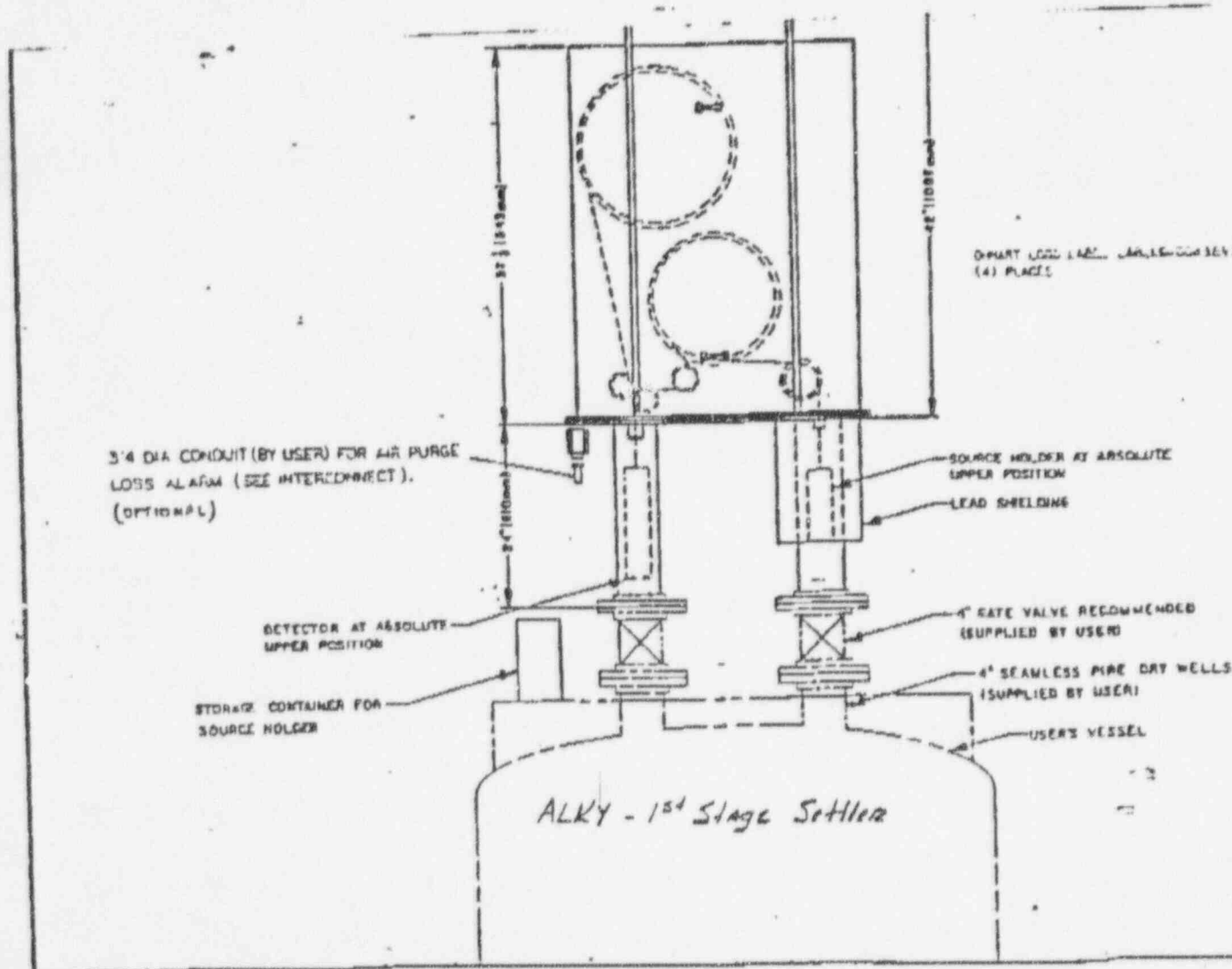
80. mCi Model #Ohmart A-2102

Alky Unit Acid Area

PV-2590 1st Stage Settler

S/N 0-705

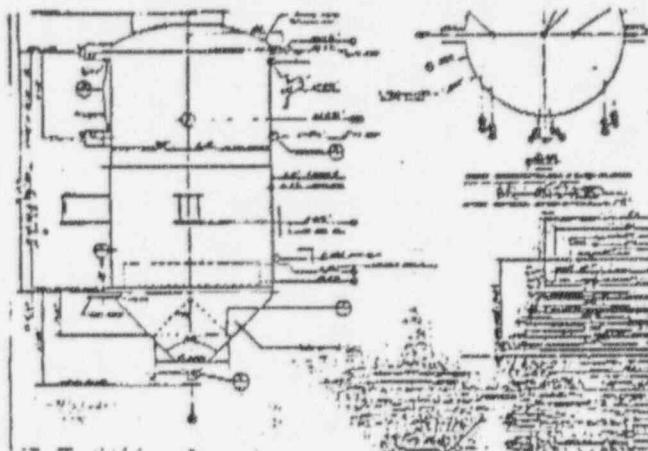
Scheduled for delivery April 1988



PLATFORMER RADIATIONLEVEL DEVICE

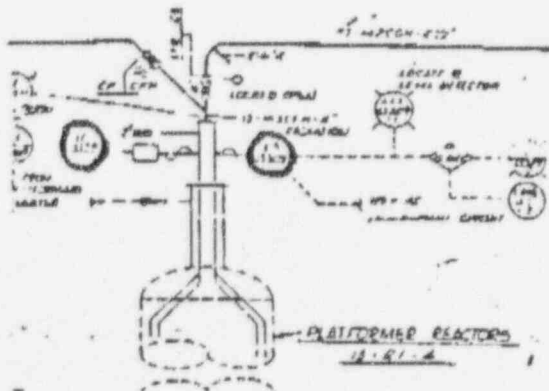
Service: LRT 13340 Level Recorder PV-13-V-15
 Radioactive Source: Cesium 137 Source holder Ohmart SHRH-6
 Source Rating: (1) 750 mCi Model Ohmart A-5771
 Location: Platformer Regenerator
 PV-13-V-15 Surge Hopper

For Safe Entry: One (1) source holder has to be locked in closed position by turning source handle until arrow points in. Align eyelets on handle and source holder; insert lock.

PLATFORMER RADIATIONALARM DEVICE

Service: LS 13309 Low Level Indicator Top #1 Reactor 13-R
 Radioactive Source: Cesium 137 Source holder Ohmart SHRH-6
 Source Rating: 750 mCi Model Ohmart A-5771
 Location: Platformer
 PV-13-R-1 Top of #1 Reactor

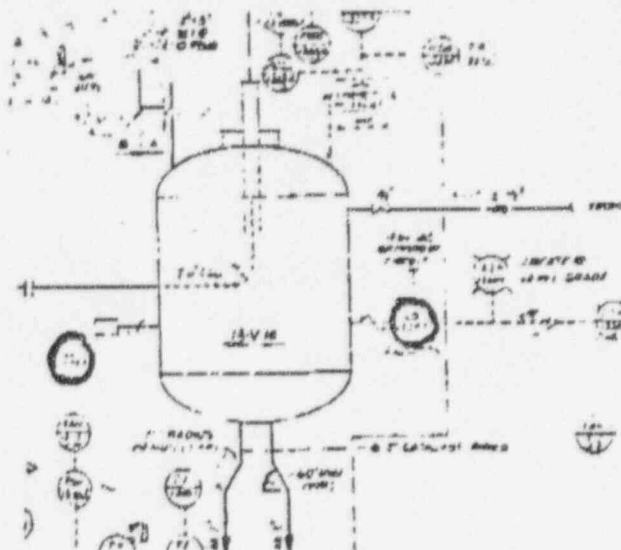
For Safe Entry: Source holder has to be locked in closed position similar to PV-13-V-15 unit.



ALARM DEVICE

Service: LS 13349 High Level Alarm PV-13-V-14
Radioactive Source: Cesium 137 Source holder #Ohmart SR-1
Source Rating: 100 mCi Model #Ohmart A-2102
Location: Platformer Regenerator
PV-13-14 Disengaging Hopper

For Safe Entry: Source holder has to be locked in closed position by removing pin and rotating handle until eyelet is at top aligned with source holder; insert lock.

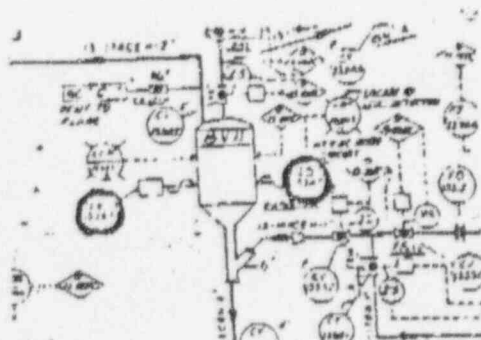


PLATFORMER RADIATION

ALARM DEVICE

Service: LS 13347 High Level Alarm PV-13-V-11
Radioactive Source: Cesium 137 Source holder #Ohmart SR-1
Source Rating: 50 mCi Model #Ohmart A-2102
Location: Platformer Regenerator
PV-13-V-11 Lock Hopper No.2

For Safe Entry: Source holder has to be locked in closed position similar to PV 13-V-14 unit.

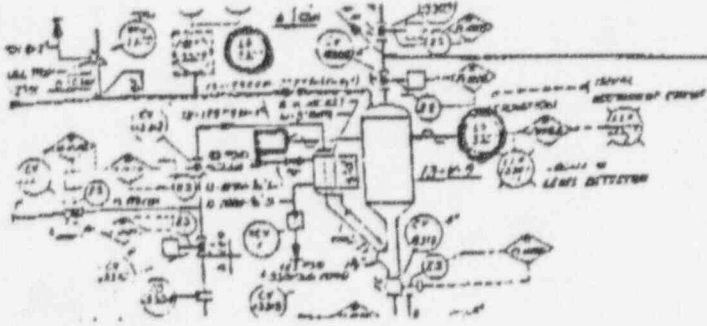


ATTACHMENT B

ALARM DEVICE

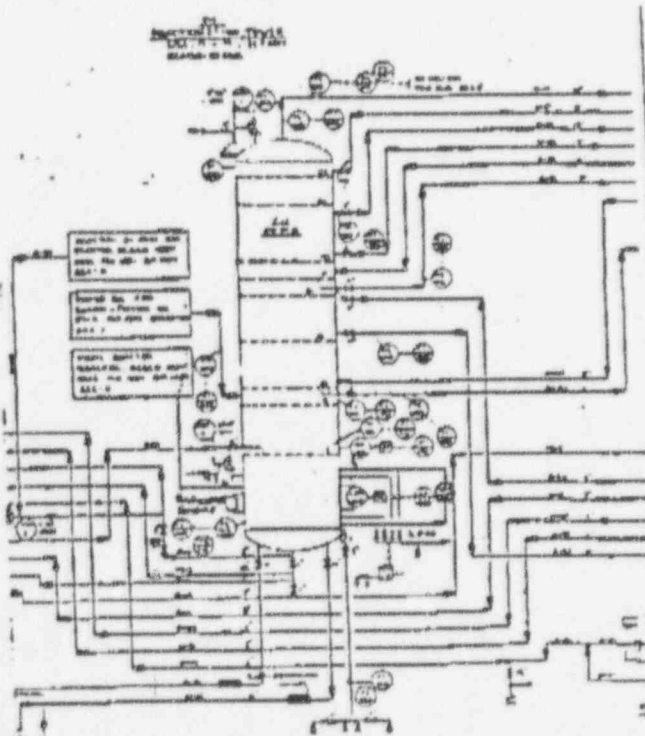
Service:	LS 13307 High Level Alarm PV 13-V-9
Radioactive Source:	Cesium 137 Source holder #Ohmart SHPM/PA
Source Rating:	50 mCi Model #Ohmart A-2102
Location:	Platformer Regenerator PV-13-V-9 Catalyst Addition Lock Hopper

For Safe Entry: Source holder has to be locked in closed position similar to PV-2508 unit.

FCC RADIATIONALARM DEVICE

Service:	L-07230 High & Low Level Alarm PV 7712
Radioactive Source:	Cesium 137 Source holder #Ohmart SHLC-1
Source Rating:	1500 mCi Model #Ohmart A-2102
Location:	Fractionator

For Safe Entry: Source holder has to be locked in closed position by pulling handle upwards until eyelet is visible; insert lock.



Attachment #9ALARM DEVICE

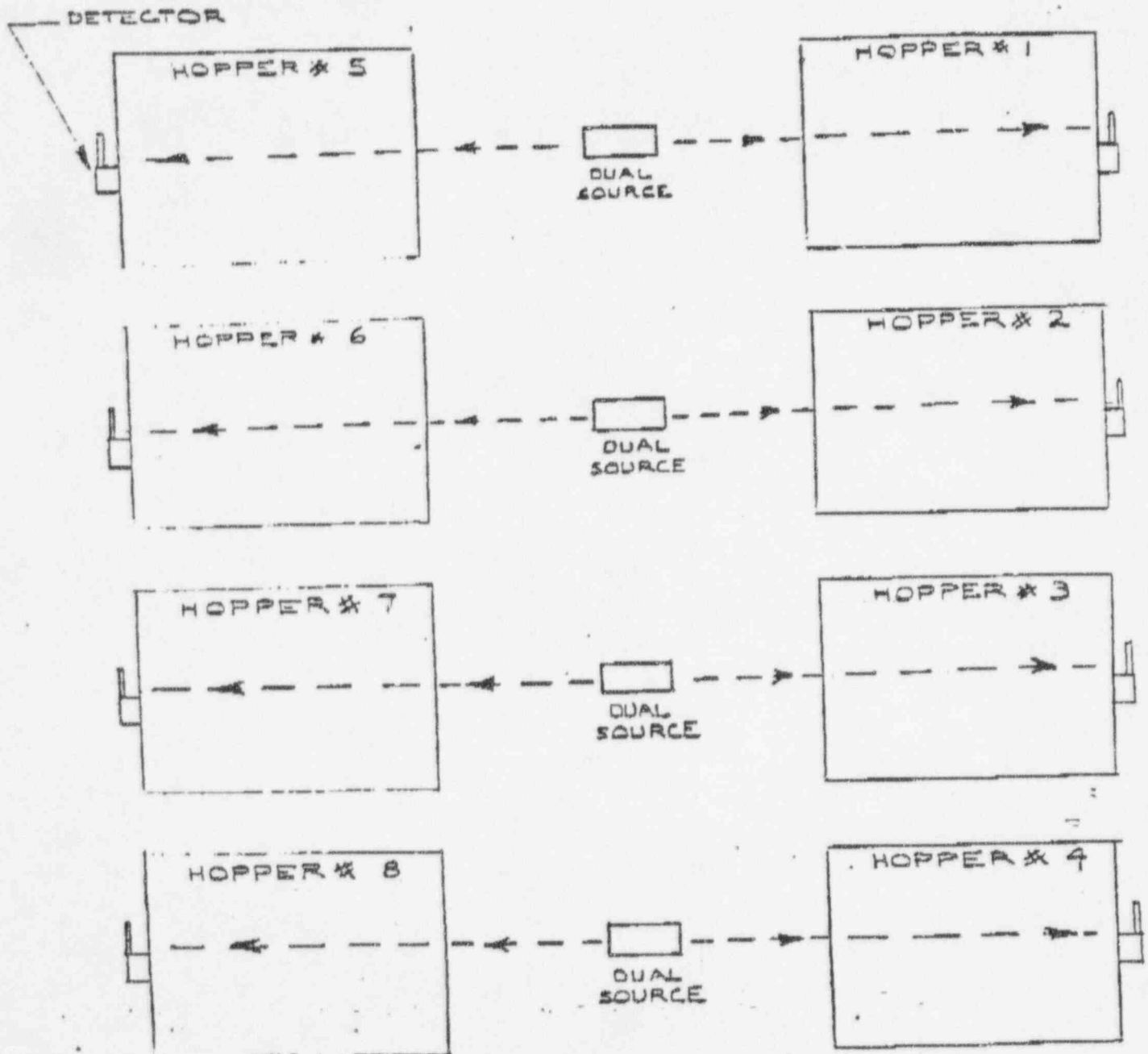
Service - High Level Alarm - Precipitator Hopper

Radioactive Source - Cesium 137 (4 each) Source holder #KAY-RAY 7080

Source Rating - 100 mCi Model #New England Nuclear HER-570

Location - FCC Precipitator Hoppers

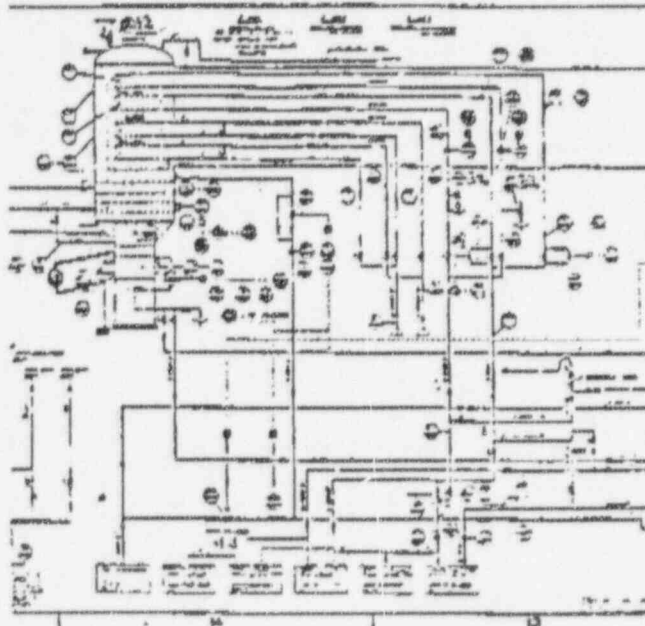
For Safe Entry: Source serving hopper must be locked in closed position with arrangement supplied on source holder.



Attachment # 10541 VACUUM TOWER

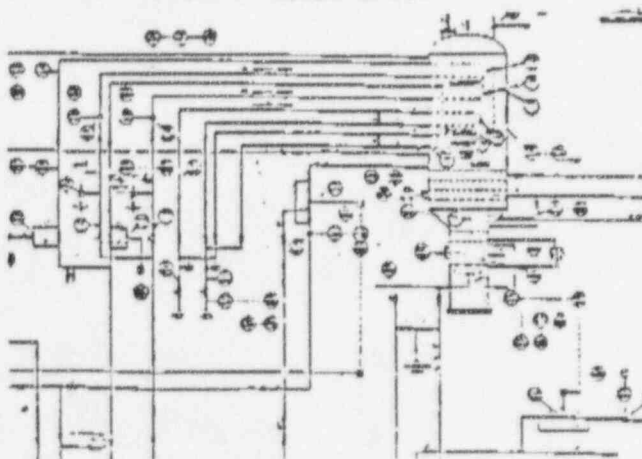
Service: LT 01026
Radioactive Source: Cesium 137 Source holder #Ohmart SHD
Source Rating: 500 mCi Model #Ohmart A-2020
Location: 541 Vacuum Tower

For Safe Entry: Source holder has to be locked in closed position by pulling on retaining pin. Source holder handle should slide down into source holder. Re-secure with retaining pin and insert lock.

542 VACUUM TOWER

Service: LT 01026
Radioactive Source: Cesium 137 Source holder #Ohmart SHD
Source Rating: 500 mCi Model #Ohmart A-2020
Location: 542 Vacuum Tower

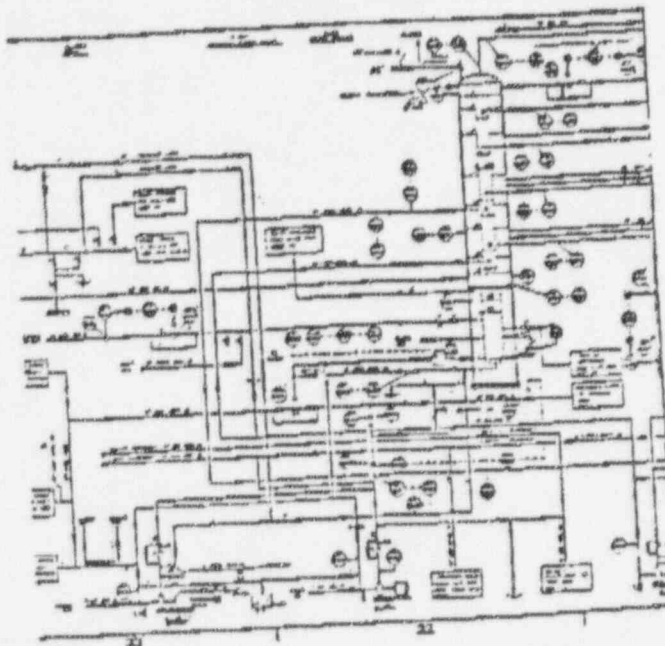
For Safe Entry: Source holder has to be locked in closed position similar to 541 Vac. Tower LT 01026 unit.



Attachment #11543 CRUDE TOWER

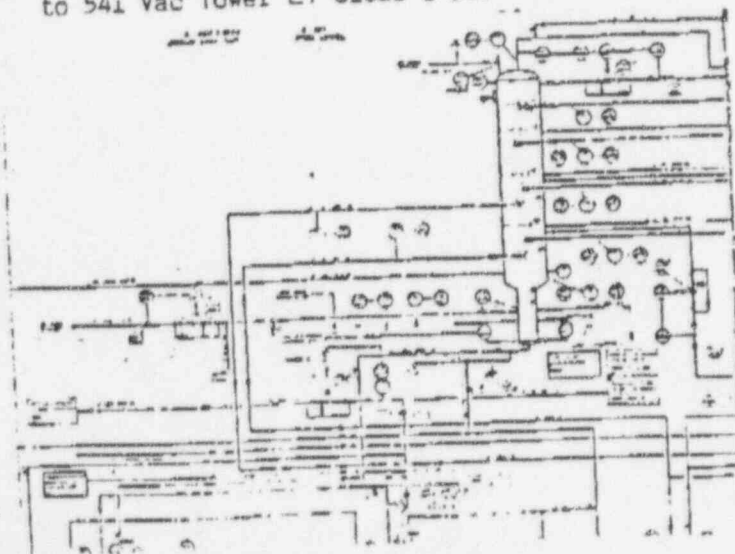
Service: LT 01201
Radioactive Source: Cesium 137 Sourceholder Ohmart SHD
Source Rating: 500 mCi Model Ohmart A-2020
Location: 543 Crude Tower

For Safe Entry: Source holder has to be locked in closed position similar to 541 Vac Tower LT 01026 unit.

544 CRUDE TOWER

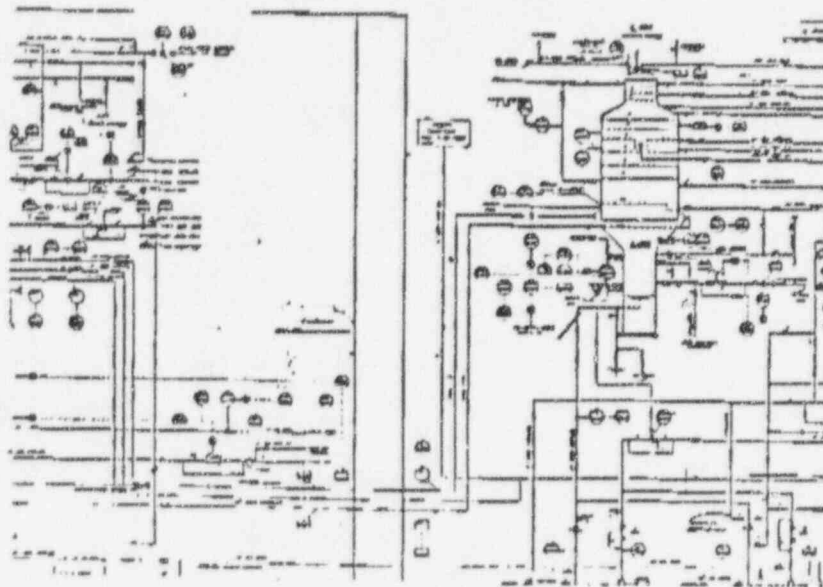
Service: LT 02401
Radioactive Source: Cesium 137 Source Holder Ohmart SHD
Source Rating: 500 mCi Model Ohmart A-2020
Location: 544 Crude Tower

For Safe Entry: Source holder has to be locked in closed position similar to 541 Vac Tower LT 01026 unit.

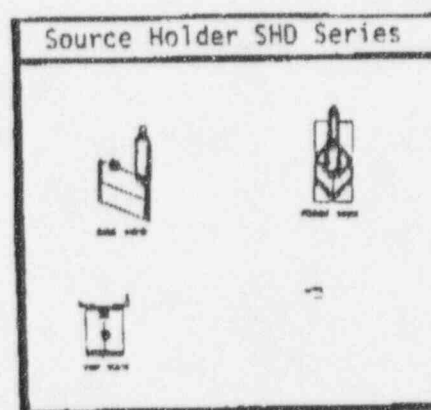
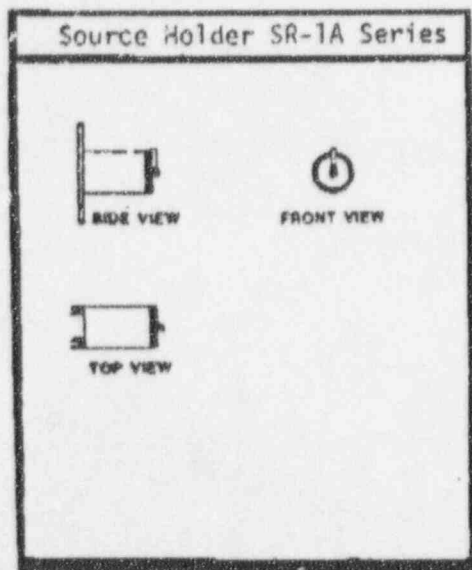
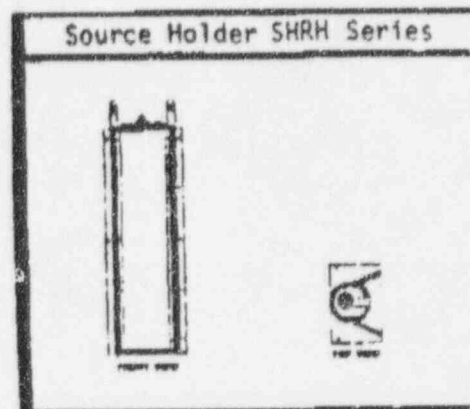
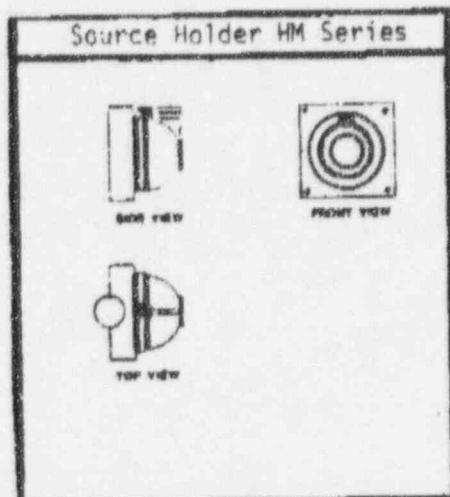
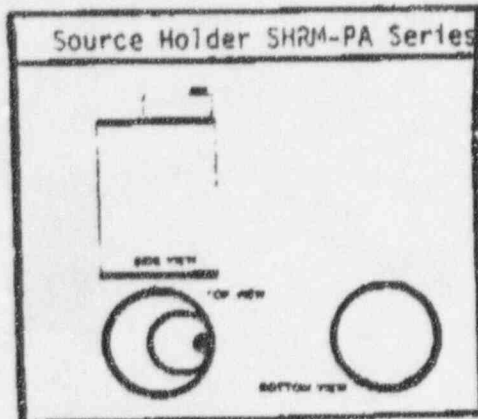


344 VACUUM TOWER.

For Safe Entry: Source holder has to be locked in closed position similar to 541 Vac Tower LT 01026 unit.



Sourceholder Diagrams



Attachment #14

Nuclear Radiation GaugesMonthly InspectionLocation of Radiation Gauges (Check Ones in your Area)

<u>Platformer</u>	- Top of #1 Reactor	_____	
	Surge Hopper	_____	
	Disengaging Hopper	_____	Area #1
	Cat. Addition Lock Hopper	_____	
	Lock Hopper #2	_____	
<u>Crude</u>	- 543 Tower	_____	
	544 Tower	_____	
	544 Vacuum Tower	_____	Area #3
<u>Vacuum</u>	- 541 Tower	_____	
	542 Tower	_____	
<u>FCC</u>	- Fractionator	_____	
	Precipitators (4 gauges)	_____	
<u>Alky</u>	- Acid Settler	_____	
	Acid Regen. (2 gauges)	_____	
	Acid Regen. Condenser	_____	Area #4
	Liquid Trap	_____	
	Polymer Surge Drum	_____	
	1st Stage Settler	_____	

Radiation source corresponding to gauge in proper location. _____

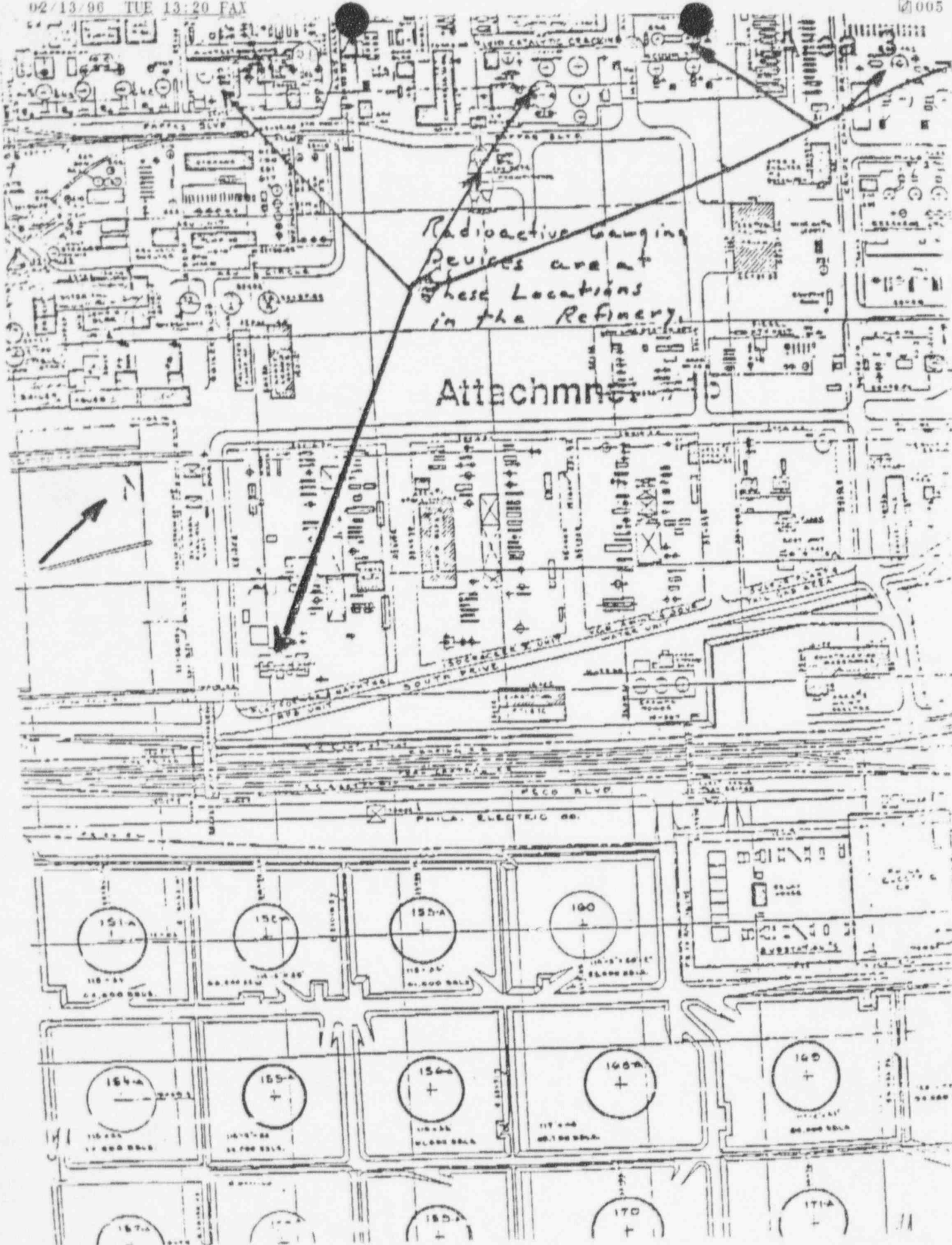
Radiation source properly identified with RADIATION sign. _____Access to vessel identified with RADIATION sign. _____

Radiation information visible on source (intensity, serial #, etc.) _____

Any following remarks, discrepancies reported to Safety Department:

Supervisor _____ Area _____ Date _____ for Month of _____

ETD:CS
873787



NUCLEAR RADIATION GAUGING DEVICES

Purpose: Safe practices and emergency procedures for working near radiation sources

Scope: Radiation sources are used to measure level, density, and for non destructive testing and inspection. Over-exposure to the ionizing radiation from these sources has the potential to alter and even destroy biological cells.

Radiation Protection Principles:

Distance from the source offers the best protection from over-exposure to ionizing radiation. Radiation intensity will decrease proportionately to the distance squared.

Time is a second way to control radiation exposure since the amount of exposure is directly proportional to the time spent in the radiation area. For example, the radiation received in a ten minute exposure is ten times greater than during a one minute exposure.

Shielding is a third way to control radiation exposure. Dense material such as lead, steel, concrete and even water can absorb radiation before the radiation can reach your body.

Planning is a fourth way to control radiation exposure. Plan your work activities around radiation sources so that you spend the shortest time possible near the source. This will ensure your exposures are as low as reasonably achievable.

Permanently mounted radiation level gauges

On some process units there are instruments which use a radiation source to determine level. The radioactive material is contained in a doubly encapsulated stainless steel assembly which is loaded into a lead lined source holder. The source holder is mounted on a vessel with the shutter opening pointing to a target device which transmits an electronic signal to the Control Center. All radioactive materials and X-ray machines are licensed by either the Nuclear Regulatory Commission or the PA Department of Environmental Resources. A list of these devices is included in this procedure which gives the source location, source materials, activity, and isolation distances in case of emergency.

Procedure:

1. Be aware of the location of fixed nuclear gauging devices in your area.
2. Sources will be identified by the conventional three bladed radiation symbol. The blades will be purple on a yellow background.
3. The most common accidental radiation exposure is caused by persons entering a vessel before the radiation source has been turned off or drawn up into its protective housing. For this reason, isolation/blind lists for any vessel with a radiation device mounted on it must include the lockout of all radiation devices.
4. Lockout will be accomplished by the following steps:
 - a. The Maintenance Supervisor will have radiation source locked out by an instrument mechanic. Once instrument mechanic has locked shutter in closed position or retracts source, the operator shall place his lock on the lockout device.

b. After source has been locked out and vessel opened, but before entry for work is granted, an instrument mechanic with a valid entry permit will use a survey meter to check for radiation in vessel. A safe entry reading is 5 MR or less at 12" from source holder surface. The area operator will witness survey.

c. Entry permit must note that radiation source has been locked out and that vessel is free from harmful levels of radiation.

5. When work in the vessel is complete and the vessel closed up, the device may be activated by having the operator remove his lock and then having the instrument mechanic remove his lock and open the shutter.
6. The refinery's Nuclear Regulatory Commission license imposes limits within which we may use nuclear devices. One of the limitations which it imposes is that only those who are specifically licensed by the NRC may remove the source holder from its mounting. No one in the refinery is licensed to remove a radiation source. If a source needs to be taken down from its mounting brackets, contact ~~ME Wiggins, Safety Director~~.

BRUCE GLAY at M.H. & Charles Chelton at 4085235050

Emergency Procedures:

Fire

1. In case of a fire, handle the immediate emergency first, and inform fire fighting personnel that radioactive sources are in the area. As soon as the immediate emergency is taken care of:
 - a. Isolate the area around the source in all directions using the distances listed in Attachment 1.
 - b. Notify the Radiation Safety Officer (Safety Director or Safety Supervisor)
 - c. Whoever conducts the radiation survey shall assume the lead shielding has melted. They shall place their survey meter on the lowest scale and approach the nuclear gauge with caution.
 - d. IF radiation profile is normal, (less than 5 mrem/hr. at 1 foot from the source), the following steps must be followed:
 1. Check the shutter mechanism for proper functioning.
 2. Leak test the unit.
 3. Inspect the source holder for any damage to the mounting hardware.
 - e. If no problems are noted, the gauge may be placed back in service. If problems are noted, the Safety Department will make arrangements with the gauge manufacturer for safe removal, packaging, and shipment of the source for repair.
 - f. IF radiation field is above normal limits, then the following steps must be followed by the surveyor:
 1. Cordon off and mark the area with radiation hazard signs at the 2 mrem/hr. level.
 2. Note the names of all personnel who may have been overexposed.
 3. Contact the gauge manufacturer for assistance in removal, packaging, and disposal.
 4. Leak test the unit for possible contamination.
 5. Test the area around the nuclear gauge for possible contamination.
 6. If tests indicate that the source holder has leakage, use rubber gloves and tongs to place plastic bags over the nuclear gauge to prevent spreading the radioactive material.
 7. The Radiation Safety Officer will maintain complete records of the incident, including all follow up done on site and in-hospital to the personnel involved.

Fall or Collision

1. Isolate the area around the source 100 feet in all directions.

2. Notify the Radiation Safety Officer (Safety Director or Safety Supervisor).
3. Survey the source holder to check if the radiation profile is normal. The radiation profile should measure less than 5 mrem/hr. at one foot from the unit with the shutter closed.
4. IF: The survey is normal, the following steps must be followed:
 - a. Insure the shutter on/off mechanism is functioning properly. If it is, lock it off. CAUTION: Make sure the radiation beam is pointing away from personnel. If the shutter cannot be turned to the off position, block the opening with shielding material (shielding material is available in the radiation emergency kit in the engine room at the Safety Building).
 - b. Leak test the nuclear gauge for contamination.
 - c. If the radiation is within prescribed limits, the source shutter mechanism is operating properly, and there is no evidence of radioactive material leakage, then the gauge may be placed back in service. Contact the Safety Department before moving any source. Remember that our license stipulates that no source may be mounted or dismounted unless it is done under the supervision of someone specifically licensed by the NRC.
5. IF: It appears that the lead shielding has been damaged, regard the source as having a radiation field present above allowable limits.
 - a. Cordon off and mark the area with radiation hazard signs at the 2 mrem/hr. radiation level.
 - b. Obtain the names of individuals who may have been overexposed.
 - c. The Radiation Safety Officer or one of those designated on the NRC license to supervise use of radiation gauges will contact the NRC immediately. That person shall also notify the gauge manufacturer so that arrangements can be made for the safe removal, packaging, and shipment of the source. The Radiation Safety Officer will maintain complete records, including all follow-up done on site and in-hospital to the personnel involved.

Radiation Emergency Kit

In case of a radiation emergency an emergency kit has been assembled and is located in the engine room of the Safety Building. The kit is equipped with the following:

Radiation warning signs	Rubber gloves
200' barricade rope	Lead sheets
200' radiation hazard flagging	Survey meter (spare batteries)
(2) 42" tongs	Plastic bags - rolled plastic
Wipe test kits	Emergency procedures

Emergency Phone Numbers

Nuclear Regulatory Commission	Ohmart Corporation
475 Allendale Road	4241 Allendorf Drive
King of Prussia, PA 19405	Cincinnati, OH 45209
(215) 337-5000 (24 hours)	(513) 272-0135 (emergency number)
	(513) 272-0131 (business phone)

Radiographic Inspection:

1. Any radiographic inspection work performed in refinery must be coordinated by Inspection Department. Reliability Department will coordinate scope of work, timing, and work location with

- appropriate operating and maintenance supervisors, radiographic inspection contractor, and other departments.
2. Any radiographic inspection contractor employed by the company must be licensed by the Nuclear Regulatory Commission. The contractor must abide by the rules and regulations of the NRC, Commonwealth of Pennsylvania, and BP Oil Company.
 3. The radiation area is to be roped off or barricaded. The area barricades shall extend far enough away from the source that exposures will be less than 2 mrem/hr. outside of the roped off area.
 4. The radiographic inspection contractor shall ensure the radiation area is clear of all other personnel prior to each exposure of the radiation source. The radiographer shall patrol the perimeter of the radiation area to ensure that personnel are observing the radiation warning signs. The radiographer shall have a survey meter with him/her to monitor exposure levels to ensure they are below 2 mrem/hr.
 5. Inspection Department personnel will wear a film badge and personal dosimeter throughout the time that they are in the vicinity of the radiography work.
 6. Whenever possible, position of the source shall be such that the beam of radiation will be away from areas occupied by people. Beamspread shall be kept as small as possible by the use of shields.
 7. All radiation source containers must be marked with conventional radiation symbol. Sources must be locked in a secure location when not under the direct control of the radiographic technician.
 8. The radiographic inspection contractor is responsible for all material brought on site. The contractor must see to it that all material has been properly disposed of before leaving the job site.
 9. The Control Center should be notified before any radiography is conducted in an area where nuclear gauges are used for level detection.
 10. No one shall enter a radiation area if an operating emergency exists until the radiographic inspection contractor has ceased operations and retracted his source so that the emergency can be handled. It is imperative that exposures be kept as low as reasonably achievable. One exception is the case where an NRC Inspector may enter a radiation area for inspection purposes. The inspector must present identification, have a film badge, survey meter and dosimeter and be made aware of the radiation field intensity that he is entering.

Emergency Procedure:

1. In an emergency involving a radiographic source, priority must be given to human safety. The radiographic inspection contractor and BP Safety Officer shall see that the area is evacuated to a distance at which exposures are below 2 mrem/hr. They shall also take action to stop the spread of contamination and rope off and post signs to establish a safe boundary around the accident site.
2. The BP Contact will notify Radiation Safety Officer (Safety Director or Safety Supervisor). Depending on levels of exposure, Radiation Safety Officer may have to notify the NRC, DER, or other agencies.
3. Identify and isolate all personnel who might have received high exposures or who could have been contaminated.
4. The Radiation Safety Officer will maintain complete records of the incident, including all follow up done on site, and in-hospital to the personnel involved.

LICENSE FEE REQUIREMENTS

LICENSE FEE AND DEBT COLLECTION BRANCH
DIVISION OF ACCOUNTING AND FINANCE
OFFICE OF THE CONTROLLER
U.S. NUCLEAR REGULATORY COMMISSION
WASHINGTON, DC 20555-0001BAYWAY REFINING COMPANY
ATTN: CHARLES F. CHELTON
1400 PARK AVENUE
LINDEN, NJ 07036

TYPE OF ACTION

- ☒ NEW LICENSE
☐ RENEWAL OF LICENSE
☐ AMENDMENT TO LICENSE

REQUESTED DATE

2-13-96

LICENSE NUMBER

CONTROL NUMBER

122881

I. APPLICATION FEE DUE

Your request for a licensing action is subject to the fee(s) in the category(ies) noted below in accordance with Section 170.31 of the enclosed Federal Register notice. Payment of the fee is required prior to the issuance of the license, renewal, or amendment.

FEE CATEGORY	APPLICATION	RENEWAL	AMENDMENT
3P	\$ 530.00	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$
	\$	\$	\$

FEE(s) DUE	\$	530.00
PAYMENT RECEIVED	\$	0.00
AMOUNT DUE	\$	530.00

- ☒ Your request was received without the prescribed application fee.
- ☐ We received your Check No. _____ in the amount of \$ _____. Payment of the additional fee noted above is required.
- ☐ Your request will increase the scope of your license program. Therefore, your request is subject to the application fee(s) noted above. Refer to Section 170.31 and Footnote 1(d)(2).
- ☐ Your license expired prior to the receipt of your application for renewal. Therefore, your request is subject to the application fee(s) noted above. Refer to Section 170.31 and Footnote 1(a).

MAKE PAYMENT OF THE FEE(S) TO THE U.S. NUCLEAR REGULATORY COMMISSION AND MAIL THE PAYMENT TO THE ADDRESS LISTED AT THE TOP OF THIS FORM. IF WE DO NOT RECEIVE A REPLY FROM YOU WITHIN 30 CALENDAR DAYS FROM THE DATE LISTED BELOW, WE SHALL ASSUME THAT YOU DO NOT WISH TO PURSUE YOUR APPLICATION AND WILL VOID THIS ACTION.

SIGNATURE -- LICENSE FEE ANALYST

BRENDA BROWN

LFDCB

2/28/96

LFDCB

Distribution:

MAF Correspondence FY
LFDCB Chief LFDCB Analyst
Invoice File w/encl LFDCB R/F (2)

DAF R/F

DATE

2-28-96

II. FEE NOT REQUIRED

- ☐ Enclosed is Check No. _____ which accompanied your request. The fee is not required because:
- ☐ We received your Check No. _____ in payment of the fee.
- ☐ The Licensing staff has informed us that your request is to be considered as a continuation of your request dated _____, Control No. _____.
- ☐ Your request was combined, prior to review, with your _____ request, Control No. _____.

III. CHECK RETURNED

- ☐ Enclosed is Check No. _____ which was returned to us by the bank for:
- ☐ INSUFFICIENT FUNDS
- ☐ ACCOUNT CLOSED
- ☐ OTHER

MAIL THE REPLACEMENT CHECK TO THE ADDRESS LISTED AT THE TOP OF THIS FORM AND REFERENCE THE ABOVE CONTROL NUMBER.

IV. LICENSE ISSUED WITHOUT THE REQUIRED FEE

- ☐ License No. _____, Amendment No. _____, issued on _____ was issued without the required fee being collected. The fee required is noted in Section I of this form.
- ☐ The scope of your licensed program was increased. Therefore, your request is subject to the application fee(s) noted in Section 1 of this form. Refer to Section 170.31 and Footnote 1(d)(2).
- ☐ Because of the urgency of your request, the license was issued without remittance of the prescribed fee noted in Section 1 of this form.

BETWEEN:

LICENSE FEE MANAGEMENT BRANCH, ARM
AND
REGIONAL LICENSING SECTIONS

(FOR LFMS USE)
INFORMATION FROM LTS

PROGRAM CODE: 03121
STATUS CODE: 3
FEE CATEGORY: -----
EXP. DATE: 0
FEE COMMENTS: -----
DECOM FIN ASSUR REQD: -----
.....

LICENSE FEE TRANSMITTAL

A. REGION I

1. APPLICATION ATTACHED

APPLICANT/LICENSEE: BAYWAY REFINING COMPANY
RECEIVED DATE: 960213
DOCKET NO: 3034071
CONTROL NO.: 122881
LICENSE NO.:
ACTION TYPE: NEW LICENSEE

2. FEE ATTACHED

AMOUNT: -----
CHECK NO.: -----

3. COMMENTS

SIGNED Charles H. Burack
DATE 2/21/96

B. LICENSE FEE MANAGEMENT BRANCH (CHECK WHEN MILESTONE 03 IS ENTERED ✓)

1. FEE CATEGORY AND AMOUNT: 3P \$530

2. CORRECT FEE PAID. APPLICATION MAY BE PROCESSED FOR:

AMENDMENT -----
RENEWAL -----
LICENSE ✓ -----

3. OTHER -----

SIGNED Burack
DATE 4/17/96

Log	<u>Feb 9</u>
Remitter	<u>FDSCo Corp.</u>
Check No.	<u>501190</u>
Amount	<u>\$530</u>
Fee Category	<u>3P</u>
Type of Fee	<u>APP</u>
Date Check Rec'd	<u>4/17/96</u>
Date Completed	
By	<u>Burack</u>