Clark INSPECTION SERVICE INC.
(918) 836-2189
Nondestructive Testing of Metals
1855 N. 105th E. AVE.
TULSA, OKLA. 74116
MAGNETIC PARTICLE · ULTRASONIC · X-RAY · PENETRANT

September 3, 1982

U.S.N.R.C.
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76011

Attention: Mr. Glen D. Brown

Re: Inspection of April 1, 1982
License 35-11615-01

Dear Sir:

In reply to your letter dated May 12, 1982, we have taken the following steps to fully comply with the NRC regulations cited. By item they are as follows:

1. 10 CRF 34.33(c) states that pocket dosimeters shall be checked at periods not to exceed one year for correct response to radiation. Acceptable dosimeters shall read within plus or minus 30 percent of the true radiation exposure.

Attached, please find procedure of Test Equipment & Supply Company, Tulsa, Oklahoma for calibration of pocket dosimeters. If upon your reply this is satisfactory, the dosimeters shall be calibrated within five days.

2. 10 CFR 71.5(a) requires, in part, that no licensee shall transport any licensed material outside of the confines of his plant or other place of use, or deliver any licensed material to a carrier for transport, unless the licensee complies with applicable requirements of the regulations appropriate to the mode of transport, of the Department of Transportation in 49 CFR 170-189.

   a. 49 CFR 173.25(a) requires, in part, that authorized packages may be shipped in outside containers; however, the containers must be marked with the proper shipping name and labeled as required by subchapter C of Title 49. The outside containers must also be marked "INSIDE PACKAGES COMPLY WITH PRESCRIBED SPECIFICATIONS" when specification packages are required.

In order to comply with 49CFR 173.25(a) the shipping containers have been labeled with paint and stencil reading "INSIDE PACKAGES COMPLY WITH PRESCRIBED SPECIFICATIONS". Licensee maintains only three mobile shipping boxes and as of June 29, 1982, these boxes were labeled. Should any further shipping boxes be obtained or fabricated, that labeling shall be included in specifications to the manufacturer.

b. 49 CFR 173.393(a)(1) requires, in part, that before the first shipment in a package approved by the U.S. Nuclear Regulatory Commission for use by another person, each shipper shall register in writing with the USNRC, Division of Materials Licensing, his name and address, the name of the person to whom the USNRC approval was issued, and the approval number assigned to the package.

As of this reply a letter has been filed with Division of Materials Licensing giving the information required. As of this date, response has not been forthcoming. We will act as necessary to their response. Licensee is only licensed to receive from one vendor and does not anticipate the use of other vendors.

c. 49 CFR 173.398(a), Note 1, requires, in part, that each shipper of special form radioactive material shall maintain on file for at least one year after the last shipment, a complete certification and supporting analysis demonstrating that the special form material meets the requirements of paragraph (a) of that section.

We sent for and received from Gamma Industries, copies of Department of Transportation certificates that hopefully meet the requirements of the Code of Federal Regulations. Please find attached copies of the information we received. Please notify us if further information is necessary.

Should you require any further information please do not hesitate to contact myself or the Radiation Safety Officer, Dell L. Ashby.

Sincerely,

R. L. Clark
President & Gen. Mgr.

RLC:jr
encl.

DEPARTMENT OF TRANSPORTATION
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION
WASHINGTON, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY

Type B Radioactive Material Package Design

Certificate Number USA/6717/B
(Revision 3)

This establishes that the packaging design described herein, when loaded with the authorized radioactive contents, has been certified by the National Competent Authority of the United States, as meeting the regulatory requirements for Type B packaging for radioactive materials as prescribed in IAEA 1/ Regulations and §§ 49 CFR 173.393a and 173.394(b)(3) of the USA 2/ Regulations for the transport of radioactive materials.

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

II. Packaging Description - Packaging authorized by this certificate consists of an outer 10-gallon steel drum with an inner container which is a metal-walled container meeting the requirements of DOT Specification 7A, surrounded by polyurethane filler and a 1-1/2" asbestos liner. Gross weight is approximately 75 pounds.

III. Authorized Radioactive Contents - The authorized contents consist of radioactive materials, n.o.s. as not more than 200 curies of iridium-192 as sealed sources which must meet the requirements for special form as set forth in 49 CFR 173.389(g).

IV. General Conditions -

a. Each user of this certificate must have in his possession a copy of this certificate.

b. Each user of this certificate, other than Gamma Industries, Baton Rouge, Louisiana, shall register his identity in writing to the Office of Hazardous Materials Regulation, 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.

V. Marking and Labeling - The package must bear the marking USA/6717/B as well as the other marking and labels prescribed by the USA Regulations.

I. Expiration Date - This certificate, unless renewed, expires on July 31, 985.

his certificate is issued in accordance with the requirements of the IAEA id USA Regulations and in response to the March 10, 1975, petition by uclear Systems, Inc., Baton Rouge, Louisiana, and revised in response to he August 12, 1980, petition by Gamma Industries, Baton Rouge, Louisiana id in consideration of the associated information provided in U.S. Nuclear egulatory Commission Certificate No. 6717 (Appendix A).

ertified by:

R. R. Rawl

September 17, 1980
(Date)

ichard R. Rawl
hief, Radioactive Materials Branch
ffice of Hazardous Materials Regulation
aterials Transportation Bureau

/ "Safety Series No. 6, Regulations for the Safe Transport of Radioactive aterials," 1967 Edition published by the International Atomic Energy Agency IAEA), Vienna, Austria.

/ Title 49, Code of Federal Regulations, Parts 100-199, USA.

evision 1 issued to incorporate USNRC Certificate No. 6717, Revision 1.

evision 2 issued to incorporate USNRC Certificate No. 6717, Revision 2 nd to extend expiration date.

evision 3 issued to incorporate USNRC Certificate No. 6717, Revision 3 nd to extend expiration date.

US Department
of Transportation

Research and
Special Programs
Administration

400 Seventh Street, S.W.
Washington, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY

Special Form Radioactive Material Encapsulation

Certificate Number USA/0166/S
(Revision 2)

This certifies that the encapsulated sources, as described, when loaded with the authorized radioactive contents, have been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in IAEA 1/ and USA 2/ Regulations for the transport of radioactive materials.

I. Source Description - The sources described by this certificate are identified as the following Gamma Industries models which are constructed according to the listing drawing numbers:

Model No.	Drawing No.
VD and VD(HP)	602-7001-004
NB, NBG and NB(HP)	602-7001-005
Single Encapsulation Universal Source	602-7001-006
Double Encapsulation Universal Source	602-7001-007
Single Encapsulation Side Weld	602-7001-008

All models are welded encapsulations constructed of 300 series or ARMCO Type 17-4PH stainless steel.

II. Radioactive Contents - The authorized radioactive contents of these sources consist of not more than:

Model No.	Contents
VD and VD(HP)	300 curies of:

Barium-131	Manganese-54
Cadmium-109	Phosphorus-32
Calcium-45	Rubidium-86
Calcium-47	Selenium-75
Cesium-137	Strontium-85
Chlorine-36	Thallium-204
Chromium-51	Thulium-170
Iridium-192	Tin-113
Cobalt-60	Ytterbium-169
Iron-59	Zinc-65

II. Radioactive Contents (continued)

Model No. (con'd)	Contents (cont'd)
NB, NBG and NB(HP)	25 Curies Americium-241 30 millicuires Ra-226 500 millicuries Americum-241 and Cesium-137 mixture
Single Encapsulation Universal Source	500 curies Iridium-192 20 curies Cobalt-60
Double Encapsulation Universal Source	5000 curies Iridium-192 2000 curies Cobalt-60
Single Encapsulation Side Weld	500 curies Iridium-192 20 curies Cobalt-60

III. This certificate, unless renewed, expires September 30, 1982.

This certificate is issued in accordance with paragraph 803 of the IAEA Regulations and in response to the June 1, 1981 petition by Gamma Industries, Baton Rouge, Louisiana, and in consideration of the associated information therein.

Certified by:

R. R. Rawl June 26, 1981
(DATE)

R. R. RAWL
Chief, Radioactive Materials Branch
Office of Hazardous Materials Regulations
Materials Transportation Bureau

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

2/ Title 49, Code of Federal Regulations, Part 170-178, USA

Revision 0 issued in response to the September 7, 1979, petition by Gamma Industries, Baton Rouge, Louisiana.
Revision 1 issued to add Cesium-137 to Models VD and VD(HP)
Revision 2 issued to list alternate stainless steel type.

GAMMA INDUSTRIES

A Division of Nuclear Systems, Inc.

BATON ROUGE
P. O. BOX 2543
2755 TED DUNHAM AVENUE
BATON ROUGE, LOUISIANA 70821
TELEPHONE 504/342-7791

HOUSTON
P. O. BOX 34526
HOUSTON, TEXAS 77034
TELEPHONE 713/944-7676

CERTIFICATE OF COMPLIANCE

TO: Clark Inspection Service

1855 N. 105th East Ave.

Tulsa, OK 74116

REFERENCE:

USA D.O.T. Type A
Gamma Industries Century S and Century SA

This is to certify that the referenced device has been tested and complies with all requirements of DOT regulations pertaining to this device when used in accordance with DOT regulations. Documentation of all tests are on file at Gamma Industries, Baton Rouge, Louisiana.

Don Riddle
Quality Assurance Manager

DEPARTMENT OF TRANSPORTATION
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION
WASHINGTON, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY

Type B Radioactive Material Package Design

Certificate Number USA/6717/B
(Revision 3)

This establishes that the packaging design described herein, when loaded with the authorized radioactive contents, has been certified by the National Competent Authority of the United States, as meeting the regulatory requirements for Type B packaging for radioactive materials as prescribed in IAEA 1/ Regulations and §§ 49 CFR 173.393a and 173.394(b)(3) of the USA 2/ Regulations for the transport of radioactive materials.

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

II. Packaging Description - Packaging authorized by this certificate consists of an outer 10-gallon steel drum with an inner container which is a metal-walled container meeting the requirements of DOT Specification 7A, surrounded by polyurethane filler and a 1-1/2" asbestos liner. Gross weight is approximately 75 pounds.

III. Authorized Radioactive Contents - The authorized contents consist of radioactive materials, n.o.s. as not more than 200 curies of iridium-192 as sealed sources which must meet the requirements for special form as set forth in 49 CFR 173.389(g).

IV. General Conditions -

a. Each user of this certificate must have in his possession a copy of this certificate.

b. Each user of this certificate, other than Gamma Industries, Baton Rouge, Louisiana, shall register his identity in writing to the Office of Hazardous Materials Regulation, 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.

V. Marking and Labeling - The package must bear the marking USA/6717/B as well as the other marking and labels prescribed by the USA Regulations.

VI. Expiration Date - This certificate, unless renewed, expires on July 31, 1985.

This certificate is issued in accordance with the requirements of the IAEA and USA Regulations and in response to the March 10, 1975, petition by Nuclear Systems, Inc., Baton Rouge, Louisiana, and revised in response to the August 12, 1980, petition by Gamma Industries, Baton Rouge, Louisiana and in consideration of the associated information provided in U.S. Nuclear Regulatory Commission Certificate No. 6717 (Appendix A).

Certified by:

R R Rawl

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

September 17, 1980
(Date)

1/ "Safety Series No. 6, Regulations for the Safe Transport of Radioactive Materials," 1967 Edition published by the International Atomic Energy Agency (IAEA), Vienna, Austria.

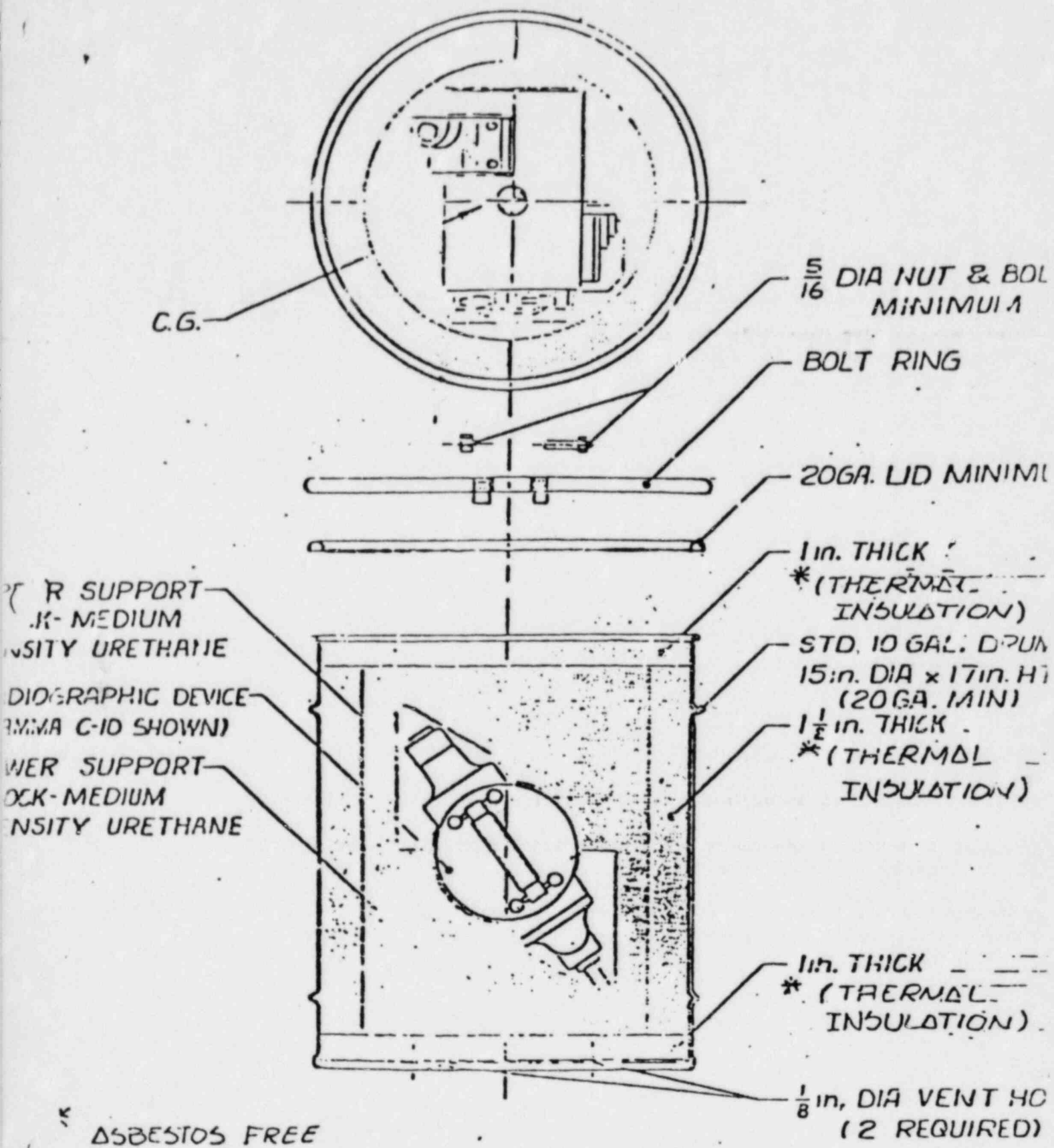
2/ Title 49, Code of Federal Regulations, Parts 100-199, USA.

Revision 1 issued to incorporate USNRC Certificate No. 6717, Revision 1.

Revision 2 issued to incorporate USNRC Certificate No. 6717, Revision 2 and to extend expiration date.

Revision 3 issued to incorporate USNRC Certificate No. 6717, Revision 3 and to extend expiration date.

GAMMA INDUSTRIES
MODEL 6717-B PACKAGE



* ASBESTOS FREE

DEPARTMENT OF TRANSPORTATION
RESEARCH AND SPECIAL PROGRAMS ADMINISTRATION
WASHINGTON, D.C. 20590

IAEA CERTIFICATE OF COMPETENT AUTHORITY

Special Form Radioactive Material Encapsulation

REFER TO:

Certificate Number USA/0166/S
(Revision 1)

This certifies that the encapsulated sources, as described, when loaded with the authorized radioactive contents, have been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in IAEA[1] and USA[2] Regulations for the transport of radioactive materials.

I. Source Description - The sources described by this certificate are identified as the following Gamma Industries models which are constructed according to the listed drawing numbers:

Model No.	Drawing No.
VD and VD(HP)	602-7001-004
NB, NBG and NB(HP)	602-7001-005
Single Encapsulation Universal Source	602-7001-006
Double Encapsulation Universal Source	602-7001-007
Single Encapsulation Side Weld	602-7001-008

All models are welded encapsulations constructed of 300 series stainless steel.

II. Radioactive Contents - The authorized radioactive contents of these sources consist of not more than:

Model No.	Contents
VD and VD(HP)	300 curies of:

Barium-131	Manganese-54
Cadmium-109	Phosphorus-32
Calcium-45	Rubidium-86
Calcium-47	Selenium-75
Cesium-137	Strontium-85
Chlorine-36	Thallium-204
Chromium-51	Thulium-170
Iridium-192	Tin-113
Cobalt-60	Ytterbium-169
Iron-59	Zinc-65

II. Radioactive Contents (continued)

Model No. (cont'd)	Contents (cont'd)
NB, NBG and NB(HP)	25 curies Americium-241 30 millicuries Ra-226 500 millicuries Americium-241 and Cesium-137 mixture
Single Encapsulation Universal Source	500 curies Iridium-192 20 curies Cobalt-60
Double Encapsulation Universal Source	5000 curies Iridium-192 2000 curies Cobalt-60
Single Encapsulation Side Weld	500 curies Iridium-192 20 curies Cobalt-60

III. This certificate, unless renewed, expires September 30, 1982.

This certificate is issued in accordance with paragraph 803 of the IAEA Regulations and in response to the September 24, 1979, petition by Gamma Industries, Baton Rouge, Louisiana, and in consideration of the associated information therein.

Certified by:

R. R. Rawl (Date)
Designated U.S. Competent Authority for the
International Transportation of Radioactive Materials
Office of Hazardous Materials Regulation
Materials Transportation Bureau
U.S. Department of Transportation

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

[2] Title 49, Code of Federal Regulations, Part 170-178, USA.

Revision 0 issued in response to the September 7, 1979, petition by Gamma Industries, Baton Rouge, Louisiana.
Revision 1 issued to add Cesium-137 to Models VD and VD(HP).

April 11, 1980

Mr. Ronald L. Wascom
Louisiana Nuclear Energy Division
Post Office Box 14690
Baton Rouge, Louisiana 70898

Dear Mr. Wascom:

I have enclosed drawings of the various standard capsule designs manufactured by Gamma Industries. We have reviewed American National Standard 542-1977 and the tests conducted on these capsules qualify them as follows:

Model	Dwg.	ANSI Classification
VD	602-7001-004	ANSI77 E 43333
ADHP	02-7001-004	ANSI77 E 56533
NB	602-7001-005	ANSI77 E 43333
NBHP	602-7001-005	ANSI77 E 56533
DOUBLE ENCAPSULATED UNIVERSAL SINGLE	602-7001-007	ANSI77 E 43515
ENCAPSULATED UNIVERSAL SINGLE	602-7001-006	ANSI77 E 43515
ENCAPSULATED SIDEWELD	602-7001-008	ANSI77 E 43515

This should provide you the information you requested for the completion of the source sheets for the items we discussed this date.

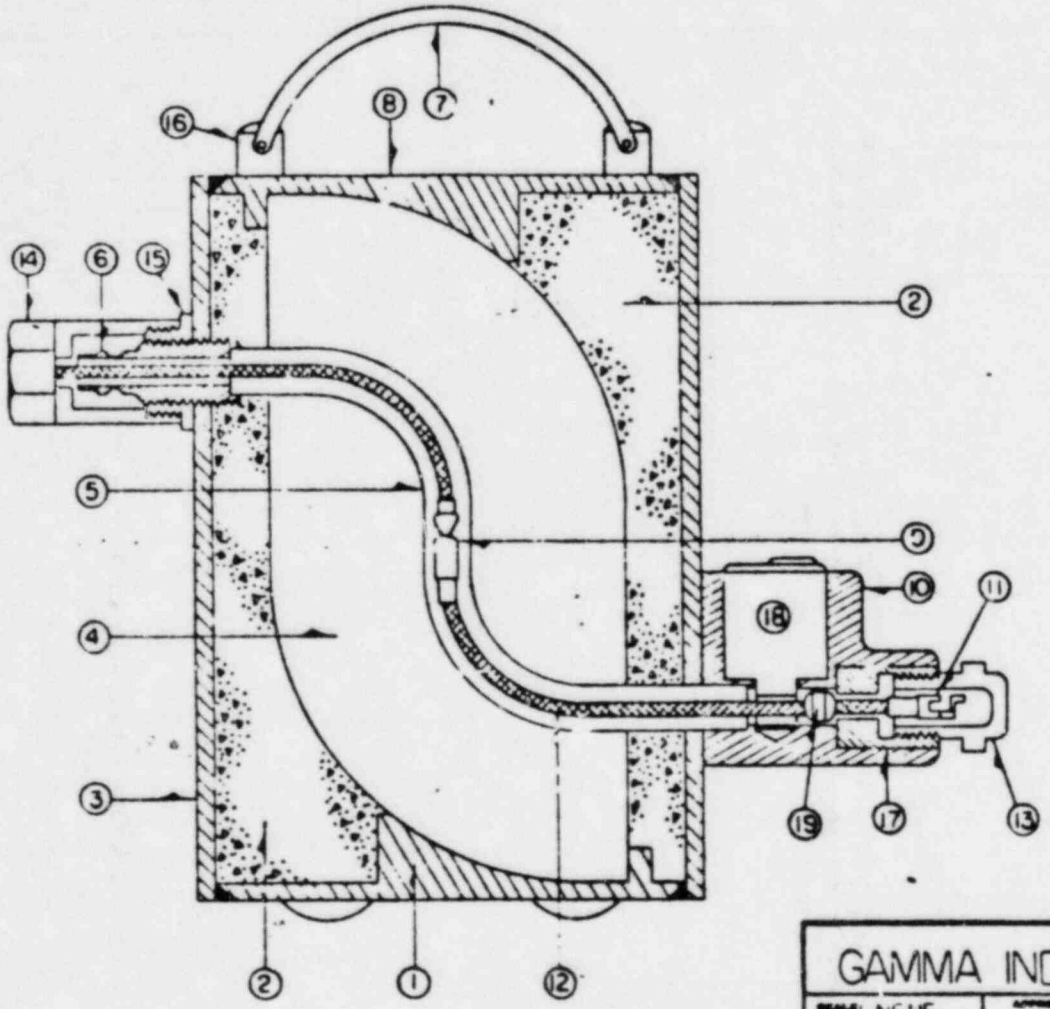
Let us know if we may be of further assistance.

Yours truly,

GAMMA INDUSTRIES

Don H. Riddle
Operations Manager
DHR/dt
cc; Mr. Howard R. Sobin
Gamma Industries, Houston

1	BOTTOM PLATE
2	POLYURETHANE
3	STEEL CASE
4	SHIELD
5	ZIRCOLOY TUBE
6	QUICK DISCONNECT COUPLING
7	LEATHER HANDLE
8	TOP PLATE
9	IR 192 CAPSULE
10	LOCK BOX
11	IMPROVED SAFE-T-KEY COUPLING
12	PIGTAIL
13	LOCK CAP
14	SAFETY PLUG
15	OUTLET NIPPLE BOSS
16	HANDLE BUTTON
17	LOCK INSERT
18	LOCK PLUNGER
19	LOCKING BALL

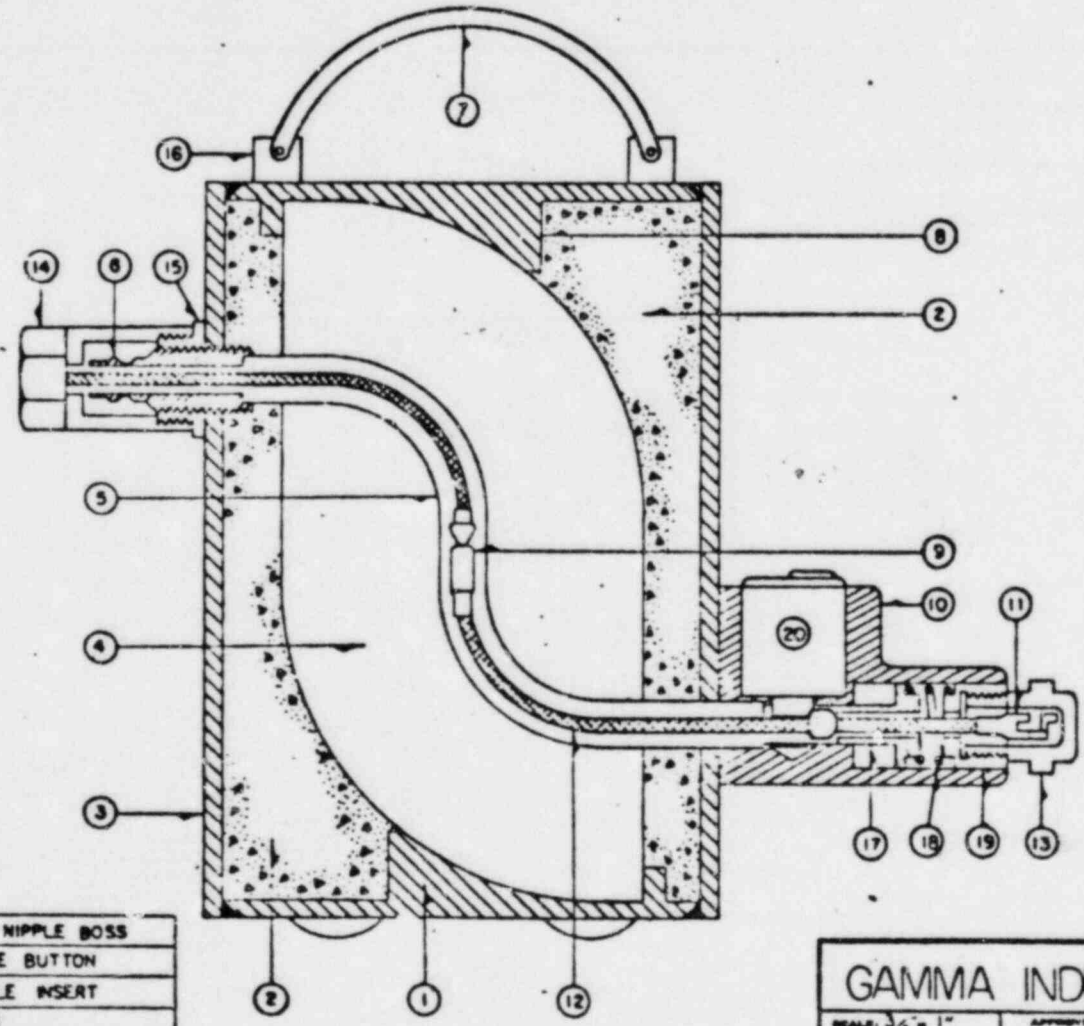


GAMMA INDUSTRIES, B.R., LA.

SCALE: NONE	APPROVED BY:	DRAWN BY: WDL
DATE: 10-1-73		REVISED

GAMMA CENTURY

142



1	BOTTOM PLATE	15	OUTLET NIPPLE BOSS
2	POLYURETHANE	16	HANDLE BUTTON
3	STEEL CASE	17	MOVABLE INSERT
4	SHIELD	18	SPRING
5	ZIRCOLOY TUBE	19	MODEL "A" INSERT
6	QUICK DISCONNECT COUPLING	20	LOCK PLUNGER
7	LEATHER HANDLE		
8	TOP PLATE		
9	IR 192 CAPSULE		
10	LOCK BOX MODEL A		
11	IMPROVED SAFE-T-KEY COUPLING		
12	PIGTAIL		
13	LOCK CAP		
14	SAFETY PLUG		

GAMMA INDUSTRIES, B.R, LA.

SCALE: 3/4" = 1" | APPROVED BY: | DRAWN BY WDL

DATE: 8-14-73 | REVISED

GAMMA CENTURY-SA

DRAWING NUMBER 338

DIRECT READING POCKET DOSIMETER
CALIBRATION PROCEDURE

All dosimeters issued to Radiography personnel will be calibrated at periods of not less than 1 year using the following procedure.

a.) Charge all dosimeters to be calibrated to their "0" scale setting, allow 10 minute setting time to allow for leakage. Note, any dosimeter that cannot be charged to "0", or is found to be leaking after 10 minutes, will be taken out of service.

b.) Remove the calibration unit from storage (using the procedure outlined in the standard O&E procedures).

c.) Place calibration unit on table in the restricted area (vauly or roped area).

d.) The dosimeters to be calibrated will be placed at two appropriate distances (D1 or D2) from the center of the calibration unit on a calibration plate. (See attached drawings).

e.) With charges to "0", dosimeters in place and a survey meter on, the calibration source will be unlocked and placed in the exposed position.

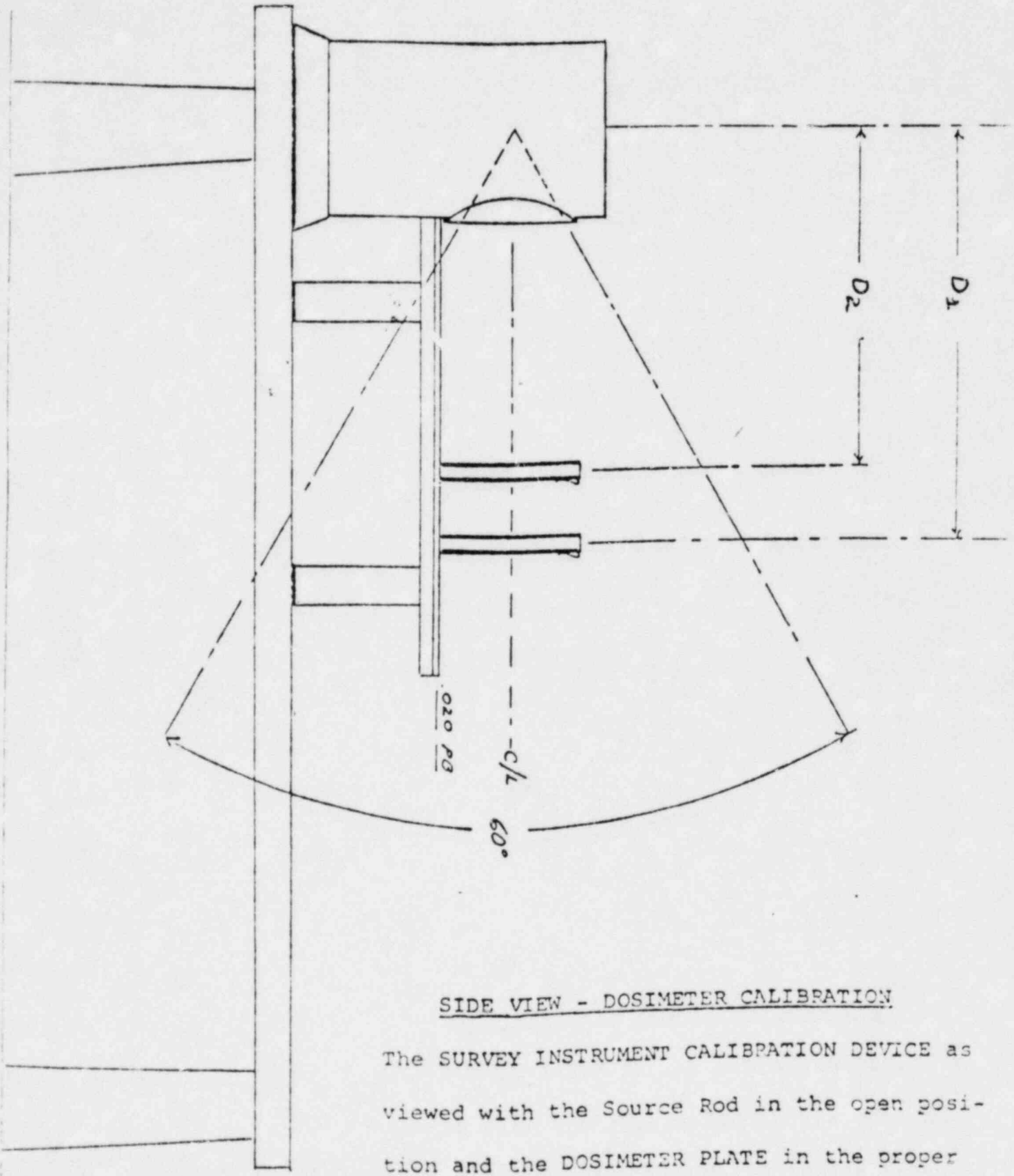
f.) Dosimeters will be exposed approximately to the calculated mid range.

g.) Calibration source will be placed in shielded position, checked with survey meter and locked.

h.) Calibration unit will be placed back in storage (using standard O&E procedures).

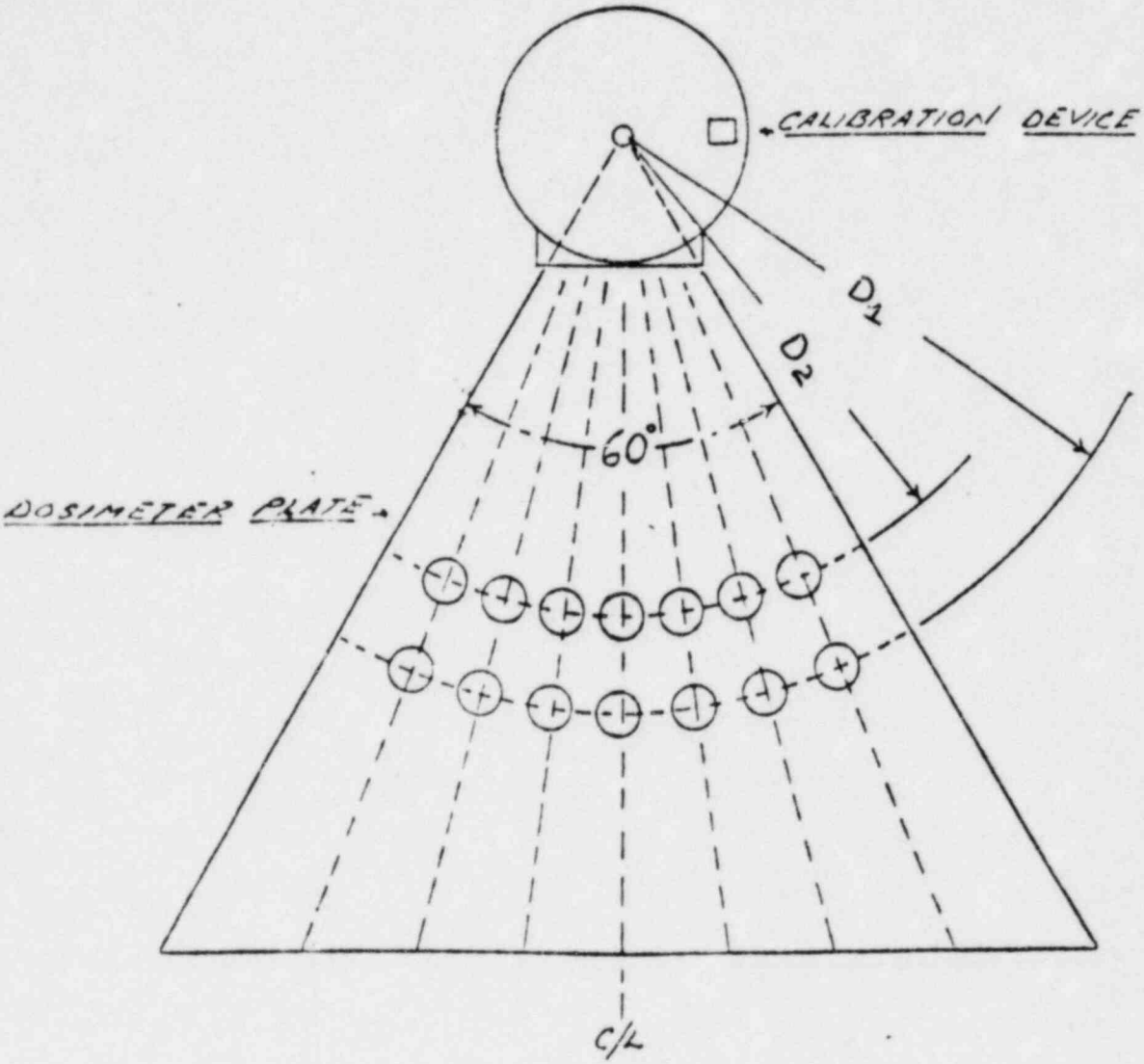
i.) The calculation to the mid range will be calculated using the information furnished with each calibration source, and verified with a calibrated survey meter and the inverse square law.

j.) The results of each direct reading pocket dosimeter calibration check will be recorded and kept for inspection by the Commission until it authorizes their disposal. Note, any dosimeter that reads more than 30% or less than 30% of the true radiation exposure will be rejected and taken out of service.



SIDE VIEW - DOSIMETER CALIBRATION

The SURVEY INSTRUMENT CALIBRATION DEVICE as viewed with the Source Rod in the open position and the DOSIMETER PLATE in the proper location with DOSIMETERS placed at either (not simultaneously) D1 or D2.



OVERHEAD (TOP) VIEW - DOSIMETER CALIBRATION PLATE

The SURVEY INSTRUMENT CALIBRATION DEVICE as viewed with the DOSIMETER PLATE in the proper location and the placement locations for DOSIMETE at either (not simultaneously) D1 or D2.