FLORIDA
PUBLIC SERVICE COMMISSION

NATURAL GAS PIPELINE

ANNUAL
SAFETY REPORT

2014

DIVISION OF ENGINEERING

TABLE OF CONTENTS

Gas Safety Background 1

Transmission Pipeline Integrity Management 4

Distribution Integrity Management Plan 4

Other Responsibilities 4

Inspection Results 5

Safety Improvement Actions 5

Conclusion 8

TABLES

Table 1: Pipeline Replacement Program 6

FIGURES

Figure 1: Diagram of Natural Gas Flow 2

Figure 2: Number of Services by Utility Type 3

Figure 3: FPSC Significant Incidents 2010-2014 7

Figure 4: Excess Flow Valves Installed in 2014 8

NATURAL GAS PIPELINE SAFETY

Gas Safety Background

The federal government establishes minimum pipeline safety performance standards under the U.S. Code of Federal Regulations, Title 49 "Transportation," Parts 190, 191, 192, and 199. The Office of Pipeline Safety, within the U.S. Department of Transportation, Pipeline and Hazardous Materials Safety Administration (PHMSA), has overall regulatory responsibility for hazardous liquid and gas pipelines in the United States. PHMSA's goal is to improve industry performance and communications to prevent hazardous material transportation incidents, accidents, injuries, and fatalities. PHMSA tracks data on the frequency of failures, incidents, and accidents. PHMSA pipeline safety regulations assure safety in design, construction, inspection, testing, operation, and maintenance of pipeline facilities and in the siting, construction, operation, and maintenance of facilities. Additionally, PHMSA sets out parameters for administering the pipeline safety program.

The Florida Public Service Commission (FPSC) is certified through PHMSA to inspect intrastate transmission and distribution pipelines, and has adopted the federal standards as well as more stringent regulations found in Section 25-12, Florida Administrative Code and Chapter 368 Florida Statutes, which authorize the Commission to inspect pipelines and adopt rules for governing pipeline safety. PHMSA authorizes state agencies, such as the FPSC, to conduct oversight and enforcement of pipeline operators through PHMSA's State Pipeline Safety Program[1].

At the March 5, 1984 Internal Affairs the Commission voted to require staff to prepare an annual summary report of the previous year's natural gas pipeline safety activities. Any questions concerning this report should be directed to:

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[1] Federal Statutes provide for state assumption of all or part of the intrastate regulatory and enforcement responsibility of utility companies through annual certifications and agreements issued under this program.

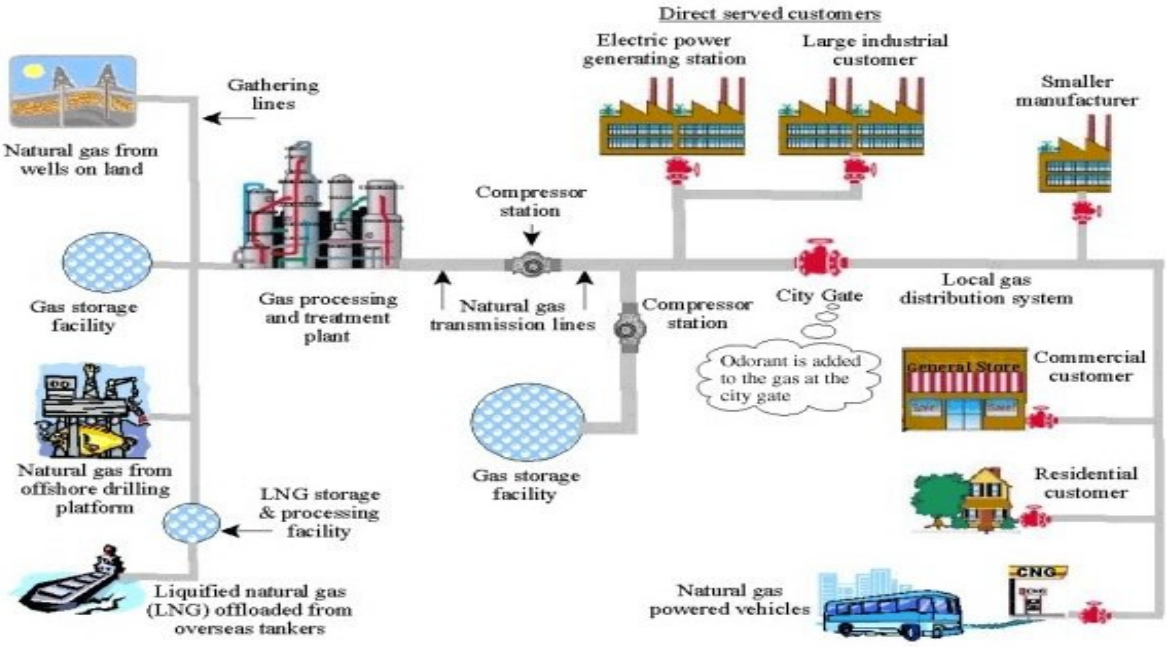
Gas Safety 2014 Overview

Through its Bureau of Safety, the FPSC evaluates intrastate gas system engineering and operations to ensure that construction, repairs, and maintenance are performed in accordance with specific test procedures using proper materials. This includes transmission and distribution pipelines, as well as master meter locations.

The diagram of natural gas flow illustrated below provides a view of the various stages of the deliverance of natural gas from the wellhead to the consumer. Consumers vary from large industrial plants, such as electric generating stations, to the single family household.

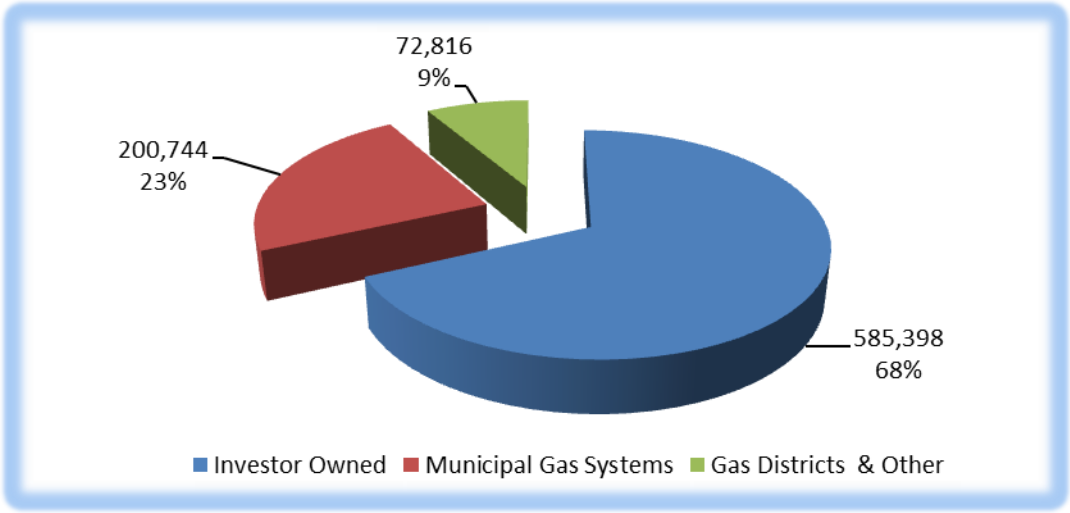
Florida is not a producer of natural gas at this time. Florida relies on gas being delivered by high pressure interstate pipelines from other states. The interstate transmission pipelines use compressor stations to maintain the appropriate pressure of the gas. The gas is then distributed to large end users like power generation plants by lateral lines off of the transmission lines. Gas is also delivered to city gas stations that reduce the pressure for use through distribution regulator stations for delivery to consumers. Where necessary, regulators are installed at the consumer's premises to further reduce the pressure of the gas for use by appliances.

Figure 1: Diagram of Natural Gas Flow



There were 42 gas distribution companies and 18 transmission companies operating 93 systems in Florida as of December 31, 2014. Figure 2 below shows the total number of services by utility type providing the service.

Figure 2: Number of Services by Utility Type



A major aspect of compliance with state and federal regulations involves regular inspections of pipeline facilities. Safety, reliability, and service monitoring promotes an uninterrupted supply of natural gas service to the public and confirms that such services are provided in a reasonable and timely manner with minimal risks. Every gas system operating in Florida is evaluated by the FPSC on an annual basis to insure the operator is in compliance with both the federal standards and state rules.

Gas Safety Inspector Duties and Training Requirements

The FPSC safety staff has seven inspectors who conduct on-going inspections and review the safety operations of Florida's 93 natural gas systems. All FPSC inspectors must complete extensive training through PHMSA, to be fully qualified to perform safety inspections. The following are the mandatory Safety Evaluation of Gas Pipeline and Systems courses:

- Plastic and Composite Materials
- Welding and Welding Inspection of Pipeline Materials
- Gas Pressure Regulation and Overpressure Protection
- Pipeline Failure Investigation
- Pipeline Safety Regulation Application and Compliance Procedures
- Corrosion Control of Pipeline Systems
- Safety Evaluation of Gas Pipeline and Systems Course

In addition to these seven, there are fourteen other courses available to FPSC inspectors to assist in efficiently performing natural gas safety inspections.

Transmission Pipeline Integrity Management

The Gas Transmission Integrity Management Plan was introduced by the Pipeline Safety Improvement Act in 2002. The rule applies to gas transmission operators jurisdictional to 49 CFR Part 192. This rule became effective February 14, 2004. The objectives are to improve pipeline safety through:

- Accelerating the integrity assessment of pipelines in high consequence areas.
- Improving integrity management systems within companies.
- Improving the role in reviewing the adequacy of integrity programs and plans.
- Providing increased public assurance in pipeline safety.

An operator of a gas transmission pipeline is required to perform ongoing assessment of the pipeline's integrity. This is done by performing a risk analysis to identify and mathematically rank all threats that could be detrimental to the integrity of the pipeline. There are many key elements included in the written plan, some of which include identification of all high consequence areas, baseline assessment plan, and identification of threats to each covered segment. The rules governing the Gas Transmission Pipeline Integrity Management Plan can be found in 49 CFR, Part 192, Subpart O.

Distribution Integrity Management Plan

PHMSA previously implemented integrity management regulations which became law when Congress passed the Pipeline Safety Improvement Act in 2002 for hazardous liquid and gas *transmission* pipelines. This regulation required a pipeline operator to develop an Integrity Management Program for gas *transmission* pipelines located in areas where a leak or rupture could cause the most harm, such as high consequence areas. Congress and other stakeholders expressed interest in understanding the nature of similarly focused requirements for gas *distribution* pipelines. Significant differences in system design and local conditions affecting distribution pipeline safety ruled out the possibility of applying the same tools and practices used for transmission pipeline systems. Therefore, PHMSA took a slightly different approach for distribution integrity management, following a joint effort involving PHMSA, the gas distribution industry, representatives of the public, and the National Association of Pipeline Safety Representatives to explore potential approaches.

The final rule establishing integrity management requirements for gas *distribution* pipeline systems was issued December 4, 2009 (74 FR 63906), with an effective date of February 12, 2010. Operators were given until August 2, 2011, to write and implement their program. The regulation requires operators, such as natural gas distribution companies to develop, write, and implement a distribution integrity management program (DIMP) with the following elements:

- Knowledge
- Identify Threats
- Evaluate and Rank Risks
- Identify and Implement Measures to Address Risks
- Measure Performance, Monitor Results, and Evaluate Effectiveness
- Periodically Evaluate and Improve Program
- Report Results

Other Responsibilities

The FPSC gas pipeline safety section also supports and assists the state's Emergency Operations Center in all energy related issues, such as energy security, natural gas explosions, and natural disasters

or when any utility related threat is detected that threatens life and/or property. Several FPSC employees of the Division of Engineering are also members of the State Emergency Response Team.[2] Their assistance requires regular involvement supplying expert advice during an emergency; and coordinating activities of the gas and electric utilities, jointly with government, fire, police, and other public and private agencies. Training exercises and safety drills are held throughout the year to keep members current on existing and upcoming procedures relating to the operations of the Emergency Operations Center and to ensure preparedness should an emergency arise.

Inspection Results

As each gas system is evaluated, the inspector prepares a summary of the findings and discusses the results with the system operator's supervisory employees. The information is forwarded to the Bureau of Safety office, where a letter is prepared and issued to an officer of the company. When violations are found, a non-compliance letter is issued to the operator, along with a designated time frame (usually 30 days) to respond to the issue(s) found. During 2014, there were 387 total violations with 63 percent attributed to PHMSA regulations and 37 percent to FPSC regulations.

During 2014, the average number of days between a violation notice being issued and the date the violation closed was 132 days. The number of days a violation had remained open has continued to decrease since 2010, indicating a more expedient response to correcting violations as they are found. Company response time from issuance of the violation notice to their response was 33 days during 2014. The companies are typically given 30 days to respond to a violation notice; however, the situation often varies due to the nature of the problem and difficulty in getting the violation corrected. There were 75 compliance actions during 2014, with rule violations ranging from: (1) inadequate procedural manual; (2) failure to odorize natural gas; (3) failure to properly identify service line valves; (4) failure to follow criteria for cathodic protection; (5) improper welding; (6) failure to use qualified personnel; (7) failure to maintain leak reports; and (8) failure to implement a written continuing public education program. All violations have been corrected or are scheduled for corrective action pursuant to the Commission's enforcement procedures. The violations scheduled but not yet corrected by year's end occur late in the year and are carried over into the following year.

Safety Improvement Actions

During 2014, staff evaluated gas operators for implementation of Public Awareness Plans (PAP). This type of inspection is in addition to the normal gas system inspections performed. PAPs are intended to keep stakeholders such as the public and emergency personnel informed about the pipelines in close proximity to their communities. Staff found that many of the gas operators, although a PAP was in place, did not take proper steps to implement the plans, or in some cases, did not evaluate the effectiveness of the procedures used to inform the stakeholders. Staff continues to work with the operators for corrective action. Consumer education information is also provided via the FPSC website at the consumer tip site. (http://www.floridapsc.com/ConsumerAssistance/ConsumerTips)

Natural Gas Bare Steel and Cast Iron Pipe Replacement

Cast iron pipe is subject to "graphitization" or graphitic softening and bare steel is subject to corrosion. Both hazards can lead to structural failure and the release of gas. Gas utilities have been urged by the PHMSA to replace these older facilities as a safety measure. In August 2012, the FPSC approved cast iron/bare steel pipe replacement riders for three natural gas utilities, Peoples Gas

[2] State Emergency Response Team provides updated information to other agencies and the public, during any emergency condition involving electric or natural gas.

System, Florida Public Utilities, and the Florida Division of Chesapeake Utilities. Under the approved pipeline replacement program, these three utilities will replace 917 miles of cast iron and bare steel distribution pipe and 8,052 service lines within a 10-year period. As the result of several meetings with Pensacola Energy, in March 2011, Pensacola Energy voluntarily established a pipeline replacement program to replace its cast iron and bare steel pipelines. Table 1 below summarizes the progress of the four utilities. For the period 2012-2014, the monthly residential bill impacts are projected to be five cents for Peoples Gas System customers, four cents for Florida Public Utilities customers, and twenty-two cents for customers of the Florida Division of Chesapeake Utilities Corporation.

Table 1: Pipeline Replacement Program

Company Name	Total Miles of Bare Steel (BS) Pipe Needing Replacement as of September 2012	Total Miles of Cast Iron Pipe (CIP) Needing Replacement as of September 2012	Total Remaining BS Mileage (as of 12/31/14)	Total Remaining CIP Mileage (as of 12/31/14)	Total Mileage Replaced as of 12/31/14
Chesapeake Utilities	152	0	111.3	0.0	40.7
Pensacola Energy	469	88	413.3	84.8	58.9
Florida Public Utilities	197	1	92.0	1.0	105.0
TECO Peoples Gas	411	156	239.5	85.0	242.5
TOTALS	1229	245	856	171	447

As a result of these programs, 447 total miles of pipeline have been replaced.

Prevention of Damage to Gas Pipelines by Excavators

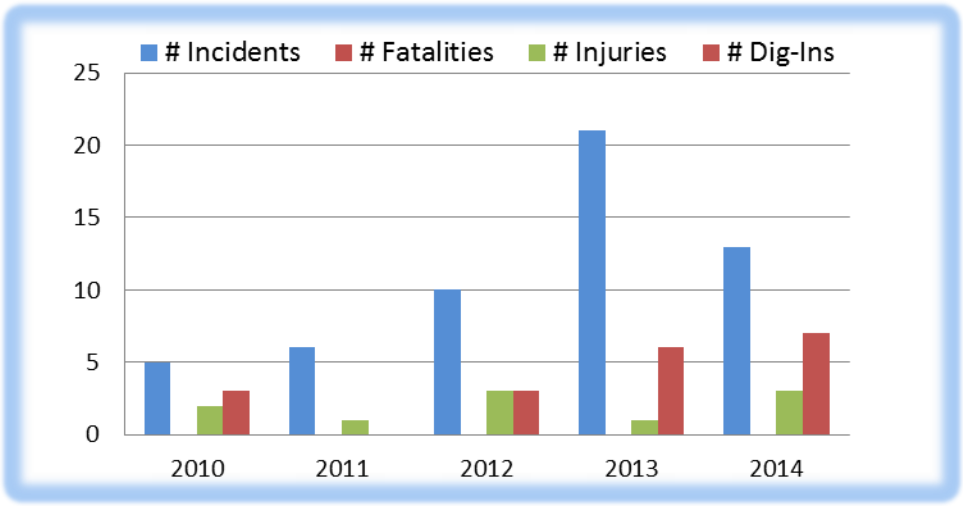
One of the highest causes of damage to natural gas pipelines in Florida, and the number one cause in the entire United States, is dig-ins (pipelines cut or damaged by others engaged in excavation activities or directional drilling). Underground utilities can sustain damages from just a small nick of the outer lining of the buried facilities, causing leaks, water intrusion, or corrosion.

Chapter 556 Florida Statutes is the Underground Facility Damage Prevention and Safety Act which requires anyone that will be digging to call 811 first, so underground utility lines can be located and marked. Sunshine State One Call of Florida is Florida's one-call center whose responsibility is to help prevent damages to underground utilities. For the excavator, calling 811 helps prevent hefty fines and repair costs due to utility service outages, injuries, environmental contamination, and property damage. Violation penalties can range from $500 to $5,000.

Sunshine State One Call of Florida is part of Common Ground Alliance. Common Ground Alliance is a member-driven association dedicated to ensuring public safety, environmental protection, and the integrity of services by promoting effective damage prevention practices. In recent years, the association has established itself as the leading organization in an effort to reduce damages to all underground facilities in North America through shared responsibility among all stakeholders. Other excavation damage prevention organizations can be found at http://www.commongroundalliance.com.

In the state of Florida, natural gas accidents and outages are reported to the FPSC in accordance with Commission Rule 25-12.084 F.A.C**.** In 2014, Florida had thirteen incidents with three injuries and zero fatalities. The reportable incidents include, but are not limited to: a lightning strike causing a gas line to ignite and a motor vehicle damaging meter sets leading to ignition. There has not been a natural gas related fatality in Florida since 2007.

Figure 3: FPSC Significant Incidents 2010-2014

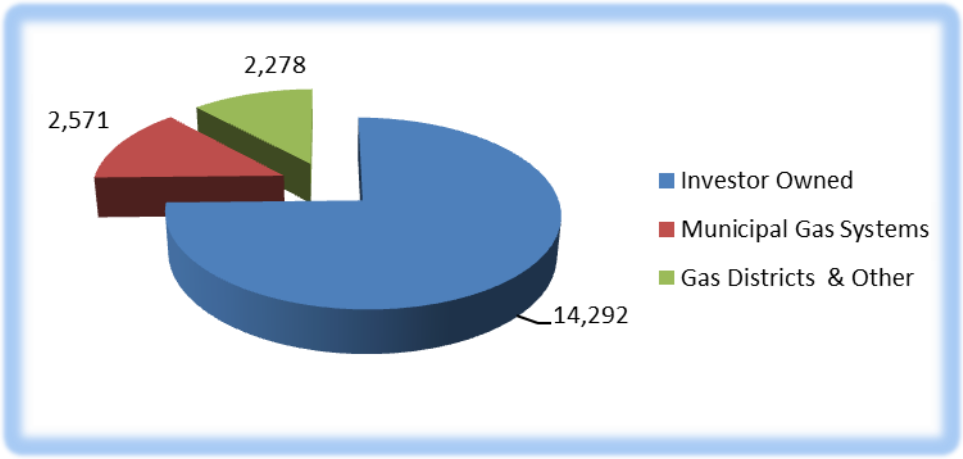


Excess Flow Valves

An excess flow valve (EFV) is a safety device designed to automatically shut off the flow of natural gas through a piping service line if it ruptures, thereby mitigating the impact of the rupture. In general, EFVs are an added optional safety device that has no effect on the gas flow resulting from a small leak, such as a leak caused by corrosion or a small crack. EFVs do not prevent accidents; instead, they help mitigate the consequences of accidents where there has been a substantial or catastrophic line break. Where installed, EFVs are complementary to damage prevention programs, one-call systems, and other pipeline safety efforts that focus on preventing accidents caused by outside forces.

EFVs became a reportable item during calendar year 2011, however, operators had until 2012 to do an inventory and provide accurate numbers of EFVs placed during the calendar year and balance at the end of the year. Effective 2012, the FPSC began to closely monitor the installation of EFVs to insure proactive responses by the gas operators. Figure 4 shows the number of EFV's each utility type installed during the year 2014.

Figure 4: Excess Flow Valves Installed in 2014



Conclusion

Although there were no Florida fatalities caused by natural gas in 2014, safety remains the top priority. The PSC worked closely with the gas companies to continue to reduce the average closing time for correcting violations. The decrease was from 184 days in 2013 to 147 days in 2014. Decreasing the time it takes to correct violations increases the safety of Florida customers. The PSC is continuing the replacement programs for Bare Steel and Cast Iron Pipe. 447 miles of pipeline have been replaced since September 2012. Replacing these types of pipeline reduces the possibility of failures due to the age and outdated materials. Finally, the increased installation of Excess Flow Valves will help mitigate the impact of any rupture on service lines.