Alliant Energy - Gas Service Manual
Chapter 7 – Customer Gas Piping and Equipment

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A. CUSTOMER PROVIDED GAS PIPING AND EQUIPMENT

1. The Customer shall furnish, install and maintain all building gas piping and gas utilization equipment beyond the meter outlet at customer expense.

2. Such gas piping and equipment shall be installed, securely supported with adequate bracketing, located where it will be protected from physical damage and maintained at all times in accordance with all applicable codes and regulations and by the Company's Gas Service Manual. Refer to Chapter 1 "General Information" for applicable codes.

3. Copper tubing shall comply with standard Type K or Type L of ASTM B 88, *Specification for Seamless Copper Water Tube,* or ASTM B 280, *Specification for Seamless Copper Tube for Air Conditioning and Refrigeration Field Service.*

4. The Company shall be supplied the volumetric flow rate of gas to be provided (in cubic feet per hour or Btu per hour), calculated using the manufacturers' input ratings of the appliances served. This flow rate shall be based on all appliances operating at full capacity simultaneously.

5. Where the input rating for an appliance is not indicated, the gas supplier, appliance manufacturer, or a qualified agency should be contacted. The Appendix to this manual can also be consulted for assistance in estimating the volumetric flow rate of gas to be supplied.

6. Any meter set changes due to improper volumetric flow rate information provided to the Company will be done at the customer's expense.

7. Customer gas piping shall be of adequate size for any gas load that may be reasonably expected to develop and shall be pressure tested and gas-tight (NFPA 54, Sections 8.1 and 5.5.1).

8. Any meter set changes required due to improper sizing of customer piping or changes in requested delivery pressure will be done at the customer's expense.

9. For delivery pressures of 5 psig or greater, all customer piping inside buildings must be welded steel pipe. This requirement does not apply when the piping located inside a building or separate areas of a building is used exclusively for one of the following:
    - Industrial processing or heating
    - Research
    - Warehousing
    - Boiler or mechanical rooms
    - Temporary installation for buildings under construction

B. COMPANY DISCONNECTION OR REFUSAL OF SERVICE

1. The Company assumes no responsibility for the installation, maintenance or operation of the customer gas piping and equipment beyond the meter outlet.

2. The Company reserves the right to discontinue gas service at any time after reasonable notice, when practicable, if such gas piping or equipment is in an unsafe condition in the opinion of the Company (NFPA 54, Sections 5.4 and 5.6).

3. The Company may refuse to provide service if any applicable Federal, State and local codes are not met. Refer to Chapter 1 "General Information" for applicable codes.

4. Company may refuse service if underground piping through a foundation wall is not encased in a protective sleeve per NFPA 54, Section 7.1.5 or if gas piping is installed underground beneath buildings without proper encasement as required in NFPA 54, Section 7.1.6.

5. Company may refuse service if any customer piping downstream of a closed shut-off valve is not capped, plugged or connected to an appliance (NFPA 54, Section 7.7.2).

6. The Company may refuse or disconnect service to any installation which does not comply with this manual or may be dangerous to life or property.

C. CORROSION PROTECTION OF CUSTOMER PIPING SYSTEMS

1. The Company's gas piping system must be electrically isolated from all customer piping, wiring or grounding systems. Refer to Chapter 3 "Company Facilities on Customer Premises".

2. As required by all federal, state and local codes and NFPA 54, any customer gas piping that is subject to corrosion must be protected by the customer. All above ground steel pipe must be painted to protect against atmospheric corrosion (NFPA 54, Section 5.6.6).

3. All piping passing through an outside wall shall also be protected against corrosion by coating or wrapping with an inert material approved for such applications (NFPA 54, Section 7.2.1). Galvanized coating or paint only is not considered sufficient to protect piping passing through outside walls or foundations. Wrapped and/or coated black pipe shall be used for all outside wall penetrations.

4. Underground piping, where installed below grade through the foundation or basement wall of the building, shall be encased in a protective sleeve. The annular space between the gas piping and the sleeve shall be sealed at the wall to prevent the entry of gas, water, insects, or rodents (NFPA 54, Section 7.1.5).

5. All underground metallic piping must be coated and cathodically protected (NFPA 54, Section 7.1.3).

D. GROUNDING OF CUSTOMER PIPING SYSTEMS

1. Each above-ground portion of a gas piping system, other than corrugated stainless steel tubing (CSST), that is upstream from the equipment shut-off valve and is likely to become energized shall be electrically continuous and bonded to an effective ground-fault current path in accordance with NFPA 54, Section 7.13.

2. Gas piping, other than CSST, shall be considered to be bonded when it is connected to appliances that are connected to the appliance grounding conductor of the circuit supplying that appliance.

3. Gas piping or any part of the meter set shall not be used as a grounding conductor or electrode.

E. CSST GAS PIPING

1. CSST gas piping systems or gas piping systems that contain one or more segments of CSST shall be bonded to the electrical service grounding system.

2. The bonding jumper shall connect to a metallic pipe or fitting between the point of delivery and the first downstream CSST fitting. The bonding jumper shall not be smaller than 6 American Wire Gauge (AWG) copper wire or equivalent, as defined in NFPA 54, Section 7.13.

3. Any variance to CSST bonding must be approved by the applicable State building codes.

F. TRANSITION TO CSST OR PIPE MATERIAL OTHER THAN STEEL

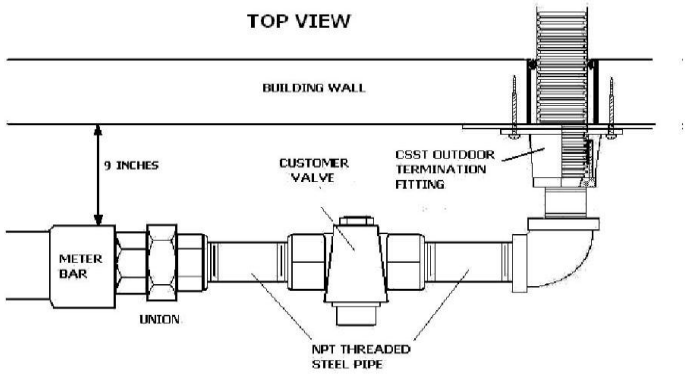
1. When copper, CSST, or piping material other than steel is used for the customer piping, steel pipe shall be used from the meter set to the point of transition. The transition shall be made inside the building using fittings approved in NFPA 54, Section 5.6.

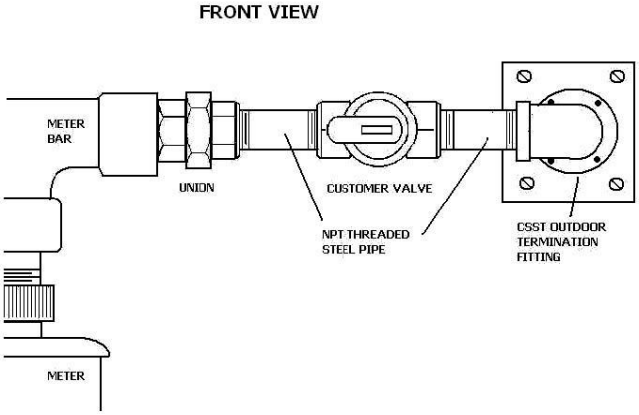
2. In the rare event building design elements or construction features prevent the transition from occurring inside the building, the transition may be made on the external side of the building as close as possible to the point of entrance to the building and be rigidly supported or securely fastened to the building wall.

3. When CSST is used inside a building, external transitions to company owned steel piping must be made with a manufacturer approved flange mount termination plate.

4. If CSST piping is to be connected to customer owned steel piping to serve outdoor equipment, a manufacturer approved fitting must be used at the point of transition.

5. The two figures that follow below depict the configuration of an outdoor transition to indoor CSST piping using a flange mounted termination plate.





G. CONVERTING FROM ANOTHER FUEL

1. All customers converting from another fuel and wishing to use their existing piping system for natural gas, must have their piping system inspected by a plumber or heating contractor.

2. The Company must receive a Gas Piping Statement signed by the inspecting party stating that the customer's installation is in compliance with applicable gas codes and the Company's Gas Service Manual prior to the meter being installed, connected and pressurized.

H. AUTOMATED METER READING REQUIREMENTS

1. Gas transportation and interruptible customers may be required to have automated meter reading equipment installed as a part of their gas meter installation (refer to pages 18 and 19 of Chapter 8). Contact the Company for requirements.

2. Customers may request gas consumption pulses from the Company's gas metering equipment. The customer will be required to sign an Agreement for Demand Pulse Equipment and comply with the requirements on pages 18 and 19 of Chapter 8.

I. MULTIPLE METER INSTALLATIONS

1. For multiple meter installations, all meters served by one service pipe shall be installed at the same location.

2. Gas piping at multiple meter installations shall be plainly marked by a metal tag, or other permanent means attached by the piping installer, designating the building or the part of the building being supplied by each meter (NFPA 54, Section 5.7.5).

3. For multiple meter installation specifications refer to page 20 of Chapter 8.

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