



U.S. Department
of Transportation

**Research and
Special Programs
Administration**

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

FEB 2 2000

Ref. No. 99-0136

Mr. Don Nelson
Quality Assurance Manager
RNG Pro-Tech, Inc.
1026 Western Drive
P.O. Box 830
Crossfield, Alberta
TOM OSO Canada

Dear Mr. Nelson:

This is in response to your letter dated May 27, 1999, concerning the factor of safety (FS) in the design of DOT specification cargo tank motor vehicles under the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180). Specifically, you inquire whether the FS reduction from 4:1 to 3.5:1, as authorized in the 1999 Addenda of the 1998 ASME Code, is permissible under the HMR.

The answer is no. The structural integrity requirements provided in § 178.337-3 allow for the maximum stress value prescribed in Section VIII of the ASME Code or 25 percent of the tensile strength of the material used. The HMR currently incorporate by reference the 1992 edition of the ASME Code with addenda through December 31, 1993, which mandates an FS of 4:1.

In a recently published notice of proposed rulemaking (Docket No. HM-218; 64 FR 53165; September 30, 1999), we proposed to incorporate by reference the 1998 edition of the ASME Code for Section VIII, Division I, without the 1999 addenda. This proposal will maintain the currently authorized FS of 4:1. Any deviation from this prescribed FS for a DOT specification cargo tank motor vehicle must be approved under the terms of a DOT exemption.

I trust this satisfies your inquiry. Please contact us if we can be of further assistance.

Sincerely,

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



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May 27, 1999

99-0136

Mr. Tom Allan
Deputy Director
Office of Hazardous Materials
U.S. Department of Transportation

Phone: (202) 366-8553, Fax: (202) 366-3753

Re: **Vessels designed with 3.5 safety factor for transports**

Dear Mr. Allan:

I have just had a phone conversation with Mr. Ron Kirkpatrick of the Technology Division, Department of Transportation. Mr. Kirkpatrick felt that you are the best person to talk to regarding to my concerns as shown below.

Based on the recent ASME Code Cases 2278, 2284 and 2290, the pressure vessels are allowed to be designed with a lower design safety factor of 3.5, versus the current factor of 4.0.

RNG Pro-Tech Inc. is a manufacturer of pressure vessels and transports for hazardous materials such as LPG and NH₃. We would like to know whether vessels designed per the Code Cases with a design safety factor of 3.5 are authorized for our transports per the Cargo Tank Hazardous Material Regulations MC331, MC338, MC406, MC407, MC412 and Specifications 51, 56 and 57.

Obviously, the use of a lower safety factor is very significant to our company and all the companies in this field. It will be greatly appreciated if we may have your response regarding to this at your earliest convenience.

Looking forward to hearing from you.

Truly yours,



Liming Dai, Ph.D.
Plant Manager