Master Meters: A Guide to Understanding Regulatory Requirements in Virginia

Created: April 8, 2024

Revised: November 19, 2024

Helpful Contact Information:

- Contact the Division of Utility and Railroad Safety ("URS") by phone: 804-371-9980
- 24-hour URS emergency phone number for reporting significant events and incidents:[1] 804-343-0863
- URS address: P.O. Box 1197 Richmond, Virginia 23218

Revision History:

Version	***Date***	***Comments***
1.0	April 8, 2024	Initial release
2.0	November 19, 2024	Updated FAQs to include additional information

This guide is not a legal reference of the Code of Virginia, the Code of Federal Regulations, or the standards incorporated by reference. Persons seeking a legal reference should utilize the Code of Virginia, the Code of Federal Regulations, and the incorporated by reference standards themselves. This guide is not intended to supersede the existing state or federal law or any of the State Corporation Commission's promulgated rules. The State Corporation Commission does not assume any responsibility for the acts or conduct of any person presenting this guide or those who read it.

[1] The definition of an "incident" as that term is used in the Commission's Pipeline Safety Standards can be found in 49 C.F.R. § 191.3.

What is the purpose of this guide?

The State Corporation Commission's Division of Utility and Railroad Safety ("Division" and "Staff") has inspection authority for safety regulations applicable to certain natural gas pipeline systems located in the Commonwealth of Virginia. These systems include master-metered gas distribution systems, which are defined as follows in 49 C.F.R. § 191.3 of the Commission's Pipeline Safety Standards:

Master Meter System *means a pipeline system for distributing gas within, but not limited to, a definable area, such as a mobile home park, housing project, or apartment complex, where the operator purchases metered gas from an outside source for resale through a gas distribution pipeline system. The gas distribution pipeline system supplies the ultimate consumer who either purchases the gas directly through a meter or by other means, such as by rents.*

This guide serves as an overview of Staff's inspection activities associated with master-metered gas distribution systems. It also provides general information about the types of small systems that constitute master-metered gas distribution systems and many of the regulations that are applicable to master-metered gas distribution systems. This guide does not serve as legal guidance for how to comply with the Commission's Pipeline Safety Standards.

Most master-metered gas distribution systems in the Commonwealth of Virginia were placed into service in the 1960s and 1970s. Following the 1970s, design preferences changed, and the Local Distribution Company ("LDC" i.e. the gas utility) serving the area was typically the entity that would own and operate all jurisdictional piping required to serve customers.

Master-metered gas distribution systems are subject to many of the same safety regulations as are LDCs (these regulations are referred to throughout this guide as the Commission's Pipeline Safety Standards and are discussed in greater detail on the next page). The regulations require that operators of master-metered gas distribution systems must report their existence and register their systems with Staff and with the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration ("PHMSA") through the process identified in 49 C.F.R. § 191.22. The regulations also address the design, construction, operation, maintenance, emergency response, and training and qualification of personnel. Division inspectors routinely inspect known master-metered gas distribution systems to check for compliance with the applicable part of the Commission's Pipeline Safety Standards.

The Commission's Pipeline Safety Standards – An Overview

The Commission's Pipeline Safety Standards related to master-metered gas distribution systems are primarily located in 49 C.F.R. parts 191 and 192. Part 191 deals with reporting of pipeline-related information to various entities, while Part 192 prescribes safety requirements related to many facets of pipeline safety, including, but not limited to:

- The design, construction, operation, and maintenance of pipeline facilities;
- The response to emergencies that arise on pipeline facilities; and
- The training and qualification of personnel who work on pipeline facilities.

Operators of jurisdictional master-metered gas distribution systems **must** comply with any and all applicable regulations at all times.

The Commission's Pipeline Safety Standards are also known as the Minimum Federal Safety Standards for transporting hazardous gases by pipeline. Jurisdictional master-metered gas distribution systems are considered to be pipeline operators. The pipes running through the small, well-defined area where the system exists are considered pipelines. The Standards are promulgated by PHMSA. The Commission has adopted these Minimum Federal Safety Standards as its own. The Standards relevant to master-metered gas distribution systems can be found online here:

- eCFR :: 49 CFR Part 191 -- Transportation of Natural and Other Gas by Pipeline; Annual, Incident, and Other Reporting
- eCFR :: 49 CFR Part 192 -- Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards

The Commission has also promulgated regulations related to preventing excavation damage of buried utility lines. Excavation damage is a leading cause of pipeline failures both in the Commonwealth of Virginia and across the United States. More information about the Commission's Damage Prevention regulations can be found here:

- Virginia SCC - Laws Rules Policies

There are also requirements in the Virginia Administrative Code that require a licensed professional engineer to exercise certain functions related to jurisdictional pipeline systems:

- Virginia Administrative Code - Title 20. Public Utilities And Telecommunications - Agency 5. State Corporation Commission - Chapter 360. Licensed Professional Engineer to Exercise Responsible Charge over Certain Natural Gas Engineering Projects

Each operator of jurisdictional pipelines is obligated to understand the full extent of any and all regulations that are applicable to its jurisdictional piping. Staff will inspect jurisdictional operators and promptly inform them of any probable violations of the Commission's

Pipeline Safety Standards, however it cannot act as a consultant or otherwise provide approval of a course of action.

Common Elements of a Master-Metered Gas Distribution System

As discussed in the introduction above, a master-metered gas distribution system is defined as follows:

Master Meter System *means a pipeline system for distributing gas within, but not limited to, a definable area, such as a mobile home park, housing project, or apartment complex, where the operator purchases metered gas from an outside source for resale through a gas distribution pipeline system. The gas distribution pipeline system supplies the ultimate consumer who either purchases the gas directly through a meter or by other means, such as by rents.*

Common elements of a jurisdictional master-metered gas distribution system include:

- **A resale of gas** – a jurisdictional master-metered gas distribution system requires a resale of gas to occur after the gas passes through the so-called master meter (i.e. the large meter owned and operated by the LDC or gas company that sells gas into the system). This can take the form of a direct resale, in which the master-metered gas distribution system operator uses a series of meters it owns and operates at the extremities of its system to measure the gas sold to each individual customer. It may also take the form of an indirect payment, such as rent, utility fees, condominium association fees, or other fees or charges paid to a central entity that, in turn, pays the gas bill provided by the LDC for the gas that passes through the master meter.

- **End-use gas consumers downstream of the master meter** – a jurisdictional master-metered gas distribution system requires end-use customers that depend on the system. An end-use customer is someone who receives gas through the system for use in gas-consuming appliances or other equipment. Examples include but are not limited to: tenants in an apartment, owners of a condominium, and concessionaires who rent space in a university dining hall. These end-use customers are part of the resale of gas discussed above.

- **A system of piping downstream of the master meter** – a jurisdictional master-metered gas distribution system has a system of pipes that transport gas from the LDC's mater meter to the various end-use customers. This concept is illustrated in the example scenarios in the next section. This system of pipes is often, but not always, located underground. Compliance with all elements of the Commission's Pipeline Safety Standards falls to the owner of this system of pipes, not the LDC that supplies gas to the system. Generally, piping systems that are contained within a single structure do not constitute a jurisdictional master-metered gas distribution system.

- **One or more master meters –** a jurisdictional master-metered gas distribution system will have one or more meters owned and operated by the LDC that measures

the amount of gas that flows into the jurisdictional master-metered gas distribution system. Some systems will have numerous master meters, each with its own discrete system of downstream buried pipelines (see Scenario 2 below).

- **A definable area where gas distribution occurs** – a jurisdictional master-metered gas distribution system includes a definable area where gas distribution occurs. This is generally, but not always, outside of a structure. Systems that are contained entirely within a single structure are usually not jurisdictional, unless they have individual metering within the structure to measure gas usage at the fuel line connection to each end-use customer.[2] The definable area tends to take the form of either a buried system of gas distribution pipelines or extensive footages of aboveground piping that is used to transport gas from the master meter to end-use customers. The 49 C.F.R. § 191.3 definition of master meter includes three examples of the definable area: a mobile home park, a housing project, or an apartment complex. Note that the definable area is not restricted to these categories of property.

[2] The jurisdictional status of any specific gas system contained within or almost entirely within a structure is a legal question that is dependent upon numerous factors unique to that structure and the business arrangement underlying the structure's gas lines.

Examples of Common Jurisdictional Master-Metered Gas Distribution Systems and Non-Jurisdictional Systems

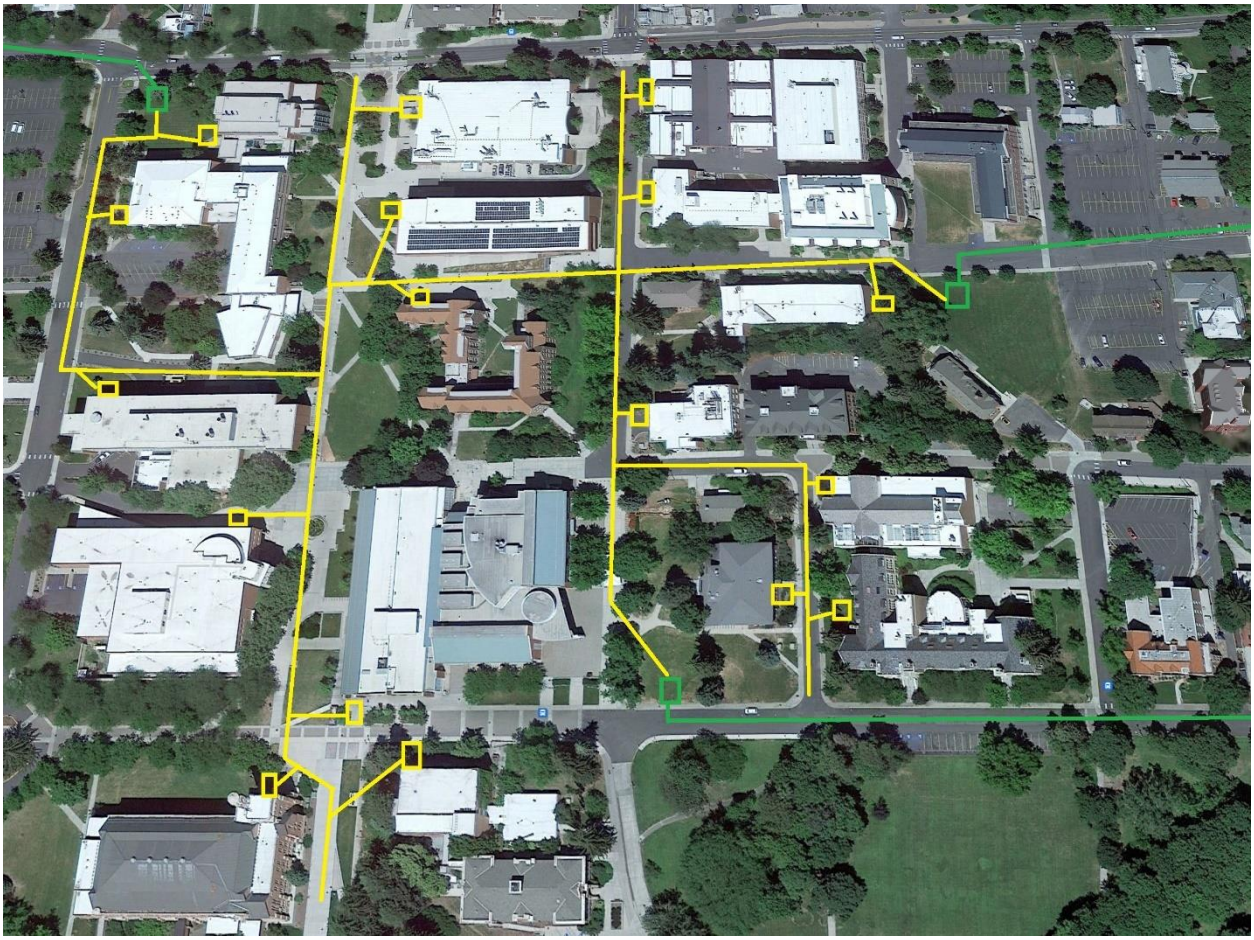
Master-metered gas distribution systems must engage in the resale of the gas purchased from the entity that supplies it gas (typically an LDC). Below are some scenarios[3] that comprise jurisdictional master-metered gas distribution systems and non-jurisdictional gas systems. Note that these scenarios are illustrative only and not meant to serve as a confirmation whether an identical real-world system is subject to the Commission's Pipeline Safety Standards.

- **Scenario 1 (Jurisdictional)** – At this apartment complex, the master meter operator purchases bulk gas from the LDC through a large-volume sales meter on the edge of the property. The LDC-owned piping and metering is denoted with green lines in the schematic below. From there, buried pipelines owned and operated by the master meter operator transport gas to each of the apartment buildings on the property. This master-metered gas distribution system piping is denoted with yellow lines in the schematic below. The piping comes above grade at each building wall, where it enters the structure and transports gas to individual apartments. The system ends at the point where the aboveground piping at each building connects to the interior piping. Each apartment has its own gas range, water heater, and furnace. Apartment tenants pay the apartment complex a flat fee for gas usage, and, in exchange, receive access to the gas transported by this pipeline system. In this scenario, the master-metered gas distribution system jurisdictional piping is denoted with yellow lines:

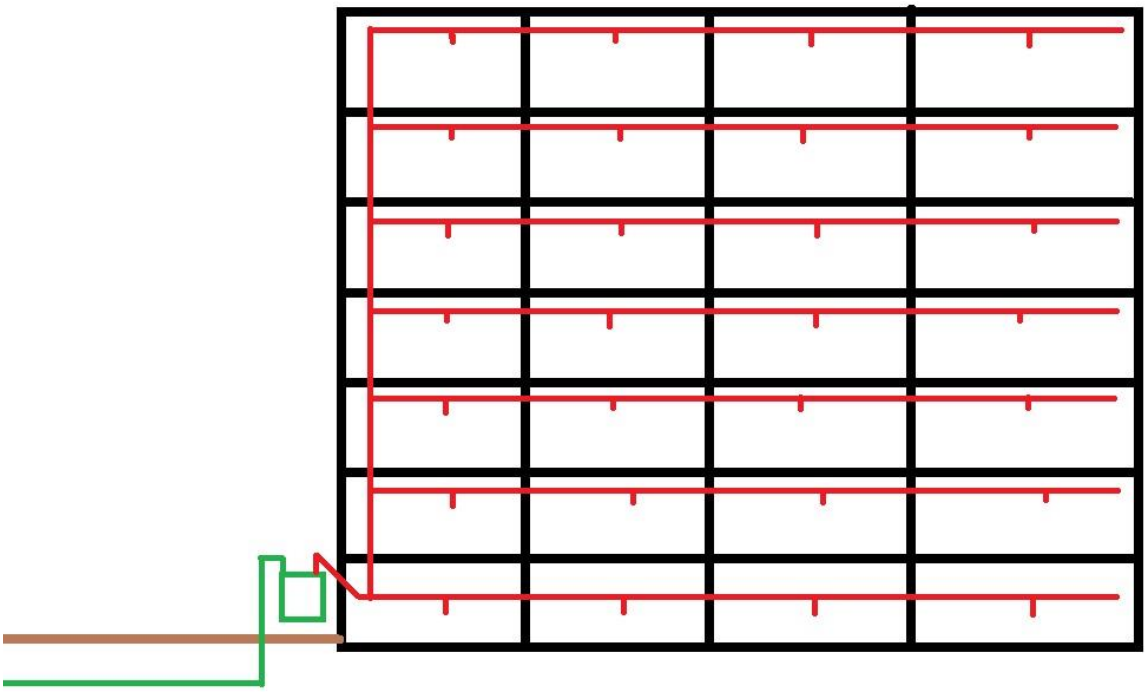
[3] Staff notes that the satellite photographs below do not depict real jurisdictional systems or locations within the Commonwealth of Virginia. These are fictional scenarios meant to serve as illustrative examples only.

- **Scenario 2 (Jurisdictional)** – At this condominium complex, the master meter operator purchases bulk gas from the LDC through three large-volume sales meters scattered throughout the property. The LDC-owned piping and metering is denoted with green lines in the schematic below. From there, buried pipelines owned and operated by the condominium association (the master meter operator) transport gas to each of the condominium units on the property. At each condominium, a small gas pipe comes above ground and then goes into the building wall to connect to the condominium's indoor piping. The jurisdictional system ends where the aboveground pipe connects to the individual condominium piping. Some of the condominium units are rentals, in which the condominium owner rents the property to a tenant. In this scenario, the master-metered gas distribution system jurisdictional piping is denoted with yellow lines:

- **Scenario 3 (Jurisdictional)** – A University purchases bulk gas from the LDC at three meters around campus. The LDC's piping and metering is represented by the green lines. The University then uses buried gas lines to transport the gas to various structures around the campus, including several that house tenants and concessionaires that pay rent to the University in order to use these spaces for residential and commercial activities. The University measures the amount of gas going to each individual building through small meters it owns and operates. The University then charges the respective tenants and concessionaires for gas used. The University's jurisdictional piping is represented by the yellow lines. At each building with a University-owned meter, a gas line comes above ground and goes through the meter, and then connects to the building wall. The system ends just downstream of the gas meter at each respective building.



- **Scenario 4 (Non-Jurisdictional)** – An apartment building is served by the LDC. The LDC transports gas to the apartment building through the green piping. The gas passes through a meter and then enters the piping associated with the apartment building. The apartment building piping is depicted in red. After the LDC's meter, a system of gas lines runs through the apartment building, providing gas to each apartment. There is no metering of gas in any of the individual apartments. The apartment building's gas lines never go underground or feature substantial lengths of piping in aboveground, outdoor areas.



Frequently Asked Questions

1. **I just found out I operate a jurisdictional master-metered gas distribution system. What do I do now?**

   The first thing an operator should do is take any and all actions necessary to ensure public safety. These actions can include, but are not limited to: ensuring there are no leaks or other hazardous conditions that pose a threat to public safety. Once an operator has ensured that there are no active threats to public safety, it generally has three options for how to proceed:

   - **Convert** – LDCs will often undertake what is known as a "conversion" project with master-metered gas distribution systems. This results in the LDC coming in and replacing all jurisdictional piping with new piping owned-and-operated by the LDC. Once this process is complete and all jurisdictional piping is successfully abandoned in accordance with the Commission's Pipeline Safety Standards, the master meter operator is no longer a jurisdictional master meter operator. The scope and cost of a conversion project is something worked out between the LDC and the master-metered gas distribution system operator.

   - **Abandon** – if a master-metered gas distribution system eliminates all of the gas-consuming appliances and equipment associated with the resale of gas and abandons the jurisdictional pipeline facilities in accordance with the Commission's Pipeline Safety Standards, the master meter operator is no longer a jurisdictional operator.

   - **Come into compliance** – the master-metered gas distribution system can work to learn and apply the regulations in the Commission's Pipeline Safety Standards. A successful path to compliance often involves the use of specialized compliance contractors. Operators who choose this path are subject to regular inspections from Division safety inspectors and may face enforcement actions up to, and including, civil penalties for probable violations of the Commission's Pipeline Safety Standards.

   During a conversion or abandonment, operators are still responsible for undertaking any and all actions necessary to comply with the Commission's Pipeline Safety Standards and to ensure public safety.

2. **Will Staff recommend compliance contractors for operators of master-metered gas distribution systems?**

   Staff is unable recommend or endorse compliance contractors. There are numerous companies that specialize in aiding operators in complying with the Commission's Pipeline Safety Standards. These companies are spread out across the United States.

3. **Does an operator of a potential master-metered gas distribution system have to wait for Staff to make contact and identify it as a jurisdictional system before beginning compliance activities?**

   No. The Commission's Pipeline Safety Standards require operators of master-metered gas distribution systems to self-report, pursuant to 49 C.F.R. § 191.22. Staff relies on this self-reporting to ensure that it has knowledge of all jurisdictional pipeline operators in the Commonwealth of Virginia.

   Staff will occasionally work with LDCs to gather lists of all customers to which they supply gas that may meet the 49 C.F.R. § 191.3 definition of a Master Meter. Staff will then review existing reported Master Meter operators, and then work to make contact with the identified customers to undertake a jurisdictional assessment of their piping.

4. **Who has the final say on whether a system is jurisdictional?**

   The Commission's Office of General Counsel ("OGC") determines whether systems are jurisdictional. Division inspectors do not have the authority to make this legal determination. If the operator does not agree with OGC's findings, it can dispute the classification in a legal proceeding at the Commission.

5. **Does there have to be buried piping for a small distribution system to be jurisdictional to the Commission's Pipeline Safety Standards?**

   No. While many systems are primarily comprised of buried piping, certain configurations (including, but not limited to: the use of meters downstream of the LDC's large meter to measure the gas usage of tenants or other consumers of gas so that they can be charged for gas usage) may result in a system being jurisdictional.

6. **Does a small distribution system have to have its own meters downstream of the master meter that measure gas usage by end-use customers to be jurisdictional?**

   No. Many master-metered gas distribution systems do not have any meters downstream of the LDC-owned-and-operated master meter. In these cases, gas is sold through indirect means, such as rent, association fees, or a flat-rate utility fee.

7. **Can my licensed plumber perform work on jurisdictional pipeline facilities?**

   Possibly. The Commission's Pipeline Safety Standards prescribe requirements for the qualifications of individuals who perform work on pipeline facilities or identify areas where qualified individuals need to perform inspections or other activities. These requirements include, but are not limited to: 49 C.F.R. § 192.227, § 192.229, § 192.241, § 192.243, § 192.285, § 192.287, § 192.305, § 192.453, § 192.615, § 192.627, and the entirety of Subpart N. Anyone who performs work on jurisdictional pipeline facilities

must meet any and all requirements specified by the Commission's Pipeline Safety Standards, regardless of any other qualifications or licensure they may possess.

8. Can I purchase pre-written procedures for use on my jurisdictional master-metered gas distribution system?

There are compliance contractors who will sell jurisdictional operators pre-written plans, programs, and procedures to try to comply with the requirements for such documents contained throughout the Commission's Pipeline Safety Standards. These "off-the-shelf" products are often written in a generic manner to be applicable to a range of different types of jurisdictional gas systems. Without editing to account for the unique attributes of your specific jurisdictional gas system, these "off-the-shelf" procedures often lack the system-specific detail required to achieve compliance with the Commission's Pipeline Safety Standards. It is the operator's responsibility to ensure that any and all required written procedures contain sufficient detail and clarity to demonstrate how compliance will be achieved with any and all applicable provisions within the Commission's Pipeline Safety Standards. Furthermore, the Standards are routinely changed and updated by PHMSA, which creates the need for regular updates to written procedures to ensure they comply with all applicable regulatory requirements.

9. Who is responsible for marking the approximate horizontal location of the buried gas lines associated with my jurisdictional master-metered gas distribution system when an 811 ticket is called?

You are. When responding to an 811 excavation ticket, the LDC that sells you gas will only mark the location of pipeline facilities it owns and operates. The only exception to this is if you have a written agreement with the LDC that explicitly identifies it as the entity responsible for locating and marking buried utility lines in response to 811 notifications. As an operator of a master-metered gas distribution system, you are responsible for becoming a member operator of Virginia 811 and then marking your pipeline facilities and carrying out all of the other requirements of 49 C.F.R. § 192.614, along with state laws and regulations pertaining to damage prevention, and any and all other applicable regulations. More information on state damage prevention laws and regulations is available on the Commission's website.

10. What do I need to know before I begin a construction project on my jurisdictional master-metered gas distribution system?

The Commission's Pipeline Safety Standards contain numerous requirements for construction projects that affect jurisdictional pipeline facilities. Operators should ensure that they are well versed in these requirements and are able to fully meet them before a project begins.

The Virginia Administrative Code also contains requirements for certain projects that affect jurisdictional pipeline facilities. These projects must be reviewed, approved, and

stamped by a licensed professional engineer before work can begin. These requirements can be found in 20VAC5-360-10 to 20VAC5-360-50 of the Virginia Administrative Code.

Staff encourages anyone considering construction of a jurisdictional master-metered gas distribution system to thoroughly consider the many regulatory requirements that apply to these gas distribution systems.

11. Where can I go to learn more about specific parts of the Commission's Pipeline Safety Standards?

PHMSA publishes interpretations of specific code sections. While an interpretation is narrowly tailored to the specific issue as it relates to the entity that wrote the request for interpretation and is not meant to be a catch-all or prescriptive guide to compliance, they can be useful tools to enhance an operator's understanding of what the regulations require. The interpretations are available on PHMSA's website.

12. I am interested in purchasing an apartment complex or other piece of property that contains a jurisdictional master-metered gas distribution system. What should I know?

In the past, the sale of jurisdictional master-metered gas distribution systems has resulted in new owners who don't understand their obligations relative to ensuring the safety of their systems through compliance with the Commission's Pipeline Safety Standards. Staff has seen transactions that have resulted in lost records, lost procedures, and lost institutional knowledge that have left the new owner in a difficult situation.

Staff also requires that ownership changes, including acquisition and divestiture, be promptly communicated to it via vapipelinesafety@scc.virginia.gov. Keep in mind that 49 C.F.R. Part 191 of the Commission's Pipeline Safety Standards contains regulatory requirements for notifying certain parties of changes to a jurisdictional pipeline, including changes in the entity responsible for compliance with safety programs, acquisition, and divestiture. Compliance with these provisions will be reviewed by both the Division and PHMSA.

A party interested in purchasing an apartment complex or other facility that contains one or more jurisdictional master-metered gas distribution systems may find it helpful to work with the seller before the sale to ensure that all written procedures, records, and other pertinent information to the jurisdictional piping is transferred to the new owner.

In addition, a new owner may find itself liable for probable violations committed by the past owner. This may include, but is not limited to: issues with design, historic operations, and historic maintenance.

13. Do I need to obtain a PHMSA Operator ID for my jurisdictional master-metered gas distribution system?

Yes. 49 C.F.R. § 191.22 of the Commission's Pipeline Safety Standards require all jurisdictional operators to obtain an Operator ID from PHMSA. This also requires reporting operator ownership, name changes, acquisitions, and divestures.

14. Scenario 4 shows a non-jurisdictional system that is almost fully contained inside of a single building. Is it possible to have a jurisdictional system that is fully contained inside of a single building?

Yes. If, for example, the apartment building owner in Scenario 4 decided to place individual gas meters in each apartment to measure and bill for gas usage, the piping in red in Scenario 4 would become jurisdictional.

15. I receive gas from an LDC and want to submeter downstream of the LDC to bill tenants who live in my apartment building. What do I need to know?

The introduction of submetering could render your system a jurisdictional master-metered gas distribution system, requiring compliance with all applicable parts of the Commission's Pipeline Safety Standards.

In addition, the Virginia Administrative Code contains additional requirements relative to submetering natural gas. 20VAC5-305-20 contains general requirements for submetering. These general requirements include provisions relative to leasing and rental agreements at submetered locations and a requirement for the submetering entity to notify the Commission and the utility providing natural gas service, in writing, of the submetering within 90 days of the completion of installation of submetering equipment. This notification must provide: (1) the name of the apartment house, office building, shopping center, or campground; (2) the location; (3) the mailing address of the owner; (4) the approximate date of installation of the equipment; and (5) the type, manufacturer, and model number of such equipment. In addition, all equipment must be installed, operated, and maintained in accordance with all municipal, state, and federal requirements, including those found in § 56-257.2 and the 2006 edition of the National Fuel Gas Code.

20VAC5-305-40 includes additional requirements for submetering, including how billing works, who may test the accuracy of submeters, how to react to meter inaccuracies, and how to react to tampering.

20VAC5, Chapter 305 contains other requirements for submetering. Staff expects any submetering to meet all regulatory requirements, including those contained in 20VAC5, Chapter 305.

16. Where does a jurisdictional master-metered gas distribution system that does not have any metering downstream of the master meter end?

Generally, the jurisdictional piping ends once it goes into the final building where end-use customers are located and is no longer underground or aboveground. In Scenario 2, for example, the jurisdictional piping ends at the point where the small runs of piping that come aboveground at each apartment building to go inside connects to the building wall. This is not always the case. The precise locations where a system begins and ends are dependent upon what the LDC owns and operates and how the associated definable area from the § 191.3 definition of master meter is configured.

17. Who is responsible for operation, maintenance and other compliance activities associated with pressure regulation and overpressure protection devices located at the beginning of a master-metered gas distribution system to protect it from the LDC's gas pressure?

It depends on where the pressure regulation and overpressure protection devices are located (i.e. on LDC-owned piping or on jurisdictional master-metered gas distribution system piping) and who owns them. Nevertheless, these pipeline facilities are subject to the same regulatory requirements as district regulator stations, as they serve the same purpose (i.e. they reduce gas pressure and protect downstream mains and service lines from an inlet pressure that exceeds the Maximum Allowable Operating Pressure of the master-metered gas distribution system).

18. Where can I learn more about how terms used in the Commission's Pipeline Safety Standard are defined?

Many of the terms and concepts used in the Commission's Pipeline Safety Standards are defined in 49 C.F.R. § 191.3 and § 192.3.

19. Where can I learn more about the Commission's Pipeline Safety Standards concerning pipeline systems that transport Liquefied Petroleum Gas?

These systems are discussed in the Commission's Pipeline Safety Standards, including in 49 C.F.R. § 191.1 and § 192.11. The Division of Utility & Railroad Safety also has a brief guide detailing these systems, which can be found on the Division's website.