

OFFICIAL RECORD COPY MATERIALS LICENSE

Amendment No. 4

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.

Licensee		In accordance with the letter dated August 13, 1996	
1. Riley, Mannon & Sturgeon, Ltd.		3. License Number	47-19672-01
		is amended in its entirety to read as follows:	
2. P.O. Box 526 Barboursville, West Virginia 25504		4. Expiration Date	September 30, 2002 (extended)
		5. Docket or Reference No.	030-19080
6. Byproduct, Source, and/or Special Nuclear Material	7. Chemical and/or Physical Form	8. Maximum Amount that Licensee May Possess at Any One Time Under This License	
A. Americium 241	A. Any sealed well logging source registered pursuant to 10 CFR 32.210 or an equivalent Agreement State regulation	A. 18.5 gigabecquerels (GBq) (500 millicuries) total, not to exceed 1.85 GBq (50 millicuries) per source	
B. Cesium 137	B. Any sealed well logging source registered pursuant to 10 CFR 32.210 or an equivalent Agreement State regulation	B. 33.3 GBq (900 millicuries) total, not to exceed 9.25 GBq (250 millicuries) per source	
9. Authorized Use:			
A. and B.		For use as described in references stated in Condition 17 and in accordance with the provisions of 10 CFR Part 39 for mineral well logging.	

CONDITIONS

10. A. Licensed material be stored at 255 Nova Street, Huntington, West Virginia and may be used at temporary job sites of the licensee anywhere in the United States where the U.S. Nuclear Regulatory Commission maintains jurisdiction for regulating the use of licensed material.
- B. The licensee shall not create or release a field office or storage location whose address is identified here for unrestricted use, without prior Nuclear Regulatory Commission approval. Reports of residual levels of facility contamination or other information concerning facility status may be required.

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**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number 47-19672-01

Docket or Reference Number 030-19080

Amendment No. 4

11. The Radiation Safety Officer for activities authorized by this license is Michael R. Mannon.
12. Licensed material shall be used by, or under the supervision and in the physical presence of, Michael R. Mannon, Patrick P. Riley or individuals who have been trained as specified in the letters (including enclosures) dated February 10, 1992 and September 14, 1992, and as specified in 10 CFR 39.13(b) and 10 CFR 39.61 and be designated, in writing, by Michael Mannon. The licensee shall maintain training records for individuals designated as users.
13.
 - A. Notwithstanding the periodic leak test required by 10 CFR 39.35, the sealed source(s) specified in Item 7, 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. Any source received from another person which is not accompanied by a certificate indicating that a test was performed within 6 months before the transfer shall not be put into use until tested.
 - B. Notwithstanding the periodic leak test required by 10 CFR 39.35, such requirement does not apply to sources that are stored and not being used. The sources excepted from this test shall be tested for leakage before use or transfer to another person. Sources may not be stored for more than 10 years without being tested.
14. The licensee shall maintain records of information important to safe and effective decommissioning at the location specified in Condition 10 pursuant to the provisions of 10 CFR 30.35(g) until this license is terminated by the Commission.
15. Sealed sources containing licensed material shall not be opened or removed from their shielded exposure device except as otherwise authorized by condition of this license.
16. Pursuant to 10 CFR 39 and the generic exemption thereto, only those sealed well logging sources meeting the requirements of 10 CFR 39.41 or those deemed acceptable under the provisions of the temporary generic exemption (effective date July 17, 1989) may be used for well logging purposes under this license. Sources which do not meet these requirements shall be placed in storage incident to disposal.

**MATERIALS LICENSE
SUPPLEMENTARY SHEET**

License Number

47-19672-01

Docket or Reference Number

030-19080

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CONDITIONS

Continued -

17. Except as specifically provided otherwise in this license, the licensee shall conduct its program in accordance with the statements, representations, and procedures contained in the documents including any enclosures, listed below. The Nuclear Regulatory Commission's regulations shall govern unless the statements, representations and procedures in the licensee's application and correspondence are more restrictive than the regulations.
- A. Letter February 19, 1991
 - B. Letter February 10, 1992 (including Operating and Emergency Procedures Manual, February 1992)
 - C. Letter September 14, 1992
 - D. Letter August 13, 1996 [add Cs 137 source and logging tools]
 - E. Reference NRC letter dated March 1, 1996 extending expiration date per 10 CFR 30.36

FOR THE U.S. NUCLEAR REGULATORY COMMISSION

DAVID J. COLLINS

DATE OCT 02 1996

BY

David J. Collins

Region II, Division of Nuclear Materials Safety
101 Marietta Street, N.W., Suite 2900
Atlanta, Georgia 30323-0199

N:\MLICENSE\47-19672-A04

10/2/96

SAFETY ANALYSIS

/A TYPE A NUCLEAR SHIPPING CONTAINER

COMPROBE, INC.
9632 CROWLEY ROAD
CROWLEY, TEXAS 76036

MODEL 1203 LOGGING PROBE & SHIELD P.N. 9380-C01
PRINT NUMBER C 4000-020

This is to certify that the referenced device
has been tested and complies with all require-
ments of DOT regulations pertaining to this
device when used in accordance with DOT regulations.



W.K. HAWKINS RSO

INTRODUCTION

Title 49 of the Code of Federal Regulations requires certain documentation regarding specification 7A, Type A Nuclear Shipping Containers. Articles 173.394 and 173.395 state the following:

Each shipper of a specification 7A packaging must maintain on file for at least one year after the latest shipment, and be prepared to provide the Department, a complete certification and a supporting safety analysis demonstrating that the construction methods, packaging design, and materials of construction are in compliance with the specification.

The information to follow is the supporting safety analysis described above for the nuclear material shipping container manufactured by Gamma Industries. A description of the steel shield container can be found in the next section, followed by environmental analysis relation and test conditions.

DESCRIPTION OF CONTAINER

The hollow cylinder shields for the container are Ledloy 300 (12L14) commercial quality, low carbon steel, welded bore plate with metallic-inert gas wire to form a 3" inch OD cylinder. This alloy conforms to ASTM-A-108 Materials. The angle steel base on mounting brackets provides a stable foundation and is constructed such that the container may be bolted (4 places) to a floor surface of logging vehicle. The central cavity is a 1 1/4" inside diameter Navy Brass (source holder) which extends 22 inches out of the center of the cylinder shield which enables optimum source location. The source holder is held in place with a steel pin insert into a lock to prevent movement thusly by intersecting a 3/8 inch hole in the source holder.

NOTE: Cylinder Type shield drawing Ø C4000-020

* REVISED 5-28-87 3 inch changed to 4" as per D.O.T.



U.S. Department
of Transportation

Research and
Special Programs
Administration

400 Balch Street, S.W.
Washington, D.C. 20530

IAEA CERTIFICATE OF COMPETENT AUTHORITY
SPECIAL FORM RADIOACTIVE MATERIALS
CERTIFICATE NUMBER USA/0078/S, REVISION 6

This certifies that the source described has been demonstrated to meet the regulatory requirements for special form radioactive material as prescribed in the regulations of the International Atomic Energy Agency¹ and the United States of America² for the transport of radioactive materials.

1. Source Identification - Gulf Nuclear Model CSV.
2. Source Description - The doubly encapsulated source is manufactured of Type 17-4 stainless steel and measures 5.0 to 25.4 mm (0.2 to 1.0 inches) in diameter by 12.7 to 76.2 mm (0.5 to 3.0 inches) in length. Construction must be in accordance with Gearhart Drawing 015-2011-C39 or Dresser Atlas Drawing No. 88645.
3. Radioactive Contents - This source consists of not more than 111 GBq (3 Ci) Thulium-170 as oxide, or 370 GBq (10 Ci) Cesium-137 as ceramic pellets, or 185 GBq (5 Ci) Cobalt-60 as metal, or 74 GBq (2 Ci) Americium-241 as oxide, or 1.85 GBq (0.05 Ci) Radium-226 as sulfate.
4. Expiration Date - This certificate expires April 30, 1996. This certificate supersedes, in its entirety, all previously issued revisions of USA/0078/S.

This certificate is issued in accordance with paragraph 803 of the IAEA Regulations and Section 173.476 of Title 49 of the Code of Federal Regulations, in response to the June 26, 1991 petition by Atlas Wireline Services, Houston, TX, and in consideration of other information on file in this Office.

Certified by:

George A. Brown

George A. Brown, Chief
Radioactive Materials Branch
Office of Hazardous Materials
Technology

SEP 22 1992

(DATE)

Revision 6 - Issued to make corrections to the Radioactive Contents.

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, United States of America.



GAMMA INDUSTRIES

A Division of Nuclear Systems, Inc.

BATON ROUGE

P. O. BOX 2543

2215 TED DUNHAM AVENUE
BATON ROUGE, LOUISIANA 70821
TELEPHONE 504/343-7791

HOUSTON

P. O. BOX 34526

HOUSTON, TEXAS 77034
TELEPHONE 713/944-7676

CERTIFICATE OF COMPLIANCE

TO: Comprobe, Inc.

9632 Crowley Road

Crowley, Tx. 76036

REFERENCE: USA DOT Type A Shipping Container
Model 37A

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

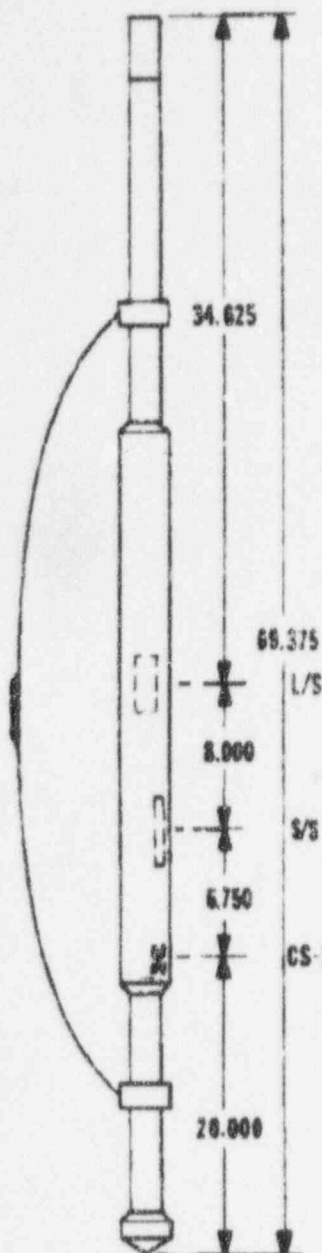
Don Riddle / *DR*

Don Riddle

Quality Assurance Manager

DUAL SPACED DENSITY PROBE

This tool with a Caliper and Gamma Ray is a good coal tool.



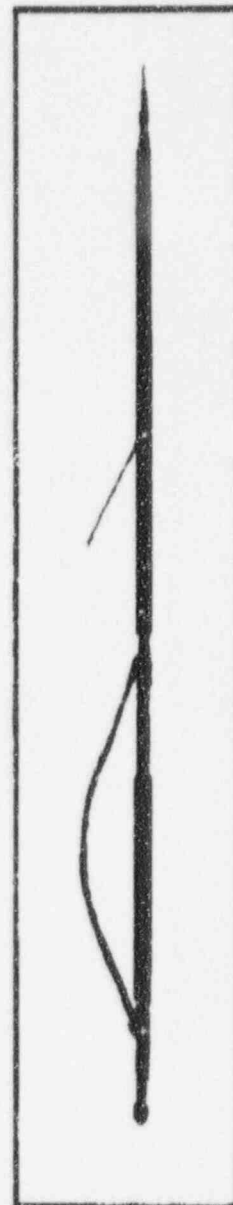
1 5/8" OD; Wt. 60 lbs; #1852
2 1/8" OD; Wt. 60 lbs; #2152

- Long space detector: NaI crystal with photo-tube
- Short space detector: halogen quench Geiger tube
- Excellent for water well logging
- Utilizes ≤ 150 mCi Cs-137 source in collimating shield
- Uses hardface subs and includes de-centralizing bowspring with carbide wear pads
- Typically runs below a de-centralizing caliper and above a dual or single spaced neutron.

2 1/2" OD; Wt. 60 lbs; #2552

- Long space detector: NaI crystal with photo tube
- Short space detector: halogen quench Geiger tube
- "Square" contour housing can be rotated to extend housing life. Provides better bore hole contact and shows no shift from air to fluid
- Utilizes ≤ 150 or ≤ 250 mCi Cs-137 source in collimating shield. For best statistic 250 mCi recommended for oil well logging.
- Typically runs below a de-centralizing caliper and above a dual or single spaced neutron

All dual spaced density probes have temp rating: 225°F; Pressure rating: 20k PSI



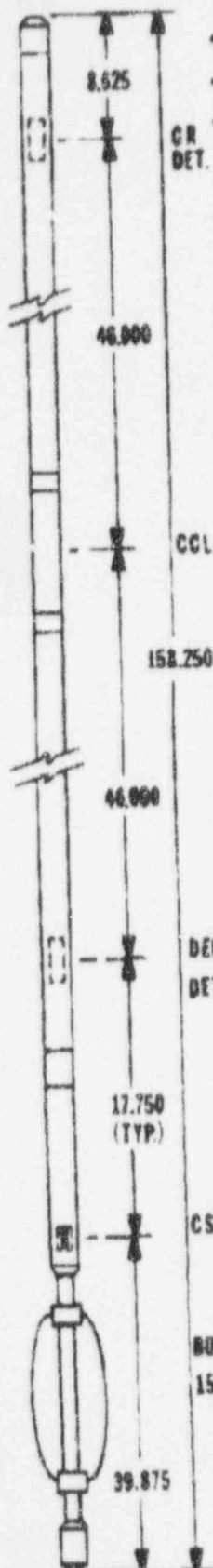
This is the Compro Pi tool and one of the 2" single detector tools.

4π OMNI DIRECTIONAL DENSITY PROBE:

1 5/8" OD: #1804-4π

SINGLE SPACED DENSITY PROBE:

This is a good coal tool in open hole.

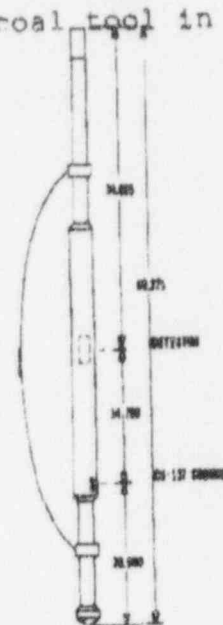


1 5/8" OD; Wt. 65 lbs.

- Single conductor top sub
- Scintillation type Gamma ray sections are identical except for pulse polarity and divide by ratio
- Top section for natural gamma and lower for omni directional density
- Excellent for gravel pack analysis
- String requires lower bow spring and typically has casing collar located in middle of string
- Uses ≤ 150 mCi Cs-137 source
- Temp rating: 300°F; Pressure rating: 20k PSI

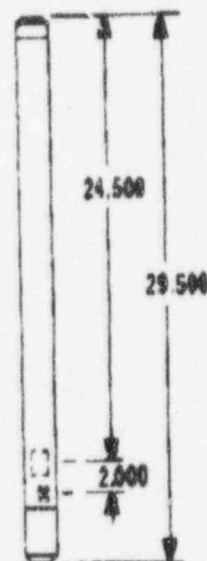
2 1/8" OD; Wt: 60 lbs; #2103

- Employs same physical construction as dual spaced version #2152 except no short spaced detector is used
- Has electrical feed thru to permit operation of tool below
- Recommend ≤ 150 mCi Cs 137 source
- Temp rating: 225°F; Pressure rating: 20K PSI



1 1/4" OD; Wt: 5 lbs; #1203

- Hi-resolution probe, well suited for coal or minerals
- Typically runs below a decentralizing caliper, alone, or with a gamma ray/neutron
- Uses ≤ 50 mCi Am 241 source
- Temp rating: 225°F; Pressure rating: 5K PSI

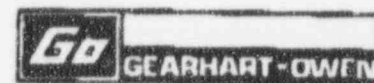


DETECTOR
AM-241 SOURCE

ELECTRONICS
PAGE 36 / 1977

THIS PAGE SUPERCEDES ELECTRONICS PAGE 36 / 1976

DENSITY/GAMMA-RAY/SINGLE-POINT/SP TOOL



FEATURES

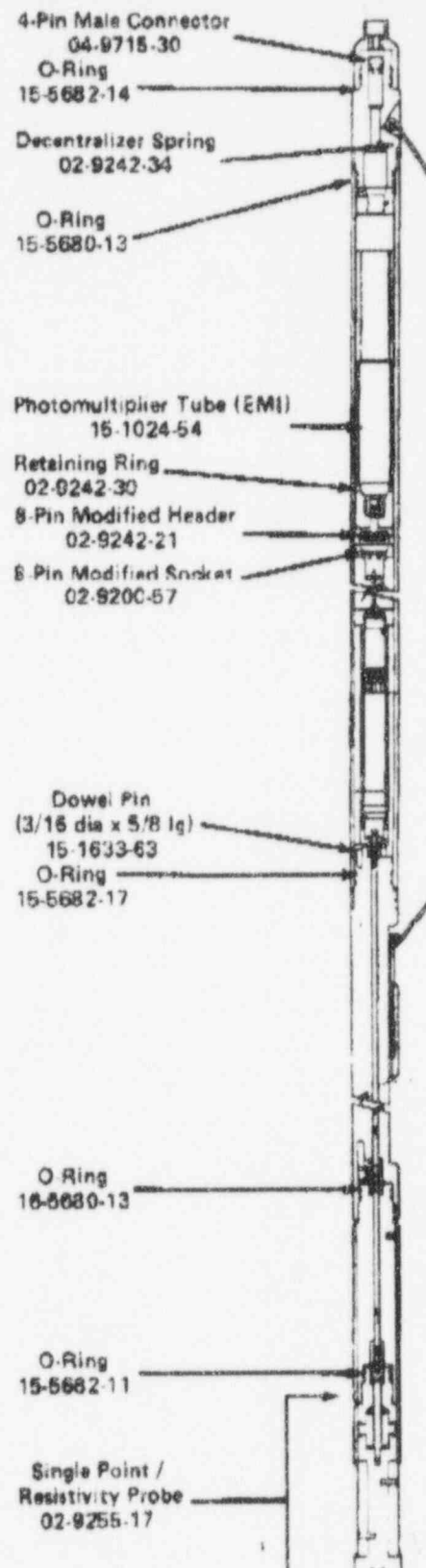
- Simultaneous 4-curve logging
- Scintillation detectors
- Anti-coincidence circuitry

DESCRIPTION

The GOI 1-11/16-O.D. Density/Gamma Ray/Single-Point/SP tool is designed to operate on a 4-conductor cable to record all curves simultaneously. The scintillation density detector is shielded with heavy metal and decentralized to minimize back scatter. The gamma detector is also scintillation to provide greater sensitivity for lithology. If pulses from the two detectors arrive at nearly the same time the logic-gating circuits will impose an additional delay on whichever pulse arrives late. This time delay is adjusted to prevent a time overlap of the two signals. The anti-coincidence circuit thereby assures that all pulses are transmitted to the surface. This solid-state electronic circuitry is mounted on a stainless steel "Z"-bent chassis, and encased in a non-ferrous Beryllium Copper housing.

SPECIFICATIONS

DIAMETER:	1-11/16 (43 mm)
LENGTH:	73-1/2 in. (1.87 m)
WEIGHT:	34 lbs. (15.4 kg.)
TEMP. RATING:	175°F (80°C)
PRESSURE RATING:	15,000 psi (1020 atm)
POWER REQUIRED:	60mA @ +40VDC





UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W., SUITE 2900
ATLANTA, GEORGIA 30323-0199

OCT 02 1996

INFORMATION FOR NRC MATERIAL LICENSEES

Please find enclosed:

- ☒ Your NRC material license
- ☐ Amendment to your NRC material license
- ☐ Amendment renewing your NRC material license
- ☐ Amendment terminating your NRC material license
- ☐ Notice for Radiographer Quality Assurance Approval Program

Please review the enclosed document carefully and be sure that you understand all conditions. If there are any errors or questions, please notify this office (ATTN: Ms. Diane Heim at (404) 331-4673) 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 19, "Notice, Instructions and Reports to Workers; Inspections," 10 CFR Part 20, "Standards for Protection Against Radiation," and other applicable regulations.
2. Not possess and use materials authorized in Items 6, 7, and 8, on the license until:
 - a. you have constructed the facilities and obtained the equipment described in the license application and supporting documentation; and
 - b. you have notified the U. S. Nuclear Regulatory Commission, Region II, ATTN: Materials Licensing/Inspection Branch, in writing, that activities authorized by the license will be initiated.
 - c. you have submitted & certified implementation of a Quality Management Program (10 CFR 35.32) for radiotherapy, or for administering > 30 uCi of I-125 or I-131.
3. Notify NRC, in writing, within 30 days:
 - a. when an authorized user, Radiation Safety Officer, or Teletherapy Physicist 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).
4. In accordance with 10 CFR 30.36(b) and/or license condition, notify NRC, promptly, in writing, and request termination of the license:
 - a. when you decide to terminate all activities involving materials authorized under the license; or
 - b. if you decide not to complete the facility, acquire equipment, or possess and use authorized material.

5. Request and obtain a license amendment before you:
 - a. receive or use byproduct material for a clinical procedure permitted under Part 35 but not permitted by your license issued pursuant to this part.
 - b. permit anyone, not authorized under 10 CFR 35, Subpart J, to work as an authorized user under a license for medical use of byproduct material.
 - c. permit anyone, not authorized under 10 CFR 35, Subpart J, to work as a Radiation Safety Officer, Teletherapy Physicist, or Nuclear Pharmacist, under a license for medical use of byproduct material.
 - d. order byproduct material in excess of the amount, or a different radionuclide or form, other than authorized on the license;
 - e. add or change the areas of use or address (or addresses) of use identified in the license application or on the license; or
 - f. change ownership of your organization.
6. Submit a complete renewal application with proper fee or termination request at least 30 days before the expiration date of your license. You will receive a reminder notice approximately 90 days before the expiration date. Possession of byproduct material after your license expires is a violation of NRC regulations. Transfer of licensed materials must be consistent with 10 CFR 30.41, 40.51 or 70.42, as applicable. 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 Statement of Policy and Procedures for NRC Enforcement Actions," NUREG-1600, (7/95). Since serious consequences to employees and the public can result from failure to comply with NRC requirements, prompt and vigorous enforcement action will be taken against those who do not achieve the necessary attention to detail and standard of compliance expected of licensees.

Thank you for your cooperation.

Enclosures:

1. NRC License
2. Category Marked Below for:
 - ☐ New licenses: NUREG-1600 (7/95); 19; 20; 30; 40 or 70, as appropriate; 71; 170; NRC Form 3; Agreement State list; and NRC Form 313.
 - ☐ New radiography licenses: Parts 34; 150.
 - ☐ New medical and teletherapy licenses: Part 35.
 - ☐ Amendments and renewals: NRC Form 313.

BETWEEN:

License Fee Management Branch, ARM
and
Regional Licensing Sections

: (FOR LFMS USE)
: INFORMATION FROM LTS
: -----
:
: Program Code: 03111
: Status Code: 0
: Fee Category: 5A
: Exp. Date: 20020930
: Fee Comments: _____
: Decom Fin Assur Req'd: N
: ::::::::::::::::::::::::::::::

LICENSE FEE TRANSMITTAL

A. REGION II

1. APPLICATION ATTACHED

Applicant/Licensee: RILEY, MANNON & STURGEON LTD.
Received Date: 9-08-22
Docket No: 3019080
Control No.: 257172
License No.: 47-19672-01
Action Type: Amendment

2. FEE ATTACHED

Amount: 6400
Check No.: 7498

3. COMMENTS

Signed _____
Date 7/4

B. LICENSE FEE MANAGEMENT BRANCH (Check when milestone 03 is entered 1 / 1)

1. Fee Category and Amount: 5A \$640

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

Amendment ☒
Renewal _____
License _____

3. OTHER _____

Signed _____
Date 9/3/96

Log	<u>Sep 2 II</u>
Remitter	<u>R.M.S. Ltd</u>
Check No.	<u>7499</u>
Amount	<u>640</u>
Fee Category	<u>5A</u>
Type of Fee	<u>Amnd</u>
Date Check Rec'd.	<u>9/3/96</u>
Date Completed	<u>9/3/96</u>
By:	<u>[Signature]</u>

RILEY, MANNON & STURGEON LTD.
P.O. BOX 517
BARBOURSVILLE, WV 25504
304 (736-8850)
AUGUST 13, 1996

U.S. Nuclear Regulatory Commission
Materials Licensing Section
101 Marietta St., Suite 2900
Atlanta, GA 30323

Dear Sir/Madam:

We wish to amend our current license (47-19672-01) to add
the following to line #6 :

B. Cesium 137	B. Sealed source	B. 900 millicuries
	(VD-HP)	maximum, not to
		exceed 250
		millicuries
		per source

Enclosed is a check for \$ 640.00 to cover the amendment fee.

If you have any questions, please contact me at the number
listed above.

Sincerely,



Michael Mannon
President/R.S.O.

MRM:bjm

Enclosure