

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.

302000

Licensee

1. Steel Dynamics, Inc.
2. 4500 County Road 59
Butler, IN 46721-9747

In accordance with letter dated
October 28, 1996
3. License Number 13-26651-01 is amended
in its entirety to read as follows:

4. Expiration Date June 30, 2000

5. Docket or
Reference No. 030-33848

6. Byproduct, Source, and/or
Special Nuclear Material7. Chemical and/or Physical
Form8. Maximum Amount that Licensee
May Possess at Any One Time
Under This License

A. Cobalt-60

A. Sealed Source
(Berthold Model
P-2608-100 or
P-2608-101)

A. 2 sources not to
exceed 43
millicuries each

B. Americium-241

B. Sealed Source
(Amersham Model
AMC.19)

B. 6 sources not to exceed
1 curie each

9. Authorized Use:

- A. To be used in Berthold Model LB 300 ML or MLT source holder for level measurements.
- B. To be used in Amersham Model AM-5A source holder for level measurements.

CONDITIONS

10. Licensed material shall be used only at the licensee's facilities located at 4500 County Road 59, Butler, Indiana.
11. The Radiation Safety Officer for this license is Tim Whiteman.
12. Licensed material shall only be used by, or under the supervision of Tim Whiteman or other individuals who have received the training described in letter dated May 26, 1995, have been instructed in the licensee's routine operating and emergency procedures and have been approved in writing by the Radiation Safety Officer.

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PDR ADOCK 03033848
C PDR

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MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number

13-26651-01

Docket or Reference Number

030-33848

Amendment No. 01

13. A. Sealed sources and detector cells shall be tested for leakage and/or contamination at intervals not to exceed 6 months or at such other intervals as specified by the certificate of registration referred to in 10 CFR 32.210.
- B. Sealed sources 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 transferred 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.
- C. In the absence of a certificate from a transferor indicating that a leak test has been made within 6 months prior to the transfer, a sealed source or detector cell received from another person shall not be put into use until tested.
- D. The leak 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 in accordance with 10 CFR 30.50(b)(2), and the source shall be removed immediately from service and decontaminated, repaired, or disposed of in accordance with Commission regulations. The report shall be filed within 5 days of the date the leak test result is known with the U.S. Nuclear Regulatory Commission, Region III, ATTN: Chief, Nuclear Materials Safety Branch, 801 Warrenville Road, Lisle, Illinois 60532-4351. The report shall specify the source involved, the test results, and corrective action taken.
- E. The licensee is authorized to collect leak test samples for analysis by Berthold Systems, Inc. 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.

COPY

MATERIALS LICENSE
SUPPLEMENTARY SHEET

License Number
13-26651-01

Docket or Reference Number
030-33848

Amendment No. 01

14. Sealed sources or detector cells containing licensed material shall not be opened or sources removed from source holders by the licensee.
15. The licensee shall conduct a physical inventory every 6 months to account for all sources and/or devices received and possessed under the license.
16. Installation, initial radiation survey, relocation, or removal from service of devices containing sealed sources shall be performed by Tim Whiteman or other individuals who have received the training described in letter dated May 26, 1995, or by persons specifically licensed by the Commission or an Agreement State to perform such services. Maintenance and repair of devices and 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.
17. 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 gauge with the shutter open. This survey shall be performed only by persons authorized to perform such services by the Commission or an Agreement State.
18. The licensee shall operate each gauge within the manufacturer's specified temperature and/or environmental limits such that the shielding and shutter mechanism of the source holder are not compromised.
19. The licensee shall assure that the shutter mechanism 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 gauge is obtained to incorporate the device manufacturer's recommendations.
20. Each gauge shall be tested for the proper operation of the on-off mechanism and indicator, if any, at no longer than 6-month intervals or at such longer intervals as specified by the manufacturer and approved by NRC.
21. 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 III, ATTN: Chief, Materials Licensing Section, 801 Warrentonville Road, Lisle, IL 60532-4351, has been notified that activities authorized by the license will be initiated.

COPY

MATERIALS LICENSE
SUPPLEMENTARY SHEET

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Amendment No. 01

22. Within 30 days of the date of a decision not to complete the facility, acquire equipment, or possess and use authorized material, the licensee must notify the Commission in writing, of the decision.
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 U.S. 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 April 26, 1995, and
- B. Letters dated May 26, 1995 (with attached application dated May 25, 1995), October 28, 1996 and January 23, 1997 (with attachments).

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Date

January 29, 1997

By

[Signature]
Nuclear Materials Licensing Branch, Region III

COPY

(FOR LFMS USE)
INFORMATION FROM LTS

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

Program Code: 03120
Status Code: 0
Fee Category: 3P
Exp. Date: 20000630
Fee Comments:
Decom Fin Assur Req'd: N

55

LICENSE FEE TRANSMITTAL

A. REGION

1. APPLICATION ATTACHED

Applicant/Licensee: STEEL DYNAMICS INCORPORATED
Received Date: 961029
Docket No: 3033848
Control No.: 302000
License No.: 13-26651-01
Action Type: Amendment

2. FEE ATTACHED

Amount: 300
Check No.: 73570

3. COMMENTS

Signed
Date

D. Hersey
11-4-96

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered ☒)

1. Fee Category and Amount:

3P \$300

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

Amendment ☒
Renewal ☐
License ☐

3. OTHER

Signed
Date

SC
11/8/96

NOV 22 1996

Log	NOV 3 711
Remitter	
Check No.	73570
Amount	\$300
Fee Category	3P
Type of Fee	AMD
Date Check Rec'd	
Date Completed	11/8/96
By	SC

90-6 MW 8-ADM 968

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 (MNBB 7714), 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 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
~~200 ROOSEVELT ROAD~~ 801 Warrenville Road
~~601 ELLYNN ST~~ Lisle, IL 60532-4351

ARKANSAS, COLORADO, IDAHO, KANSAS, LOUISIANA, MONTANA, NEBRASKA, NEW
MEXICO, NORTH DAKOTA, OKLAHOMA, SOUTH DAKOTA, TEXAS, UTAH, OR WYOMING,
SEND APPLICATIONS TO:

NUCLEAR MATERIALS LICENSING SECTION
U.S. NUCLEAR REGULATORY COMMISSION, REGION IV
611 RYAN PLAZA DRIVE, SUITE 400
ARLINGTON, TX 76011-8064

ALASKA, ARIZONA, CALIFORNIA, HAWAII, NEVADA, OREGON, WASHINGTON, AND U.S.
TERRITORIES AND POSSESSIONS IN THE PACIFIC, SEND APPLICATIONS TO:

RADIOACTIVE MATERIALS SAFETY BRANCH
U.S. NUCLEAR REGULATORY COMMISSION, REGION V
1450 MARIA LANE
WALNUT CREEK, CA 94596-5368

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 13-26651-01
☐ C. RENEWAL OF LICENSE NUMBER _____

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

Steel Dynamics, Inc
4500 County Road 59
Butler, IN 46721-9747

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

Same as 2

4. NAME OF PERSON TO BE CONTACTED ABOUT THIS APPLICATION

Tim Whiteman

TELEPHONE NUMBER

(219) 868-8000 Ext. 179

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 <u>3P</u> AMOUNT ENCLOSED <u>\$ 300.00</u>
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

pm:10-28-96

SIGNATURE

DATE

FOR NRC USE ONLY RECEIVED

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

OCT 29 1996

REGION III

302000

STEEL DYNAMICS, INC.

4500 County Road 59 - Butler, IN 46721 ☐ (219) 868-8000 ☐ Fax (219) 868-8055

October 28, 1996

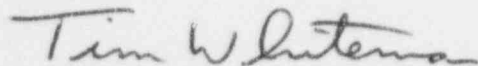
Materials Licensing Section
US Nuclear Regulatory Commission, Region III
801 Warrenville Road
Lisle, IL 60532-4351

Dear Sir:

Enclosed please find the completed application for an amendment to License Number 13-26651-01 for Steel Dynamics, Inc. (SDI). The plant expansion will be operational in March 1997. I have attempted to include all information necessary for your review.

If you have any questions or comments, please call at (219) 868-8000, ext. 179.

Sincerely,



Tim Whiteman
Environmental Engineer
Steel Dynamics, Inc.

OCT 29 1996

- ✓ Item 5. a. Element and mass number: Americium-241
b. Chemical and/or physical form: Stainless Steel Capsule
Manufacturer: Source Model #: AMC.19
Shielding Model #: AM-5A
NRC Registration #: MD-31-088-02
c. Maximum amount possessed: 6 Curie

Item 6. Purpose for which licensed material will be used:
Steel gauge measurement

Item 7. Individual responsible for radiation safety program and their training experience.
Tim Whiteman Environmental Engineer
40 hour Radiation Training by Ronan Engineering company, 8050 Production
Drive, Florence, KY, 41042, Instructor: George Ellis Date: May 10, 1991

Jan Conwell Safety Director

Item 8. Training for individuals working in or frequenting restricted areas. Mill operators
will be working in areas near the source. They will be given training before
installation and operation of the mold level control by the manufacturer of the
level control equipment. The above individuals in Item 7 will conduct annual
refresher courses. Records of training will be maintained for 5 years.
Please add the following individuals as completing 40 hour
training:

1. Joshua Graham
2. William Fliehmman
3. Neil Shrock
4. James Sechler
5. Keith Likes
6. Randy Risedorph

Item 9. Facilities and Equipment:

- 9.1 Drawing TD01607/E, dated 3-12-88, enclosed, shows the details of the
radioactive gauge.
- 9.2 The environmental conditions to which the gauges will be exposed are as
follows: The source holder will be securely mounted. This will provide a
suitable environment for proper operation of the gauge measurement.
- 9.3 Information on the maintenance of gauges are provided in the Registry of
Radioactive Sealed Source and Devices, attached. The gauges as per
the manufacturers recommendation require leak testing every 6 months.
- 9.4 Emergency numbers in the event of accidents are as follows:
Tim Whiteman Phone: (219) 868-8000, Ext. 179
Jan Conwell Phone: (219) 868-8000, Ext. 177
NRC Region III Phone: (708) 829-9500 (24 hour)

Item 10

Radiation Safety Program

10.1 Performance of Service Operations by Others

Initial installation, radiation survey, maintenance, and leak testing will be performed by the manufacturer Industrial Gauging and Control Inc. After proper training, Steel Dynamics employees may perform maintenance, leak-testing, and device relocation.

10.2 Personnel Monitoring Equipment

Radiation levels 1 foot from the shielded device will be less than 2 mR/hr. Therefore, no personnel monitoring equipment will be required. However, SDI plans to implement a program of personnel monitoring. The surface of the shielded device will be less than 100 mR/hr. Therefore, no high radiation areas exists.

10.3 Radiation Detection Instruments

The Survey Meter will (1) be performed so that the readings are +/- 20% of the actual values over the range of the instrument, (2) have a calibration chart that shows the results of the calibration, the date of the last calibration, and the due date for the next calibration affixed to the survey meter, and (3) be calibrated at least annually and after servicing. The calibration records will be kept for a minimum of 2 years after each calibration. Instrument calibration services will be obtained from an individual or organization holding a current license (NRC or Agreement State) to perform such services such as Berthold Systems, Ronan Engineering, R.M. Wester or Suntrac Services.

10.4 Leak-Testing

Leak test will be performed at 6 month intervals by Berthold Systems, Inc., Industrial Gauging and Control Inc., or Steel Dynamics, Inc. personnel. A written record will be kept of the results of each leak test. The leak test may be performed by the Radiation Safety Officer or a qualified contractor. The radiation assay will be performed by a contractor. If there is reason to suspect that a sealed source might have been damaged, or might be leaking, it shall be tested for leakage before further use.

10.5 Lock-Out Procedures

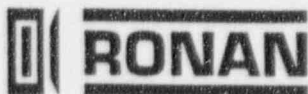
Lock-Out Procedures have been prepared and are enclosed the Radiation Safety Program. This will be posted in the RSO office.

10.6 Performance of Services

All services performed by SDI employees will follow the written procedures provided by the device manufacturer in the Operating Manual for the AM-5A measuring device.

Item 11. Waste Management

Steel Dynamics, Inc. (SDI) will dispose of the radioactive material by one of two methods: 1. Transfer the radioactive material to an authorized recipient such as the original supplier of the gauge. 2. Disposal of the material by a commercial firm licensed (NRC or Agreement State) to accept radioactive waste.



RONAN ENGINEERING COMPANY
NUCLEAR MEASUREMENTS DIVISION
FLORENCE, KENTUCKY

*This is to certify that
William B. Flichman*

has successfully completed the
**RONAN RADIATION SAFETY
TRAINING SCHOOL**

The Following Topics Were Covered

The principles and fundamentals of radiation protection and good safety practices related to the use of radioactive materials.

Radioactivity measurements, use of radiation detection instruments, and monitoring techniques.

Biological effects of radiation.

Procedures for performing services.

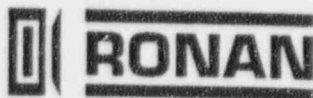
Actual practice in performing the services.

October 13, 1995

Date

Matthew W. Boulton

Instructor



RONAN ENGINEERING COMPANY
NUCLEAR MEASUREMENTS DIVISION
FLORENCE, KENTUCKY

This is to certify that
Joshua Graham

has successfully completed the
RONAN RADIATION SAFETY
TRAINING SCHOOL

The Following Topics Were Covered

The principles and fundamentals of radiation protection and good safety practices related to the use of radioactive materials.

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Procedures for performing services.

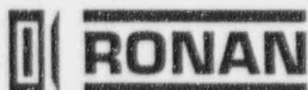
Actual practice in performing the services.

October 6, 1995

Date

A handwritten signature in cursive script, appearing to read 'William H. Little', written over a horizontal line.

Instructor



RONAN ENGINEERING COMPANY
NUCLEAR MEASUREMENTS DIVISION
FLORENCE, KENTUCKY

This is to certify that
Neil Shrock

has successfully completed the
RONAN RADIATION SAFETY
TRAINING SCHOOL

The Following Topics Were Covered

The principles and fundamentals of radiation protection and good safety practices related to the use of radioactive materials.

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Procedures for performing services.

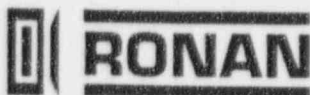
Actual practice in performing the services.

October 6, 1995

Date

William H. Smith

Instructor



RONAN ENGINEERING COMPANY
NUCLEAR MEASUREMENTS DIVISION
FLORENCE, KENTUCKY

This is to certify that
James Fechler

has successfully completed the
RONAN RADIATION SAFETY
TRAINING SCHOOL

The Following Topics Were Covered

The principles and fundamentals of radiation protection and good safety practices related to the use of radioactive materials.

Radioactivity measurements, use of radiation detection instruments, and monitoring techniques.

Biological effects of radiation.

Procedures for performing services.

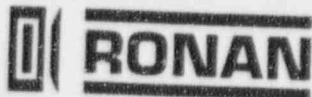
Actual practice in performing the services.

October 6, 1995

Date

William H. Smith

Instructor



RONAN ENGINEERING COMPANY
NUCLEAR MEASUREMENTS DIVISION
FLORENCE, KENTUCKY

This is to certify that
Keith Likes

has successfully completed the
**RONAN RADIATION SAFETY
TRAINING SCHOOL**

The Following Topics Were Covered

The principles and fundamentals of radiation protection and good safety practices related to the use of radioactive materials.

Radioactivity measurements, use of radiation detection instruments, and monitoring techniques.

Biological effects of radiation.

Procedures for performing services.

Actual practice in performing the services.

October 6, 1995

Date

William H. Smith
Instructor



RONAN ENGINEERING COMPANY
NUCLEAR MEASUREMENTS DIVISION
FLORENCE, KENTUCKY

This is to certify that
Randy Risedorph

has successfully completed the
RONAN RADIATION SAFETY
TRAINING SCHOOL

The Following Topics Were Covered

The principles and fundamentals of radiation protection and good safety practices related to the use of radioactive materials.

Radioactivity measurements, use of radiation detection instruments, and monitoring techniques.

Biological effects of radiation.

Procedures for performing services.

Actual practice in performing the services.

October 6, 1995

Date

William H. Smith

Instructor



A Measurex Company
Center of Excellence for the Metals Industry

TRANSMITTAL LETTER

TO: Mr. Kevin Bort
Plant Electrical Engineer
STEEL DYNAMICS
4500 County Road 59
Butler, IN 46721
☎ (219) 868-8000

DATE: 01 August 1996

FROM: Paul Rebstock

JOB: 968710, -12,-13

REF: Steel Dynamics

Per our discussion this morning, please find enclosed the information concerning licensing for radioactive materials:

- (1) DMC Radioactive Material Safety Information, Device: AM-5A,
Measurex DMC License #MD-31-088-02

If I could be of any further assistance, please do not hesitate to give me a call.

Thank you.

DMC Radioactive Material Safety Information

Device: AM-5A

Mx/DMC license #
MD-31-088-02

1) Data Measurement Corporation:

DMC is located in Gaithersburg, Maryland. The State of Maryland is our Licensing Authority and we must follow the rules and regulations in the Code of Maryland Regulations 10.14.02.01. These rules and regulations are in agreement with the United States Nuclear Regulatory Commission (USNRC).

DMC has a specific license to manufacture and distribute certain measuring, controlling and gauging devices that contain radioactive material. These devices may or may not require the end user to obtain a Specific License for possession and use the equipment. Our license number is MD-31-088-02. A copy of this license will be provided on receipt of written request.

2) Source Information:

- Type and Name of Material:

The Radioactive Material is Americium-241. Americium-241 is a man-made element that undergoes alpha radioactive decay. It has a 432.2 year half life. The useful radiation is a gamma ray, which is a by-product of the alpha decay. The maximum energy of the gammas emitted from Americium-241 is 59.9 KeV.

- Mark (Brand Name):

The Americium-241 is incorporated into a ceramic enamel and then welded in a stainless steel capsule with a 0.2 - 0.25 mm window. The loaded capsule is called a sealed source. The Americium-241 sealed source to be used is manufactured by the Amersham Corporation. Amersham is based in the United Kingdom.

- Source Model:

The sealed source has been given the model number AMC.19. This model number is recognized by the USNRC. A photocopy of the AMC.19 is included on page 3. The Amersham capsule type code is X.93. Please refer to the Model Number AMC.19 when applying for any import permit or possession license.

- Source Serial Number:

Each sealed source must have a unique serial number. DMC does not know the sealed source serial number until we receive the source. We typically receive the source four to six weeks prior to shipment.

DMC will install the AMC.19 into a source holder. The following information is typically required on import permits and possession licenses.

- Source Holder Model:

The container of the sealed source is called the "source holder". The source holder for 1 curie Americium-241 sources used in thickness gauges has been given the model number "AM-5A". This model number is recognized by the USNRC. Please refer to the source holder model number "AM-5A" when applying for your import permit or possession license.

- Source Holder Serial Number:

DMC will assign the source holder a unique serial number at the time the sealed source is loaded into the holder. This number is for DMC record keeping and typically is not required by the licensing authorities.

The sealed source and source holder combination is called a "device." Attached please find the State of Maryland Safety evaluation of the AM-5A device. (page 4 to 7)

3) Shipping Information:

-Type of Packing (Type A):

All radioactive shipments must be in either a Type A or Type B container. A schematic of the Type A 17-H drum used by DMC is attached. (page 8)

-Index of Transport:

The Index of transport is defined in the United States as the Radiation Level in mRem at a distance of one meter from the shipping container. This information is obtained at the time of shipment.

However, the typical index of transport for 1000 mCi Americium-241 in a Type A container is 0.0.

- Serial Number of Container

"Type A" shipping containers are not required to have a unique serial number.

- Size of Container

The size of the "Type A" container is 28 inches high x 18 inches in diameter (711.2 mm high x 457.2 mm in diameter).

- Package Certificate

Attached please find the "Type A" certification for the 17-H steel drum. (pages 9 to 13)

- Shipper's Declaration for Dangerous Goods. (Special Form NOS)

DMC follows the International Air Transport Association guidelines in preparing Dangerous Goods shipping paperwork.

Attached please find a typical Federal Express dangerous goods form. We will not generate a dangerous goods form until the sources are ready to ship. (usually 24 hours before shipment). (page 14)

The Americium-241 will be shipped UN 2974 "Radioactive Material, Special Form, NOS." The source capsule has been approved as a "special form" by the United Kingdom (Country of sealed source origin). Refer to attached Special Form certificate "GB/40/S-85 Issue 1." (page 15)

- Activity of source when shipped

The exact activity will be contained in the manufacturer's source test report received with the source. However the manufacturer specifies the source will be 1000 mCi plus or minus 10 percent.

4) Gauge Isodose curves:

Plots of the radiation levels around the AM-5A device installed in a DMC C-frame assembly are attached. Please find three views of the shutter open and one of the shutter closed levels. (pages 16 to 19)

RECEIVED SEP 16 1991

REGISTRY OF RADIOACTIVE SEALED SOURCE AND DEVICES
SAFETY EVALUATION OF DEVICE

(Amended March 7, 1990)
(Page 1 only)

NO: MD-381-D-101G

DATE: March 7, 1990

PAGE 1 of 3

DEVICE TYPE: Thickness Gauge Source Holder

MODEL: AM-5 and AM-5A

MANUFACTURER/DISTRIBUTOR: Data Measurement Corporation
15884 Gaither Drive
Gaithersburg, Maryland 20877
(Formerly Industrial Gauging and Control)

SEALED SOURCE MODEL DESIGNATION: Gamma Industries NB-HP
Amersham ANC.19

ISOTOPE: Americium-241

MAXIMUM ACTIVITY: 1 curie

LEAK TEST FREQUENCY: 6 months

PRINCIPAL USE: Gamma Gauges

CUSTOM DEVICE: YES ☒ NO ☐

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

(Amended in Entirety)

NO.: MD381D101G

DATE: May 24, 1983

PAGE 2 of 3

DEVICE TYPE: Thickness Gauge Source Holder

DESCRIPTION:

The source holder which is mounted in the bottom portion of a C frame device consists of a hollow brass cylinder approximately 1½" high by 5" in diameter with 5/8" wall thickness. The cylinder is closed at each end by 5/8" thick plates. A pellet holder containing the radioactive source is fastened internally to one end plate by six machine screws. A hole in the opposite plate permits radiation, when an internal shutter is in the open position, to pass through the material being measured, to a detector in the upper arm of the C frame.

Model AM-5: An internal spring action shutter which must be opened manually by insertion of a long slotted key through the side of the cylinder contains a hole which permits radiation to pass during use of the device. A ¼" lead shield in the shutter obstructs the beam when the shutter is closed. Plastic windows in each end of the holder are used to monitor the position of the shutter. A red "open" or green "Closed" are indicated. A manual trigger accessible without any tool may be used to close the shutter. An automatic trigger is actuated and the shutter is closed if the source holder is removed from the C frame.

Model AM-5A: The shutter motion is controlled by a pneumatic cylinder which replaces a former spring. There are no other basic design changes. Applied air pressure opens shutter and keeps it open. In case air pressure is lost, the plunger is retracted by means of internal cylinder spring and the shutter is closed.

The device consists of a steel C frame with a 4" - 12" gap through which the material to be measured passes by means of a conveyor system. The device which is designed for permanent installation primarily in a rolling mill may be moved laterally to monitor thickness of sheet type material. An electrically operated shutter which closes automatically in case of power failure provides a second shutter for the device. A red (open) and green (closed) light indicate the position of this shutter. Metal strips of varying thickness are incorporated in the device for calibration purposes. In actual use all operations are controlled from a control panel.

LABELING:

The device bears a metal label with engraved lettering as follows: CAUTION RADIOACTIVE MATERIAL Contains one Curie of Am-241; The receipt, possession, use and transfer of this device are subject to a general license and to the regulations of the U.S. NRC or a state agency. Removal of this label is prohibited. IGC1 Sn-. This label is fastened to the source holder by rivets.

REGISTRY OF RADIOACTIVE SEALED SOURCES AND DEVICES
SAFETY EVALUATION OF DEVICE

(Amended in Entirety)

NO.: MD381D101G

DATE: May 24, 1983

PAGE 3 OF 3

DEVICE TYPE: Thickness Gauge Source Holder

EXTERNAL RADIATION LEVELS:

The radiation is confined to a useful beam between the jaws of the gauge which has been measured by the manufacturer at 40 mr/hr using a Victoreen 440 detector - Outside of the jaws of the gauge, radiation levels reported by the manufacturer are less than 2.5 mr/hr and are less than 1 mr/hr at any point more than two feet away from the source under all operating conditions.

LIMITATIONS AND/OF OTHER CONSIDERATIONS OF USE:

The device's activation (opening of both shutters) after installation or relocation is performed by the manufacturer. The manufacturer supplies a manual, repairs the gauge and performs all maintenance required. The manual states that "leak tests" of the source must be performed at least once every six months by an individual licensed to perform such tests. Leak testing service is not provided by the manufacturer.

Industrial Gauging and Control, Inc. is authorized by Maryland Radioactive Material License MD-31-088-02 to distribute the source holder as a component of an IGC thickness gauge to generally licensed persons.

ISSUING AGENCY:

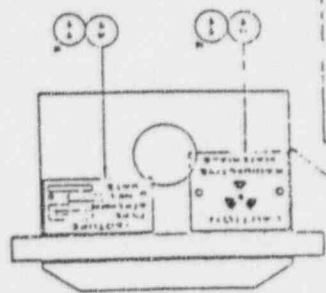
Maryland State Department of Health and Mental Hygiene

Date: May 24, 1983

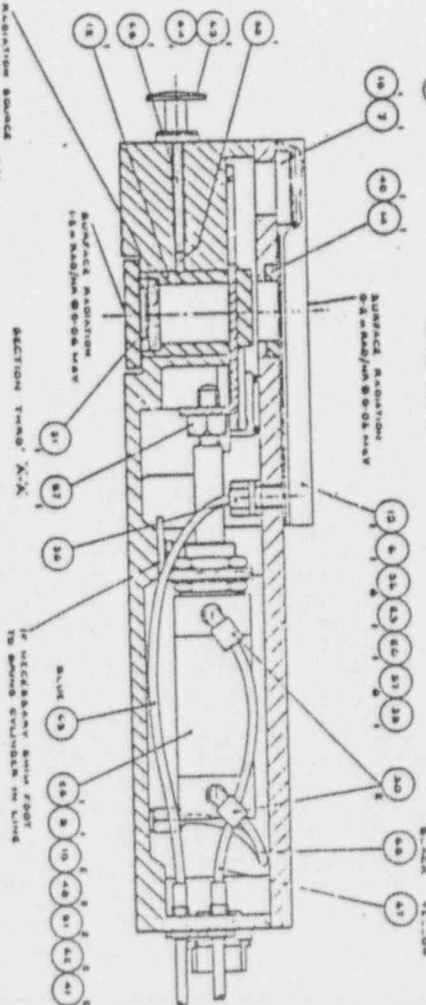
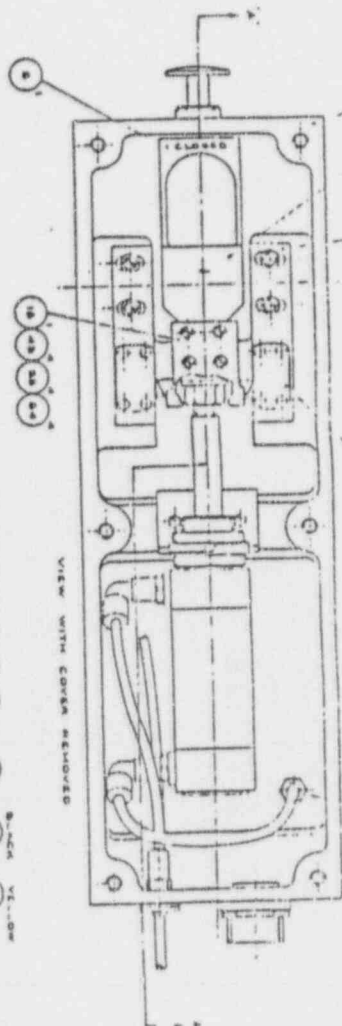
Received by: Charles R. Flynn
Charles R. Flynn

Date: May 26, 1983

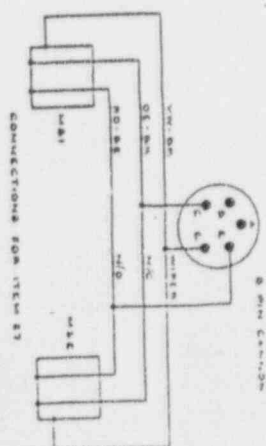
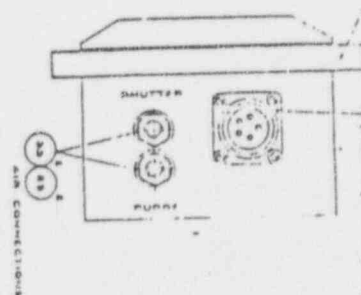
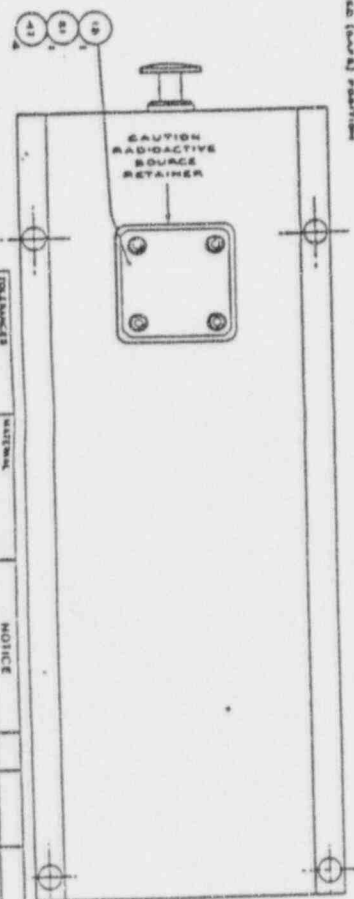
Received by: Robert E. Corcoran
Robert E. Corcoran



UNCLASSIFIED
DATE 05-08-2018
BY 60320 UCBAW



radiation source:
10 cubic centimeters 60
cobalt source giving 60
mr. dose rate at 10
cm. distance



NOTES:
1. DRY-ROTOR TYPE ELECTRIC-
CONVECTION MOTOR ON WAGO

[illegible][illegible]



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

CERTIFICATE OF REGISTRATION
SEALED SOURCE

Manufacturer and Distributor

Amersham Corporation
ATTN: Mr. Keith E. Fletcher (312) 593-6300 x 415
2636 Clearbrook Drive
Arlington Heights, IL 60005

Sealed Source Model Designation

AMC. D1

Isotope and Maximum Activity

Am-241, 4 curies

Conditions of Normal Use

The Model AMC. D1 sealed source is designed for use in x-ray fluorescence analytical equipment for research or analytical laboratory applications and for industrial nuclear gauging. The source in normal use is not expected to be subjected to excessive extremes of temperature, physical shock or to corrosive environments.

Sealed Source Description

The Amersham Corporation Model AMC. D1 sealed source consists of up to 4 curies of Am-241 incorporated as an integral component of a ceramic matrix which is bonded to an insert of stainless steel. The outer capsule is of monel with a beryllium window. The window is sealed by vacuum brazing and the outer capsule by argon arc welding. Capsule diameters range from 17.0 mm up to 24.0 mm. Beryllium windows are 1.0 mm thick.

Radiation Levels

The unshielded radiation levels from the source as specified by Amersham Corporation is about 150 rads/hr at 5 cms and 3 rads/hr at 25 cms.

The above results are derived from calculation and represent X and gamma ray emissions only. Neutron emissions expected are 10^4 n/sec/ci for Am-241.

Based on these radiation levels, close contact with the Model AMC.D1 sealed source could result in serious radiation exposures. Therefore, this source should be handled only by personnel trained and experienced in radiation safety and then only with proper handling equipment. In normal use the source should be permanently mounted in a properly designed shielded exposure device and should not be regularly removed or handled.

The Amersham Corporation states that the Model AMC. D1 has an ANSI Classification of C-64344 per ANSI N542-1977.

Limitations and/or Other Considerations

- A. This source shall not be subjected to environmental or other conditions of use which exceed ANSI Classification C-64344 (ANSI N542-1977).
- B. This source shall be distributed only to specific licensees of NRC or Agreement States.
- C. Leak Testing: This source shall be leak tested at 6 month intervals using techniques approved by the licensing authority and capable of detecting the presence of 0.005 microcuries of removable alpha contamination.
- D. Handling, Storage, Use, Transfer, and Disposal: To be determined by the licensing authority.

References:

The safety review and registration of the Model AMC. D1 sealed source design is based on information contained in Amersham Corporation letters dated December 21, 1978 and March 23, 1979 and enclosures thereto.

June 7, 1979



Certificate of Approval of Design for Special Form Radioactive Material

Title	
Low Energy Photon Source - Capsule Assembly X.93	
Drawing Nos and Specification References	
Assembly: 3RC 11069/S Issue C Components: 3RC 11070/S Issue B 3RC 11072/S Issue C 3RC 11071/S Issue A 3RC 11073/S Issue C DCR 1839 applies RSD/CTR/98 Dated 15 January 1981 SEM/040/1292 Dated 22 May 1992	
Q.A. Programme Ref: I P Q A M	
Radioactive Material	Maximum Activity
Americium 241	74 GBq (2 Ci)

THIS IS TO CERTIFY that the Secretary of State for Transport being, for the purposes of the Regulations of the International Atomic Energy Agency, the Competent Authority of Great Britain in respect of inland surface transport and of the United Kingdom of Great Britain and Northern Ireland in respect of sea and air transport and the Department of the Environment for Northern Ireland being the Competent Authority of Northern Ireland in respect of inland surface transport, have approved the above mentioned Special Form Design. Radioactive material manufactured to the above-mentioned design qualifies as special form radioactive material and as such will meet the requirements of the regulations overleaf.

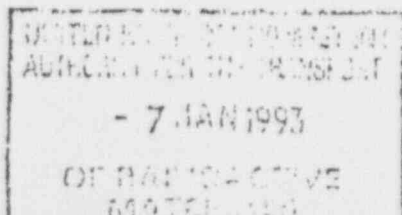
This Certificate of Approval applies only to the design as set out in the above named drawings and specifications submitted by Amersham International plc

In the event of any alteration in the composition of the package, the package design or in any of the facts stated in the application for approval, this certificate will cease to have effect unless the Competent Authority is notified of the alteration and the Competent Authority confirms the certificate notwithstanding the alteration.

This Certificate Cancels all Previous Issues and is valid until 31 December 1995

COMPETENT AUTHORITY
IDENTIFICATION MARK:

GB/40/S-85



Transport Radiological Adviser
Department of Transport
2 Marsham Street
London SW1P 3EB

On behalf of the Secretary of State
for Transport and the Department of
the Environment for Northern Ireland

Americium-241

γ and primary X-ray sources

Disc sources, stainless steel window

Americium-241 incorporated in a ceramic enamel sealed in a welded stainless steel capsule.

Sources codes AMC 62-66 are designed for backscatter applications, the active ceramic is recessed into a tungsten alloy insert.

Nominal content activity* MBq mCi	Capsule	Typical photon output in photons/sec per steradian 59.5keV	Code
37	1 X.10/2	8×10^5	AMC 62
111	3 X.10/2	2.5×10^6	AMC 63
370	10 X.10/2	8×10^6	AMC 64
1110	30 X.11	2.4×10^7	AMC 65
3700	100 X.11/1	5.3×10^7	AMC 66

*Tolerance $\pm 10\%$

Recommended working life: 15 years

Nominal content activity* GBq mCi	Capsule	Typical photon output in photons/sec per steradian 59.5keV	Code
3.7	100 X.91	5.3×10^7	AMC 16
11.1	300 X.92	1.5×10^8	AMC 17
18.5	500 X.97	2.8×10^8	AMC 18
37	1000 X.93	5×10^8	AMC 19
111	3000 X.94	1.2×10^9	AMC 30
185	5000 X.95	2×10^9	AMC 50

*Tolerance $\pm 10\%$

Recommended working life: 15 years

Disc sources, beryllium window

Americium-241 incorporated in a ceramic enamel, sealed in a welded metal capsule with brazed beryllium window; the active component is recessed into a stainless steel support with tungsten alloy backing.

These sources are designed for applications where the Np L X-rays are also required.

Nominal content activity* GBq mCi	Capsule	Typical photon output in photons/sec per steradian 59.5keV	Code
0.37	10 X.130/4	8.6×10^6	AMC 130/44
1.11	30 X.131/4	2.6×10^7	AMC 131/45
3.7	100 X.131/4	6.7×10^7	AMC 131/46
3.7	100 X.134/4	7.8×10^7	AMC 134/46

*Tolerance $\pm 10\%$

Recommended working life: 10 years

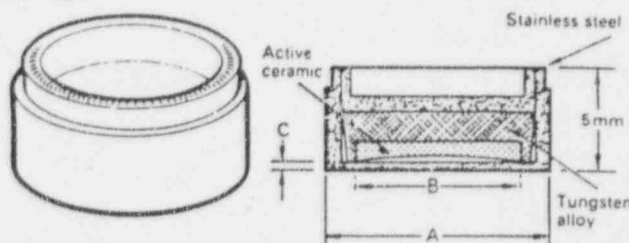
Quality Control, see page D1

Wipe test A

Bubble test D

Immersion test L

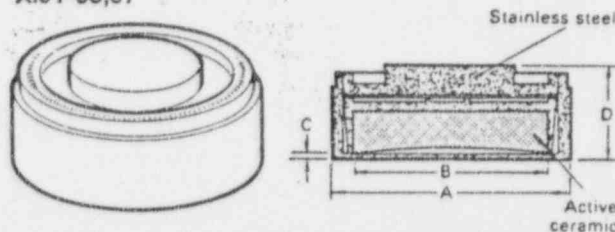
X.10,11



Capsule dimensions and Safety performance testing

Capsule	Overall diam. 'A' mm	Active diam. 'B' mm	Window thickness 'C' mm	Safety performance testing ANSI/ISO classification	IAEA special form	IDNS Model No.
X.10/2	8	4.2	0.2-0.25	C64545	GB/3/S	AMC.D2
X.11	10.8	7.2	0.2-0.25	C66544	GB/4/S	AMC.D3
X.11/1	10.8	8.0	0.2-0.25	C66544	GB/4/S	AMC.D3

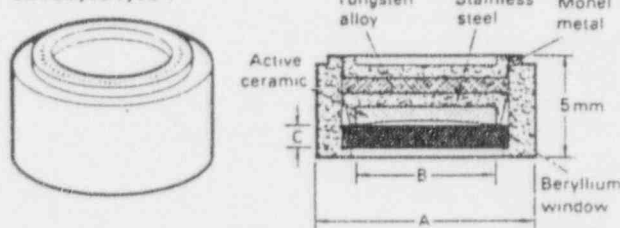
X.91-95,97



Capsule dimensions and Safety performance testing

Capsule	Overall diam. 'A' mm	Active diam. 'B' mm	Window thickness 'C' mm	Overall thickness 'D' mm	Safety performance testing ANSI/ISO classification	IAEA special form	IDNS Model No.
X.91	10.8	7.5	0.2-0.25	6	C64444	GB/38/S	AMC.16
X.92	15	12	0.2-0.25	6	C64444	GB/39/S	AMC.17
X.93	30	25	0.2-0.25	6	C64444	GB/40/S	AMC.19
X.94	36	31	0.25-0.3	8	E64444	GB/107/S	AMC.30
X.95	45	40	0.25-0.3	8	E64444	GB/121/S	AMC.50
X.97	22	18	0.2-0.25	6	C64444	GB/41/S	AMC.18

X.130,131,134



Capsule dimensions and Safety performance testing

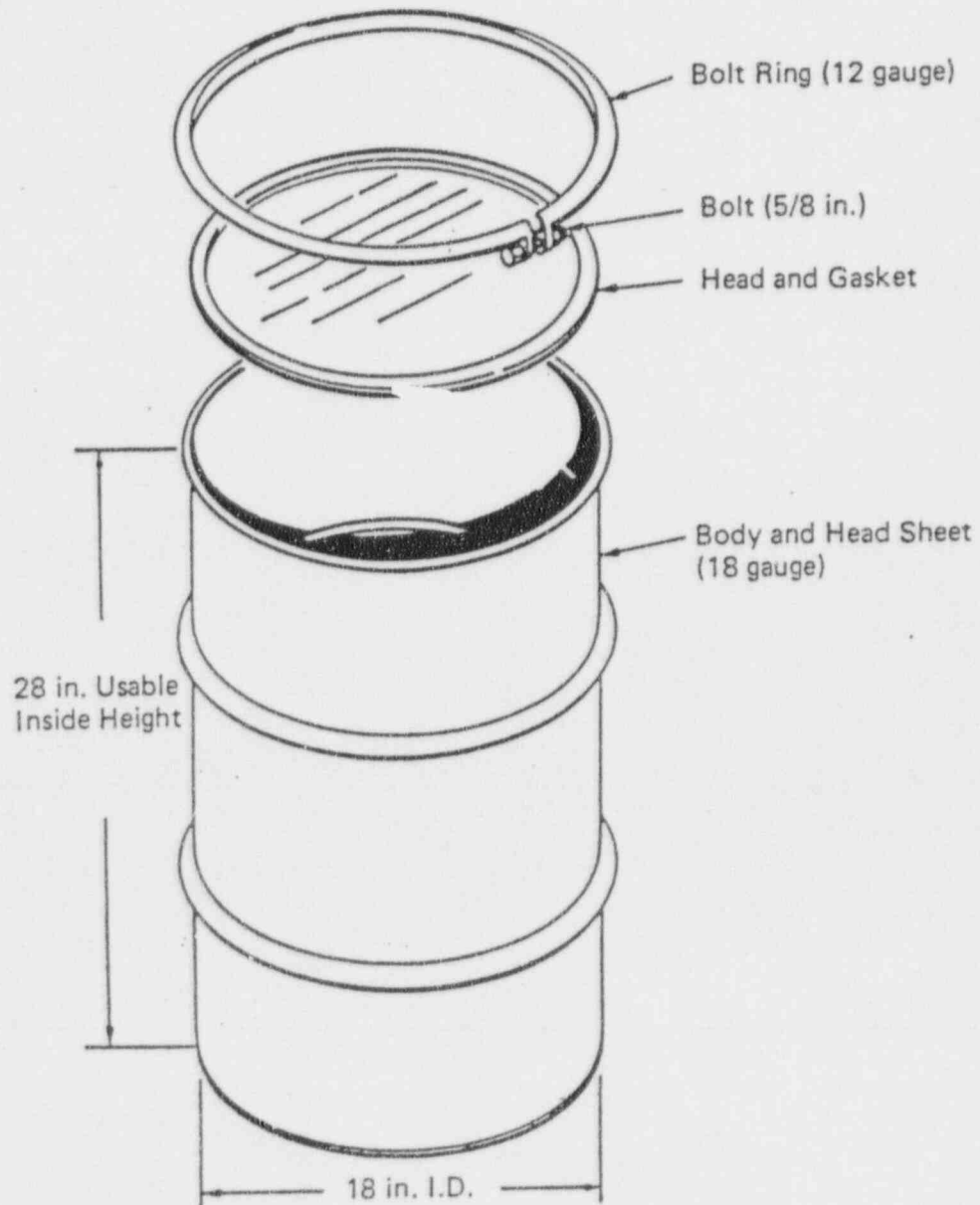
Capsule	Overall diam. 'A' mm	Active diam. 'B' mm	Window thickness 'C' mm	Safety performance testing ANSI/ISO classification	IAEA special form	IDNS Model No.
X.130/4	8	4.2	0.95-1.05	C64344	GB/145/S	AMCL
X.131/4	10.8	7.2	0.95-1.05	C64344	GB/144/S	AMCL
X.134/4	15	10.6	0.95-1.05	C64344	GB/146/S	AMCL

Neutron emission, see page B13

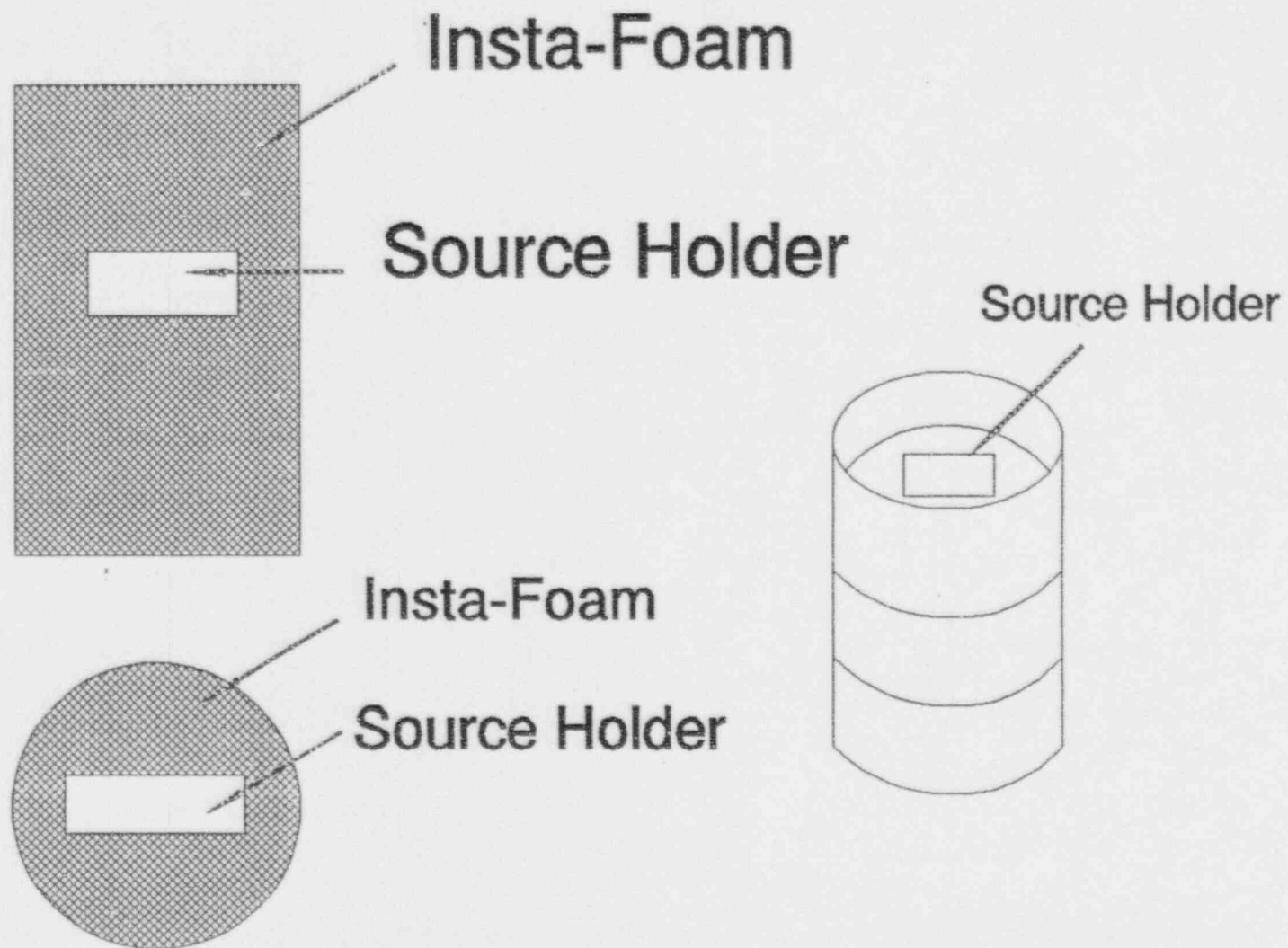
Safety performance testing, see page D1

DOT 7A Type A
49CFR 173.350

Steel Drum (30 gallon) - 17H
49CFR § 178.118



I7-H Barrel with AM-5A Source Holder



1. PACKAGE DESCRIPTION

COMMON NAME: DOT Spec 17H Steel Drum (30-gal)

DIMENSIONS:	<u>Height (in.)</u>	<u>Diameter (in.)</u>
Interior	28	18
Exterior	29.5	20

MATERIALS/METHOD OF CONSTRUCTION:

- Body and Head Sheet - 18 gauge
- Ring - 12 gauge
- Bolt - 0.625 in.
- Gasket Required

2. AUTHORIZED CONTENTS:

The three forms are authorized. Each shipper must determine the most appropriate form for his particular contents and comply with any special requirements (i.e., RTV, inner bag, etc.).

- Material Form No. 1: Solids - any particle size.
- Material Form No. 2: Solids - large particle size only (i.e., sand, concrete, debris, soil, etc.).
- Material Form No. 3: Solids - objects with no significant dispersible or removable contamination.*

MAXIMUM GROSS WEIGHT:

Form No. 1: 400 lb
Forms No. 2 and 3: 500 lb

RESTRICTIONS/SPECIFICATIONS:

- For Form No. 1 Contents - RTV sealant or equivalent must be applied to the surface of the gasket in contact with the drum body.
- For Form No. 2 and No. 3 Contents - No packaging component requirements other than as specified in Paragraph 1.
- Bolt closure tightened to 40 ft-lb with tapping of ring during tightening.
- Gasket material must have operating range of -40°F to +158°F.
- A dent (approximately 2.75 in.) resulted from the 4-ft drop test on the bottom edge. Each shipper must ensure that the radiation level at the surface of the package will not increase by more than 20%.

*For definition, see 173.443, Contamination Control.

RESTRICTIONS/SPECIFICATIONS (continued):

- For heavy, bulky materials (i.e., concrete chunks, motors, pumps, etc.), equipment or materials with sharp corners or protrusions, or material/containment geometrics which could result in highly localized forces, the shipper must ensure that the contents are securely fastened/positioned within the package.
- The shipper must determine that the actual contents are closely simulated by the test contents. If they are not, testing/analysis must be conducted and documented to demonstrate Spec 7A compliance with the actual contents.

3. 49 CFR 178.350 REGULATORY REQUIREMENTS

Testing/Analysis Results

- | | |
|--|---|
| (A) 49 CFR 173.24 - Standard Requirements for All Packages | Meets applicable requirements.
See MLM-3245, Addendum 1, Page A-1. |
| (B) 49 CFR 173.411 - General Design Requirements | Meets applicable requirements.
See MLM-3245, Addendum 1, Page B-1. |
| (C) 49 CFR 173.412 - Additional Requirements for Type A Packages | Meets applicable requirements.
See MLM-3245, Addendum 1, Page C-1. |
| (D) 49 CFR 173.465 - Type A Packaging Tests | Meets applicable requirements. |
-
- | | |
|------------------------------|---|
| - Water Spray | <u>Pass.</u> This test was conducted on nine different types of steel drums and a total of 26 packagings. In all cases, there was no detectable effect on the ability of the packaging to meet the subsequent Type A tests. In all cases, there was no inleakage of water as a result of this test. See MLM-3245, Addendum 1, Page D-3. |
| - Free Drop | <u>Pass.</u> Four-ft drop test conducted on:
Top - approximately 45° on bolt;
Bottom - approximately 45°;
Side - flat on bolt.
See MLM-3245, Addendum 1, Page D-20. |
| - Corner Drop (not required) | |

- Compression

Pass. This test was conducted at five times the gross weight for 24 hr. No detectable effect on the packaging was observed. See MLM-3245, Addendum 1, Page D-51.

- Penetration

Pass. This test was not conducted. Conclusion based on successful testing of comparable 17H 55-gal drum. See MLM-3245, Addendum 1, Page D-71.

4. QUALITY CONTROL

PACKAGING/ACCEPTANCE/USE CRITERIA

<u>CRITICAL</u>	<u>MAJOR</u>	<u>ACCEPTANCE/PRE-USE/INSPECTION CRITERIA*</u>
Lid/body interface	Vendor qualifications and experience	<u>Functional:</u> <ul style="list-style-type: none">- Ease of lid/closure ring application- Bolt closure ring--bolt size- Gasket, adhesive, as specified- Geometry, as specified
- Sealing surface		<u>Acceptable Conditions:</u> <ul style="list-style-type: none">- Lack of dents, no deformation of sealing surfaces- Dimensions, as specified- Gasket size, materials, geometry- Continuous welds, no sharp edges
Gasket		<u>Lot Tests by Shipper, as Appropriate, and/or Vendor Certification:</u> <ul style="list-style-type: none">- Marking- Test data- Type A Certification Document provided as appropriate- Air leak tests
Weld areas		<u>Visual:</u> <ul style="list-style-type: none">- Surface/coating as specified- Lack of imperfections in application- Lack of rust, dents, nicks
Body and chime	Metal thickness	
- Air leak tests	- Bolt size	
	Protective coating application	

* These criteria apply to first-time use and to reuse as a DOT 7A Type A packaging.

5. ADDITIONAL INFORMATION

PRIMARY USER(S):

Martin Marietta Energy Systems Inc.
P.O. Box Y
Oak Ridge, Y-12 Plant
Oak Ridge, TN 37830

Contact:

H. E. Crowder
FTS: 624-2689
COMM (615) 574-2689

For Additional Information:

D. A. Edling
FTS: 774-3919
COMM: (513) 865-3919

EXPRESS QUESTIONS? CALL 800-231-5555 TOLL FREE TRACKING NUMBER 9643740794

Sender's Federal Express Account Number 0200-2195-0 Date 7-22-93

From (Your Name) Please Print C. Burnett

To (Recipient's Name) Please Print

City Gaithersburg MD ZIP Required 20877

YOUR INTERNAL BILLING REFERENCE INFORMATION (First 24 characters will appear on invoice) 6812-938971B

PAYMENT 1 ☒ Bill Sender 2 ☐ Bill Recipient's FedEx Acct No 3 ☐ Bill 3rd Party FedEx Acct No 4 ☐ Bill Credit Card

SERVICES (Check only one box) Priority Overnight Service Standard Overnight Service Economy Two-Day Service

DELIVERY AND SPECIAL HANDLING (Check services required) 1 ☐ HOLD FOR PICK-UP 2 ☒ DELIVER WEEKDAY 3 ☐ DELIVER SATURDAY 4 ☒ DANGEROUS GOODS 5 ☐ DRY ICE 6 ☐ OTHER SPECIAL SERVICE

PACKAGES 1 63 5000. Total 1 63 5000.

SERVICE CONDITIONS, DECLARED VALUE AND LIMIT OF LIABILITY

SIGNATURE RELEASE UNAVAILABLE

9643740794 AIRBILL NUMBER

SHIPPER'S CERTIFICATION FOR RESTRICTED ARTICLES/DANGEROUS GOODS

CHECK ONE ☐ 49 CFR ☒ IATA/ICAO (TYPE OR PRINT)

PROPER SHIPPING NAME	CLASS OR DIVISION	UN OR ID NO	SUBSIDIARY RISK	QUANTITY AND TYPE OF PACKING	PACKING INST	AUTHORIZATION
RADIOACTIVE MATERIAL SPECIAL FORM N.O.S.	7	UN 2974		AMERICIUM 241 SOLID ONE (1) TYPE A PACKAGE X 37 GBq	I White T.I. 0.0 DIM: 28"H X 18" DIA	Special Form Certificate GB/40/S-85 Issue 1 attached.

ADDITIONAL HANDLING INFORMATION

TRANSPORT DETAILS

REPORT OF DEPARTURE Gaithersburg, MD

IF ACCEPTABLE FOR PASSENGER AIRCRAFT, THIS SHIPMENT CONTAINS RADIOACTIVE MATERIAL INTENDED FOR USE IN, OR INCIDENT TO, RESEARCH, MEDICAL DIAGNOSIS OR TREATMENT.

I HEREBY DECLARE THAT THE CONTENTS OF THIS CONSIGNMENT ARE FULLY AND ACCURATELY DESCRIBED ABOVE BY PROPER SHIPPING AND ARE CLASSIFIED, PACKED, MARKED, AND LABELED, AND ARE IN ALL RESPECTS IN PROPER CONDITION FOR TRANSPORT BY AIR ACCORDING TO THE APPLICABLE INTERNATIONAL AND NATIONAL GOVERNMENT REGULATIONS.

NAME AND TITLE OF SHIPPER Chris Burnett/Radiation Safety Officer

PLACE AND DATE Gaithersburg, MD 22 July 1993

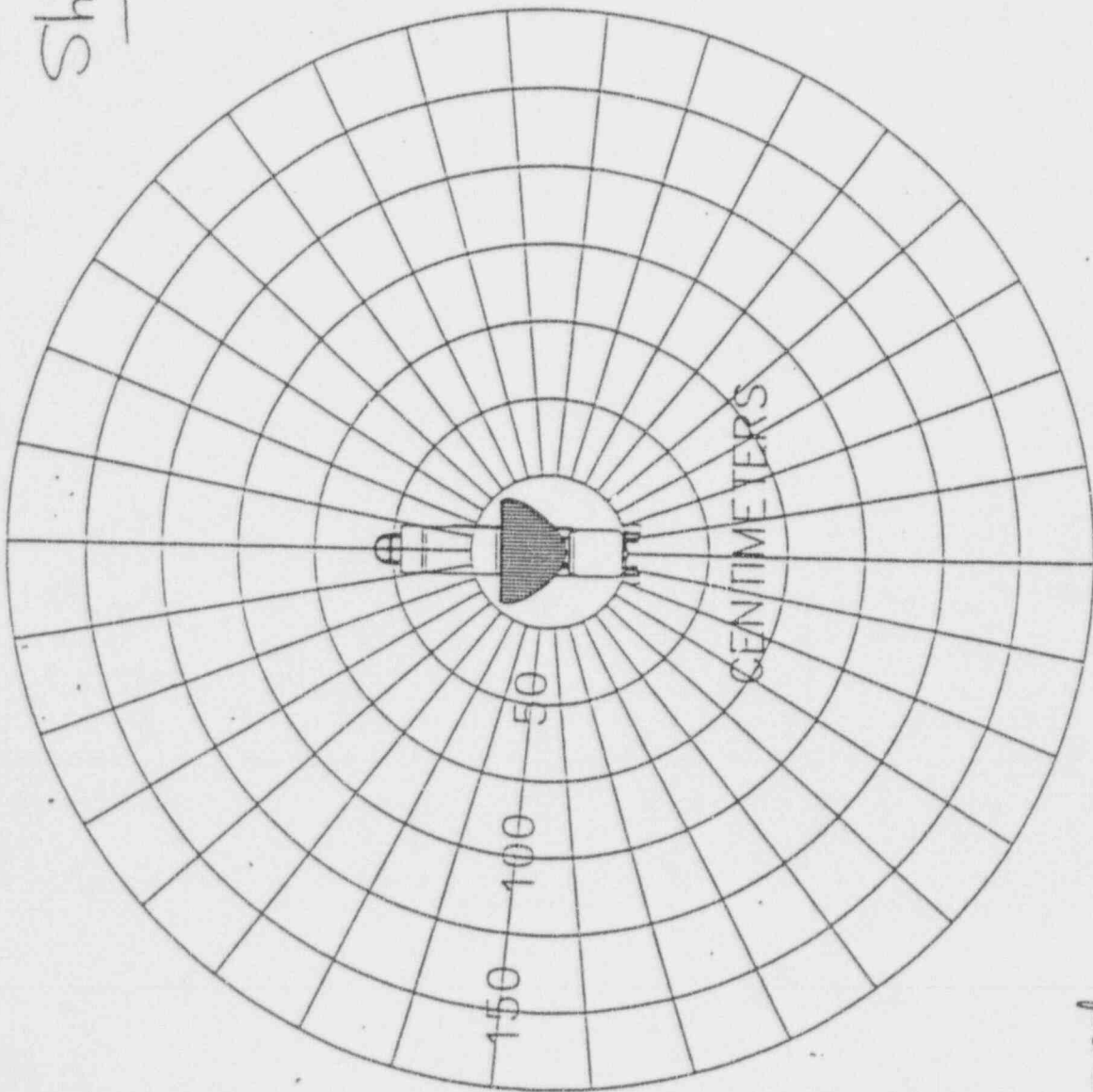
EMERGENCY TELEPHONE NUMBER 301-948-9559

SIGNATURE OF SHIPPER

SEE WARNING ON BACK

Shutter Open

NOTES:
 SURVEY TAKEN USING
 1 CURIE AU 241
 8" C-FRAUD AIR CAP
 LIMITS SHOWN ARE .25 MR/HR.



with shutter closed
 radiation levels
 are less than 0.25 mR/hr

DATA MEASUREMENT

SCALE: N.J.S.	APPROVED BY: J. J. C.	DATE: 7-22-66	REVISION: 1
RADIATION SURVEY 8" AIR CAP			INSTRUMENT: 535
PROJECT: C 11949			DATE: 7-22-66

NOTICE

THE SURVEY AND THE DATA
 WERE OBTAINED BY THE
 USE OF THE CURIE AU 241
 SOURCE. THE DATA ARE
 SUBJECT TO THE LIMITS
 OF THE INSTRUMENT AND
 THE SOURCE. THE DATA
 ARE NOT TO BE USED
 FOR ANY OTHER PURPOSE
 WITHOUT THE WRITTEN
 PERMISSION OF THE
 BUREAU OF RADIATION
 PHYSICS.


VALUATION OF DATA

THE DATA ARE
 SUBJECT TO THE
 LIMITS OF THE
 INSTRUMENT AND
 THE SOURCE. THE
 DATA ARE NOT
 TO BE USED FOR
 ANY OTHER
 PURPOSE WITHOUT
 THE WRITTEN
 PERMISSION OF
 THE BUREAU OF
 RADIATION
 PHYSICS.

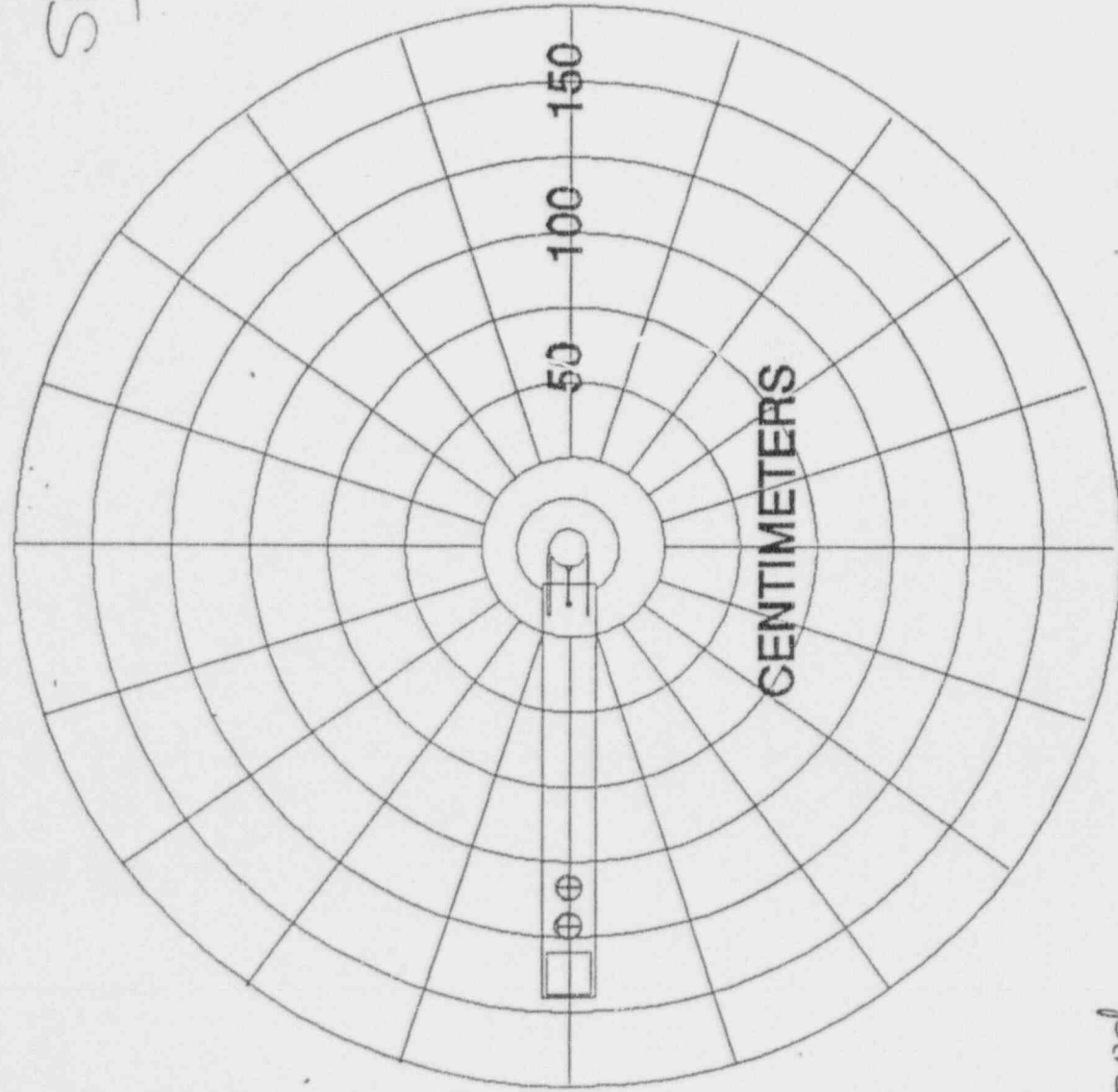


UNIT'S SHOWN ARE .25 MM/HR.

with shutter closed
radiation levels
are less than 0.25 mR/hr.

		<p>TOLERANCES UNLESS OTHERWISE SPECIFIED</p> <p>UNIT IS DECIMAL INCH</p> <p>5. ALL PLACES 0.005 6. ALL PLACES 0.010 7. ALL PLACES 0.020 8. ALL PLACES 0.040 9. ALL PLACES 0.060 10. ALL PLACES 0.080 11. ALL PLACES 0.100 12. ALL PLACES 0.150 13. ALL PLACES 0.200 14. ALL PLACES 0.250 15. ALL PLACES 0.300 16. ALL PLACES 0.375 17. ALL PLACES 0.500 18. ALL PLACES 0.625 19. ALL PLACES 0.750 20. ALL PLACES 0.875 21. ALL PLACES 1.000 22. ALL PLACES 1.250 23. ALL PLACES 1.500 24. ALL PLACES 1.750 25. ALL PLACES 2.000 26. ALL PLACES 2.500 27. ALL PLACES 3.000 28. ALL PLACES 3.500 29. ALL PLACES 4.000 30. ALL PLACES 4.500 31. ALL PLACES 5.000 32. ALL PLACES 5.500 33. ALL PLACES 6.000 34. ALL PLACES 6.500 35. ALL PLACES 7.000 36. ALL PLACES 7.500 37. ALL PLACES 8.000 38. ALL PLACES 8.500 39. ALL PLACES 9.000 40. ALL PLACES 9.500 41. ALL PLACES 10.000 42. ALL PLACES 10.500 43. ALL PLACES 11.000 44. ALL PLACES 11.500 45. ALL PLACES 12.000 46. ALL PLACES 12.500 47. ALL PLACES 13.000 48. ALL PLACES 13.500 49. ALL PLACES 14.000 50. ALL PLACES 14.500 51. ALL PLACES 15.000 52. ALL PLACES 15.500 53. ALL PLACES 16.000 54. ALL PLACES 16.500 55. ALL PLACES 17.000 56. ALL PLACES 17.500 57. ALL PLACES 18.000 58. ALL PLACES 18.500 59. ALL PLACES 19.000 60. ALL PLACES 19.500 61. ALL PLACES 20.000 62. ALL PLACES 20.500 63. ALL PLACES 21.000 64. ALL PLACES 21.500 65. ALL PLACES 22.000 66. ALL PLACES 22.500 67. ALL PLACES 23.000 68. ALL PLACES 23.500 69. ALL PLACES 24.000 70. ALL PLACES 24.500 71. ALL PLACES 25.000 72. ALL PLACES 25.500 73. ALL PLACES 26.000 74. ALL PLACES 26.500 75. ALL PLACES 27.000 76. ALL PLACES 27.500 77. ALL PLACES 28.000 78. ALL PLACES 28.500 79. ALL PLACES 29.000 80. ALL PLACES 29.500 81. ALL PLACES 30.000 82. ALL PLACES 30.500 83. ALL PLACES 31.000 84. ALL PLACES 31.500 85. ALL PLACES 32.000 86. ALL PLACES 32.500 87. ALL PLACES 33.000 88. ALL PLACES 33.500 89. ALL PLACES 34.000 90. ALL PLACES 34.500 91. ALL PLACES 35.000 92. ALL PLACES 35.500 93. ALL PLACES 36.000 94. ALL PLACES 36.500 95. ALL PLACES 37.000 96. ALL PLACES 37.500 97. ALL PLACES 38.000 98. ALL PLACES 38.500 99. ALL PLACES 39.000 100. ALL PLACES 39.500 101. ALL PLACES 40.000 102. ALL PLACES 40.500 103. ALL PLACES 41.000 104. ALL PLACES 41.500 105. ALL PLACES 42.000 106. ALL PLACES 42.500 107. ALL PLACES 43.000 108. ALL PLACES 43.500 109. ALL PLACES 44.000 110. ALL PLACES 44.500 111. ALL PLACES 45.000 112. ALL PLACES 45.500 113. ALL PLACES 46.000 114. ALL PLACES 46.500 115. ALL PLACES 47.000 116. ALL PLACES 47.500 117. ALL PLACES 48.000 118. ALL PLACES 48.500 119. ALL PLACES 49.000 120. ALL PLACES 49.500 121. ALL PLACES 50.000 122. ALL PLACES 50.500 123. ALL PLACES 51.000 124. ALL PLACES 51.500 125. ALL PLACES 52.000 126. ALL PLACES 52.500 127. ALL PLACES 53.000 128. ALL PLACES 53.500 129. ALL PLACES 54.000 130. ALL PLACES 54.500 131. ALL PLACES 55.000 132. ALL PLACES 55.500 133. ALL PLACES 56.000 134. ALL PLACES 56.500 135. ALL PLACES 57.000 136. ALL PLACES 57.500 137. ALL PLACES 58.000 138. ALL PLACES 58.500 139. ALL PLACES 59.000 140. ALL PLACES 59.500 141. ALL PLACES 60.000 142. ALL PLACES 60.500 143. ALL PLACES 61.000 144. ALL PLACES 61.500 145. ALL PLACES 62.000 146. ALL PLACES 62.500 147. ALL PLACES 63.000 148. ALL PLACES 63.500 149. ALL PLACES 64.000 150. ALL PLACES 64.500 151. ALL PLACES 65.000 152. ALL PLACES 65.500 153. ALL PLACES 66.000 154. ALL PLACES 66.500 155. ALL PLACES 67.000 156. ALL PLACES 67.500 157. ALL PLACES 68.000 158. ALL PLACES 68.500 159. ALL PLACES 69.000 160. ALL PLACES 69.500 161. ALL PLACES 70.000 162. ALL PLACES 70.500 163. ALL PLACES 71.000 164. ALL PLACES 71.500 165. ALL PLACES 72.000 166. ALL PLACES 72.500 167. ALL PLACES 73.000 168. ALL PLACES 73.500 169. ALL PLACES 74.000 170. ALL PLACES 74.500 171. ALL PLACES 75.000 172. ALL PLACES 75.500 173. ALL PLACES 76.000 174. ALL PLACES 76.500 175. ALL PLACES 77.000 176. ALL PLACES 77.500 177. ALL PLACES 78.000 178. ALL PLACES 78.500 179. ALL PLACES 79.000 180. ALL PLACES 79.500 181. ALL PLACES 80.000 182. ALL PLACES 80.500 183. ALL PLACES 81.000 184. ALL PLACES 81.500 185. ALL PLACES 82.000 186. ALL PLACES 82.500 187. ALL PLACES 83.000 188. ALL PLACES 83.500 189. ALL PLACES 84.000 190. ALL PLACES 84.500 191. ALL PLACES 85.000 192. ALL PLACES 85.500 193. ALL PLACES 86.000 194. ALL PLACES 86.500 195. ALL PLACES 87.000 196. ALL PLACES 87.500 197. ALL PLACES 88.000 198. ALL PLACES 88.500 199. ALL PLACES 89.000 200. ALL PLACES 89.500 201. ALL PLACES 90.000 202. ALL PLACES 90.500 203. ALL PLACES 91.000 204. ALL PLACES 91.500 205. ALL PLACES 92.000 206. ALL PLACES 92.500 207. ALL PLACES 93.000 208. ALL PLACES 93.500 209. ALL PLACES 94.000 210. ALL PLACES 94.500 211. ALL PLACES 95.000 212. ALL PLACES 95.500 213. ALL PLACES 96.000 214. ALL PLACES 96.500 215. ALL PLACES 97.000 216. ALL PLACES 97.500 217. ALL PLACES 98.000 218. ALL PLACES 98.500 219. ALL PLACES 99.000 220. ALL PLACES 99.500 221. ALL PLACES 100.000 222. ALL PLACES 100.500</p>	
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Shutter Open

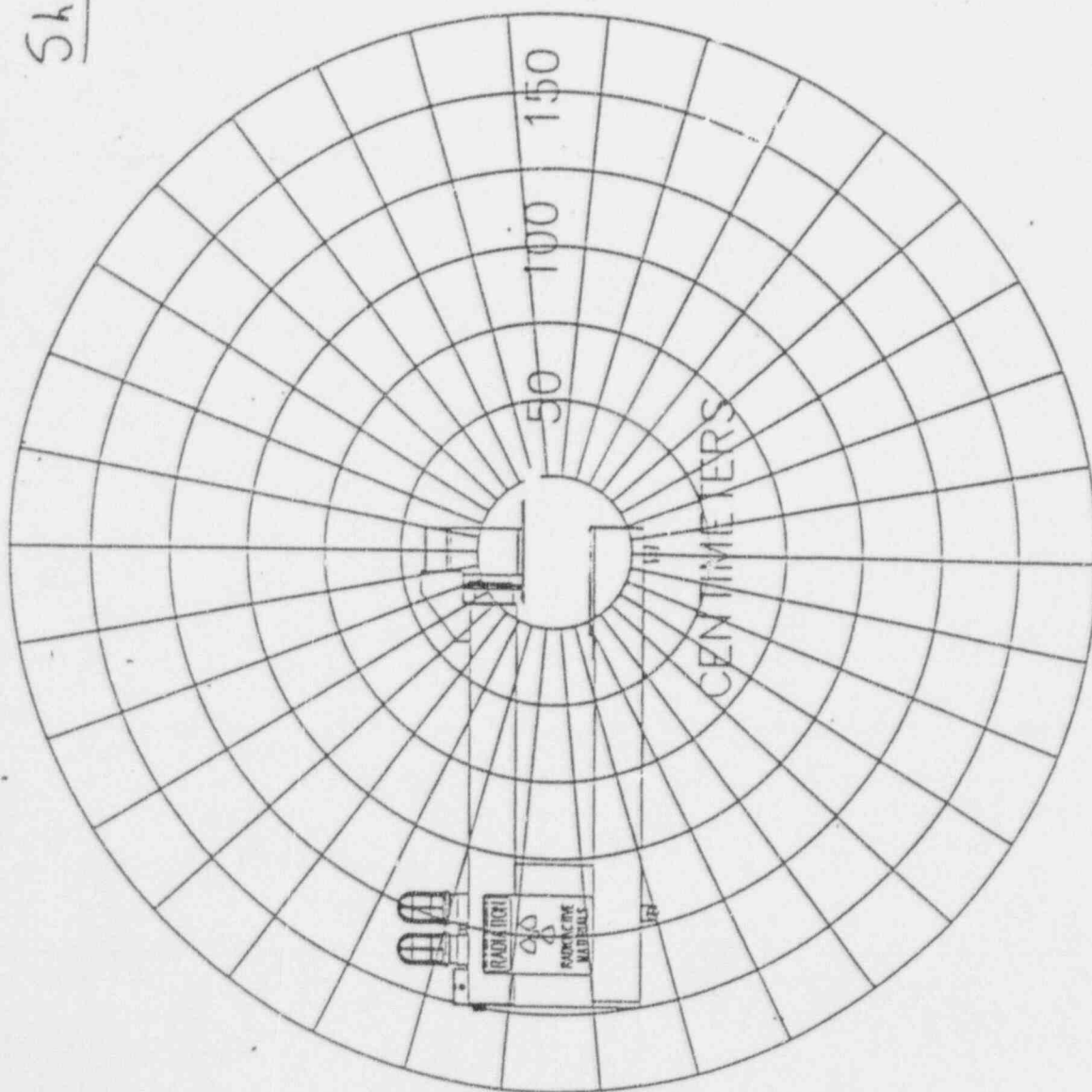


NOTES:
 SURVEY TAKEN USING
 1 CURIE AM 241
 8" C-FRAME AIR CAP
 LIMITS SHOWN ARE .25 MR/HR

with shutter closed
 radiation levels
 are less than 0.25 mR/hr

FOR INSTRUCTIONS, DIRECTIONS, AND PREPARATION OF THIS DRAWING, SEE THE DRAWING AND THE DRAWING NOTES. 1. THIS DRAWING IS A COPY OF THE ORIGINAL DRAWING. 2. THIS DRAWING IS A COPY OF THE ORIGINAL DRAWING. 3. THIS DRAWING IS A COPY OF THE ORIGINAL DRAWING. 4. THIS DRAWING IS A COPY OF THE ORIGINAL DRAWING.		NOTICE THE DRAWING AND THE DRAWING NOTES ARE THE PROPERTY OF THE U.S. GOVERNMENT AND ARE NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT PERMISSION IN WRITING FROM THE U.S. GOVERNMENT.	
TITLE: RADIATION SURVEY DATE: 7-22-88 BY: J. J. J.	SCALE: 1/4" = 1'-0" APPROVED BY: J. J. J. DATE: 7-22-88	DRAWING NO.: C 11949 SHEET NO.: 1 OF 2	DATA MEASUREMENT RADIATION SURVEY 8" AIR CAP LIMITS SHOWN ARE .25 MR/HR





NOTES

SURVEY TAKEN USING

1 CURTIS AM 941

0° C-FRACTION 2000 GAP

LIMITS SHOWN ARE .29 WPM/VER.

with shutter closed
radiation levels
are less than 0.25 mR/hr.

NOTICE

FOR FRANCHISES AVAILABLE
OTHERWISE SEE OTHERS

[illegible]

1

There is a small table in

1000

1994

0.75 m/s

7

DATA MEASUREMENT

[illegible]

RADIATION SURVEY 8" AIR CAP

979	C 11949 on 2 v 2
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JAN 30 1997

Keith Busse
CEO and President
Steel Dynamics, Inc.
4500 County Road 59
Butler, IN 46721-9747

Dear Mr. Busse:

Enclosed is Amendment No. 01 to your NRC Material License No. 13-26651-01 in accordance with your request.

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 III office at (630) 829-9887 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. Unless your license has been 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. Notify NRC, in writing, within 30 days:
 - a. When the Radiation Safety Officer permanently discontinues performance of duties under the license or has a name change; or
 - b. When the licensee's mailing address changes (no fee is required if the location of byproduct material remains the same).

302000

3. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license when you decide to terminate all activities involving materials authorized under the license.
4. Request and obtain a license amendment before you:
 - a. Change Radiation Safety Officers;
 - b. Order byproduct material in excess of the amount, or radionuclide, or form different than authorized on the license;
 - c. Add or change the areas of use or address or addresses of use identified in the license application or on the license; or
 - d. Change ownership of your organization.
5. 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 certifying official rather than a consultant.

You will be periodically inspected by 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 Policy and Procedures for NRC Enforcement Actions. Since serious consequences to employees and the public can result from failure to comply with NRC requirements,

K. Busse

-3-

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.

Sincerely,

Original Signed By
Gidget Watson
Nuclear Materials Licensing Branch

License No. 13-26651-01
Docket No. 030-33848

DOCUMENT NAME: M:\03033848.CL7

To receive a copy of this document, indicate in the box: "C" = Copy without attachment/enclosure "E" = Copy with attachment/enclosure "N" = No copy

OFFICE	DNMS/RIII								
NAME	GWatson:brt								
DATE	01/21/97 GW								

OFFICIAL RECORD COPY

CONVERSATION RECORD

TIME

DATE

1/21/97

☐ VISIT☐ CONFERENCE☒ TELEPHONE☐ INCOMING☒ OUTGOINGNAME OF PERSON(S) CONTACTED OR IN CONTACT
Tim Whiteman, RSOORGANIZATION (OFFICE, DEPT. ETC.)
Steel Dynamics, Inc.

TELEPHONE NO.

219/868-8000

SUBJECT

License NO. 13-26651-01

SUMMARY

I requested the following information in regards to letter dated 10/28/96:

1. Certifying Official Signature.
2. Diagram of proposed gauge location.

Mr. Whiteman stated that he would forward the aforementioned information ASAP.

ACTION REQUIRED

NAME OF PERSON DOCUMENTING CONVERSATION

SIGNATURE

DATE

ACTION TAKEN

SIGNATURE

TITLE

DATE

STEEL DYNAMICS, INC.

4500 County Road 59 - Butler, IN 46721 Telephone (219) 868-8000/FAX (219) 868-8055

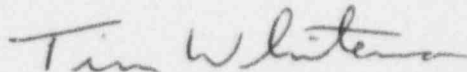
US Nuclear Regulatory Commission
Region III
Materials Licensing Section
801 Warrenville Road
Lisle, IL 60532-4351

January 23, 1997

Dear Ms. Watson,

Enclosed please find the letter authorizing Tim Whiteman to sign on behalf of Steel Dynamics, Inc. (SDI) for all NRC correspondence. Also enclosed are drawings showing location and description of each source. SDI does not have a smaller drawing showing the locations of the sources.

Sincerely,



Tim Whiteman
Environmental Engineer

RECEIVED

JAN 24 1997

REGION III

302000

JAN 24 1997

STEEL DYNAMICS, INC.

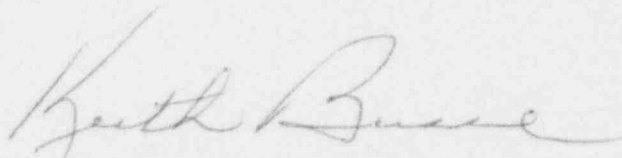
4500 County Road 59 - Butler, IN 46721 Telephone (219) 868-8000/FAX (219) 868-8055

US Nuclear Regulatory Commission
Region III
Materials Licensing Section
801 Warrenville Road
Lisle, IL 60532-4351

January 23, 1997

Attn: Gidget Watson

This letter authorizes Tim Whiteman to act as signatory on behalf of Steel Dynamics, Inc. (SDI) in regards to the application letter dated October 28, 1996, the letter dated January 23, 1997, and all future correspondence with the Nuclear Regulatory Commission (NRC).



Keith Busse
President and Chief Executive Officer

RECEIVED

JAN 24 1997

REGION III



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION III
801 WARRENVILLE ROAD
LISLE, ILLINOIS 60532-4351

November 4, 1996

Tim Whiteman
Environmental Engineer
Radiation Safety Officer
Steel Dynamics Incorporated
4500 Country Road 59
Butler, IN 46721-9747

SUBJECT: ACKNOWLEDGEMENT OF CORRESPONDENCE
(Letter & Application Dated 10/26/96)

Dear Licensee:

In response to your request, we have completed the initial processing, which is an administrative review of your application for a(n):

☐ New License ☒ Amendment ☐ Renewal
☐ Termination ☐ Auth User (Amendment not required)
☐ Other _____

No administrative deficiencies were identified during this initial review. However, it should be noted that a technical review may identify omissions in the submitted information.

It appears that your request is routine (see 1-3 below, as applicable).

1. New and amendment actions are normally processed within 90 days, unless we find major deficiencies, or policy issues requiring central program office assistance.
2. Renewal actions are normally processed within 180 days, however, under timely filing (before expiration), you may continue to operate under your existing license.
3. Termination actions are normally processed within 90 days, unless confirmatory surveys following decontamination/decommissioning activities are involved.

A copy of your correspondence has been forwarded to our Licensing Fee and Debt Collection Branch (301/415-6097) for approval of the fee category and amount, if required.

If you have a compelling safety or business-related reason for requesting expedited review, please contact the Materials Licensing Branch at (630) 829-9887. We will try to complete your request as soon as practicable. Any correspondence about this request should reference the control number.

Nuclear Materials Support Branch

Mail Control No. 302000
License No. 13-26651-01