U.S. Department
of Transportation

**Pipeline and Hazardous
Materials Safety
Administration**

1200 New Jersey Avenue, SE
Washington, D.C. 20590

JUL 15 2014

Mr. Melvin J. Simon
NAVSEA 04ND3
RADIAC Program Operations
Acting Technical Warrant Holder
Naval Sea Systems Command
1333 Isaac Hull Avenue, SE Stop 4120
Washington Navy Yard, DC 20376-4120

Ref. No.: 14-0120

Dear Mr. Simon:

This is in response to your email dated June 16, 2014, requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) relating to the transportation of neutron radiation detectors containing boron trifluoride. Section 172.102(c)(1) Special Provision 238 paragraph (c) offers relief from the other requirements of the HMR for neutron radiation detectors containing not more than 1 gram of boron trifluoride when packaged as specified and transported by highway, rail, vessel, or as cargo on an aircraft.

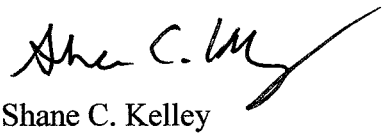
You describe the construction of a neutron radiation detection system and your proposal to place a sufficient quantity of activated alumina or activated carbon desiccant within a sealed outer moderator that also acts as the outer case of the system. The outer moderator which is made of polyethylene also encases the detector probe containing the boron trifluoride. You ask if this described method of packaging meets the intent of the requirements of paragraph a.(4) of Special Provision 238.

As described, the neutron radiation detection system would meet the requirements Special Provision 238 paragraph a.(4) relating to the requirement for a liner surrounding the detector. The sealed polyethylene outer moderator would serve as the required liner.

Provided the radiation detector meets all other requirements of paragraph (a) of Special Provision 238 and the system is packaged in a strong outer packaging capable of withstanding a 1.8 meter (6-foot) drop without leakage, or the system itself, without packaging is capable of withstanding a 1.8 meter (6-foot) drop without leakage, the described radiation detection system is eligible for the relief from the HMR provided by paragraph (c) of Special Provision 238.

I trust this information is helpful. If you have further questions, please do not hesitate to contact this office.

Sincerely,



Shane C. Kelley
Acting International Standards Coordinator
Standards and Rulemaking Division

Babich
172.102
Special Provisions
14-0120

Dodd, Alice (PHMSA)

From: Lehman, Victoria CTR (PHMSA)
Sent: Monday, June 16, 2014 3:37 PM
To: Hazmat Interps
Subject: FW: Letter of Interpretation - Request DOT Concurrence with US Navy Proposed Packaging Method for BF3 Neutron Detector
Attachments: AN-PDR-70 Probe Exploded View.pdf
Signed By: victoria.lehman@dot.gov

Please submit this request for a formal letter of interpretation. Mr. Simon previously discussed this question with Adam Lucas in the HMIC on 6/4/2014.

Thanks, Victoria

-----Original Message-----
From: Simon, Melvin J CIV SEA 04 [mailto:melvin.simon@navy.mil]
Sent: Monday, June 16, 2014 10:45 AM
To: INFOCNTR (PHMSA)
Cc: Murray, Jessica M CTR SEA 04; Reale, Steven G CIV SEA 04; Jeff Cherry (jeffcherry@orbisinc.net); Gadbois, Jon CIV SEA 04; Simon, Melvin J CIV SEA 04
Subject: Letter of Interpretation - Request DOT Concurrence with US Navy Proposed Packaging Method for BF3 Neutron Detector

9492
Ser 04ND3/137
16 JUN 2014

From: U. S. Navy, Naval Sea Systems Command, Radiation Detection, Indication and Computation (RADIAC) Program Office

Subj: Letter of Interpretation - Request DOT Concurrence with U. S. Navy Proposed Packaging Method for BF3 Neutron Detector

Ref: (a) 49 CFR 172.102, Special Provisions

Attachment: (1) AN/PDR-70 RADIAC Probe Exploded View

1. Background. Reference (a), Special Provision (SP) 238, was recently updated and provides new guidance for transporting neutron radiation detectors containing Boron Trifluoride (BF3) gas. The U.S. Navy uses a portable neutron radiation detector (AN/PDR-70) that utilizes a proportional counter (Reuter-Stokes/RSN-320-M2) containing less than 1 gram of BF3 gas at less than atmospheric pressure (60 cm/Hg). These detectors are now being transported under the new provisions per SP 238, paragraph c. This topic was discussed with DOT PHMSA's Office of Hazardous Materials Safety, Hazardous Materials Information Center (202-366-4488) who suggested the submission of a written request for interpretation via email or letter per 49 CFR 105.20.

2. Discussion. SP 238, paragraph c., provides conditions and exceptions when

LEGEND FOR FIGURE 5-1.

	Name	Ref. Desig.
1.	Handle assembly	1A1
2.	Thumbscrew	---
3.	O-ring	---
4.	Nut, self-locking	---
5.	Screw	---
6.	Outer moderator	1MP1
7.	Rubber bumper	1MP7
8.	Screw	---
9.	Attenuator, rear	1MP3
10.	Attenuator, sleeve	1MP4
11.	Inner moderator	1MP6
12.	Attenuator, front	1MP2
13.	Proportional counter and connector	1V1
14.	Plug, moderator	1MP5
15.	Cable assembly	1A2
16.	Gasket, probe	1MP8
17.	Cap, probe	1MP9
18.	Washer	---
19.	Screw	---

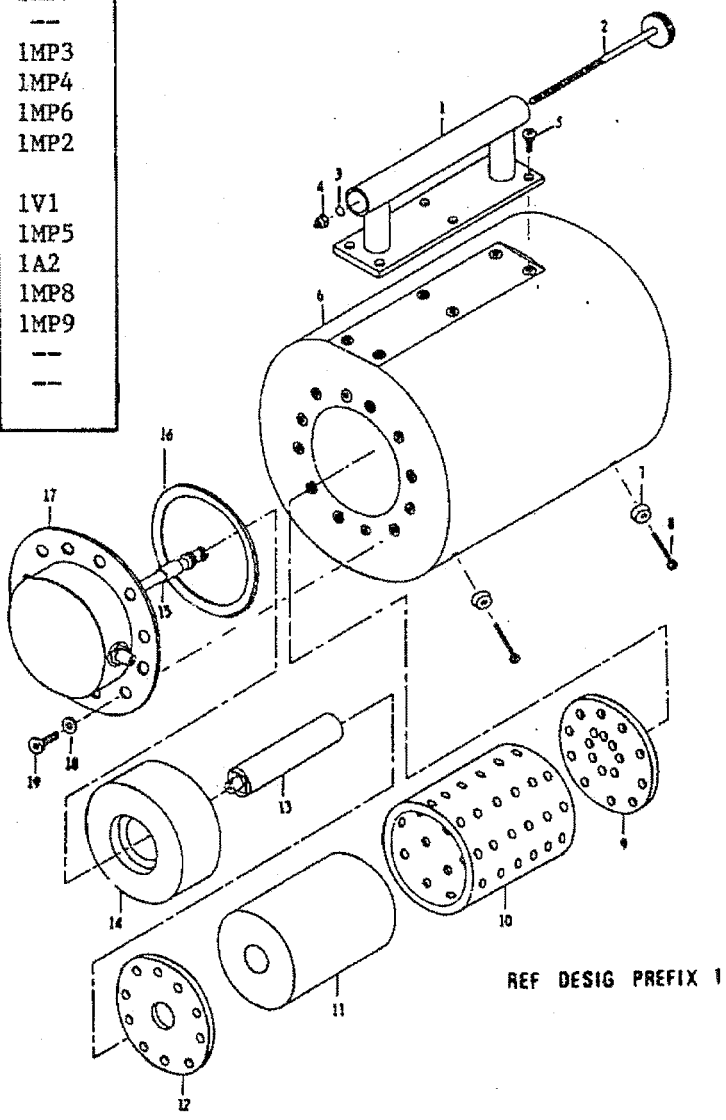


Figure 5-1. Radiac Probe, Exploded View