3 GATEWAY CENTER

PITTSBURGH, PENNSYLVANIA 15230

June 4, 1973

U. S. Atomic Energy Commission Washington, D. C. - 20545

ATTENTION: Isotopes Branch, Division of Materials Licensing

Gentlemen:

Please find enclosed our application for By-Product Material License.

If you should have any further questions or correspondence, please contact the following personnel:

Mr. Wayne C. Gohacki
Jones and Laughlin Steel Corporation
Aliquippa Works
P. O. Box 490
Aliquippa, Pa. - 15001

Telephone No. - (412) 378-6011 - EXT.5478 or 5479

OR

Mr. A. A. Mammarelli, Jr., Manager Industrial Health Engineering Jones & Laughlin Steel Corporation 3 Gateway Center Pittsburgh, Pa. - 15230

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions

Telephone No. - (412) 565-3622



Yours very truly,

JONES & LAUGHLIN STEEL CORPORATION

35557 Wayne C. Gohacki, Foreman, Waste Treatment Plant - Aliquippa W∳rks

cc: H.W.Gilberg A.A.Mammarelli, Jr.

INSTRUCTIONS.—Complete Itanis 1 th previous applications filed with the Com specific. Use supplemental sheets whe mission, Washington, D.C., 20545, Att receive an AEC Byproduct Material Lice Title 10, Code of Federal Regulations, 1	rough 16 if this is an initial applic mission with respect to Items 8 thre re necessory. Item 16 must be co ention: Isotopes Bronch, Division of ense. An AEC Byproduct Material Part 30, and the Licensee is subject	ation or an application for renewal of a license. Information contained such 15 may be incorporated by reference provided references are clear impleted on all applications. Mail two copies to: U.S. Atomic Energy C & Materials Licensing. Upon approval of this application, the applicant License is issued in accordance with the general requirements contained to Title 10, Code of Federal Regulations, Part 20 $L+L$	in and am- will I in
(D) NAME AND STREET ADDRESS OF AF	PPLICANT, (Institution, firm, hospital	(b) STREET ADDRESS'ES; AT WHICH BYPRODUCT MATERIAL WILL DE USED.	(11
JONES & LAUGHLIN STE	EL CORPORATION		
Aliquippa Works			
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ATTENTION: W.C.Gohad	ki		
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To be used and stored per cent mill scale i	d in Texas Nuclear Mc in recirculating line	odel 5176 source holders to measure the es as part of a water quality control syst	∋m.
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ATTACHED SHEET - FORM AEC - 313 (8-64)

ITEM 8 - TRAINING

Instructions on radiation safety procedures, leak test procedures, and proper on and off mechanism, functioning will be provided by Nuclear Chicago Corporation at the time of installtion.

See attached J&L Form G-1411.

ITEM 14 - RADIATION PROTECTION PROGRAM

Initial Installation

Initial installation, maintenance, repair and initial radiation surveys of the source devices and the installation will be performed by Nuclear Chicago Corporation, or by other persons specifically authorized by the Commission or as agreement State to perform such services.

Relocation and Reinstallation

Relocation and reinstallation of the source devices will be performed by authorized Jones & Laughlin Steel Corporation personnel as required. The source devices shutter mechanisms will be placed in the closed, locked position prior to their removal from their fixed locations at all times.

In the event work must be done on (in) the vessel (pipe) being monitored, or the source devices must be removed from their fixed position, the radiation safety officer will assure that the shutter mechanisms are in the closed, locked positions and performs a radiation survey to insure the security of the source and proper functioning of the shutter mechanisms.

Proper storage of the source devices will be maintained and the shutter mechanisms will be in the closed, locked positions at all times that the source devices are not properly installed in their fixed positions.

Servicing, maintenance, and repair of equipment, other than the source devices, used as part of the installation, will be conducted by Jones & Laughlin Steel Corporation authorized personnel.

Installation, replacement, and disposal of the sealed sources contained in the source devices will be performed only by Nuclear Chicago Corporation or other persons specifically authorized by the Commission or an agreement State to perform such services.

Leak Tests

Tests for leakage and/or contamination will be performed by trained, authorized Jones & Laughlin Steel Corporation personnel at intervals not to exceed three years; using the Texas Nuclear QT/lK Leak Test Kit in accordance with procedures outlined by Texas Nuclear Division, Nuclear Chicago Corporation. (Copy enclosed).

ITEM 14 - RADIATION PROTECTION PROGRAM - CONTINUED

Emergency Procedures

In the event of any emergency involving the source devices resulting in damage to the source devices or shutter mechanism, the area in the vicinity of the source devices will be restricted until an inspection can be made by the radiation safety officer.

ITEM 15 - WASTE DISPOSAL

No waste disposal is involved. In the event that the source devices are damaged, in need of repair, or their use discontinued, the source device will be returned to Nuclear Chicago Corporation or other persons specifically authorized by the Commission or an agreement State for proper disposal of the sources. Texas Nuclear Page 1, Issue 2 March 5, 1973

LEAK TEST PROCEDURE - QT/1K

The gauge should not be dismantled or disassembled in order to leak test. Testing of the external seams, flanges, and end plate is adequate. Each kit is designed and supplied to test one gauge.

1. If the gauge has a movable shutter, position the shutter actuator to the closed position. In the event that the shutter actuator is frozen, or appears damaged, notify immediately:

> Texas Nuclear Health Physics Department (512) 836-0801, Ext. 256.

- 2. Remove the two cotton-tipped applicators and the bottle containing the wash solution.
- 3. Moisten the applicators in the solution and wipe the source holder surfaces, around seams and bolts, where contamination is most likely to appear. The radioactive material itself may be in a small, powder-like form and if the steel encapsulation fails, the material can appear on the exterior of the source holder at places where unwelded seams occur, around shaft bushings, or around bolt penetrations. If a drawing is enclosed, it will serve as a guide to these areas.
- 4. After wiping, place the applicators in the bottle (cotton down) and break the wooden stems off against the bottle edge so that the top can be resealed. Care should be taken not to touch the cotton end of the applicators with the fingers following the wiping operation.
- 5. Place the bottle containing the cotton tips back in the mailing tube, after securely sealing the bottle. Identify the device tested, either on the enclosed drawing, or on a separate page.
- 6. Place the information sheets back in the mailing tube and reseal.

7. Use the self-addressed label to return to Texas Nuclear.

Leak Test Procedure - QT/1K Page 2

NOTES

Upon receipt the applicators will be counted on instruments that have a demonstrated sensitivity and accuracy of $1.02 \times 10^{-5} \mu \text{Ci}\pm5\%$ for Cs-137, and approximately the same sensitivity for other energetic gamma emitters. If the applicators are found to be free of contamination, a notice will be sent via mail in the form of a leak test certificate. If the applicators are found to contain significant amounts of radioactive material, an emergency notification will be sent, via telephone or telegram, advising that the unit must be taken out of service and what additional actions should be taken.

The Post Office Department regulations prohibit the shipment of radioactive material through the mails when the level of gamma radiation at the outer surface of the mailing tube exceeds 0.5 milliroentgens per hour. Therefore, the mailing tube should be surveyed with an appropriate radiation detector, when such is available, prior to mailing. If the levels exceed 0.5 milliroentgens per hour, notify Texas Nuclear for further instructions.

If after reading the instructions contained there is still some question as to procedure, please contact Texas Nuclear Health Physics before proceeding.

Additional instructions:

LETTER OF CERTIFICATION

This is to certify that

Wayne C. Gohacki Jones & Laughlin Steel Corp.

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

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

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

TEXAS NUCLEAR DIVISION Nuclear-Chicago

W. G. Hendrick Health Physicist

CERTIFICATE OF TRAINING

This is to certify that

WAYNE C. GOHACKI

Has Successfully Completed a Radiation Safety Training Course

sponsored by Texas Nuclear Division, Nuclear-Chicago.



NUCLEAR-CHICAGO A SUBSIDIARY OF G. D. SEARLE & CO. TEXAS NUCLEAR DIVISION

MAY 19 73 5тн DAY OF ISSUED HEALTH PHYSICIST 172.1 VICE PRESIDENT/GENERAL MANAGER

RADIATION SAFETY TRAINING COURSE

AGENJA

First Days's Session

8:30 - 9:30	<pre>1. Introduction</pre>	of Course
	2. Review of Preparation Mater	ial
9:30 -10:00	 Atomic Structure a. Nomenclature b. Periodic Table 	
10:00 -10:15	Coffee Break	
10:15 -12:00	 4. Radioactive Materials a. Isotopes b. Decay c. Half-Life 	
	5. Types of Radiation	. ·
12:00 - 1:00	Lunch	•
1:00 - 3:00	 6. Radiation Interaction with a. Ionizing Radiation 1. electromagnet 2. charged parti 3. neutron b. Specific Ionization 	Matter tic cle
3:00 - 3:15	Coffee Break	· ·
3:15 - 4:00	7. Radiation Dosimetry a. Definitions and Unit b. Guality Factor	s of Dose
4:00 - 5:00	Review	
5:30 - 7:00	HAPPY HOUR	

	Second Day's Secsion		
8:30 - 9:00	question and Answer Session		
9:00 -10:00	<pre>l. Radiation Dosimetry (Continued)</pre>		
10:00 -10:15	Coffee Break		
10:15 -12:00	c. Biological Effects d. Dose Limits e. Radiation Protection Guides		
12:00 - 1:00	Lunch		
1:00 - 3:00	Radiation Detection		
· · ·	 Detection Instruments a. Basic Operation b. Survey Meters 		
•	2. Personnel Dosimetry		
	 J. Distance, Time, Shielding a. Inverse Square Law b. Half-Value Layer 		
3:00 - 3:15	Coffee Break		
3:15 - 4:30	Discussion and Review To be announced		
· ·	Homework Assignment Read Part I Manual of Standards and		

Procedures Complete Study Quiz I

Third Day's Session

8:30 - 9:00	Question and Answer Session
9:00 -10:00	 Working Definitions a. Radiation Areas and Posting b. Installation c. Surveying d. Leak Testing e. Shipping and Labeling
10:00 -10:15	Coffee Break
10:15 -12:00	2. Regulatory Control a. Title 10, Code of Federal Regulations b. Agreement States c. Licensing Procedures d. Purpose of Licensing Program (Lecturer from Texas State Health Department) e. Responsibility
12:00 - 1:00	Lunch
1:00 - 2:45	Review and Class Discussion .
2:45 - 3:00	Coffee Break
3:00 - 3:30	 Summary of Topics a. Role of Radiation Safety Personnel b. Class Discussion
3:30 - 4:30	 4. Preparation for Laboratory a. Form Review b. Team Assignment c. Surveying and Leak Testing Demonstration
	Homework Assignment Read Part II of Manual of Standards and Procedures Complete Study Quiz II Material Review for Exam

Fourth Day's Session

- 8:30 9:00 Question and Answer Session
- 9:00 -10:15 Written Test on Lectures and Homework Assignments
- 10:15 -10:30 Travel to Texas Nuclear

10:30 -12:30 Laboratory Work at Texas Nuclear Corporation

- 1. Check-out and re-briefing on use of portable radiation survey meters.
- 2. Survey Density, Level and Belt Weigh devices.
- Leak Test Devices Using QT/1S Procedure 3. a. Count Swabsb. Prepare Leak Test Certificates
 - b.
- 4. Class Discussion on Remaining Questions

ADJOURNMENT

1:00

G.1811 11/67. Plant_ Addres TRAINING AND EXPERIENCE WITH IONIZIN	JONES & LAUGHLIN STEEL COR ALIQUIPPA WORKS ALIQUIPPA, PA 15001 G RADIATION OF RERSONNEL OF	PORATION	(See In	Reverse Side f istructions)	or
Name <u>M. G. SMITH</u>	Job Title GENERAL FOREMAN IONIZING RADIATION TRAIL	Soc. Sec. No.	(Department)	Y Q Date	4-8-74
TYPE OF TRAINING	WHERE TRAINED	ON JOB	DURATION OF	TRAINING FORMAL COURSE	TIME
1. Principles and Practices of Radiation Protection	Jones & Laughlin Steel Corp. Aliquippa Works	Yes	1 Hour (1965)	None	
2. Radisactivity (Radiation) measurements; standardization, and monitoring tech- niques and instrumentation.	Jones & Laughlin Steel Corp. Aliquippa Works	Уез	1 Hour (1965)	None	
3. Mothematics and colculations basic to use and measurement of radioactivity (radiation).	Jones & Laughlin Steel Corp. Aliquippa Works	Yes	1 Hour (1965)	None	
4. Biological offects of radiation.	Jones & Laughlin Steel Corporat	tion Yas	1 Hour	None	
5. In actual use of ionizing radiation Describe source: $\underline{AM-241} = 2$ curies $C_{g}-137 = 2$ curies	Jones & Laughlin Steel Corporat Aliquippa Works	tion Yes	2,weeks (1965)	None	
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Kay-Ray, Inc. J&L Steel Corporation Aliquippa Works Kay-Ray, Inc. J&L Steel Corporation Aliquippa Works	- Yes - Yes	4 Hours (1960) 	4 Hours) None 4 Hours) None	Feb. (1974) Feb. (1974)
Kay-Ray, Inc. J&L Steel Corporation Aliquippa Works	- Yes	- 4 Hours (1966)	4 Hours	Fab. (1974)
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HEALTH PHYSICS ASSOCIATES LTD. CONSULTANTS IN RADIATION SAFETY

2356 SKOKIE VALLEY ROAD / HIGHLAND PARK, ILL. 60035 / PHONE: AREA (312) 433-3330

LEAK TEST INSTRUCTIONS FOR KAY-RAY MODEL 5701 GAUGES CONTAINING 137 CESIUM SOURCES

Materials:

States and States and States and States and

Three swab sticks in tubes. Vial with wetting agent. Plastic gloves in 685. Set of wipe test instructions. Information sheet.

Radiation Sciety Precentions:

Operator should wear the disposable gloves provided while taking the wipes. They are removed, after the wipes are placed into the tins, by a sterile technique (by grasping inner surface at wrist). The gloves are placed in the bag provided and returned to EBALTH PHYSICS ASSOCIATES. Wash hands when through. Always ascertain the source' is in "store" position before reginning tests. Handle cust stics by cap only. Do not usedle stick or ection tip.

Leak Testing Procedures:

- Add water to test tube containing wetting agent until it is approximately half full. It will be used to wet swab sticks before making wipes.
- 2. Wet swab stick #1 in wetting agent furnished and wipe interface of source head and mounting surface, i.e., Hopper, Pipe, etc ..
- 3. Wet swab stick #2 in wetting agent furnished and wipe around shaft of source actuating handle, that protrudes through source head.
- 4. Wet sweb stick #3 in wetting agent furnished and wipe around bolt holes protruding through source head base plate.
- 5. Place all swab stick tubes in returnable mailing container, remove gloves per instructions above and place in bag provided for
 - return to HEALTH PHYSICS ASSOCIATES.

- Set survey meter to its most sensitive range in a low background area. Bring container with swabs to meter and note maximum de-6. flection of mater above background.
- 7. If meter indication is 0.4 mR/hr or less, above background, place the return label provided on container and return to HEALTH PHYSICS ASSOCIATES, with completed information sheet enclosed.
- If available survey meter is not a geiger counter type (e.g. ion chamber) and cannot read down to 0.4 mR/hr, determine that read-8. ing is less than 2.0 mR/hr on contact. Return container to HEALTH PHYSICS ASSOCIATES via REA express. Do not ship if indicated surface activity is greater than 2.0 mR/hr, and call HEALTH FHYSICS ASSOCIATES for further instructions.



HEALTH PHYSICS ASSOCIATES LTD. JONS ... AND

2356 SKOKIE VALLEY ROAD / HIGHLAND PARK, ILL 60035 / PHONE: AREA (312) 433-3330

LEAK TEST INSTRUCTIONS FOR MAY-RAY MODEL 2500 GAUDES CONTAINING 241-AMERICIUM SOURCES

These instructions are dependent upon the leak testing to be performed in two stages. The first stage is done in the field by the user with the kit furnished and the second stalysis stage, in the laboratory of HEALTH PHYSICS ABSOCIATES. The attached information sheet should be completed in duplicate and returned with the wipes.

Hale 123.

- 1 Pair disposable plastic gloves.
- 3 Filter papers in flat metal tins.
- 1 Leak test instructions.
- 2 Duplicate report forms.

(Section Bafety Precautions:

Operator should wear the disposable gloves provided while taking the wipes. They are removed, after the wipes are placed into the tins, by a sterile technique (by grasping inner surface at wrist). The gloves are placed in the bag provided and returned to HEALTH PHYSICS ASSOCIATES. Wash hands when through. <u>Always ascertain the source is in "store" posi-</u> tion before teginning tests.

Leak Test Procedures:

- Wet filter paper from tin #1 with 1-2 drops of water. Using moderste pressure without tearing the paper, wipe around interface of source head and hopper.
- Wet filter paper from tin #2 with 1-2 drops of water. Using moderete pressure, wipe around the"0" ring seal of the source actuating handle shart protrucing from source head.
- Wet filter paper #3 as above, using moderate pressure, wipe area on source head or hopper where activity may be present.
- 4. Insert completed information sheets (in suplicate; gloves, bag and tins into shipping box, apply anclosed late! stamp and mail to HEALTH PRYSICS ASSOCIATES.

ATTACHMENT - FORM AEC 313 (8-69)

Jones & Laughlin Steel Corporation Aliquippa Works P. O. Box 490 Aliquippa, Pa. - 15001

ITEM #13 - FACILITIES AND EQUIPMENT

Enclosed are the following drawings which describe the specific installation of the Kay-Ray, Inc. Granular Solids, Moisture Gauge Systems, Mod. 2500 C in accord with manufacturers recommendations:

No.	AA-5103	-	A-2 Blast Furnace Stock House Screens, Coke Weigh Hoppers	, Coke Bins,
No.	AA-5105	-	A-2 Blast Furnace Stockhouse,	Skip Pit
No.	AA-5108	·	A-2 Blast Furnace Department, ment	Ceneral Arrange-
No.	AA-8220	-	A-2 Blast Furnace Department, ment, Coke Moisture Detection	General Arrange- System
No.	AA-8240	-	A-2 Blast Furnace Department, Moisture Detection System.	Details, Coke

ITEM #14 - RADIATION PROTECTION PROGRAM

A. Initial Installation and Surveys

The Granular Solids Moisture Gauge Systems will be installed initially by Jones & Laughlin Steel Corporation authorized personnel in accordance with the manufacturers recommendations and under the supervision of qualified Kay-Ray, Inc. personnel.

Kay-Ray, Inc. personnel will be in attendance at the time of uncrating, installation, and start-up of the System.

Initial radiation surveys will be conducted by Kay-Ray, Inc. personnel.

Access into the Coke Weigh Hoppers

Personnel access into the interior of the Coke Weigh Hoppers will be restricted to authorized personnel and only for necessary inspections and maintenance. All accesses will be locked and under the control of the Radiation Safety Officer or his authorized representatives.

When entry into the coke weigh hopper is required, all source devices will be placed into the locked "stored" position prior to unlocking any access entrance. The Radiation Protection Officer, or his authorized representatives, will verify that the sources are in the "stored" position prior to permitted entry of personnel into the weigh hoppers.

All source devices will remain in the locked "stored" position until it has been verified by the Radiation Protection Officer, or his authorized representative, that no personnel have remained inside the weigh hopper(s) and all access entrances have been locked.

B. Operating Procedures

Operations of the Granular Solids. Moisture Gauge Systems will be in accord with the manufacturer's recommendations con tained in the instruction manuals supplied.

C. Maintenance and Repair

Source replacement, and maintenance and repair of source holders containing by-product materials shall be performed by Kay-Ray, Inc. or other persons specifically authorized by the Commission or an Agreement State to perform such services.

Relocation, removal, and reinstallation of source devices will be performed by authorized Jones & Laughlin Steel Corporation personnel under the supervision of the Radiation Protection officer at such times as necessary for maintenance or repair of the coke weigh hoppers.

ITEM #14 - RADIATION PROTECTION PROGRAM - CONTINUED

C. Maintenance and Repair - Continued

All source holders will be placed in the locked "stored" position prior to the removal of the source holder from its mounting, and remain in this locked "stored" position until re-installed on the coke weigh hoppers.

D. Leak Test Procedures

Initial leak testing of all sealed sources and testing for proper operation of the on-off mechanisms will be performed by Kay-Ray, Inc. personnel.

Leak testing and testing for proper operation of the on-off mechanisms will be performed at six-month intervals by Kay-Ray, Inc. personnel or authorized Jones & Laughlin Steel Corporation personnel using Health Physics Associates, Ltd., Highland Park, Illinois, leak test kits. (See enclosed instructions).

E. Emergency Procedure

In the event of an emergency involving the sealed sources or source holders, such as physical damage, fire, oil leaks, etc., the source holders will be placed in the locked "stored" position, if possible. The Director of the appropriate AEC Compliance Office shall be notified in accord with 10 CFR 20. Corporate Industrial Health Engineering personnel will be notified to provide health physics assistance, and Kay-Ray, Inc. will be notified to provide assistance as deemed necessary.

ITEM #15 - WASTE DISPOSAL

No waste disposal is involved. In the event of damage to the sealed sources or source holders, they will be returned to Kay-Ray, Inc. or other persons specifically authorized by the Commission for repair or disposal as required.