

September 26, 1980

Mr. J. K. Campbell, P.E.  
Venart Industries Limited  
215 - 52nd Street  
Delta, British Columbia, Canada V4M 2Y3

Dear Mr. Campbell:

This refers to your letter dated August 11, 1980, in which you requested an interpretation of 49 CFR Part 192, Subpart C--Part Design, as it relates to compressor station main piping.

Question: You ask whether strict compliance with 49 CFR is mandatory or not.

Response: All pipelines subject to the Natural Gas Pipeline Safety Act (NGPSA) must comply with the prescribed requirements of 49 CFR Part 192, "Transportation of Natural and Other Gas by Pipeline," (copy enclosed). These requirements are considered as minimums that must be met. Under section 11(a) of the NGPSA, operators of pipelines found not in compliance with 49 CFR Part 192 are subject to a civil penalty not to exceed \$1,000 for each violation for each day the violation persists up to a maximum of \$200,000 for any related series of violations.

Question: You ask if we agree with your interpretation of the maximum stress levels allowable under 49 CFR Part 192.

Response: No. It appears that you have not considered the performance requirements contained in §192.103, General, which states: "Pipe must be designed with sufficient wall thickness, or must be installed with adequate protection, to withstand anticipated external pressures and loads that will be imposed on the pipe after installation." The purpose of this performance requirements is to take care of those stresses which are not relieved after construction and proof testing that become additive to operating stresses. Some of the stresses which are of concern specifically with compressor station design are those caused during blowdowns and repressurization of discharge lines, by effects of soil settlement, by major temperature changes, by mechanical and sonic vibration, and pulsation.

We wish to emphasize that the design factor (F) contained in §192.111 is required to be used only in determining the pressure containment abilities of the pipe. However, a person responsible for designing a pipeline, including compressor station piping, must use appropriate design factors and/or provide protection against the accumulative effects of all relevant stresses. Part 192 does not specify the design factors to be used in considering stresses other than those produced by internal pressure although the design factor (F) contained in §192.111 would be considered appropriate.

Thank you for your very helpful analysis and discussion of MOHR circle diagrams explaining the complexity involved in analyzing combined stresses in compressor station piping.

Sincerely,

Melvin A. Judah  
Acting Associate Director for  
Pipeline Safety Regulation  
Materials Transportation Bureau

Enclosure