APV REFINERY PRODUCTS CORP.
A Member of the APV Group of Companies
N90 W14555 COMMERCE DRIVE
MENOMONEE FALLS, WISCONSIN 53051-0278
Telephone (414) 255-2990
TWX 9102603621

January 7, 1986

U.S. Nuclear Regulartory Commission
Region III
799 Roosevelt Rd.
Glenn Ellyn, IL 60137

Attention: Material Licensing Division

Gentlemen:

We are requesting permission to amend our license, number 48-03665-04 to change suppliers from Tech Ops Inc. to Gamma Industries, Inc.

In our license we are able to use Automation Industries Model 41037 sealed sources for Iridium 192 and Automation Industries Model 41708 sealed sources for Cobalt 60.

We would like the change to read as follows:

7) Which is chemical and/or physical form "A" Gamma Industries Model B-3G and "B" Gamma Industries Model B-3G.

9) We would like to change under authorize use-
   a) From quote "For use in Automation Industries - Model 63 exposure devices for industrial radiography and in Automation Industries Model 41027 source changers for storage and replacement of sources";to quote "For use in Automation Industries Model 63 exposure devices for industrial radiography and in Gamma Industries Model No. C10 source changer for storage and replacement of sources".

   b) From quote "For use in Automation Industries Model 63C exposure devices for industrial radiography and in Automation Industries Model 1-563 source changers for storage and replacement of sources"; to quote "For use in Automation Industries Model 63C exposure devices for industrial radiography and in Gamma Industries Model No. C8 source changers for storage and replacement of sources".

Attached are two (2) copies each of the certificate of compliance from Gamma Industries as follows:

1) Certificate of Compliance for Radioactive Materials packages. US NRC Certificate No. 9133 Rev. 2

2) Certificate of Compliance for Radioactive Material packages. US NRC Certificate No. 6717 Rev. 6

3) Certificate of Compliance from the US Dept. of Transportation

4) Certificate of Compliance for Radioactive Material packages.
US NRC Certificate No. 9128 Rev. 3

5) Radioactive Material License from the Louisiana Nuclear Energy Division.
1) License Number LA-0006-LU1

Included with this letter is our check for $230.00 for the amendment fee.

Very truly yours,

APV REFINERY PRODUCTS CORP.

Leo J. Warden

Leo J. Warden
Radiation Safety Officer

LJW:jz
enc. check

NRC FORM 618
(6-83)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

# CERTIFICATE OF COMPLIANCE
## FOR RADIOACTIVE MATERIALS PACKAGES

| 1.a CERTIFICATE NUMBER | b. REVISION NUMBER | c. PACKAGE IDENTIFICATION NUMBER | d. PAGE NUMBER | e. TOTAL NUMBER PAGES |
|---|---|---|---|---|
| 9133 | 2 | USA/9133/B(U) | 1 | 2 |

2. PREAMBLE

a. This certificate is issued to certify that the packaging and contents described in Item 5 below, meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."

b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a. PREPARED BY (Name and Address)

Gamma Industries
P.O. Box 2543
Baton Rouge, LA 70821

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Gamma Industries application dated
April 12, 1982.

71-9133

c. DOCKET NUMBER

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

(1) Model No.: C-10

(2) Description

A steel encased, uranium shielded radiographic device. The source exchanger is approximately 7.0 inches long and 5.5 inches in diameter and provided with a 5" high steel handle (1/2" diameter). The radioactive source assembly is housed in a Zircalloy or titanium "S" tube. The tube is surrounded by depleted uranium metal as shielding material. The depleted uranium shield assembly is encased in a steel housing. The void space between the depleted uranium shield assembly and the outer container is filled with a polyurethane foam. The source exchanger is enclosed in a steel box 10-1/2" x 10-1/2" x 17-1/4" long with the steel handle of the source exchanger protruding. The gross weight of the package is 70 pounds.

(3) Drawings

The packaging is constructed in accordance with Gamma Industries Drawing Nos. 637-7001-020, Rev. 2; 637-7001-033A, Rev. -; 637-7001-033B, Rev. -.

CONTROL NO. 80458

(b) Contents

(1) Type and form of material

Iridium 192 as sealed sources that meet the requirements of special form radioactive material.

(2) Maximum quantity of material per package

240 curies

6. The minimimum depleted uranium shielding thickness must be 1-9/16 inches.

7. The source must be secured in the shielded position of the packaging by the safety cap, source assembly and lock box assembly. The components used to secure the source must be fabricated of matrials capable of resisting a 1,475°F fire environment for one-half hour and maintaining their positioning function. The ball stop of the source assembly must engage the locking device. The flexible cable of the source assembly must be of sufficient length and diameter to provide positive positioning of the source at the optimum shielding position at the center of the "S" tube.

8. The name plates must be fabricated of materials capable of resisting the fire test of 10 CFR Part 71 and maintaining its legibility.

9. The packaging must be provided with a tamperproof feature which meets the requirements of 10 CFR §71.43(b).

10. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12.

11. Expiration date: May 31, 1987.

REFERENCE

Gamma Industries application dated April 12, 1982.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Charles E. MacDonald, Chief
Transportation Certification Branch
Division of Fuel Cycle and
Material Safety, NMSS

Date: APR 1 0 1984

NRC FORM 618
6-83)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

# CERTIFICATE OF COMPLIANCE
## FOR RADIOACTIVE MATERIALS PACKAGES

| a. CERTIFICATE NUMBER | b. REVISION NUMBER | c. PACKAGE IDENTIFICATION NUMBER | d. PAGE NUMBER | e. TOTAL NUMBER PAGES |
|---|---|---|---|---|
| 6717 | 6 | USA/6717/B(U) | 1 | 2 |

2. PREAMBLE

a. This certificate is issued to certify that the packaging and contents described in Item 5 below, meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."

b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a. PREPARED BY (Name and Address)

Gamma Industries
P.O. Box 2543
Baton Rouge, LA 70821

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Nuclear Packaging, Inc. application dated June 20, 1975, as supplemented

c. DOCKET NUMBER 71-6717

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

(1) Model No.: 6717-B

(2) Description

Radiographic device within a protective overpack. The overpack consists of an outer container which is a 10-gallon open head steel drum having a minimum 20-gauge body and cover, welded seams and a clamp-ring type head closure. The void space between the inner and outer container is filled with 1-1/2" thick molded asbestos free liner on sides, top and bottom, plus molded polyurethane filler to position and secure the radiographic device within the drum. Maximum gross weight of the package not to exceed 75 pounds.

(3) Drawing

The packaging is constructed in accordance with Nuclear Packaging Inc. Drawing No. SK-D-1, Rev. 2.

5. (b) Contents

(1) Type and form of material

Iridium 192 as sealed sources which meet the requirements of special form radioactive material.

(2) Maximum quantity of material per package

200 curies.

6. The contents must be secured in a single snug-fitting inner radiographic device which has a metal outer wall and meets the requirements of DOT Specification 7A packaging.

7. The source shall be secured in the shielded position of the radiographic device by the shipping plug, source assembly, and locking device. The shipping plug and source assembly used must be fabricated of materials capable of resisting a 1475°F fire environment for one-half hour and maintaining their positioning function. The ball stop of the source assembly must engage the locking device. The flexible cable of the source assembly and shipping plug must be of sufficient length and diameter to provide positive positioning of the source in the shielded position.

8. The packaging authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR§71.12.

9. Expiration date: July 31, 1990.

REFERENCES

Nuclear Packaging, Inc. application dated June 20, 1975.

Supplements dated: August 8, 1975; and February 26, 1980.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

Charles E. MacDonald, Chief
Transporation Certification Branch
Division of Fuel Cycle and
Material Safety, NMSS

Date: JUL 22 1985

B-3-G FOR T/O's 6M Multitron

US Department
of Transportation

Research and
Special Programs
Administration

400 Seventh St. S.W.
Washington D.C. 20590

COMPETENT AUTHORITY CERTIFICATION
FOR A TYPE B(U)
RADIOACTIVE MATERIALS PACKAGE DESIGN
CERTIFICATE USA/6717/B(U), REVISION 2

This certifies that the radioactive materials package design described below has been certified by the competent authority of the United States as meeting the regulatory requirements for a Type B(U) packaging for radioactive materials as prescribed in the IAEA[1] and USA[2] regulations.

1. Package Identification - Model No.6717-B.

2. Packaging Description and Authorized Radioactive Contents - as described in Nuclear Regulatory Commission Certificate of Compliance No. 6717, Revision 6 (attached).

3. GENERAL CONDITIONS -

   a. Each user of this certificate must have in his possession a copy of this certificate and all documents necessary to properly prepare the package for transportation.

   b. Each user of this certificate, other than the original petitioner, shall register his identity in writing to the Office of Hazardous Materials Regulation, Research and Special Programs Administration, U.S. Department of Transportation, Washington D.C. 20590.

   c. This certificate does not relieve any consignor or carrier from compliance with any requirement of the Government of any country through or into which the package is to be transported.

CONTROL NO. 80458

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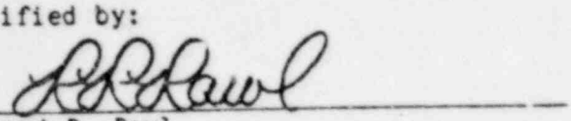
[1] "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials, 1973 Revised Edition (As Amended)" published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

[2] "Title 49, Code of Federal Regulations, Parts 100 - 199, USA."

4. The package shall bear the marking USA/6717/B(U) in addition to other required markings and labeling.

5. This certificate, unless renewed, expires on July 31, 1990.

Certified by:



August 6, 1985

Richard R. Rawl
Chief, Radioactive Materials Branch
Office of Hazardous Materials Regulation
Materials Transportation Bureau

Revision 2 - issued to incorporate NRC certificate 6717, Revision 6; extend expiration date.

NRC FORM 618
(5-83)
10 CFR 71

U.S. NUCLEAR REGULATORY COMMISSION

# CERTIFICATE OF COMPLIANCE
## FOR RADIOACTIVE MATERIALS PACKAGES

| 1.a. CERTIFICATE NUMBER | b. REVISION NUMBER | c. PACKAGE IDENTIFICATION NUMBER | d. PAGE NUMBER | e. TOTAL NUMBER PAGES |
|---|---|---|---|---|
| 9128 | 3 | USA/9128/B(U) | 1 | 2 |

2. PREAMBLE

a. This certificate is issued to certify that the packaging and contents described in Item 5 below, meets the applicable safety standards set forth in Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Materials for Transport and Transportation of Radioactive Material Under Certain Conditions."

b. This certificate does not relieve the consignor from compliance with any requirement of the regulations of the U.S. Department of Transportation or other applicable regulatory agencies, including the government of any country through or into which the package will be transported.

3. THIS CERTIFICATE IS ISSUED ON THE BASIS OF A SAFETY ANALYSIS REPORT OF THE PACKAGE DESIGN OR APPLICATION

a. PREPARED BY (Name and Address)

Gamma Industries
P.O. Box 2543
Baton Rouge, LA 70821

b. TITLE AND IDENTIFICATION OF REPORT OR APPLICATION

Gamma Industries application dated May 20, 1978, as supplemented.

c. DOCKET NUMBER 71-9128

4. CONDITIONS

This certificate is conditional upon fulfilling the requirements of 10 CFR Part 71, as applicable, and the conditions specified below.

5.

(a) Packaging

(1) Model No.: C-8

A steel encased, uranium shielded source exchanger. The shipping container is approximately 16 inches in diameter, 13 inches long and 26 inches high in its skid mounted configuration. The radioactive source assembly is housed in a Zircaloy or titanium "S" tube. A septum at the center of the "S" tube prevents moving the source assembly beyond the optimum shielding position. The tube is surrounded by depleted uranium metal as shielding material. The depleted uranium shield assembly is encased in a steel housing. The void space between the depleted uranium shield assembly and the outer container is filled with a polyurethane foam. The gross weight of the container is 500 pounds.

(3) Drawings

The packaging is constructed in accordance with Gamma Industries Drawing Nos. 821-1001-033, 191, 821-1001-347, 821-1001-389, 821-1001-116, 821-1001-414, 811-1001-346, 811-1001-408, 801-1001-336, 801-1001-328, 801-1001-283, 801-1001-338, 801-1001-224 and 801-1001-159.

~~8 SUPERSEDE~~ 2pp.

AMENDMENT B

5. (b) Contents

(1) Type and form of material

Cobalt 60 as sealed sources that meet the requirements of special form radioactive material.

(2) Maximum quantity of material per package

200 curies

6. The source shall be secured in the shielded position of the packaging by the safety cap, source assembly and lockbox assembly. The components used to secure the source must be fabricated of materials capable of resisting a 1475°F fire environment for one-half hour and maintaining their positioning function. The ball stop of the source assembly must engage the locking device. The flexible cable of the source assembly must be of sufficient length and diameter to provide positive positioning of the source at the septum in the shielded position.

7. The can and side plates must be a minimum of 1/4-inch thick carbon steel. The can and side plates shall be joined by full penetration welds. All other welds shall be fillet welds having sufficient throat thickness to develop strength equal to or greater than the metals being joined.

8. The nameplates shall be fabricated of materials capable of resisting the fire test of 10 CFR Part 71 and maintaining their legibility.

9. The package authorized by this certificate is hereby approved for use under the general license provisions of 10 CFR §71.12.

10. Expiration date: October 31, 1988.

REFERENCES

Gamma Industries application dated May 20, 1978.

Supplement dated: October 25, 1978.

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

R H Odegaarden

for Charles E. MacDonald, Chief
Transportation Certification Branch
Division of Fuel Cycle and
Material Safety, NMSS

Date: OCT 06 1983

SOURCE EXCHANGE PROCEDURE

WITH C-8 SOURCE CHANGER WHEN USING COBALT-60 SOURCES

Attached is a cross-sectional view of a C-8 Source Changer. The Changer is equipped with four (4) locks. One pad lock is located on each end access compartment. One plunger type lock is located on each side of the storage shield. The plunger type locks are arranged so that the locking ball on the source pig-tail will fit into the center of the plunger when it is in the down or locked position.

One end of the Changer is marked NEW SOURCE and one end is marked OLD SOURCE.

The following procedure should be followed in the source changing operation.

ALWAYS HAVE A SURVEY METER THAT IS IN PERFECT OPERATING CONDITION AT HAND.

1. Survey the C-8 changer with the meter. Surface reading should not exceed 200 mR/hr, and 10 mR/hr at three (3) feet from the surface.
2. Unlock the plunger type lock on OLD SOURCE side of the changer and remove the safety plunger.
3. Connect the short source exchange tube that is provided to the empty lock with the other end attached to your camera outlet nipple.
4. Connect the control drive cable to the old source in your camera.
5. Unlock the camera lock.
6. Crank the old source from you camera into the source changer until it stops when the old source comes into contact with the new source in the source changer.
7. Survey the C-8 changer to be sure source is in safe position.
8. Depress the lock plunger. Check that the lock plunger has engaged the locking ball and that source can not move in either direction by gently cranking in both directions. Unscrew source exchange tube and pull away

from the source changer slowly, while cranking forward the additional drive cable for clearance. Continue to monitor with the survey meter to be certain that the source is locked in the safe position. The old source cable and Saf-T-Key connectors should come into view at this point.

9. Recheck position of the source locking ball to assertain that the ball is directly under the lock plunger and that the source can not move in either direction, and then disconnect the control cable from the source pigtail.
10. At this point, screw the swivel protector cap into the old source lock box to protect the pigtail and further contain it.
11. Move the camera to NEW SOURCE end of the C-8 changer.
12. Remove the protector cap from the lock box marked NEW SOURCE.
13. Connect the control drive cable to the new source and screw the source exchange tube into the lock box.
14. Unlock the new source lock.
15. Stand away as far as possible and draw the new source into the camera until it comes to the safe position.
16. Survey the camera and lock the new source in the camera.
17. Disconnect the control cable from the source and camera.
18. Remove the source exchange tube from the camera and C-8 source changer.
19. Screw the safety plug into the lock box marked NEW SOURCE and lock.
20. Survey the source changer to be sure that the surface radiaiton does not exceed 200 mR/hr, or 10 mR/hr at three (3) feet from the surface.

As an additional safety measure you may wrap some strong tape around the lock boxes such that the lock plungers will not accidentally unlock. Lock each end compartment with the pad locks. Return the Source Changer to Gamma Industries as quickly as possible, Freight prepaid.

PLEASE NOTE THE FOLLOWING SHIPPING INSTRUCTIONS:

# C-8 RETURN SHIPPING INSTRUCTIONS

Having surveyed the C-8 Source Changer, the following Return Shipping Instructions must be followed:

1. Check the markings on the nameplate. The markings should read as follows:

   GAMMA INDUSTRIES
   BATON ROUGE, LA
   USA - DOT 55-600
   RADIOACTIVE MATERIALS SPECIAL FORM NOS

2. Measure the Transport Index. Using a survey meter, measure the radiation levels at three (3) feet from the surface of the container in all directions. The maximum level measured, in mR/hr, is the Transport Index.

3. Labeling

   Two (2) Radioactive Yellow II and two (2) Radioactive Yellow III labels have been furnished you for the return shipment.

   If the Transport Index is less than 1 mR/hr and the maximum survey readings on the surface of the container are less than 50 mR/hr, affix the two (2) Radioactive Yellow II labels, 180° apart, to the surface of the container.

   If the Transport Index is greater than 1 mR/hr but less than 10 mR/hr and the maximum survey readings on the surface of the container are less than 200 mR/hr, affix the two (2) Radioactive Yellow III labels, 180° apart, to the surface of the container.

   On each of the labels affixed to the container, write the isotope being shipped, Cobalt-60, the number of curies of this isotope being shipped and in the square, the Transport Index.

   If the Transport Index measures greater than 10 mR/hr, or the surface readings are greater than 200 mR/hr, do not attempt to ship the container and call Gamma Industries (504/383-7791 - 24 hour/day) at once.

   Please return all unused Radioactive labels with the shipment.

CONTROL NO. 80458



8/77

4. Sh pping Papers

The following information must appear on the shipping papers as required by the U. S. Department of Transportation:

RADIOACTIVE MATERIALS SPECIAL FORM NOS
COBALT-60 METALLIC SOLID
* _____ CURIES
TRANSPORT INDEX _____ **
RADIOACTIVE YELLOW _____ *** LABELS AFFIXED
DOT 55-600

**** "THIS IS TO CERTIFY THAT THE ABOVE NAMED ARTICLES ARE PROPERLY CLASSIFIED, DESCRIBED, PACKAGED, MARKED, AND LABELED, AND ARE IN PROPER CONDITION FOR TRANSPORTATION, ACCORDING TO THE APPLICABLE REGULATIONS OF THE DEPARTMENT OF TRANSPORTATION."

YOUR SIGNATURE _____

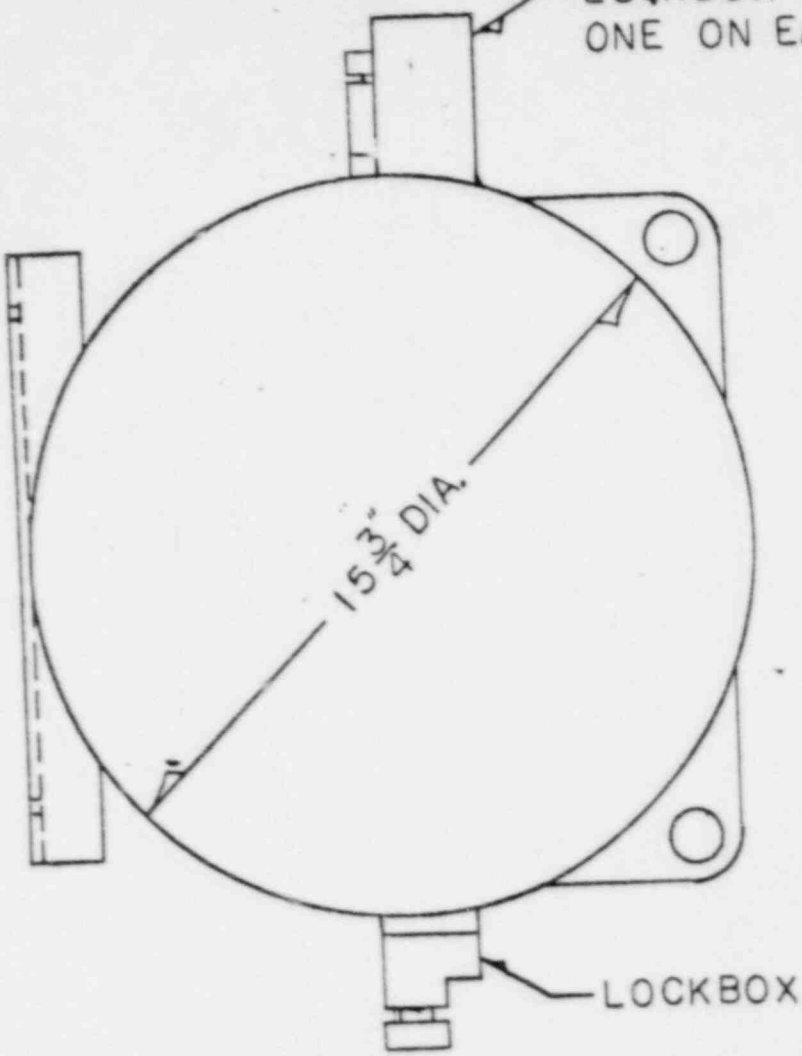
DATE _____

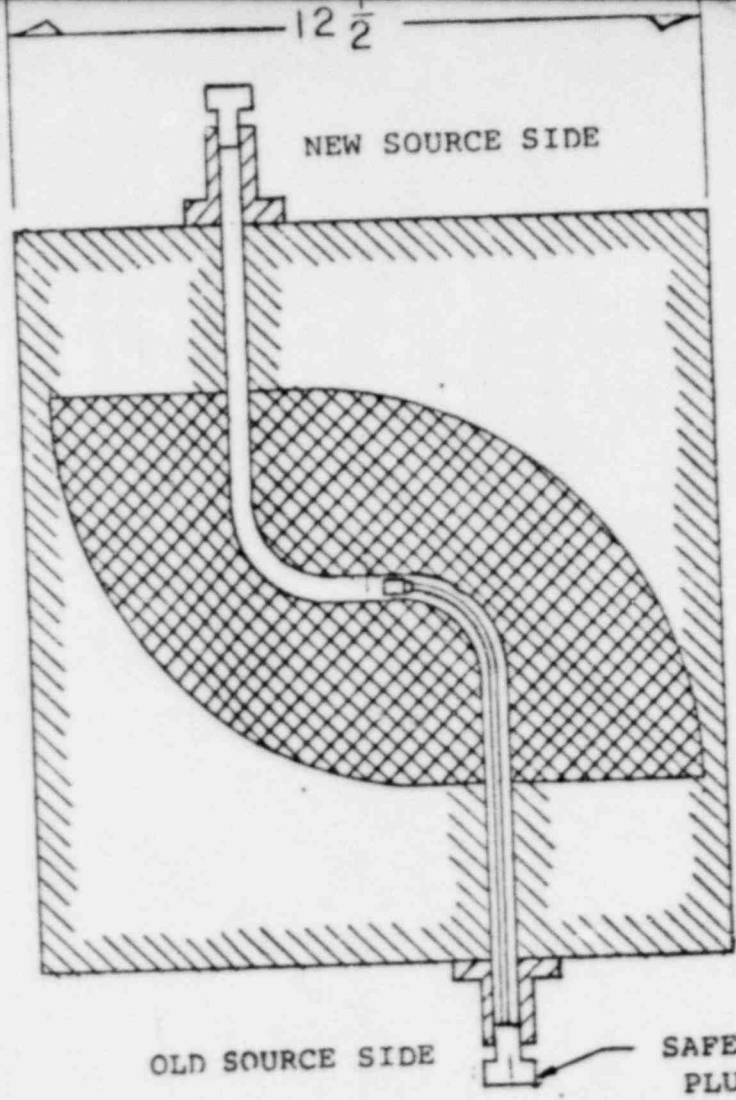
* Enter the number of Curies as found on your Decay Chart

** Enter the Transport Index as measured in Step 2.

*** Enter the Radioactive Label you affixed to the outside of the container, II or III.

**** This phrase is the Shipper's Certification. It must appear on the shipping papers as shown here.




NOTE

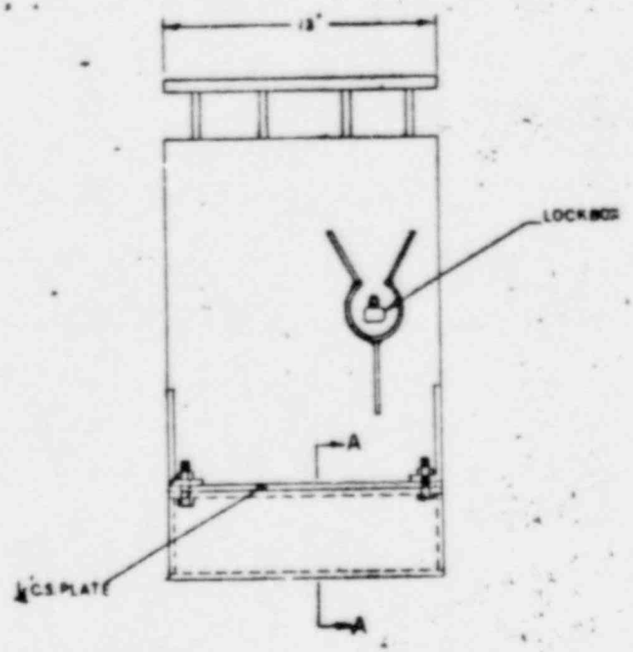
GAMMATRON-100, 50 AND 20, HAVE SAME DIMENSIONS BUT DIFFERENT SIZE SHIELD

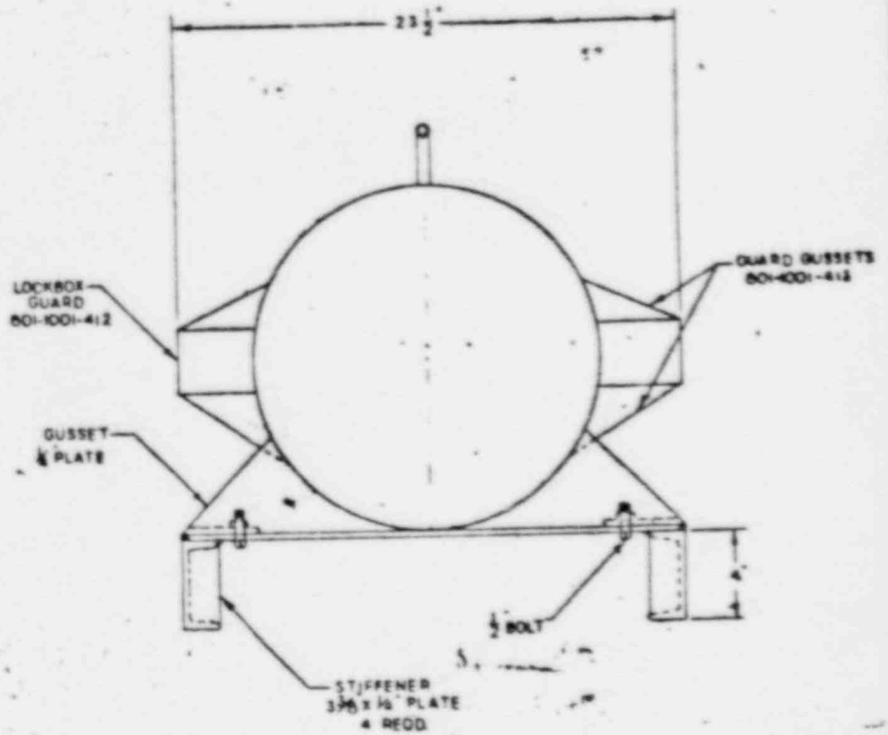
GAMMA INDUSTRIES BATON ROUGE, LA.

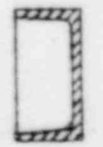
| | | |
|---|---|---|
| SCALE: NONE | APPROVED BY: | DRAWN BY J.R.G |
| DATE: 2-4-71 | | REVISED |

C-8 SHIPPING CONTAINER

DRAWING NUMBER 191



SECTION A-A

CHANNEL 4"x5.4#

GAMMA INDUSTRIES B.R. LA.

11-02-76

GAMMATRON MODEL C-8

RECEIVED NOV 0 5 1984

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF ENVIRONMENTAL AFFAIRS

CERTIFIED MAIL P 165 350 454

# RADIOACTIVE MATERIAL LICENSE

LOUISIANA NUCLEAR ENERGY DIVISION
P.O. BOX 14690
BATON ROUGE, LOUISIANA 70808

Pursuant to the Louisiana Environmental Affairs Act (West's LSA-R.S. 30:1051 et seq.) and the Louisiana Radiation Regulations, and in reliance on statements and representations heretofore made by licensee, a license is hereby issued authorizing the licensee to receive, acquire, own, possess and transfer radioactive material for the purpose(s) and at the place(s) designated below. This license shall be deemed to contain the conditions specified in West's LSA-R.S. 30:1105 of the Louisiana Nuclear Energy and Radiation Control Law, and is subject to all applicable rules, regulations and orders of the Louisiana Nuclear Energy Division now or hereafter in effect, including the Louisiana Radiation Regulations, and to any condition specified in the license.

| LICENSEE | LICENSE NUMBER | EXPIRATION DATE |
|---|---|---|
| Gamma Industries, Inc.<br>2255 Ted Dunham<br>Baton Rouge, Louisiana 70802<br><br>Attention: A. R. Patterson<br>Vice President - Operations | LA-0006-LO1<br>AMENDMENT NUMBER<br>☐ INITIAL LICENSE 18 | July 31, 1986<br>Previous Amendments Are Void |
| | THIS LICENSE ISSUED PURSUANT TO AND IN ACCORDANCE WITH<br>☒ Application ☐ Letter ☐ Telegram ☐ _____<br>SIGNED BY: B.McDuff<br>DATE: May 3, 1984 | |

| RADIOISOTOPE ELEMENT | RADIOISOTOPE MASS NO | MAXIMUM NUMBER OF SOURCES | MAXIMUM ACTIVITY* OR QUANTITY PER SOURCE | SEALED SOURCE IDENTIFICATION / CHEMICAL FORM—PHYSICAL STATE | STORAGE CONTAINER OR EXPOSURE DEVICE / AUTHORIZED USE |
|---|---|---|---|---|---|
| Any (Except SNM) | Any | Total | 10 Ci | Liquid or Solid | Manufacture of Exempt Quantity Sources |
| Any | Any | Any | 500 Ci | Any | Transfer, Storage or Distribution in Any Specific or Generally Licensed Device or Container Acceptable for Transportation |
| Any (Except SNM) | Any | Total | 200 Ci | Solid or Liquid | Packaging, Storage and Transfer of Radioactive Waste |
| Any (Except SNM) | Any | Total | 8000 Ci | Sealed Sources | Packaging, Storage and Transfer of Radioactive Waste |
| Co | 60 | Total | 4000 Ci | Metallic Pellets | Manufacture of Sealed Sources |
| Co | 60 | Any | 2000 Ci | Sealed Sources* | Distribution of Industrial Sources |
| Co | 60 | Any | 15000 Ci | Sealed Sources* | Installation, Relocation, Modification, Transfer or Storage in Devices or Hot Cell |
| Cs | 137 | Any | 5 Ci | Sealed Sources* | Distribution of Sealed Sources, Instrument Calibration |
| Cs | 137 | Any | 5000 Ci | Sealed Sources* | Installation, Relocation, Modification, Transfer or Storage in Devices or Hot Cell |

SNM - Special Nuclear Material

*Any Sealed Source Evaluated by the Louisiana Nuclear Energy Division, an Agreement State or the U.S. Nuclear Regulatory Commission.

*μCi—Microcurie, mCi—Millicurie, Ci—Curie

CONTROL NO. 80458

J. MAX ROBINSON, ASSISTANT SECRETARY
OFFICE OF AIR QUALITY AND NUCLEAR ENERGY

L Ware Bollinger

DATE: October 30, 1984

PAGE 1 OF 4 PAGES

DEPARTMENT OF NATURAL RESOURCES
OFFICE OF ENVIRONMENTAL AFFAIRS
LOUISIANA NUCLEAR ENERGY DIVISION
BATON ROUGE, LOUISIANA

| Gamma Industries, Inc. | LICENSE NUMBER LA-0006-LO1 | AMENDMENT NO. ☐ INITIAL LICENSE 18 | EXPIRATION DATE July 31, 1986 |
|---|---|---|---|

| RADIOISOTOPE ELEMENT | RADIOISOTOPE MASS NO | MAXIMUM NUMBER OF SOURCES | MAXIMUM ACTIVITY* OR QUANTITY PER SOURCE | SEALED SOURCE IDENTIFICATION / CHEMICAL FORM-PHYSICAL STATE | STORAGE CONTAINER OR EXPOSURE DEVICE / AUTHORIZED USE |
|---|---|---|---|---|---|
| Yb | 169 | Any | 100 Ci | Sealed Sources* | Distribution of Industrial Sources |
| Yb | 169 | Any | 100 Ci | Aluminum Capsules | Manufacture of Sealed Sources |
| Ir | 192 | Any | 300 Ci | Sealed Sources* | Distribution of Radiography Sources |
| Ir | 192 | Total | 40,000 Ci | Metallic Pellets | Manufacture of Sealed Sources |
| Am | 241 | Any | 20 Ci | Sealed Sources* | Research and Development (L.R.R. Section A.2(a)(58)) Distribution of Industrial Sources |
| Cf | 252 | 2 | 100 mCi | Battelle SK-184-PM | Transfer or Storage |
| U | Depleted | | Any | Solid | Shielding Material |

L.R.R. - Louisiana Radiation Regulations
*Any sealed source evaluated by the Louisiana Nuclear Energy Division, an Agreement State or the U.S. Nuclear Regulatory Commission.

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The licensee is hereby authorized to perform the following customer services:

1. Fabrication, distribution, demonstration and testing of industrial and radiography sources;
2. Installation, removal, relocation, modification, relabeling, and radiation area profiles of industrial gauges and sources;
3. Installation, relocation, modification, transfer and/or storage of sealed sources in industrial devices;
4. Distribution of approved leak test kits and perform leak tests;
5. Storage and transfer of radioactive waste;
6. Calibrate radiation detection instruments; and
7. Retrieve industrial radiography sources.

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1. Radioactive material shall be used by or under the supervision of individuals designated by Ralph Laprairie, Radiation Safety Officer.
2. A. The licensee is authorized to fabricate, test and distribute sources and devices at 2255 Ted Dunham Avenue, Baton Rouge, Louisiana. Such sources and devices shall have been evaluated by the Louisiana Division of Radiation Control prior to distribution.

*μCi—Microcurie; mCi—Millicurie; Ci—Curie

| PAGE 1 SIGNED BY: | | DATE | PAGE | OF | PAGES |
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| E. HALL BOHLINGER, ASSISTANT SECRETARY OFFICE OF AIR QUALITY AND NUCLEAR ENERGY | Eldare Bohlinger | October 30, 1984 | 2 | | 4 |

| amma Industries, Inc. | LICENSE NUMBER LA-0006-LO1 | AMENDMENT NO. ☐ INITIAL LICENSE 18 | EXPIRATION DATE July 31, 1986 |
|---|---|---|---|

| RADIOISOTOPE | | MAXIMUM NUMBER OF SOURCES | MAXIMUM ACTIVITY* OR QUANTITY PER SOURCE | SEALED SOURCE IDENTIFICATION | STORAGE CONTAINER OR EXPOSURE DEVICE |
|---|---|---|---|---|---|
| EMENT | MASS NO | | | CHEMICAL FORM-PHYSICAL STATE | AUTHORIZED USE |

B. Research and development, storage and demonstration of devices containing radioactive material may also be performed at 2393 Ted Dunham Avenue and contiguous property, Baton Rouge, Louisiana.

C. The licensee is also authorized to conduct radiography demonstrations, prototype testing of radiation gauging and/or radiography devices and to perform routine gauging studies at 2255 Ted Dunham Avenue and contiguous property, Baton Rouge, Louisiana and at temporary job-sites of the licensee in and offshore the State of Louisiana.

3. Pursuant to Louisiana Radiation Regulations, the licensee is authorized to possess depleted utanium for purposes of shielding or collimation in radiographic exposure devices that have been evaluated by the Division, an Agreement State or the U.S. Nuclear Regulatory Commission.

4. The licensee is authorized to calibrate radiation detection instruments as a customer service. Each calibration or radiation detection instruments shall include at least 2 points other than zero for each scale that the instrument is certified as calibrated by the licensee.

5. A. The licensee is authorized to package and store radioactive waste material received from customers or resulting from the decontamination of facilities performed by the licensee, provided that the maximum amount or radioactive waste possessed by the licensee at any one time does not exceed a total of 200 Curies. The licensee may also store sealed sources received from customers for disposal up to a total of 8,000 Curies.

B. Possession of Special Nuclear Material is not authorized by this license.

C. The licensee is authorized to transfer radioactive waste material to authorized persons for disposal.

6. The licensee shall not use radioactive material in or on human beings or in field applications where such activity is released, except as provided otherwise by a specific condition of this license.

7. A. Each sealed source acquired from another person shall be tested for contamination and/or leakage upon receipt.

B. Each sealed source fabricated by the licensee shall be tested for contamination and/or leakage immediately after fabrication. If test reveals the presence of 0.005 microcuries or more of removable contamination, the licensee shall repair and/or decontaminate and retest the source prior to distribution.

C. Each sealed source containing radioactive material shall be tested for leakage and/or contamination at intervals not to exceed six (6) months. The test shall be capable of detecting the presence of 0.005 microcurie of removable contamination on the sealed source. The test sample shall be taken from the sealed source or from the surfaces of the device in which the sealed source is permanently or semi-permanently mounted or stored on which one might expect contamination to accumulate. Records of leak test results shall be kept in units of microcuries and maintained for inspection by the Division. Sources in storage are exempt from the requirements of this paragraph until they are put into use or immediately prior to transfer.

*μCi—Microcurie, mCi—Millicurie, Ci—Curie

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| L. HALL BOHLINGER, ASSISTANT SECRETARY OFFICE OF AIR QUALITY AND NUCLEAR ENERGY | /s/ Hall Bohlinger | October 30, 1984 | 3 | | 4 |

| | LICENSE NUMBER | AMENDMENT NO. | EXPIRATION DATE |
|---|---|---|---|
| Gamma Industries, Inc. | LA-0006-L01 | ☐ INITIAL LICENSE 18 | July 31, 1986 |

| RADIOISOTOPE: ELEMENT | RADIOISOTOPE: MASS NO | MAXIMUM NUMBER OF SOURCES | MAXIMUM ACTIVITY* OR QUANTITY PER SOURCE | SEALED SOURCE IDENTIFICATION / CHEMICAL FORM-PHYSICAL STATE | STORAGE CONTAINER OR EXPOSURE DEVICE / AUTHORIZED USE |
|---|---|---|---|---|---|

D. If the test required by Section A or C of this condition reveals the presence of 0.005 microcurie or more of removable contamination, the licensee shall immediately withdraw the sealed source from use and shall cause it to be decontaminated and repaired, or to be disposed of in accordance with the Louisiana Radiation Regulations. A report shall be filed within five (5) days of the receipt of the test results with the Administrator of the Louisiana Nuclear Energy Division, describing the equipment involved, the test results and the corrective action taken.

E. Tests for leakage and/or contamination shall only be performed by the licensee.

F. 1. The licensee is authorized to perform tests for leakage and/or contamination on sealed sources and on devices containing sealed sources at 2255 Ted Dunham Avenue, Baton Rouge, Louisiana and at customer jobsites using leak test kits that have been previously evaluated by the Louisiana Nuclear Energy Division.

2. A copy of the leak test results shall be sent to each customer, and a copy shall be maintained for inspection by the Division.

8. Sealed sources containing radioactive material in industrial gauges shall only be opened or removed from their respective source holders at 2255 Ted Dunham Avenue, Baton Rouge, Louisiana.

9. Generally licensed devices shall not be installed by the licensee in such manner or location that any person could reveive more than 0.5 Rem in a calendar year under ordinary circumstances of use.

10. After installation or relocation by the licensee of each device containing radioactive material, the licensee shall conduct a radiation survey and shall assure that the levels of radiation do not exceed those specified by the license authorizing the manufacture of the installed gauge. The licensee shall furnish a copy of the radiation survey to the recipient of the gauge.

11. A. The licensee is authorized to repair, modify, dismantle or effect a change in a gauge which is being installed, maintained, relocated, or leak tested, provided that each gauge that has been modified shall be evaluated by the Louisiana Nuclear Energy Division, an Agreement State or the Nuclear Regulatory Commission.

B. The licensee is authorized to modify labels affixed to industrial gauges where:

1. A change in the leak test interval for the gauge has been authorized;

2. A modification has been approved by the Louisiana Nuclear Energy Division, and Agreement State, or the Nuclear Regulatory Commission; or

3. A generally licensed gauge is converted to a specifically licensed status.

12. Except as specifically provided otherwise by the license, the licensee shall possess and use radioactive material described in the above schedule(s) in accordance with statements, representations and procedures contained in the licensee's application dated May 3, 1984, and in all subsequent correspondence.

CONTROL NO. 80458

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*μCi—Microcurie; mCi—Millicurie; Ci—Curie

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| E. HALE BOBLITT, ASSISTANT SECRETARY OFFICE OF AIR QUALITY AND NUCLEAR ENERGY — L. Hale Boblitt | October 30, 1984 | 4 | | 4 |