



U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety Administration**

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

APR 18 2007

Mr. Spencer B. Neyland
Operations Manager/Physicist
LND, Inc.
3230 Lawson Boulevard
Oceanside, NY 11572

Reference No.: 06-0241

Dear Mr. Neyland:

This responds to your October 24, 2006 letter concerning the transportation of several styles of hermetically sealed nuclear radiation sensor (detector) tubes containing various quantities of Boron trifluoride, 2.3, Hazard Zone B, at less than atmospheric pressure under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Subsequently, you submitted additional information and samples for our review.

According to your letter, LND, Inc. is the holder of Special Permit 12087, which authorizes the manufacture, mark, sale and use of nonrefillable, non-DOT specification cylinders with not more than 57 grams of Boron, trifluoride for transportation in commerce. You enclosed a letter of interpretation (Crawford; February 9, 1984) which informed the writer that "due to the form and limited quantity of boron trifluoride contained in the radiation detector tubes," these devices are not subject to the HMR. The response was in reference to a question concerning the transportation of radiation detector tubes, each containing less than one gram of Boron trifluoride at less than atmospheric pressure. You asked if this exception also applies to certain LND nuclear radiation detector tubes containing less than one gram of Boron trifluoride at less than atmospheric pressure, and if this exception applies to international shipments and air shipments made under the International Civil Organization's (ICAO) Technical Instructions.

We reviewed the additional information submitted on the hermetically sealed detector tubes, each containing not more than one gram of Boron trifluoride filled to less than atmospheric pressure, and packaged in a specially designed packaging. Based on the form and quantity of Boron trifluoride contained in the radiation detector tubes, it is our



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determination these tubes, when packaged and offered for shipment as described in your letter, will not pose an unreasonable risk to health, public safety or property during transportation and, therefore, are not subject to the HMR.

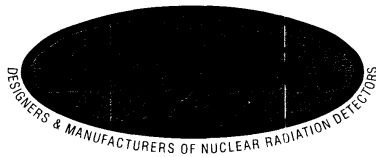
We apologize for the delay in responding. Your confidential additional information and samples are herewith returned.

Sincerely,

A handwritten signature in black ink, appearing to read "H. Mitchell", written in a cursive style.

Hattie L. Mitchell
Chief, Regulatory Review and Reinvention
Office of Hazardous Materials Safety

Enclosures



3230 LAWSON BLVD., OCEANSIDE, NEW YORK 11572

E-mail: info@indinc.com • WEB SITE: <http://www.indinc.com>
1-516-678-6141 • FAX 1-516-678-6704

Corbin
§ 172.101
§ 173.4
Small Quantity Exceptions
06-0241

October 24, 2006

Mr. Edward T. Mazzullo
Director, Office of Hazardous Materials Standards
U.S. DOT/PHMSA (PHH-10)
400 7th Street, SW
Washington, DC 20590-0001

Re: Request for letter of interpretation.

Dear Mr. Mazzullo,

I am writing to request an interpretation of the Hazardous Materials Regulations regarding the classification of very small quantities of Boron trifluoride gas at less than atmospheric pressure contained in hermetically sealed nuclear radiation detectors.

The question arose when LND was given a copy of a letter from the Department of Transportation, originally issued on February 9th, 1984 to our competitor N. Woods Counter Laboratory, Inc. regarding their application for an exemption for boron trifluoride filled nuclear radiation sensors. I have enclosed a copy of the letter for reference.

I asked Cheryl West Freeman, in the Office of Hazardous Materials Technology, if the letter in question is representative of the current view at the DOT and if it might have an impact on our Special Permit for boron trifluoride nuclear radiation sensors (DOT-SP 12087). Ms. Freeman consulted with Dr. George Cushmac who stated that the letter was accurate and valid, i.e., boron trifluoride nuclear radiation sensors with less than a gram of gas at less than atmospheric pressure "...are not construed to pose a risk to life and property during transportation and, therefore, are not considered subject to the Hazardous Materials Regulations...".


LND, Incorporated's DOT Special Permit 12087 covers a broad range of boron trifluoride nuclear radiation sensor designs with a maximum pressure of up to 3 PSIG boron trifluoride; however, most of our boron trifluoride detectors are filled to less than atmospheric pressure and contain less than one gram of boron trifluoride (in fact, 0.01 grams is not uncommon). Would it be possible to have a similar letter of interpretation issued to LND stating that the subset of sensors that meet the above requirements are not subject to the Hazardous Materials Regulations, 49 CFR Parts 170-179?

If indeed these products are not considered subject to the Hazardous Materials Regulations, 49 CFR Parts 170-179, would this also apply to international shipments and air shipments governed by IATA/ICAO regulations?

Clarification of this issue will have a wide impact, as there are many BF3 nuclear radiation sensors already in use in handheld instruments that need to be transported in motor vehicles, railway cars, ships and aircraft. Thank you for looking into this matter.

Sincerely,

LND, INCORPORATED



Spencer B. Neyland
Operations Manager/Physicist

Cc Helen Engrum, Cheryl West Freeman

TO: ROBERT ORTEGA
 ALW
 DUANE STEPHENS
 FAX: 325-235-4672
 FROM: MARJORY CRAWFORD
 FAX: 219-926-6662
 (24 HR)
 DOT LETTER
 5/15/86

FEB - 9 1984

Ms. Marjory Crawford
 Vice President
 N. Wood Counter Laboratory, Inc.
 1525 East 53rd Street
 Chicago, Illinois 60615

Dear Ms. Crawford:

This is in reference to your application dated January 31, 1984, requesting an exemption authorizing the transportation of radiation detector tubes. These tubes contain less than a gram of boron trifluoride gas, are filled to less than atmospheric pressure, and are overpacked in a specially designed packaging.

Your application is returned as being unnecessary. Due to the form and limited quantity of boron trifluoride contained in the radiation detector tubes, these devices, when packed and offered for shipment as described in your application, are not construed to pose a risk to life or property during transportation and, therefore, are not considered subject to the Hazardous Materials Regulations, 49 CFR Parts 170-179.

Sincerely,
 ORIGINAL
 ALAN L. ROBERTS

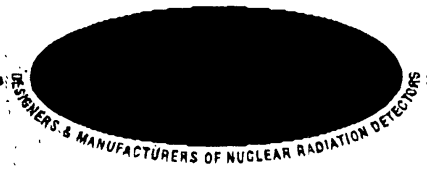
Alan I. Roberts
 Associate Director for Hazardous
 Materials Regulation
 Materials Transportation Bureau

Enclosure

DMT-231:JSHEDGKPEH:bj:2/9/84
 cc: DMT-20, DMT-231

file: E8239

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1-516-678-6141 • FAX 1-516-678-6704

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18 April 2007

Ms. Hattie L. Mitchell
Chief, Regulatory Review and Reinvention
U.S. DOT/PHMA PHH-12 (Room 80430)
400 7th Street S.W.
Washington, D.C. 20590

Dear Ms. Mitchell,

I am writing to provide the U.S. DOT with additional technical information about nuclear radiation sensors containing less than 1 gram of boron trifluoride at less than atmospheric pressure.

In the highly unlikely event that a boron trifluoride containing nuclear radiation sensor developed a leak, the following would occur:

Because the sensor volume is under a partial vacuum, air would leak into the volume of the sensor diluting the trace amount of gas; any moisture in the air would immediately react with the gas, further reducing the amount of gas in the sensor volume. At this point the material would be considered non-hazardous.

Furthermore, for over 50 years with more than 100,000 boron trifluoride sensors in service worldwide in the nuclear and radiation protection industries, there has never been an incident of a boron trifluoride leak.

I hope that this supplementary information is helpful. Please call me if you have any further questions or if I can be of any assistance.

Sincerely,

LNB INCORPORATED

Spencer B. Neyland
Operations Manager/Physicist