SPECIFICATION: G-704-1

TITLE: GAS METER AND REGULATOR INSTALLATION REQUIREMENTS

VOLUME: 3 and Gas Yellow Book

1) This specification has been revised to incorporate comments made by GTI’s technical experts and Con Edison’s subject matter experts

2) Section 2.0 - Added Part 192 applicable code sections

3) Section 3.1 - Clarified “readily accessible”. Added (A) and (B) addressing protection from atmospheric corrosion and vehicular damage.

4) Section 3.6 - Added reference to Spec G-11813.

5) Section 4.2 (D) - Added section covering vent line protectors (VLPs).

6) Section 4.5 (A) - Added section covering details of pipe post installation. Contents previously located in Section 4.6. Renumbered subsequent sections.

7) Section 5.1 - Added title of spec G-695.

8) Section 5.2 - Added material requirements for close nipples.

9) Section 5.3 - Added instruction covering field discovery of leaded connections

10) Section 5.5 - Added new section requiring field installers to check the MAOP on the manufacturer’s data plate against the customer’s MAOP.

11) Section 6.1 - Clarified MAOP requirement.

12) Section 6.2 - Revised to add manufacturer’s test requirement for new diaphragm meters. Added reference to applicable ANSI Standards.
13) Section 6.3 - Added new section covering manufacturer’s test requirement for new rotary and turbine meters. Renumbered subsequent sections.

14) Section 6.4 - Revised pressure limitation of tinned case meters.

15) Section 6.5 - Added new section covering regulators with internal reliefs.

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1.0 SCOPE

This specification outlines gas meter and regulator installation requirements.

2.0 LEGAL REQUIREMENTS

In compliance with the following:
A) NYCRR Title 16 Part 255 Sections 255.353, 255.355, 255.357, and 255.359
B) 49 CFR Part 192, Sections 192.353, 192.355, 192.357, and 192.359
C) New York City Fuel Gas Code, Appendix E
D) New York State Gas Code, Sections 401.6 and 416

3.0 GAS METER AND REGULATOR LOCATIONS

3.1 Each meter and service regulator must be installed in a readily accessible (accessible without the use of special equipment, ladders or step stools) location and be protected from atmospheric corrosion and other damage, including any vehicular damage that may be anticipated.

A) For protection from Atmospheric Corrosion, refer to G-8100, “Service Line Installation”, for cleaning and coating requirements for aboveground piping.

B) Vehicular damage prevention is covered in Section 4.0 of this specification.

3.2 Each service regulator on new and replacement service lines, except for replacements by insertion, must be installed outside of the building, unless it is impractical or unsafe.

A) Where the service regulator must be installed within the building, it is to be located as near as practical to the point of service line entrance.

B) For service line replacements where the service regulator must remain inside, the regulator shall be tested and inspected in accordance with G-11838, “High Pressure Gas Service Line Inspection”.
3.0 GAS METER AND REGULATOR LOCATIONS (Continued)

3.3 The upstream regulator in a series must be located outside the building, unless it is located in a separate metering or regulating building.

3.4 Each meter installed within a building must be located in a ventilated place and not less than three feet from any source of ignition or any source of heat which might damage the meter.

3.5 The meter shall not be located under combustible stairways.

3.6 When installing a new gas service for which gas pressure regulating and associated gas cleaning equipment and accessories is required for a building of public assembly (G-11813, “Identification, Inspection, and Documentation of Buildings of Public Assembly (BOPA”), or apartment building, or building within an apartment, industrial or commercial complex, each with a capacity for normal occupancy of 75 or more persons, the following requirements shall be met:

A) When outside installation is impracticable, regulations applicable to indoor installations with high pressure services shall pertain.

B) The associated gas cleaning equipment and accessories may be located in the same area as the metering and/or pressure regulation equipment.

C) Where practicable, the regulating and gas cleaning equipment shall be installed within a separate room that is designed for two-hour fire resistance, and is effectively sealed off from the remaining space in the building.

D) In the case of indoor installations, special effort shall be made to prevent and indicate tampering by unauthorized persons.

E) In all the above installations and on doors or accesses leading to all the above installations, a conspicuous notice shall be posted indicating the instructions for actions to be taken and the telephone number of the proper person to be called in the event a gas odor is detected.
3.0 **GAS METER AND REGULATOR LOCATIONS** (Continued)

3.7 When located inside the building, meters shall be located as near as practicable to the point of entrance of the service and, where possible, the meters shall be located in the cellar or basement unless otherwise permitted by the NYC DOB Commissioner or Authority Having Jurisdiction. The meter location shall be clean, dry, and free of refuse, steam or chemical fumes. Meters shall be adequately protected against extreme cold or heat and shall be readily accessible for reading and inspection.

3.8 The area in which the meter is located shall be properly ventilated. Notwithstanding the foregoing, outside meter installations shall be permitted in areas where the utility company certifies that dry gas is being distributed. Con Edison’s natural gas is considered to be dry gas.

3.9 In a multiple dwelling, no gas meter, other than the replacement of an existing meter, shall be located in any boiler room or other room or space containing a heating boiler, in any stair hall, nor in any public hall above the cellar or above the lowest story if there is no cellar.

3.10 In any multiple dwelling where there is an existing gas meter located in any boiler room or other room or space containing a heating boiler, one additional gas meter may be installed in such room or space, provided such additional gas meter is installed adjacent to the existing gas meter and is used in conjunction with the supply of gas for a gas-fired heating boiler or a gas-fired water heater used as a central source of supply of heat or hot water for the tenants residing in such multiple dwelling. Such additional gas meter may be installed only upon the condition that space heaters or hot water appliances in the dwelling units are eliminated.

3.11 Gas meters shall not be installed:

A) within three feet of sources of ignition including burners, electric panel boxes or machinery. **NOTE**: Electric meters are not normally considered a source of ignition.

B) in a corrosive atmosphere;

C) where they may be subjected to vehicular damage unless approved protection from damage is installed in accordance with Section 4.0;
3.0 **GAS METER AND REGULATOR LOCATIONS** (Continued)

D) in areas that are not readily accessible for reading, replacement or necessary maintenance;

E) in public passages, halls, bedrooms, over doors;

F) other areas deemed inconvenient or hazardous by the company.

3.12 Meters are installed so that the meter inlet is on the left when reading the meter. The Customer shall install the fuel line on the right side of the meter.

4.0 **PROTECTION FROM DAMAGE**

4.1 If the customer's equipment or supplemental gas supply might create either a vacuum or a back pressure, a device must be installed to protect the Con Edison distribution system. Commingling of a customer's supplemental gas supply with utility supplied gas is permissible provided the customer verifies that the supplemental gas is interchangeable with the gas supplied by the utility.

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

A) be rain and insect resistant;

B) be located at a place where gas from the vent can escape freely into the atmosphere and away from any opening into the building (a minimum of 18 inches);

C) be protected from damage caused by submergence in areas where flooding or ice accumulation may occur; and

D) vent line protectors (VLP) shall be installed per requirements of G-699 at locations specified in G-8217.

4.3 Each pit or vault that houses a customer meter or regulator at a place where vehicular traffic is anticipated must be able to support that traffic.
4.0 **PROTECTION FROM DAMAGE** (Continued)

4.4 Meter and regulator piping which may be subjected to accidental vehicular impact shall be suitably protected. Where piping may be subject to vehicular damage, bumpers shall be placed by the customer around regulator and metering equipment. Bumpers shall be installed in accordance with drawing 502163.

★ 4.5 This protection shall consist of a minimum of two concrete filled, four inch diameter or larger pipe posts or other suitable protection approved by the company.

A) The pipe posts shall be buried at least three feet, and extend to a minimum height of three feet above ground. Post holes shall be filled with concrete. Certain installations may require more substantial protection at the discretion of the company (e.g. exposure to truck traffic).

4.6 Large commercial/industrial outdoor meter locations shall be protected by a 6 foot high lockable fence, chain link or equivalent. The fence shall be equipped with a double hasp lock to allow access by Con Edison and Customer.

5.0 **INSTALLATIONS**

★ 5.1 Each meter and each regulator must be installed so as to minimize anticipated stresses upon the connecting piping and the meter. Refer to G-695, “Supporting Gas Service Regulators and Meters”, for design and installation requirements to be used for gas meter and regulator installations.

★ 5.2 When close (all-thread) nipples are used, the wall thickness remaining after the threads are cut must meet the minimum wall thickness requirements of NYCRR Title 16 Part 255. All close nipples shall be black steel, 150#, schedule 40.

★ 5.3 Connections made of lead or other easily damaged material may not be used in the installation of meters or regulators. If a leaded connection is found in an active field installation, contact EH&S for instructions for proper removal.
5.0 INSTALLATIONS (Continued)

5.4 Each regulator that might release gas in its operation must be vented to
the outside atmosphere. Refer to EO-17118 for the sizing and installation
requirements to be used for regulator vent lines.

5.5 Field personnel that install meters, customer regulators, and volume
correction equipment shall check the meter manufacturer’s data plate for
actual meter MAOP to assure that customer delivery pressure is below
MAOP.

6.0 OPERATING PRESSURE

6.1 A meter may not be used at a pressure that exceeds the Maximum
Allowable Operating Pressure (MAOP) established by the manufacturer.
The MAOP is found on the meter data plate for all modern meters.

6.2 When qualifying a new diaphragm meter type, the manufacturer shall test
the aluminum case to a minimum of 10 psig, or 1.5 times MAOP,
whichever is greater per requirements of ANSI B109.1 and 109.2.

6.3 For rotary and turbine meters, the manufacturer shall test the meter body
to 1.5 times the MAOP of the meter per requirements of the applicable
standards (ANSI B109.3 & AGA-7). Meter MAOP is found on the data
plate installed by the manufacturer.

6.4 A rebuilt or repaired tinned steel case meter may not be used for elevated
delivery pressures.

6.5 Regulators equipped with internal reliefs (IR) shall be installed so that
the regulator orifice size and expected range of inlet pressures is
compatible with overpressure protection requirements for the customer
piping:

A) For regulator sizing refer to G-48, “Gas Meter and Service
Regulator Sizing” or contact Gas Measurement.

B) Refer to G-294, “Code Identification of Gas Service Regulators”, for
tables showing the code identification numbers used to identify gas
service regulators installed on customer services (manufacturer,
model, body size, inlet outlet piping, orifice size, and other factors).
7.0 METER ROOM CLEANLINESS

7.1 Gas meter rooms, when provided, shall at all times be kept clear of all rubbish; and shall not be used in any way for storage purposes, including material or equipment of any kind. A legible sign reading "Gas meter room-No storage permitted" shall be permanently and conspicuously posted on the exterior of the meter room door, except that the sign may be posted on the interior of the meter room door in buildings classified in occupancy group J-3. The lettering of such signs shall be of bold type at least one inch in height and shall be properly spaced to provide good legibility. The lettering and background shall be of contrasting colors.

7.2 Where gas meters and related equipment are not located in a separate room but are located in an open floor area, no combustible material shall be stored or kept within five feet of such equipment; nor shall the gas meter be within three feet of any heating boiler or sources of ignition and, except for buildings in occupancy group J-3, there shall be a physical barrier required if the room is also used for storage purposes or the like.

8.0 COMPLIANCE AND EXCEPTIONS

8.1 All gas meters, service regulators and associated piping shall be installed in accordance with the applicable Con Edison meter and regulator specifications/drawings and shall comply with the requirements of this specification.

8.2 The Customer (or their agent) shall obtain the approval of the local authority having jurisdiction for any exceptions to the requirements specified in this specification.

★ 9.0 REFERENCES

520163 - Bumper Installation
EO-17118 - Regulator Vent Installation
G-48 - Gas Meter and Service Regulator Sizing
G-294 - Code Identification of Gas Service Regulators
9.0 REFERENCES (Continued)

G-695 - Supporting Gas Service Regulators and Meters

G-699 - Installation and Inspection of Gas Service Regulator Vent Line Protectors (VLPs)

G-8100 - General Specification for the Installation of Gas Distribution Services

G-8217 - Flood-Prone Areas for the Installation of Gas Service Regulator Vent Line Protectors (VLPs)

G-11813 - Identification, Inspection, and Documentation of Gas Services Supplying Buildings of Public Assembly

G-11838 - High Pressure Gas Service Inspection

G-11875 - Procedure for Purging Gas Piping in a Building With Natural Gas After an Outage, Repair, or a New Business Turn-On

National Fuel Gas Code, ANSI Z223.1