PERIODIC INSPECTIONS OF DISTRICT REGULATOR & RELIEF VALVES
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Inspection of District Regulator Stations and over pressure protection devices are essential in complying with Federal and State Regulations.

In order to understand the functions of a District Regulator, we must start with the City Gate Station. Some pipeline people call City Gates, Town Border Stations.

City Gate Stations are where distribution companies purchase natural gas from the pipeline. The gas is measured and odorized here. Measuring devices are usually installed by pipeline companies. Odorizers are installed by distribution companies.

Pipeline companies bring the gas from the well head and it goes into a gathering system. The gathering system is where a pipeline transports gas from a current production facility to a transmission line or main.

From the gathering system, it goes to a compressor or dehydration regulating station. At this point, the pressure is lower or control to the MAOP of the pipeline system. The gas leaves the compressor station with xx amount of gas pressure. This gas goes to the City Gate Station, where the pipeline lowers their pressure to operating pressure of the line (MAOP) inside the City Gate Station.

The distribution company then takes the gas through a City Gate Station where the pressure is lowered again to (MAOP) of the distribution line. The natural gas leaves the City Gate where along the line, there are district regulator station installed. District regulator station cut the pressure down so the gas can go to customer homes.

Distribution system is usually 20# PSIG to 55# PSIG. The relief valves are set at 60# PSIG.

Over pressure protection devices are devices that protect the down stream pipeline in the event of regulator failure. These devices include the relief valve, the monitor, and the positive pressure shut off. Regulator and over protection devices must be inspected in accordance to federal and state law and company policy.

The annual inspection verifies that all present conditions do not exceed design condition. These stations are reviewed yearly to see if any changes have occurred. If the maximum operating pressure of distribution system exceeds 60# PSIG, one of the following methods must be used to regulate and limit, to the maximum safe valve and automatic shut off, should the pressure exceed 60# PSIG.

RAILROAD COMMISSION OF TEXAS-PIPELINE SAFETY RULES

192.195 Protection Against Accidental Over-pressuring

A. General Requirement

Each pipeline that is connected to a gas source so that the maximum allowable operating pressure could be exceeded as a result of pressure control failure or of some other type of failure, must have pressure limiting devices.

B. Additional Requirements for Distribution System

Each distribution system that is supplied from a source of gas that is at a higher pressure than the maximum allowable operating pressure for the system must:

1. Have pressure regulating devices capable of meeting the pressure, load, and other service conditions that will be experienced in normal operation of the system, and that could be activated in the event of failure of some portion of the system and

2. Be designed so as to prevent accidental over-pressuring.

192.199 Requirements for Design of Pressure Relief & Limiting Devices

Except for repute disc, each pressure relief or pressure limiting device must

a. Be constructed of material such that the operation of a device will not be impaired by corrosion.

b. Have valves and valve seats that are designed not to stick in a position that will make the device inoperative.

c. Be designed and installed so that it can be readily operated to determine if the valve is free, can be tested to determine the pressure at which it will operate, and can be tested for leakage when in the closed position.

d. Have support made of non-combustible material.

e. Have discharged stacks, vents, or outlet ports designed to prevent accumulation of water, ice, or snow, located where gas can be discharged into atmosphere without undue hazard.
f. Be designed and installed so that the size of the opening, pipe, and fitting located between the system to be protected and the pressure relieving device, and the size of the vent line, are adequate to prevent hammering of the valve and to prevent impairment of relief capacity.

g. Where installed at a district regulator station to protect a pipeline system from over-pressuring, be designed and installed to prevent any single incident such as an explosion in a vault or damage by a vehicle from affecting the operation of both the over-pressure protective device and the district regulator; and

h. Except for a valve that will isolate the system under protection from its source of pressure, be designed to prevent unauthorized operation of any stop valve that will make the pressure relief valve or pressure limiting device inoperative.

In closing, natural gas is a wonderful power source that must be controlled in a safe manner to receive the full potential benefits. This is done by using regulators and relief valves as stated above.