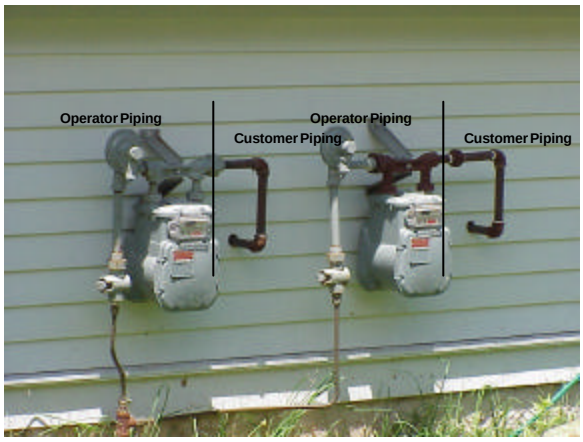
CHAPTER V
PROPER LOCATION AND DESIGN OF TANKS REGULATORS AND METER SETS

If the LP gas piping system is jurisdictional to the federal pipeline safety regulations (49 CFR Part 192), jurisdiction ends at the outlet of the customer meter or, if there is no customer meter, where the customer piping begins. See Part 192.1(b)(4)(i) and (ii) for a description of jurisdictional LP gas systems.



Before locating tanks, regulators and meters, three points must be considered:

- Accessibility
- Protection of tanks, piping and meters
- Protection of people from release of gas at the meter set

TANKS, REGULATORS AND METERS: LOCATION

Install tanks in accordance with NFPA 58, using table 3-2.2.2 to compute the proper distance from buildings and property where building can occur.

Install service regulators and customer meters in a readily accessible location, yet, where they will be protected from physical damage.

If a service regulator is used, it must be installed upstream of the customer meter. The regulator vent must be pointed downward to keep rain from entering the shell and making the regulator inoperable.

Install meter sets outside wherever possible. With a little extra planning and effort, an outside meter set will reduce the possibility of problems in the future. Service regulators installed inside a building must be placed as close as practical to the point where the service line enters the building. The operator must vent the regulator to the outside. Meters installed inside a building must be located in a ventilated area. A meter must be at least 3 feet from any source of ignition or heat that might damage the meter. However, the service regulator vent

discharge must be five feet from any exterior ignition source and 3 feet from any building opening as required by NFPA 58.

NOTE: Be familiar with the location of the pilot light on the water heater and its proximity to the inside meter set.

TANKS, REGULATORS AND METERS: PROTECTION FROM DAMAGE

Tanks and meter sets must be located where they will be protected from physical damage from outside sources. Also of concern is damage from corrosion. Whenever a vehicle could damage tanks or a meter set, a suitable barricade must be installed.

Always ensure that the meter sets are properly supported both upstream and downstream of the meter set.

A good coating of light colored metallic paint on all aboveground piping subject to corrosion provides sufficient protection to retard corrosion. The point where the riser comes out of the ground is susceptible to corrosion on metallic risers and should be inspected periodically.

The outside terminal of each service regulator vent and relief must be:

- rain, snow, ice and insect resistant.
- located where gas from the vent can escape freely into the atmosphere without endangering persons or is not likely to enter a building through an opening such as a door, window or louver in a roof overhang. The point of venting must be 3 feet or more from such building openings, 5 feet from ignition sources.
- protected from water damage in areas subject to flooding. The vent location must be designed to remain above any anticipated flood level.

Customer meter sets must be installed to minimize stresses on connecting piping. Never allow the meter set to be used as an anchor for pet lines or other outside force inducing conditions.

Each pit or vault housing service regulators and customer meters in a road, driveway or parking area must be able to support the vehicular traffic. If there is a question on the design of the pit or vault, it is best to contact a competent construction engineering consultant.

CUSTOMER METER INSTALLATIONS: OPERATING PRESSURE

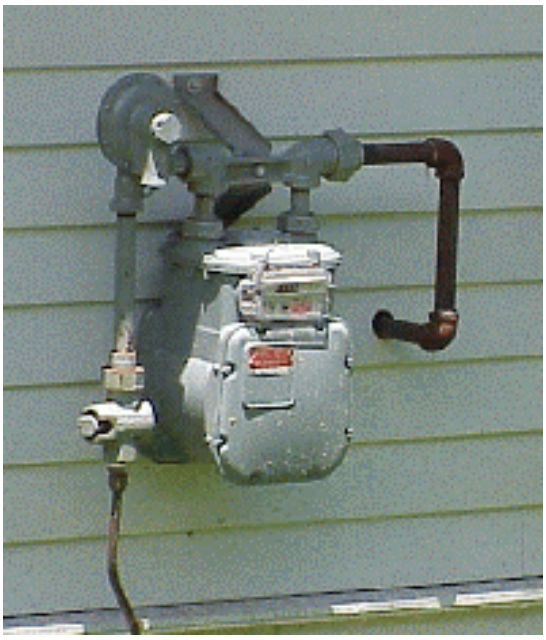
Die cast or iron case vapor meters can be used at pressures equal to or less than the design pressure, but not to exceed 67% of the manufacturer's shell test pressure. The design pressure must be marked on the meter housing.

Tin or brass type vapor meters must not have operating pressures exceeding 1 psig.

Meters installed after November 12, 1970, must be tested to a minimum of 10 psig.

SERVICE LINES: LOCATION OF VALVES

- Relation to regulator or meter. Each service line valve must be installed upstream of the regulator. If there is no regulator, install the valve upstream of the meter.



- Outside valves. Each service line must have a shutoff valve in a readily accessible location outside the building.
- Underground valves. Each underground service line valve must be located in a covered durable curb box or standpipe that allows easy operation of the valve. The curb box or standpipe must not put stress on the service line.

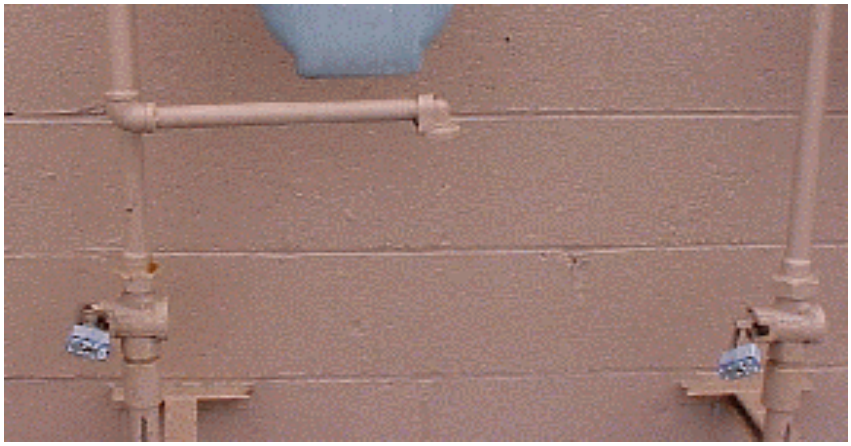
NOTE: It is recommended that service regulators and customer meters always be installed outside.

SERVICE LINES: UNDER A BUILDING

Service lines should not be installed under buildings or manufactured homes. If a service line is installed under a building, it must be encased in a gas tight conduit. The conduit must terminate outside aboveground where the gas venting would not be a hazard. The vent must have a fitting to prevent rain, snow, ice or insects from hampering operation.

COMMON PROBLEMS AT RISERS, SERVICE REGULATORS AND CUSTOMER METERS

- Regulator vandalism or damage. This can be a very hazardous problem. If the regulator fails to function for any reason, high pressure gas may enter the house and the appliance. Tall flames may result at the appliance burner and cause a fire. Also, the escape of gas within the building can cause an explosion.
- Obstructed vents. The vent on the regulator should be free of any obstructions. A wire screen installed at the vent should prevent the accumulation of dirt, the intentional insertion of foreign objects or the build up of insect nests (e.g. wasp nests). If the screen is removed, a new one must be inserted. A non-functioning vent could cause regulator failure and present a serious fire or explosion hazard. The vent should be away from windows and air intakes. Vents should also be protected from weather elements.
- Tenants move out. The valve on the meter riser should be equipped with a locking device to be controlled by authorized personnel only. When tenants move out, the gas must be shut off and the valve locked until new tenants move in. The locking device on the shutoff valve also allows repair of appliances without the gas being accidentally turned on.



- Riser misuse. The tenants or customers should not be permitted to use the riser and its components for other purposes. Never use the riser as an anchor for laundry lines, plant supports or bicycle racks.

- Corrosion. Check for corrosion on the service riser at ground level. Check for excessive rusting of all aboveground metallic components. Refer to Chapter VIII for more information on the prevention of corrosion.
- Flexible lines. Flexible lines should be UL approved and must be installed aboveground. Flexible lines can become kinked from poor treatment.