

**LUDLUM MEASUREMENTS, INC.**

501 OAK STREET  
P.O. BOX 810  
SWEETWATER, TEXAS 79556  
WEBSITE: www.ludlums.com



**DESIGNER AND  
MANUFACTURER  
OF**

*Scientific and Industrial  
Instruments*

**800-622-0828(US & CANADA) 325-235-4672(FAX) 325-235-5494 email:bhuckabee@ludlums.com**

12 June 2014

Justin A. Vazquez  
USNRC  
Licensing Branch  
Division of Materials Safety and State Agreements  
Office of Federal and State Materials and  
Environmental Management Programs

Re: USNRC License no. 42-21454-01E

Subject: Response to your letter dated 03 June 2014 requesting additional information concerning license amendment request, the following is submitted

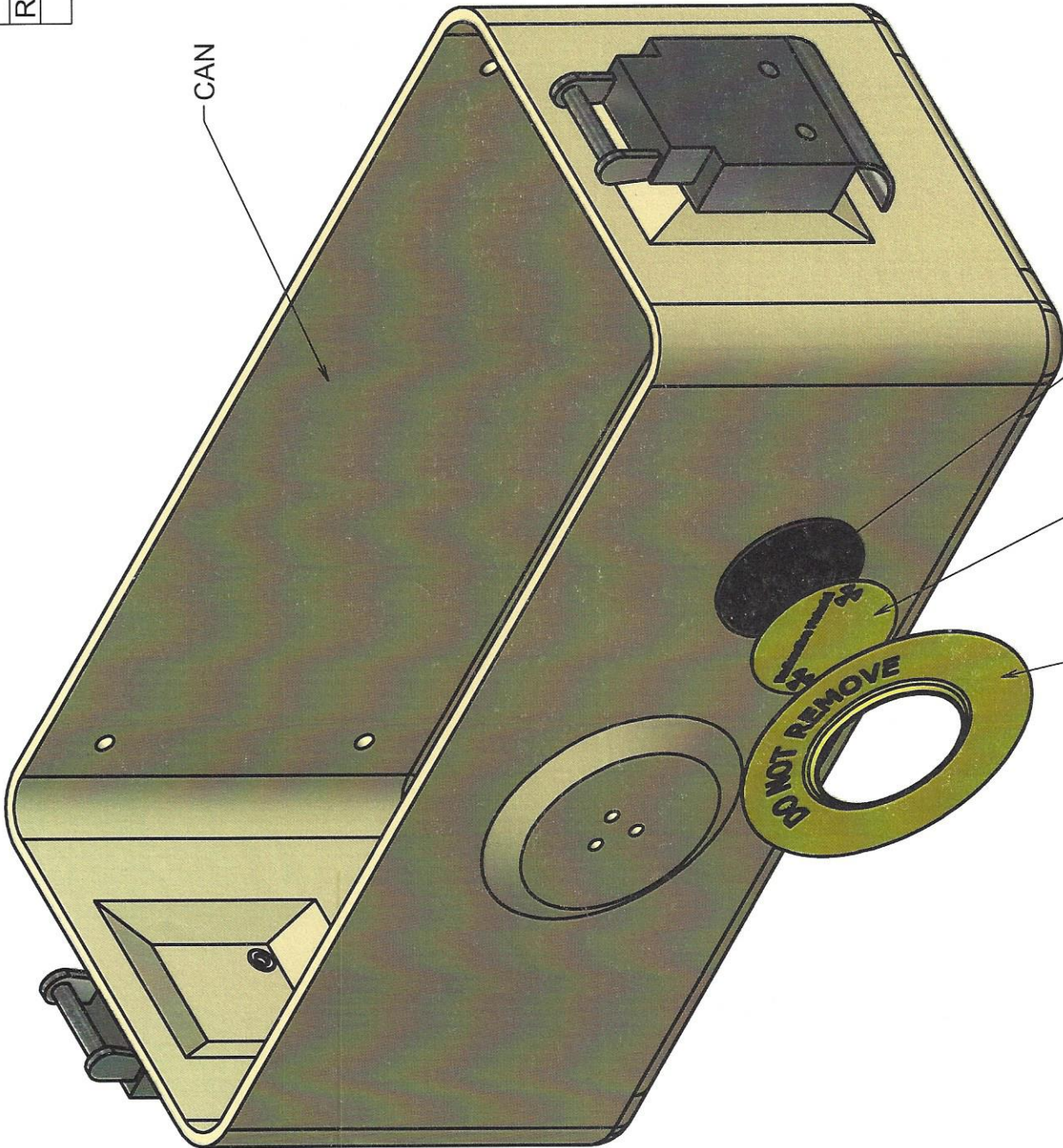
- 1.a. Ludlum Measurements Inc. has, is, and will continue to distribute exempt quantity of byproduct material in accordance with ALL applicable federal rules and regulations.
- b. Ludlum Measurements Inc. has, is, and will continue to distribute exempt quantity of byproduct material in accordance with ALL applicable federal rules and regulations. The methodology pertaining to assurance that the external surface of outer package readings does not exceed 0.5 mR/hr is done by setting minimum packaging requirements of which this came about by measuring with a calibrated Ludlum Model 3 and Model 44-38 detector to determine minimum packing distances and quantity of radioactive material. This measuring and testing method also set requirements when individual packages need to be monitored with a calibrated meter. SEE **ATTACHMENT 1**
- 2.a. When utilizing the LMI part number 7464-474 as part of the assembly to attach a check source to an instrument, the USNRC approved label as supplied with the check source from the manufacturer is in view due to this part has a clear center as shown in **ATTACHMENT 2**.
- b. When attaching a check source utilizing the mechanical assembly, the portion of the assembly labeled "holder" on the drawing labeled as **ATTACHMENT 3** is milled to have an opening to view the USNRC approved label as supplied with the check source from the manufacturer.
3. See **ATTACHMENT 4** for the brochure that is included with each shipment of byproduct material that is a quantity that is exempt from NRC or Agreement State licensing requirement which has the statement as required by 10 CFR 19(d). This is the same information that was included in my letter dated 20 June 2013, and was approved for use in accordance with NRC license 42-214-54-01E amendment 07, dated 14 August 2013 and signed by Shirley Zu.

Regards,

Bill Huckabee RSO

Attachment 2

REVISION HISTORY			
REV	DESCRIPTION	DATE	BY
1	VALID	12-2-09	RHS



CAN

3M 5952 VHB

DOUBLE SIDED TAPE

CHECK SOURCE

7464-474

SOURCE LABEL WITH CLEAR CENTER

W/ 3M 468 ADHESIVE OR EQUIV

DWN	DATE	CHK	DATE	APP	DATE
RHS	12-3-09				

DWG NUM: 4464-473 SCALE: 1:1

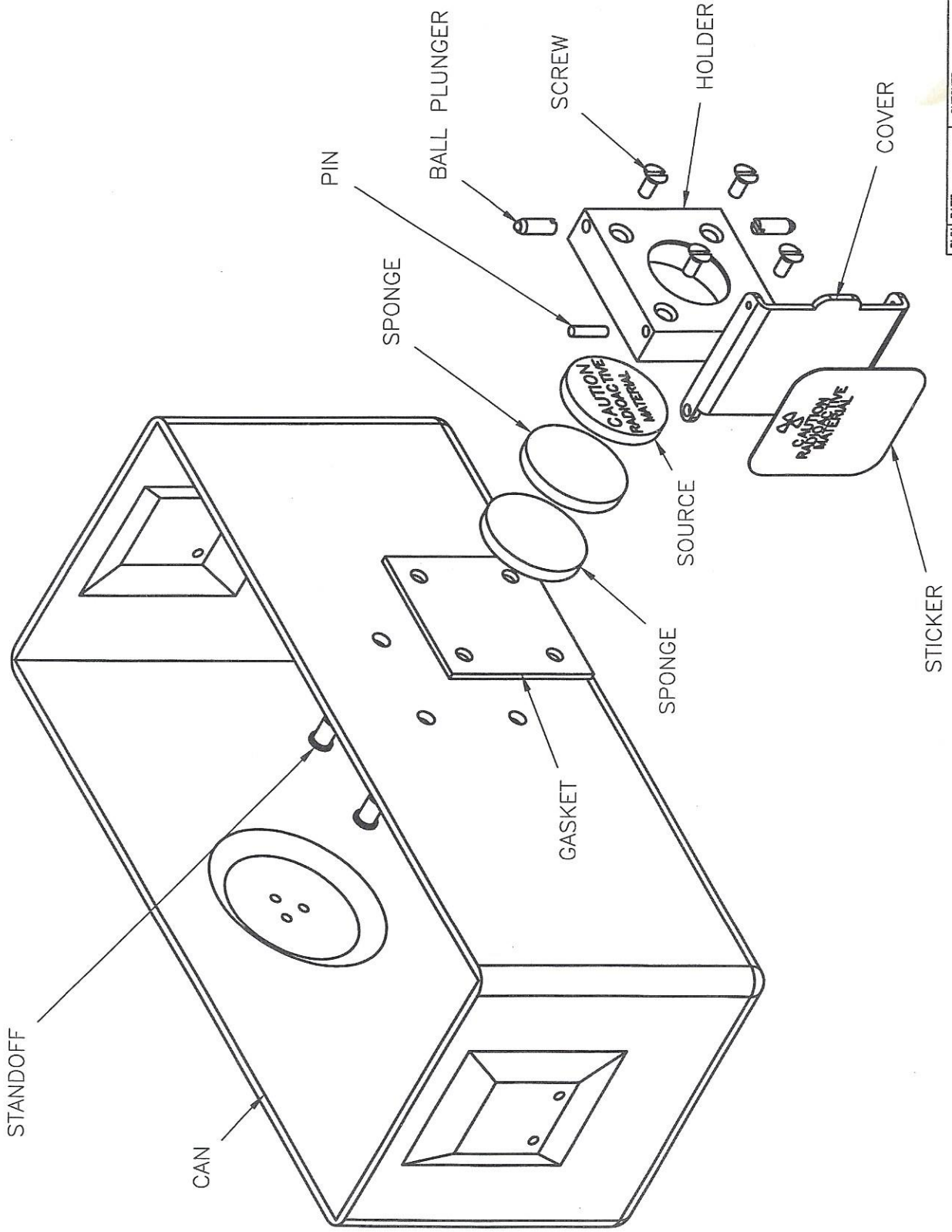
TITLE CAN WITH SOURCE AND LABEL

LUDLUM MEASUREMENTS, INC.  
810 CALS STREET  
SWEETWATER, TEXAS 79556

SERIES 464 SHEET 473

Attachment 3

REV #	ALTERATIONS	DATE	BY
2	VALID EC-381	4-25-97	JGW
3	VALID EC-1017	10-20-98	TJR



DWN DATE	CHECKED	APPROVED
JGW 10-5-01	<i>[Signature]</i>	<i>[Signature]</i>

TITLE: SOURCE HOLDER ASSEMBLY  
SERIES: 62  
SHEET: 166B

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Attachment 1

## MEMORANDUM

From: Bill Huckabee

Date: 02 February 2010

To: Shipping Department

Subject: Documenting package readings when shipping RAM, exempt quantity.

Comments: When shipping a single package with Cesium 137 sources greater than Eight (8)  $\mu\text{Ci}$  total activity, you must document the survey results.

Use the model 3/44-38 s/n274612/PR296035 and survey all surfaces.  
Use the supplied stamp to record the readings on the orange card.

The packaging material must be a minimum of 3" from the box side in all directions.

When surveying packages with  $> 8 \mu\text{Ci}$ , the readings must be less than 0.5 mr/hr. If the readings are greater than 0.5 mr/hr, the package can not ship as exempt quantity.

Maximum  $\mu\text{Ci}$  per package for Cesium137 = 100  $\mu\text{Ci}$

For greater the 8  $\mu\text{Ci}$  of other isotopes, consult RSO

## Radioactive Material Exempt Quantities (Per U.S. NRC & State Regulations)

This radioactive material conforms to the conditions and limitations specified for radioactive material in:

- 49CFR173.421
- 10CFR30,
- 10CFR30.71, Schedule B Exempt Quantities
- BS 5288/C11111

The radioactive material contained in the package is an exempt quantity from USNRC and/or Agreement State licensing requirements.

The radiation exposure rate at any point on the external surface of this package does not exceed 0.5 milli rem/hour.

No other hazard labeling and shippers declaration are required or authorized.

Radioactive Material ——— Not for Human Use ——— Introduction Into Foods, Beverages, Cosmetics, Drugs, or Medicinals, or Into Products Manufactured for Commercial Distribution is Prohibited ——— Exempt Quantities Should Not be Combined.

Do not expose the source to harsh chemicals or extreme temperature changes.

The quantities of radioactive material contained in these products is extremely small and present no known radiation hazard. However, it is always good practice to minimize exposure by following the basic principles of time, distance and shielding. Solid, sealed exempt quantity sources require no special handling but when working with liquid sources, gloves and laboratory coats are recommended.

Eating, drinking and smoking should be prohibited in areas where radioactive material is used or stored.

Use of radioactive material should be supervised by a responsible person in authorized areas. Exempt quantity products should be used only as intended and in accordance with instructions provided. All radioactive material should be securely stored when not in use.

These exempt quantity products may be disposed of in regular waste providing all radiation symbols have been removed or defaced. When disposing of liquid exempt quantities, it is recommended that they be flushed into the public sewer system diluted with large volumes of water.

Manufactured and Distributed by:  
**SPECTRUM TECHNIQUES**  
106 Union Valley Road  
Oak Ridge, Tennessee 37830 USA  
Tel: 865-482-9937  
Fax: 865-483-0473  
E-mail: [sales@spectrumtechniques.com](mailto:sales@spectrumtechniques.com)  
Web Site: [www.spectrumtechniques.com](http://www.spectrumtechniques.com)

The exempt quantity source(s) contained in this order were distributed by;

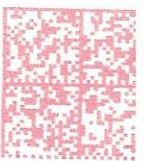
Ludlum Measurements Inc  
501 Oak St  
Sweetwater TX 79556 USA  
Tel: 325-235-5494  
Email: [ludlum@ludlums.com](mailto:ludlum@ludlums.com)  
USNRC license 42-2145401E



Bill Hockstabe  
LUDLUM MEASUREMENTS, INC.  
P.O. Box 810  
SWEETWATER, TX 79556-3209  
USA



7013 1090 0001 4356 8170



ZIP 79556 \$00!  
02 1M  
0001375036 JUN 1

**First Class Mail**  
**First Class Mail**

**RETURN RECEIPT  
REQUESTED**

Justin A. Vazquez  
USNRC  
Licensing Branch  
Division of Materials Safety and State Agreements  
Office of Federal and State Materials and  
Environmental Management Programs  
Washington DC 20555-0001

*JAV*

*20852*