

December 15, 1976

Chief, Southern Region, MTP-50-SO

Acting Director, Office of Pipeline  
Safety Operations

Interpretation of 192.161(d)(1)

Your memorandum of August 20, 1976, asks, "Are pipe stacks installed for the purpose of controlling relieved gas, under overpressure conditions, subject to rule 192.161(d)(1)?"

Section 192.161(d)(1) requires:

(d) Each support on an exposed pipeline operated at a stress level of 50 percent or more of SMYS must comply with the following:

(1) A structural support must not be welded directly to the pipe.

Section 192.3 defines the word "pipeline" as "all parts of those physical facilities through which gas moves in transportation including pipe, valves, and other appurtenances attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders and fabricated assemblies."

These pipe stacks do not contain gas in transportation but are only used to safely vent gas to atmosphere that has been removed from the transportation system by the operation of an emergency relief valve. Thus, the vent pipe for a relief valve is not subject to these restrictions.

When designing these pipe stacks, consideration must be given to the extreme forces and vibrations that often result from the discharge of a high pressure jet of gas. Stresses developed as a result of this jet can cause failure of the stacks and may also be transferred to the relief valves and other pipeline facilities with a resulting possibility of failure. Considering the usual industry practice of designing discharge stacks for relief valves using pipe of equal or larger diameter than the relief valve size and the fact that relief valves in a full open condition are operating at critical flow rates, it is doubtful that stress level due to internal gas pressure would reach 50 percent of SMYS. On a high pressure relief, the combined forces of valve vibration, gas stream thrust, and bending moments are very severe and must be considered in the design of the relief stack to prevent the failure of such piping.

Cesar DeLeon, MTP-1

MEMORANDUM

DATE: 8/20/76

TO: Acting Director, MTP-1  
Office of Pipeline Safety Operations

FROM: Chief, Southern Region

SUBJ: Interpretation of 192.161(d)(1)

Are pipe stacks installed for the purpose of controlling relieved gas, under overpressure conditions, subject to rule 192.161(d)(1)?

During normal operating conditions, these stacks would be under atmospheric pressure.

If the answer is affirmative, I would also like a technical opinion as to whether, under relieving conditions, it is reasonable to expect stack pressures similar to line pressures when the stacks are essentially open ended.

James C. Thomas