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July 16, 2012

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street
P. O. Box 3265
Harrisburg, PA 17105-3265

In re: Docket No. L-2009-2107155
Rulemaking Re Amendment to 52 Pa. Code § 59.18 Meter Location

Dear Secretary Chiavetta:

Enclosed for filing on behalf of Equitable Gas Company, LLC are an original and 15 copies of its Comments to the Public Utility Commission's Proposed Rulemaking Order entered July 28, 2011 in the above matter.

Very truly yours,

THOMAS, LONG, NIESEN & KENNARD

By

Thomas T. Niesen

cc: Adam D. Young, Esquire (by email w/encl.)
John M. Quinn (by email w/encl.)
David W. Gray, Esquire (by email w/encl.)

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Before the
PENNSYLVANIA PUBLIC UTILITY COMMISSION

2950

Rulemaking Re Amendment to
52 Pa. Code § 59.18 Meter Location

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Docket No. L-2009-2107155

COMMENTS OF EQUITABLE GAS COMPANY, LLC
TO PROPOSED RULEMAKING ORDER ENTERED JULY 28, 2011

AND NOW, comes Equitable Gas Company, LLC ("Equitable" or "Company"), by its attorneys, and submits the following Comments in accordance with the Proposed Rulemaking Order entered in the above captioned proceeding by the Public Utility Commission ("Commission") on July 28, 2011 ("Proposed Rulemaking Order"):


1. On July 28, 2011, the Commission entered its Proposed Rulemaking Order commencing a rulemaking process to amend its existing regulation at 52 Pa. Code § 59.18, consistent with Annex A to the Order, which will be titled Meter and Regulator Location. The Order invites interested parties to file written comments to the proposed regulation within 30 days of its publication in the *Pennsylvania Bulletin*, which occurred on June 16, 2012.

2. Equitable is pleased to have the opportunity to submit comments to the proposed regulation concerning meter and regulator location. Equitable's Comments are presented in the Appendix A attached hereto and are submitted without prejudice to any position Equitable might take in any subsequent proceeding(s) involving these or any other matters.¹

¹ Equitable also joins in the Comments being submitted by the Energy Association of Pennsylvania to the extent those Comments are not inconsistent with Equitable's Comments as expressed herein.

WHEREFORE Equitable Gas Company, LLC submits the attached Comments in accordance with the Public Utility Commission's Proposed Rulemaking Order entered July 28, 2011.

Respectfully submitted,

By 

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Date: July 16, 2012

APPENDIX A

Comments of
Equitable Gas Company, LLC
to Proposed Rulemaking Order Entered July 28, 2011
Docket No. L-2009-2107155
Proposed Regulation – 52 Pa. Code § 59.18 – Meter and Regulator Location

General Comment to Proposed Regulation - Inconsistency with Federal Regulation

Equitable shares the Commission's goal of ensuring safe and reliable natural gas service and the Company will continue to work cooperatively in matters of gas safety with the Commission's Gas Safety Division. Equitable has well established gas safety practices that are appropriately tailored to the specific needs of its distribution system, including practices relating to meter and regulator location that are in compliance with applicable state and federal regulations. However, Equitable is concerned that the proposed regulations impose new and more onerous obligations than those contained in existing state and federal regulations. Moreover, these proposed regulations attempt to eliminate the flexibility needed in making safe and cost effective decisions related to meter and regulator location at a time when utilities are appropriately focused on allocating capital and resources to address risks identified in their Distribution Integrity Management Program ("DIMP") plans. Equitable respectfully submits the following Comments in order to address these concerns.

The Proposed Rulemaking Order explains that the Commission has adopted and is enforcing 49 CFR § 192.353 – Customer Meters and Regulators: Location, and 49 CFR § 192.357 – Customer Meters and Regulators: Installation. It then states that the proposed new regulation at 52 Pa. Code § 59.18 would bring state regulations consistent with the adopted federal regulations.¹ Equitable, however, is concerned that the proposed new state regulation is, in fact, inconsistent with federal regulation and does, in fact, impose additional regulatory requirements that are not part of the present federal regulatory scheme.

Specifically, the language for proposed Section 59.18 is taken, largely, from the Guide Material for 49 CFR § 192.353, found in the Gas Piping Technology Committee's ("GPTC")

¹ The Commission addressed the proposed regulation in its response to questions of the Independent Regulatory Review Commission's in that agency's "Regulatory Analysis Form." In its response to Question No. 12 of the "Form," the Commission stated that, "NGDCs will have no greater responsibility [under the proposed regulations] than they currently have under federal regulations." Similarly, in its response to Question No. 7 of that same document, the Commission stated that these regulations are being proposed "so that our state regulations are consistent with the federal regulations that the Commission has already adopted." Consistent with those statements, at page 9 of the Proposed Rulemaking Order, the Commission stated that the proposed language of new Section 59.18 would impose no additional regulatory requirements upon NGDCs that these utilities are not already subject to under the federal regulations.

Guide for Gas Transmission and Distribution Piping Systems ("Guide" or "Guide Material").² A copy of pages 149 through 154 of Subpart H of the Guide addressing 49 CFR § 192.353 and 49 CFR § 192.357 and also showing the Guide Material for the federal regulations is attached as Exhibit 1 from which the substantial identity of language between the Guide Material and the proposed regulation is readily apparent.

The Guide Material is advisory in nature and contains guidance and information for consideration by operators in complying with federal regulations. As the Guide Material is advisory only, it is not intended that public authorities or others will adopt the Guide in mandatory language, in whole or in part, in laws, regulations, administrative orders, ordinances, or similar instruments as the sole means of compliance. This limitation is expressly stated in the Preface Section of the Guide.³

Recognizing that the Commission has already adopted and is already enforcing 49 CFR § 192.353 and 49 CFR § 192.357 and that the language of the proposed regulation is already part of the federal regulatory scheme through the Guide Material, Equitable's general comment and general concern with the proposed regulation is twofold:

First, under federal regulation, Guide Material is advisory, not mandatory. However, under the proposed new state regulation at Section 59.18, Guide Material (as modified by the proposed regulations) would become mandatory, and, therefore, be inconsistent with the federal regulations that the Commission has already adopted, as well as contrary to the Guide's expressly noted limitations.

Second, and more significant, the proposed regulation consistently replaces the flexible language of the Guide Material with prescriptive language, leaving no room for utility discretion.⁴ Instances of the insertion of prescriptive language

² The Guide has existed for many years to provide recommendations, guidance, and other information to assist gas piping system operators in complying with the Federal pipeline safety regulations codified at 49 CFR Parts 191 and 192. The first edition of the Guide was published in 1970. The current edition of the Guide was issued in 2009. New editions are usually issued every three years. In his letter of November 24, 2008, to the Chairperson of the GPTC, Mr. Jeffrey D. Wiese, Associate Administrator for Pipeline Safety, United States Department of Transportation Pipeline and Hazardous Materials Safety Administration ("PHMSA"), explains that the "Guide provides a clear and concise guidance for the gas pipeline safety regulations and is an excellent means of helping operators comply with the regulations." Mr. Wiese further explained that:

"The recommendations in the Guide are derived from the cumulative knowledge and experience of GPTC members in the fields of gas distribution, transmission and gathering, manufacture of pipe and components, and related activities. It is the weight of this broad knowledge and experience which gives the Guide its usefulness and credibility. PHMSA gives special thanks to the members of the GPTC, and their sponsor organizations. It is through this type of collaboration that we ensure both regularity and practicality."

³ Gas Piping Technology Committee, *ANSI GPTC Z380.1 Guide for Gas Transmission and Distribution Piping Systems*, at xiii (2009 ed.).

⁴ Generally, the proposed regulation replaces the word "should" in the Guide Material with "shall" throughout the proposed regulation.

occur throughout the proposed regulation. Proposed Section 59.18(a)(2), for example, provides that “[m]eters *shall* be installed at the service regulator,” while the Guide Material provides that “[m]eters *should normally* be installed at the service regulator.” Proposed Section 59.18(a)(8) provides that “[t]he meter location *must* accommodate for the installation of the service line in a straight line perpendicular to the main,” while the Guide Material provides that “[t]he meter location *should normally* permit the installation of the service line in a straight line perpendicular to the main.” Proposed Section 59.18(b) provides that “[o]utside meters or service regulators *shall* be installed in the following locations . . . ,” while the Guide Material provides that “[o]utside meters or service regulators *should* be installed in the following locations.” Proposed Section 59.18(c)(1) provides that “[i]nside meters *shall* be considered only when . . . ,” while the Guide Material provides that “[i]nside meter locations *should* be considered under the following conditions.”

The prescriptive language and removal of discretion is inconsistent with the Guide Material and the federal regulations that the Commission has adopted. The proposed regulation is, moreover, unreasonable. Utilities must have discretion to address meter set location on an individual basis. Federal regulation and the Guide Materials provide the flexibility for NGDCs to exercise their discretion and NGDCs should not be faced with competing and contradictory federal and state regulations.

With the federal regulatory scheme already addressing meter set location, Equitable questions whether the proposed regulation is necessary. If the Commission remains of the view that a change to the existing regulation is required, then perhaps the new regulation should be redrafted to do no more than explain that meter set location is addressed at the federal level with citation to the pertinent federal regulations and reference to the advisory Guide Material in a policy statement.

To be clear, Equitable already applies the Guide Material in its operational decision making and will continue to do so. It is certain that other NGDCs do likewise. Equitable’s concern is that the new state regulation is inconsistent with the existing federal regulation and would, in fact, impose additional regulatory requirements above and beyond those existing at the federal level.⁵ Equitable is especially concerned with the stripping of discretion from the operational decision making process in regard to meter set location. A state regulation that removes the utility’s discretion would be unreasonable and inconsistent with federal regulations, as well as the Guide Material. Indeed, some of the language in the proposed regulation would impose impractical requirements that could place an NGDC in the position of choosing to violate the requirements or denying service to a customer. Such unintended consequences should be avoided.

⁵ These additional regulatory requirements have both an operational and financial impact – operational in terms of technical compliance and financial in terms of the capital investment required to implement the additional requirements.

Comments to Specific Subsections of Proposed Regulation

Section 59.18(c)(4) – All regulators, connected to steel service lines, shall be relocated to the outside by year end 2020.

One of the most problematic provisions of the proposed regulation is Section 59.18(c)(4), which would require “all” regulators, connected to steel service lines, to be relocated to the outside by year end 2020.⁶ This relocation requirement is not part of existing federal regulation and would clearly impose a new and additional regulatory requirement on NGDCs.⁷ Even assuming that a practical alternative is available for an outside location that does not unnecessarily create new risks (i.e. tripping hazards, vandalism, etc.), this new requirement creates a new and significant level of required capital investment for the NGDC. In Equitable’s own situation, it has 7,094 high pressure inside meter sets with steel services (curb-to-meter). Assuming that the proposed regulation intends to now shift to Equitable the financial responsibility for the customer owned facilities in these relocations,⁸ Equitable estimates the capital investment required to relocate inside regulators, connected to steel services, to be at least \$9,000,000 using the estimates provided on page 4 of the report of the Independent Regulatory Review Commission.⁹

In support of this section of the proposed regulation, the Commission states that there have been 65 reportable incidents in Pennsylvania over the past 40 years involving inside meter sets and that several utilities do not perform leak surveys up to the meter set when the meter and regulator are located inside a building. It is, however, not at all clear from a review of the incidents that the inside location of the meter was the cause, primary or otherwise, of the 65 reportable incidents.¹⁰ Thus, Equitable questions any reliance on this information to support a

⁶ Although the proposed regulation states that regulators connected to steel service lines shall be relocated by year end 2020 or within 8 years, the Proposed Rulemaking Order states at page 8 that the relocation of these regulators is to be completed within 10 years.

⁷ Moreover, the Guide Materials that were relied upon to prepare the proposed regulation have no such suggested language. If the risk were as significant as suggested, one would expect the Guide Materials to address the issue.

⁸ In Western Pennsylvania and within all of Equitable’s service territories, service lines from the curb to the meter, as well as the fuel line downstream from the meter inside the building, are owned by, and the responsibility of, the customer. It appears that the proposed regulation attempts to inappropriately shift the responsibility for those lines, financial and otherwise, to Equitable and other western utilities that operate under the same guidelines.

⁹ The Proposed Rulemaking Order suggests in regard to proposed Section 59.18(c)(4) that an alternative to the relocation of inside meter sets connected to steel services is the potential installation of an Excess Flow Valve (“EFV”) on the steel line. First, the proposed regulations themselves do not clearly identify the EFVs as an alternative to the stated relocation of regulators. Moreover, the current technology for EFVs makes them unavailable for certain design applications, including certain commercial applications. To the extent the regulations are intended to extend beyond residential applications, the installation of EFVs is not a viable alternative to moving the regulator.

¹⁰ Descriptions of the reportable incidents were provided by NGDCs in response to a data request that asked for “a schedule of reportable incidents that your Company was involved with that occurred from 1970-present that

new regulation that will impose an obligation with a multi-million dollar price tag for the industry and ratepayers as well as related challenges of locating adequate alternative locations for meters and/or regulators. Additionally, in regard to its own leak surveys, Equitable's protocol is, and will continue to be, to perform the survey up to the meter – even when the meter is located inside a building. Equitable employs all appropriate means necessary to gain access to perform the leak survey for inside meters. Thus, the ability to complete leak surveys up to the meter is not an adequate basis to rely upon to support this regulation.

Equitable is concerned that the proposed regulation unnecessarily creates an accelerated regulator relocation schedule without adequate evidence of the true risk and without consideration of the significant cost of the relocation effort. Equitable evaluates the replacement of aging infrastructure as part of its ongoing Pipeline Replacement Program ("PRP").¹¹ Infrastructure replacement through the PRP is based upon the relative risk ranking described in the Company's DIMP. The relocation of inside regulators connected to steel services is not, by itself, a factor in the DIMP risk ranking.

In Equitable's view, there is insufficient evidence of a safety threat from inside regulators to establish a relocation completion deadline by regulation. Equitable, moreover, questions the need for the significant additional capital investment created by the proposed regulation at a time when resources are more focused on pipeline replacement. It is clear that such investment is not supported by the DIMP plans of the NGDCs and it is not required by the existing federal law.

Section 59.18(a)(10) – When the Commission or a utility determines that a meter or regulator must be moved for safety reasons, all costs associated with the relocation of such meter or regulator shall be borne by the utility. When a utility moves a meter in addition to the regulator, pursuant to this section, the cost of extending customer-owned facilities to the new meter location shall be borne by the utility.

As with proposed Section 59.18(c)(4) discussed above, proposed Section 59.18 (a)(10), which would require the NGDC to bear "all" costs associated with the relocation of a meter or regulator, is not part of existing federal regulation and would clearly impose a new and additional regulatory requirement on an NGDC. It would also create a new and significant level of required capital investment for the NGDC. The apparent broad scope of the proposed language is further problematic because, in Western Pennsylvania, service lines from the curb to

involved inside meter sets." Many descriptions are brief with little support for a conclusion that the incident would not have occurred absent the inside meter set.

¹¹ Equitable replaces all of its non-plastic and/or unprotected service lines with plastic as a normal step when it replaces mains and will continue to do so. A pressure leak test is conducted on the customer service line from curb-to-meter and the service is reconnected once it passes the test. The customer is responsible for any replacement/repairs needed for any failed customer service lines during those projects. This has been Equitable's practice for many years. In the event Equitable is performing an uprate of its mains during its mainline replacement (like the Columbia project cited at pages 6 and 7 of the Proposed Rulemaking Order), which necessitates upgrades to the customer service line, the Company then assumes financial responsibility for the repairs/replacement needed for customer owned service lines as a result of that uprating.

the meter, as well as the fuel line downstream from the meter inside the building, are owned by, and the responsibility of, the customer.

The proposed regulation would establish a blanket rule requiring the NGDC to bear “all” associated costs (including the cost of extending customer-owned facilities) when a meter or regulator is relocated for safety reasons. Equitable believes that these relocation costs are appropriately the responsibility of the customer in accordance with long-standing tariff provisions and long-standing practice in Western Pennsylvania. Many regulator/meter moves require extensive houseline (i.e. customer non-jurisdictional piping downstream of the meter) work inside the house. In some circumstances, this may include modifications to the structure itself (i.e. cutting floor joists, removing plaster walls and ceilings). Equitable believes that existing practice properly allocates relocation costs between the NGDC and the customer and Equitable questions the need for placing all meter and regulator related relocation costs on the NGDC at a time when resources are more properly focused on pipeline replacement.

Section 59.18(a)(8) – The meter location must accommodate the installation of the service line in a straight line perpendicular to the main.

Equitable agrees that locating the meter to accommodate installation of the service line perpendicular to the main is the preferred location protocol. The Guide Material explains that meters are “normally” located in this way. There are, however, circumstances where the meter cannot be located to accommodate a perpendicular service line. Trees or landscaping, as well as the location of other utility infrastructure, can sometimes be an obstacle necessitating the location of the meter in such a way that perpendicular installation of the service line cannot be accommodated. Non-perpendicular service line installation can also occur in very large apartment complexes where multiple meters at different locations are fed from the same service line. The proposed regulation with its prescriptive language would apparently remove flexibility and preclude the NGDC from locating meters to accommodate these natural and other obstacles. Equitable believes that the flexibility found in the Guide Materials is more appropriate than the prescriptive language in the proposed regulation as the Guide Materials would provide the utility with decision making discretion concerning the location of the meter in relation to the service line while, at the same time, recognizing that the meter is normally located to accommodate the installation of the service line perpendicular to the main.

Section 59.18(c) – Inside meter or service regulator locations.

Proposed Section 59.18(c) departs significantly from the Guide Materials, which state very simply and somewhat in the nature of a general rule that “[i]nside meter locations should be considered under the following conditions.

- (1) An acceptable outside location is not available or practical.
- (2) Protection from ambient temperatures is necessary to avoid meter freeze ups. (This condition is most often encountered in low-pressure systems that pick up moisture from water-sealed gas holders or other sources.)”

Proposed Section 59.18(c), however, states that “[i]nside meter locations shall be considered only when:

- (i) An acceptable outside location is not available due to restrictions in Federally approved Historic Districts or in high risk vandalism districts.
- (ii) Protection from ambient temperatures is necessary to avoid meter freeze ups.”

Inside meter or service regulator locations should not be solely based upon the subjective definitions of “Historic” and “High Vandalism” districts. EGC believes the utility is best suited to determine the safest location for meters/regulators. For instance, in many neighborhoods within EGC’s service territory, pedestrian and vehicular safety would be compromised by placing an above ground regulator or meter where there is basically no room to protect it. The installation of concrete barriers is typically impractical in wall to wall paved areas and narrow streets. Thus, in such situations, inside meter sets are the only viable option to potentially denying service to a customer. Alternatively, meter sets installed under exterior stairways are often a preferable placement to protect against vehicular and pedestrian traffic. However, it appears that such sets would be prohibited by proposed Section 59.18(a)(9). These are the types of practical issues that explain the flexibility built into the Guide Materials. Such flexibility is necessary for the safe and cost effective placement of meters and regulators and it should be preserved in any new regulations on these issues.

Conclusion

Equitable is pleased to have the opportunity to submit the foregoing comments to the proposed regulation concerning meter and regulator location. Equitable looks forward to working with the Commission to address this matter further.

EXHIBIT 1

SUBPART H CUSTOMER METERS, SERVICE REGULATORS, AND SERVICE LINES

§192.351

Scope.

[Effective Date: 11/12/70]

This subpart prescribes minimum requirements for installing customer meters, service regulators, service lines, service line valves, and service line connections to mains.

GUIDE MATERIAL

No guide material necessary.

§192.353

Customer meters and regulators: Location.

[Effective Date: 10/15/03]

- (a) Each meter and service regulator, whether inside or outside a building, must be installed in a readily accessible location and be protected from corrosion and other damage, including, if installed outside a building, vehicular damage that may be anticipated. However, the upstream regulator in a series may be buried.
- (b) Each service regulator installed within a building must be located as near as practical to the point of service line entrance.
- (c) Each meter installed within a building must be located in a ventilated place and not less than 3 feet (914 millimeters) from any source of ignition or any source of heat which might damage the meter.
- (d) Where feasible, the upstream regulator in a series must be located outside the building, unless it is located in a separate metering or regulating building.

[Amdt. 192-85, 63 FR 37500, July 13, 1998; Amdt. 192-93, 68 FR 53895, Sept. 15, 2003]

GUIDE MATERIAL

1 GENERAL RECOMMENDATIONS

- (a) Where practical, no building should have more than one service line.
- (b) Meters should normally be installed at the service regulator. When more than one meter is set on a particular premises, they should typically be set at one location. If meters are installed at multiple locations on the premises, the operator should consider providing a tag or other means to indicate that there are multiple meter locations.
- (c) An outside, aboveground meter location is desirable when weather conditions, availability of space, and other conditions permit.

- (d) When selecting a meter or service regulator location, consideration should be given to the potential damage by outside forces, such as those from vehicles, construction equipment, tools, materials that might be placed on the meter, and falling objects (e.g., packed snow or ice from a roof). Where such potential is evident, the meter or service regulator should be protected or an alternate location selected. See Guide Material Appendix G-192-13.
- (e) Meters and service regulators should not be installed in contact with the soil or other potentially corrosive materials. The potential for shorting out the insulating fitting should also be considered.
- (f) See guide material under §192.479 for the following relative to atmospheric corrosion.
 - (1) General considerations.
 - (2) Specific considerations regarding the meter and service regulator location and the regulator vent lines and tubing.
- (g) Section 192.353(a) requires that each meter and service regulator be installed in a readily accessible location. Each location should accommodate access for reading, inspection, repairs, testing, changing, and operation of the gas shut-off valve.
- (h) The meter location should normally permit the installation of the service line in a straight line perpendicular to the main.
- (i) Meters and service regulators should not be installed in the following locations.
 - (1) Under or in front of windows or other building openings which may be used as emergency fire exits or under interior or exterior stairways.
 - (2) A crawl space with limited clearance.
 - (3) Near building air intakes.

2 OUTSIDE METER OR SERVICE REGULATOR LOCATIONS

- (a) Outside meters or service regulators should be installed in the following locations.
 - (1) Preferably, above ground in a protected location, adjacent to the building served.
 - (2) In a properly designed buried vault or meter box.
 - (i) The vault or meter box should be located on the customer's property, either adjacent to the building served or near the gas main.
 - (ii) Vaults may be located in a public right-of-way. Consent of local jurisdictions may be required.
 - (iii) Proper design and location considerations should include ventilation, vehicular traffic (see §192.355(c)), potential for soil accumulation, surface water runoff, high water table, and proximity to building air intakes or openings.
 - (iv) Piping installed through vault walls should be properly coated to protect from corrosion.
 - (v) Note §192.189(b) that states:
A vault containing gas piping may not be connected by means of a drain connection to any other underground structure.
 - (vi) When outside a paved surface, consideration should be given to the potential for fill, topsoil, or sod being placed over the vault.
 - (vii) See guide material under §192.355 for considerations involving service regulator and relief vents in vaults.
- (b) At locations where vehicular damage is reasonably anticipated, some means of providing protection to the meter set assembly include the following.
 - (1) Distance from roadways or driveways.
 - (2) Installation of posts, parking bumpers, or barricades.
 - (3) Location behind existing protective structures.
 - (4) Installation in a buried vault or meter box.

3 INSIDE METER OR SERVICE REGULATOR LOCATIONS

- (a) Inside meter locations should be considered under the following conditions.
 - (1) An acceptable outside location is not available or practical.
 - (2) Protection from ambient temperatures is necessary to avoid meter freeze-ups. (This condition is most often encountered in low-pressure systems that pick up moisture from water-sealed gas holders or other sources.)
- (b) Where practical, meters and service regulators should not be located in confined engine, boiler, heater, or electrical equipment rooms, nor should they be located in living quarters, closets, restrooms, bathrooms, or similar locations.
- (c) Each service regulator installed within a building should be located as near as practical to the service line entry point. When selecting the service regulator location, venting requirements and the vent piping location and length should be considered. See §§192.355 and 192.357.
- (d) Where a meter or service regulator is located inside a building, §192.365 requires a readily accessible shut-off valve that, if feasible, is located outside the building.
- (e) Meters and service regulators in certain inside locations (e.g., parking garages) may require protection from vehicular damage. See 2(b) above.
- (f) For additional considerations regarding plastic service lines, see guide material under §192.375.

4 OTHER METER OR SERVICE REGULATOR LOCATIONS

An alternate consideration is a specially constructed cabinet recessed in the building wall, sealed from inside the building and vented to and accessible from outside the building.

§192.355

Customer meters and regulators: Protection from damage.

[Effective Date: 02/22/88]

- (a) *Protection from vacuum or back pressure.* If the customer's equipment might create either a vacuum or a back pressure, a device must be installed to protect the system.
- (b) *Service regulator vents and relief vents.* Service regulator vents and relief vents must terminate outdoors, and the outdoor terminal must --
 - (1) Be rain and insect resistant;
 - (2) Be located at a place where gas from the vent can escape freely into the atmosphere and away from any opening into the building; and
 - (3) Be protected from damage caused by submergence in areas where flooding may occur.
- (c) *Pits and vaults.* 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.

[Amdt. 192-58, 53 FR 1633, Jan. 21, 1988]

GUIDE MATERIAL

1 PROTECTIVE DEVICE

A suitable protective device should be installed downstream of the meter and regulator under the following conditions.

- (a) If the customer's utilization equipment, such as a gas compressor, could produce an excessive drop in gas pressure or a vacuum at the meter or regulator, a protective device such as the following should be used.
 - (1) Automatic shut-off valve with manual reset (for decreasing pressure).
 - (2) Restricting orifice.
 - (3) Regulating device set to close at a predetermined decrease in pressure.
- (b) If the customer's utilization equipment could cause compressed gas, compressed air, oxygen, etc., to flow back into the meter or regulator, a protective device such as the following should be used.
 - (1) Check valve.
 - (2) Automatic shut-off valve with manual reset (for increasing pressure).
 - (3) Regulating device set to close at a predetermined increase in pressure. The protective device should provide gas-tight shutoff if flow reversal occurs. Consideration should be given to the explosion hazard of air or oxygen mixed with natural gas or other hydrocarbons.
- (c) If a supplementary or an alternate gas supply (e.g., LPG) is interconnected for standby use and could flow back into the meter or regulator, a protective device such as those listed in 1 (a) and (b) above should be used. A 3-way valve that closes the normal gas supply before admitting the alternate supply could eliminate the need for a protective device.

2 CORROSION DAMAGE

If corrosion damage is likely to occur to meters and service regulators, see guide material under §192.479.

3 CONSIDERATIONS TO MINIMIZE DAMAGE BY VEHICLES AND OTHER OUTSIDE FORCES

See Guide Material Appendix G-192-13.

4 REGULATOR AND RELIEF VENTS AND VENT PIPING

4.1 *Outside vents and vent piping termination.*

All outside regulator vents and the outside terminations of all service regulator vent and relief lines should have vented caps, fittings, or other protection. The protection should be installed in accordance with the manufacturer's instructions, and should meet the requirements of §192.355(b). Where there is a potential for exposure to severe water or freezing conditions, special fittings or other arrangements should be used which will prevent blocking of the vent or relief line or interference with the operation of the regulator due to ice and water.

4.2 *Inside regulators.*

See §§192.353 and 192.357 for design and location considerations for inside regulators. See 4.3 below for vent piping design considerations.

4.3 *Vent piping design.*

(a) Single regulator or relief vent.

The vent piping should be designed to minimize the back pressure if the regulator diaphragm ruptures or the relief valve activates.

(b) Multiple regulator or relief vents.

Typically, a separate vent line is used for each regulator or relief valve as in (a), but a properly designed common vent line may be used.

(1) A common vent line should be designed and sized to:

- (i) Minimize back pressure to the connected regulator having the largest venting flow rate, if venting occurs.

- (ii) Ensure that the outlet pressure of the other connected regulators does not increase to an unsafe value. If a regulator diaphragm ruptures or a relief valve activates and gas flows through the common vent line, the resultant back pressure will cause the outlet pressure of the other connected regulators to increase by the back-pressure amount. The amount of back pressure depends on the diameter and length of the common vent line and the venting flow rate.
 - (iii) Ensure that the total maximum vent line pressure for all regulators connected does not exceed the maximum back pressure specified for any one of the connected regulator vents.
 - (iv) Ensure that all the regulators connected to a common vent line have the same delivery pressure.
- (2) Regulators with low-pressure delivery (utilization pressure for low-pressure gas burning equipment) should have no high-pressure delivery regulator connected to the common vent line installation.
- (3) When considering the addition of regulators to an existing common vent line:
- (i) Do not connect a regulator with a different delivery pressure.
 - (ii) Do not connect a regulator with a larger venting flow rate than used in the initial design, unless a new calculation indicates that the common vent line is adequate at the larger venting flow rate.
- (4) The operator should consider using regulators with either:
- (i) A device set to close at a predetermined increase in pressure, or
 - (ii) Using an automatic shut-off valve with a manual reset.

5 PITS AND VAULTS

- (a) See guide material under §192.353 for design and location considerations.
- (b) When service regulators are installed in underground pits or vaults, regulator and relief vents should be installed in a manner to prevent blocking of the vents where there is a potential for soil or water accumulation.

§192.357

Customer meters and regulators: Installation.

[Effective Date: 11/12/70]

- (a) Each meter and each regulator must be installed so as to minimize anticipated stresses upon the connecting piping and the meter.
- (b) When close all-thread nipples are used, the wall thickness remaining after the threads are cut must meet the minimum wall thickness requirements of this part.
- (c) Connections made of lead or other easily damaged material may not be used in the installation of meters or regulators.
- (d) Each regulator that might release gas in its operation must be vented to the outside atmosphere.

GUIDE MATERIAL

1 ACCESSIBILITY

The meter should be installed where it can be easily read and the connections are accessible. See guide material under §192.353 for location considerations.

2 MINIMIZING ANTICIPATED STRESSES

- (a) Care should be taken to ensure that the meter set assembly is not installed under stress.
- (b) Where practical, the outside portion of the service line, including associated piping, should be designed so that damage to the service line due to outside forces will not cause leakage inside a building.
- (c) Swing joint piping techniques may be used to reduce the problems of piping stress and for ease of installation. For pipe sizes up to 1½" where meter bars are not installed for piping support, it is common industry practice to use swing joint piping.
- (d) For threaded metallic joints, see guide material under §192.273.
- (e) Piping should be supported to minimize stress on the regulator body, meter case, and piping. Appropriate blocking, pads, stands, brackets, and hangers should be used as necessary. Supports for horizontal steel piping should be spaced so that the distances listed in Table 192.3571 are not exceeded.
- (f) Reasonable precautions, such as increased pipe wall thickness, may be taken to protect the meter set assembly or service regulator from natural or other hazards.

MAXIMUM HORIZONTAL SUPPORT SPACING FOR STEEL PIPING	
Nominal Pipe Size (Inches)	Maximum Support Spacing (Feet)
½	6
¾ or 1	8
1 ¼ through 2	10
2 and larger	See MSS SP-58 and MSS SP-69

TABLE 192.3571

3 VENTING OF REGULATORS AND RELIEFS TO THE OUTSIDE ATMOSPHERE

See 4 and 5 of the guide material under §192.355.

§192.359
Customer meter installations: Operating pressure.
[Effective Date: 07/13/98]

- (a) A meter may not be used at a pressure that is more than 67 percent of the manufacturer's shell test pressure.
- (b) Each newly installed meter manufactured after November 12, 1970, must have been tested to a minimum of 10 p.s.i. (69 kPa) gage.
- (c) A rebuilt or repaired tinned steel case meter may not be used at a pressure that is more than 50 percent of the pressure used to test the meter after rebuilding or repairing.

[Amdt. 192-3, 35 FR 17659, Nov. 17, 1970; Amdt. 192-85, 63 FR 37500, July 13, 1998]

GUIDE MATERIAL

No guide material necessary.