Sep 02 1976

Mr. H. R. Garabrant
Gas Utilities Safety Engineer
Utilities Division
Arizona Corporation Commission
2222 West Encanto Blvd., Suite 210
Phoenix, Arizona 85009

Dear Mr. Garabrant:

This responds to your letter dated June 23, 1976, which discusses overpressure protection of petroleum gas systems, stating that the pressure in the storage tank exceeds 60 psig during summer, and suggests a technical review and "rule changes to eliminate the use of relief valves on piped LP gas systems except when used as a second overpressure device downstream of a monitor and working regulator combination and as required on LP storage tanks."

The significance of your comment that LP tank pressure will exceed the specific value of 60 psig is not readily apparent from the information presented. Further discussion, therefore, seems appropriate solely for clarification and to avoid any possibility of misinterpretation. Title 49 CFR Section 192.195 requires that pressure limiting or relieving devices must be provided so that the maximum allowable operating pressure (MAOP) of a pipeline will not be exceeded, and that a distribution system which is supplied from a source having a higher pressure than the MAOP of the system must have properly designed pressure regulation devices which can be activated in the event of some failure and will prevent overpressuring.

The criteria for determining whether a requirement exists for a monitor, relief, automatic shut off, or other arrangement for overpressure protection, thereby, is the MAOP of the pipeline and not necessarily a system pressure in excess of 60 psig.

A maximum actual operating pressure of 60 psig for a distribution system is applicable as criteria only in connection with service regulator requirements. As set forth in 49 CFR Section 192.197, pressure limiting or relief devices are required in addition to the service regulator if system pressure exceeds 60 psig, but for distribution pressures below 60 psig, no pressure limiting device is required other than a service regulator having certain characteristics.

On the basis of the described criteria, it must be assumed that 60 psig is significant either because the MAOP of the referenced systems is 60 psig or that the services are not equipped with pressure limiting or relief devices.

Regarding your suggestion that Federal regulations be changed with respect to the use of relief valves on petroleum gas systems, a review by this Office has concluded that the initiation of rule making procedures for such modification is unwarranted for the following reasons:

1. Current Federal regulations, prescribing requirements for the characteristics, application and installations of pressure relief devices, provide adequate and appropriate levels of safety. Federal Standard, 49 CFR Section 192.11, incorporates NFPA Standards No. 58 and 59 by reference but significantly prescribes that Part 192 shall prevail in the event of conflict. Paragraph (b)(3) of Section 192.11 particularly provides that discharge vents from relief valves must be located so as to prevent any accumulation of gas at or below ground, and 49 CFR Section 192.199(e), reinforcing this requirement, specifies that a pressure relief device must have discharge stacks, vents, or outlet ports located where gas can be discharged into the atmosphere without undue hazard.

   Numerous other requirements of Part 192 and NFPA 58 provide extensive coverage of the design, application, and installation of relief devices, and since relief devices may not be installed where discharged gas will accumulate on the ground or cause undue hazard, the expressed central concern is null.

2. Pressure relieving devices in most instances are the only practicable means of providing overpressure protection for vaporizers, containers, and hydrostatic relief between valves. NFPA 58 Section 314 requires that regulators used to control distribution or utilization pressure be as close to the container as practicable. Since other required pressure relieving devices would be present, all in the same general area, little, if any, benefit would derive from the exclusion of the one relief device on the distribution system.

3. In certain circumstances, such as a small closed distribution system, a pressure relief device may be the best means of assuring safety from overpressure.

4. Constraints imposed by the Office of Pipeline Safety Operations (OPSO) on an operator's design flexibility are inappropriate where commensurate safety benefits are not evident.

We hope that this explains OPSO's position to your satisfaction and provides information which may be of help in determining whether an installation is in compliance with Federal regulations.

Sincerely,

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Cesar DeLeon
Acting Director
Office of Pipeline
Safety Operations

June 23, 1976

Mr. Cesar DeLeon
Office of Pipeline Safety Operations
Department of Transportation
Washington, D.C. 20590

Dear Cesar:

In a piped gas propane system during the summer time, the pressure on the LP storage tank is over 60 pounds. I have cited LP companies in the past for the lack of over-pressure protection of their distribution systems when fed with a single regulator set at 15 pounds. As a result, most have installed monitor regulators. However, one company is planning on a relief valve. As I read the rules, there are three choices (condensed to simplify) that are legal to provide protection:

(1) A monitor regulator

(2) An automatic shutoff valve

(3) A relief valve

For a situation such as this a shutoff valve (2 above) is obviously undesirable as you lose the gas pressure in the system; and the system relight procedure must be implemented which is quite costly and disturbing to customers.

I cannot condone the use of a relief (apparently legal) as it spills LP gas which is heavier than air, thus causing a hazard due to the ground hugging characteristics. In this case the relief valve discharge is in a somewhat remote area; but, for example, one can never be sure where kids will be.

To protect the system with monitors would be better, but with the vaporizer and piping arrangement at least three monitors would be required. Therefore, the operator is installing a relief valve on the inlet to the system.

I am suggesting that your technical section review the situation and make rule changes to eliminate the use of relief valves on

piped LP gas systems except when used as a second over-pressure device downstream of a monitor and working regulator combination and as required on LP storage tanks.

Sincerely,

ARIZONA CORPORATION COMMISSION

H.R. Garabrant, P.E.
Gas Utilities Safety Engineer
Utilities Division