

*FLORIDA
PUBLIC SERVICE COMMISSION*



NATURAL GAS PIPELINE

*ANNUAL
SAFETY REPORT*

2013

DIVISION OF ENGINEERING

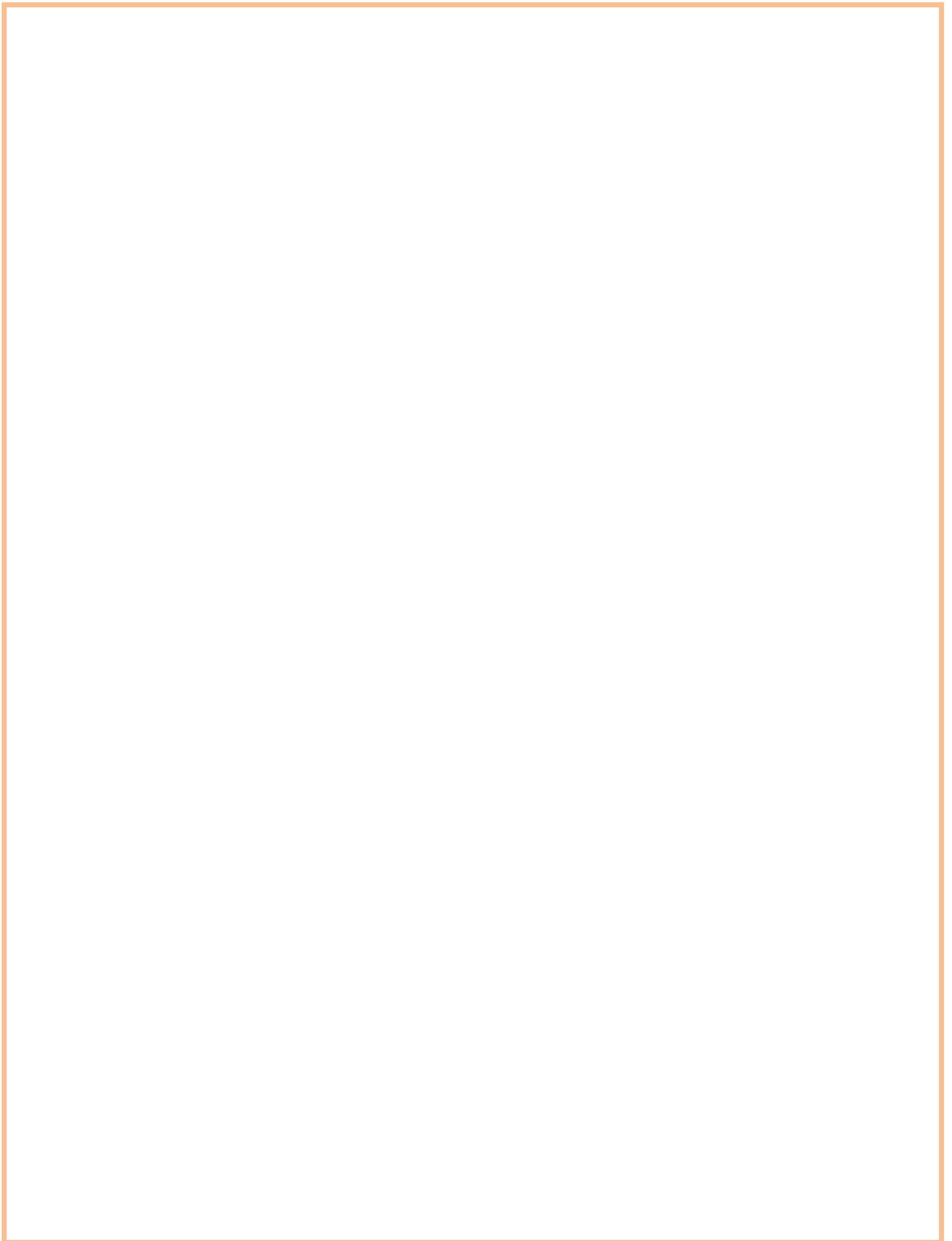


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NATURAL GAS PIPELINE SAFETY

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 Program¹.

At the March 5, 1984, Internal Affairs meeting, the Commission voted to require staff to prepare an annual summary report of the previous year’s natural gas pipeline safety activities. This is the report for calendar year 2013.

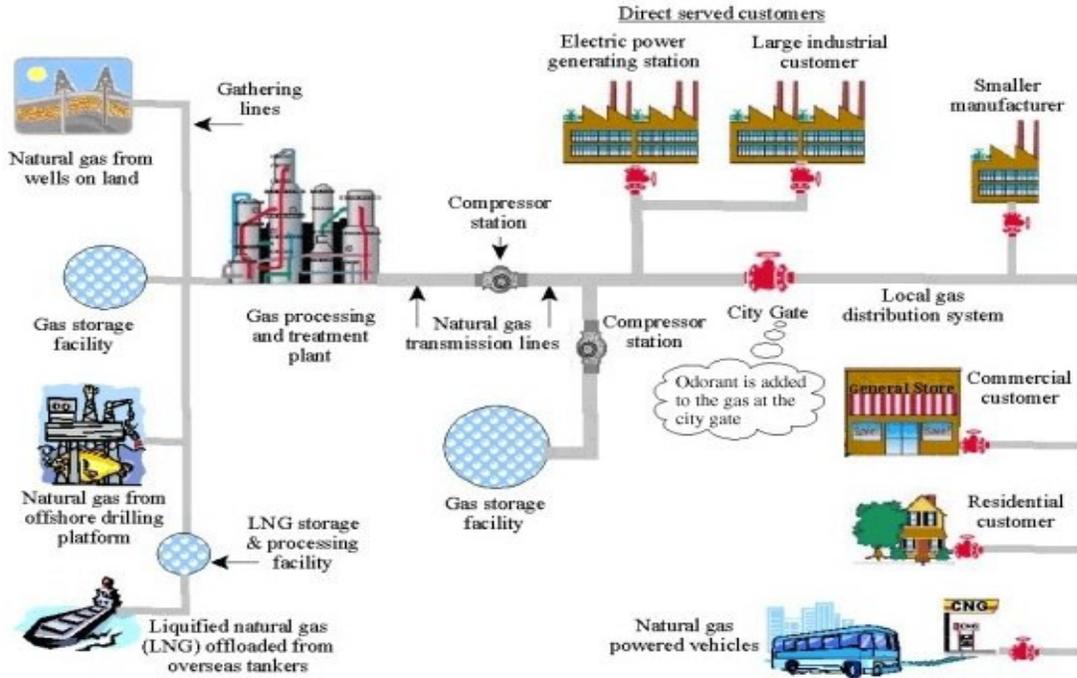
GAS SAFETY 2013 OVERVIEW

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 specified tested procedures using proper materials. This includes transmission and distribution pipelines, as well as master meter locations.

The diagram in Figure 1 provides a simplified look at how natural gas flows from the *source* to the *final destination*.

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.

Figure 1: Diagram of Natural Gas Flow



A major aspect of compliance 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 on an annual basis to insure the operator is in compliance with both the federal standards and state rules. Violations are monitored closely to insure timely compliance. During 2013, the average number of days between a violation notice being issued, to the date the violation closed was 153 days. The number of days a violation remained open has continued to decrease since 2010, indicating a more expedient response to correcting violations as they are found.

During 2013, Florida reported no fatalities and one injury. 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. The number of incidents due to dig-ins has tapered off significantly during the past five years, which could be attributed to the continued emphasis on calling for underground utility locations before taking any action (digging).

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 94 natural gas systems. All FPSC inspectors must complete extensive training through PHMSA, to be fully qualified to perform safety inspections. Initially, there are seven mandatory courses which must be completed within three years from completion date of the first course.

The following are the mandatory Safety Evaluation of Gas Pipeline and Systems courses:

- 1) Plastic and Composite Materials
- 2) Welding and Welding Inspection of Pipeline Materials
- 3) Gas Pressure Regulation and Overpressure Protection
- 4) Pipeline Failure Investigation
- 5) Pipeline Safety Regulation Application and Compliance Procedures
- 6) Corrosion Control of Pipeline Systems
- 7) Safety Evaluation of Gas Pipeline and Systems Course

In addition to the initial training, there are courses which are mandatory if the inspector performs inspections related to course content, such as:

- 1) Distribution Integrity Management Plan
- 2) Fundamentals of SCADA System Technology and Operation
- 3) Safety Evaluation of Inline Inspection
- 4) Safety Evaluation of Control Room Management
- 5) Investigating and Managing Internal Corrosion of Pipelines
- 6) Operator Qualification
- 7) Integrity Management Plan for Transmission Pipelines

Overall, there are 21 courses available to FPSC inspectors to efficiently perform natural gas safety inspections. The FPSC inspectors conduct annual evaluations of each of the companies' systems which include:

- Annual field inspections of natural gas pipeline systems operations and facilities in order to determine conformance to state and federal regulations.
- Investigate and review related operator's records for compliance with Federal Pipeline Safety Standards (i.e., 49 Code of Federal Regulations Parts 191, 192, 199) state gas pipeline safety rules (i.e., as defined per Section 25-12, F.A.C.) and Chapter 368 Florida Statutes.
- Take measurements to assure corrosion control equipment is performing effectively.
- Test pipeline valves to ensure they will be located, and operate in the event of an emergency.

- Check settings on instruments and equipment designed to protect against events that could overpressure the pipeline.
- Check customer meter readings for accuracy, in response to requests from customers.

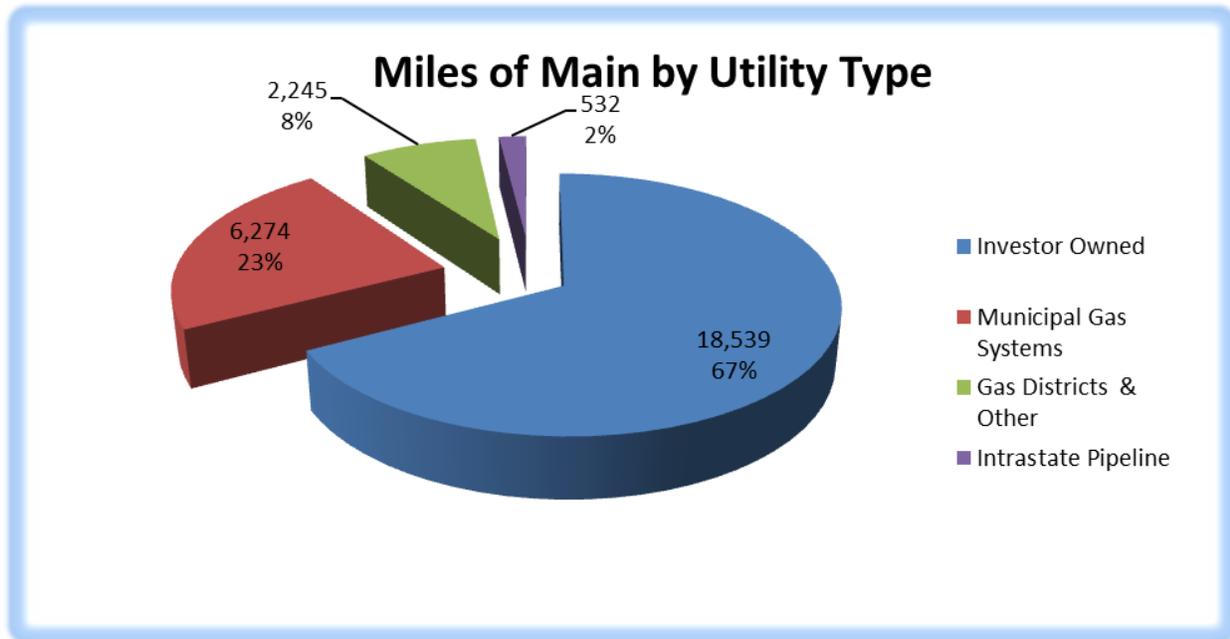
SCOPE OF GAS SERVICE IN FLORIDA

There were 60 gas companies operating 94 systems in Florida as of December 31, 2013.

- 4 Gas Districts
- 6 Investor-Owned Companies with 33 gas systems
- 5 Master Meters
- 17 Intrastate Pipelines with 23 gas systems
- 28 Municipalities with 29 gas systems

Florida's gas systems (some companies have several systems) are comprised of approximately 40,262 total miles of pipeline,² and 873,088 customer service lines.³ Investor-owned utilities account for 67 percent of the total miles of natural gas mains in Florida, while the remaining 33 percent is comprised of municipalities, gas districts, master meters (housing authorities), and intrastate transmission pipelines. The charts below show the total miles of main (does not include miles of service lines) and the total number of services by utility type providing the service.

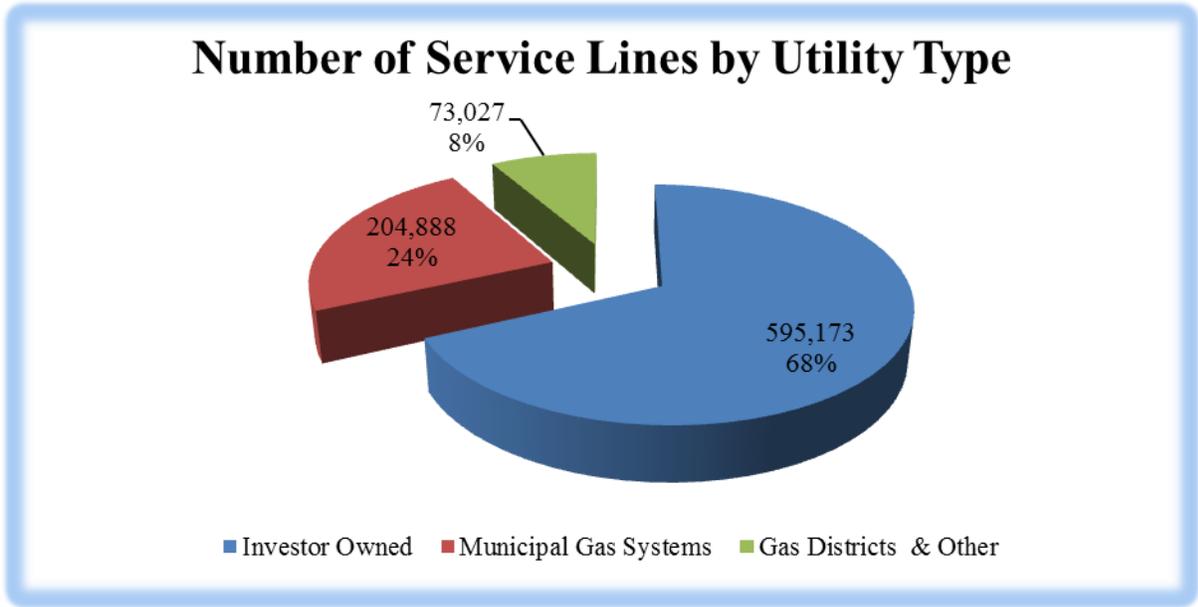
Figure 2: Miles of Main by Utility Type



² This includes 12,672 miles for service lines from the main to the meter.

³ Source: FORM PHMSA F 7100.1-1 and F 7100.2-1, as provided annually, by each operating company in Florida.

Figure 3: Number of Services by Utility Type



Below is a chart that shows the amount of pipeline by material type for the period ending December 31, 2013. The majority of the pipeline in Florida is made of plastic and protected steel.

Figure 4: Miles of Main by Material Type

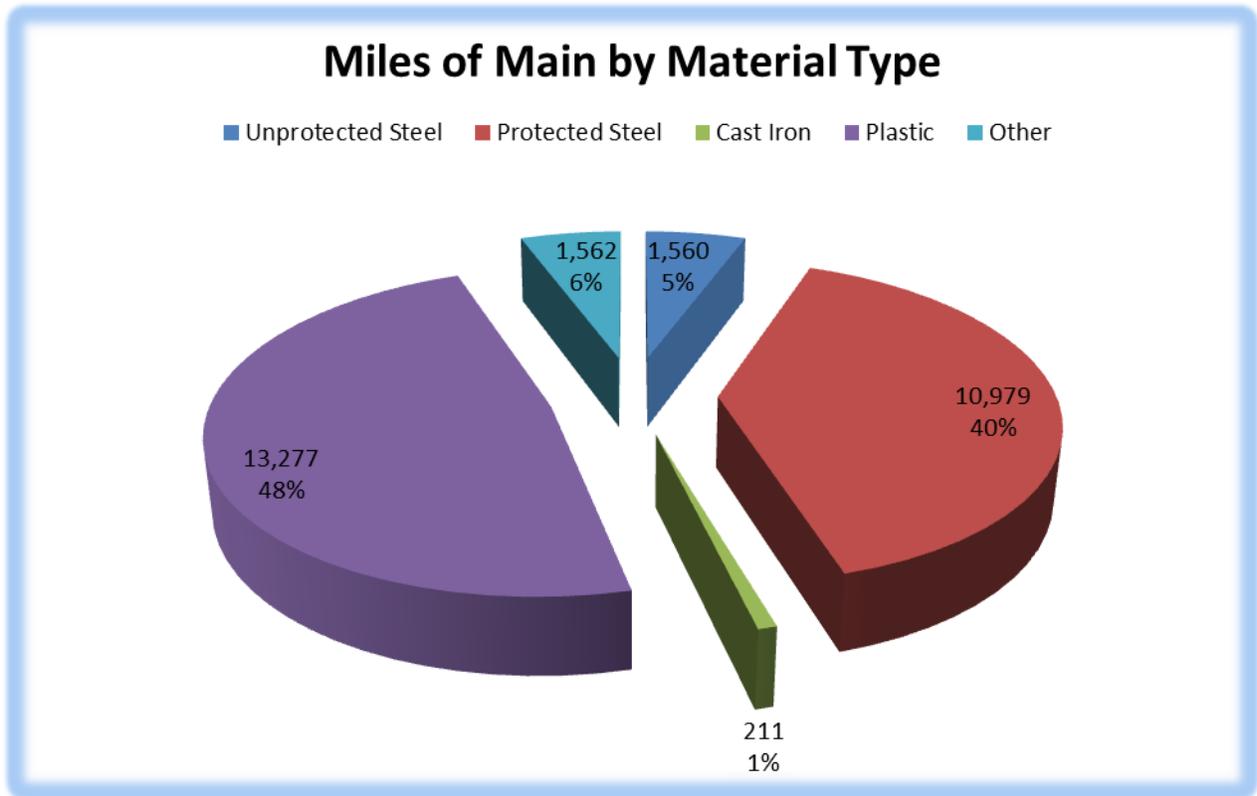
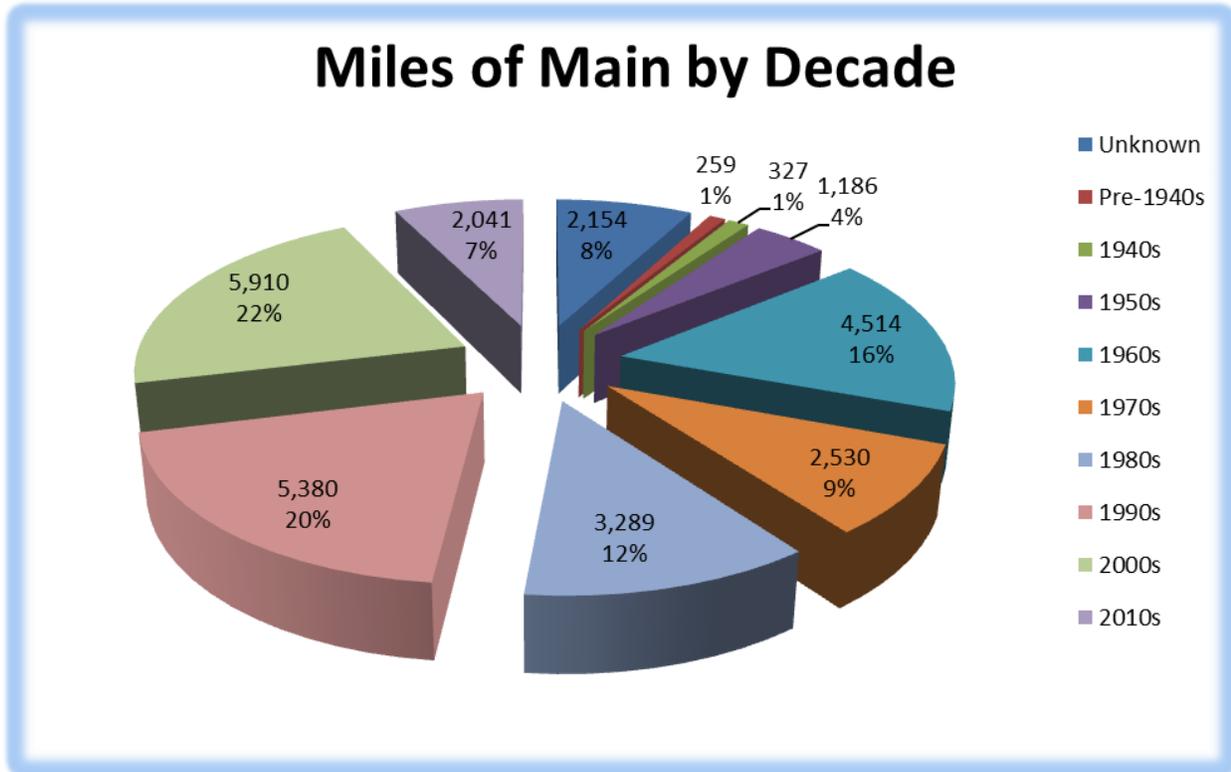


Figure 5 below shows the quantity and age of the existing pipeline in Florida as of December 31, 2013. The majority of the pipeline in Florida is less than 40 years old. Cast iron and steel pipelines without corrosion control, which range in age from 50 to 70 plus years, accounts for only 22 percent of the total pipeline in Florida. These aged and/or unprotected pipes have a significantly higher leakage rate than that of the newer plastic pipeline that was placed after 1971.

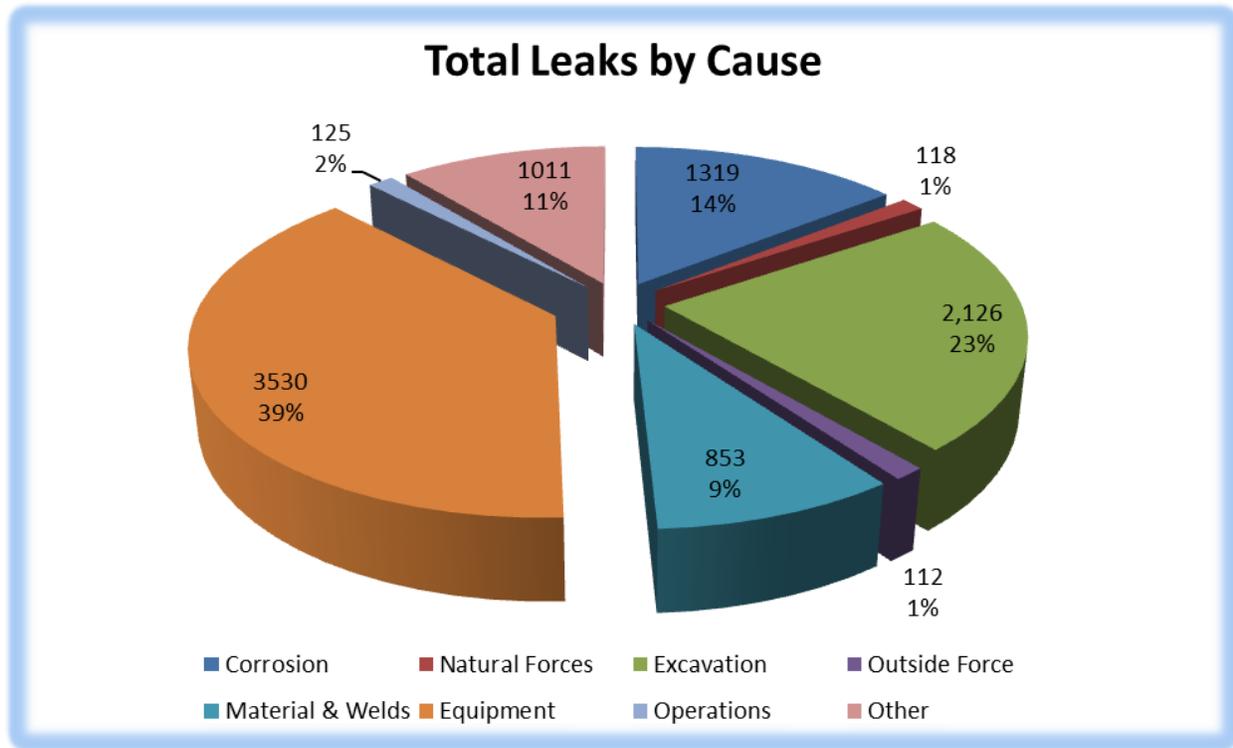
Figure 5: Miles of Main by Decade



While aged and unprotected pipelines have a higher leakage rate, there are many different causes that create gas leaks. Equipment failure and excavation damage have historically accounted for the highest causes of gas leaks, which were a combined 62 percent during 2013.

Figure 6 shows that equipment failure and excavation damage remain the leading causes of leaks in 2013.

Figure 6: Total Leaks by Cause



SAFETY IMPROVEMENT ACTIONS

During 2013, 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. The purpose of this type of inspection was to ensure that the PAPs were implemented, effective, and complete.

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.

These activities and education information are further enhanced via the FPSC website which contains publications that provide consumer information on Bill of Rights for Electric and Gas Service, as well as the Natural Gas Pipeline Safety Annual Report.

In addition to these public awareness activities, the FPSC Bureau of Safety issued a request in September 2011 for all gas operators in Florida who had bare steel and/or cast iron pipes in service, to submit a pipeline replacement program. These plans were implemented beginning in 2012. Table 1 illustrates the 2013 progress of each proposed replacement program submitted by the gas operators involved.

Table 1: Pipeline Replacement Program

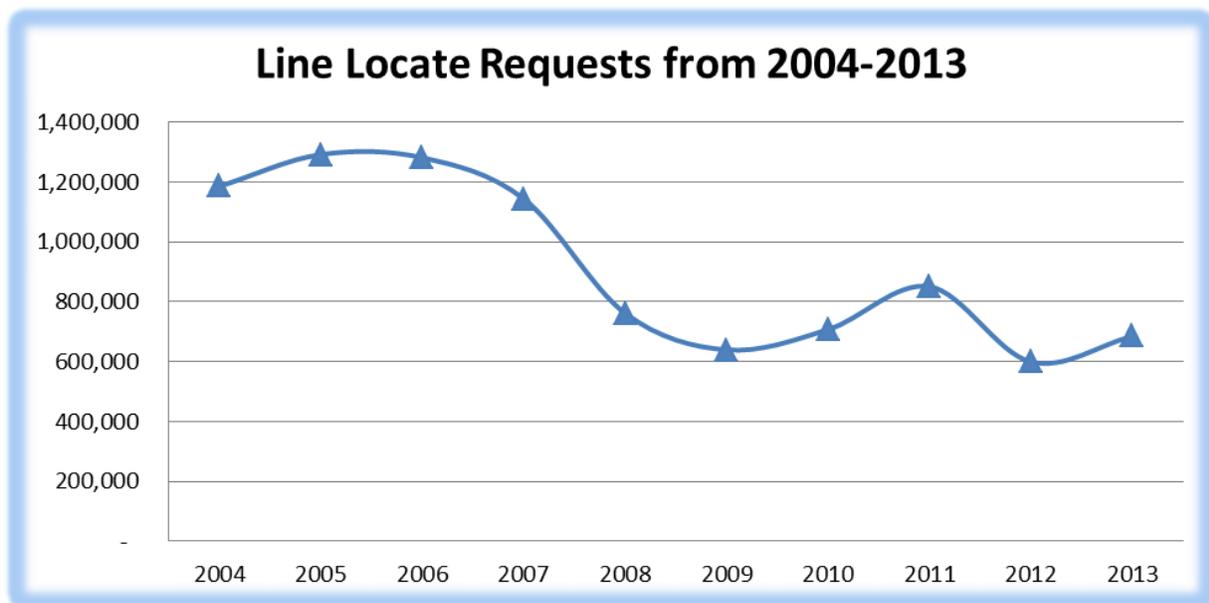
Company Name	Proposed Replacement Completion Date	Total Remaining BS Mileage (as of 12/31/13)	Total Remaining CIP Mileage (as of 12/31/13)	Total Remaining Mileage (as of 12/31/13)
Chesapeake Utilities	Docket 120036-GU approved September 24, 2012, to become effective January 1, 2013.	130	0	130
Pensacola Energy	Completion date being developed	436	85	520
Florida Public Utilities	Docket 120036-GU approved September 24, 2012, to become effective January 1, 2013.	129	1	130
TECO Peoples Gas	Docket 110320-GU approved September 18, 2012, to become effective January 1, 2013.	299	89	387
Totals		993	174	1168

As a result of these programs, 307 total miles have been replaced. In 2013, gas operators replaced 14 miles of cast iron pipeline and 119 miles of unprotected bare steel pipeline.

PREVENTION OF DAMAGE TO GAS PIPELINES BY EXCAVATORS

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. The figure below shows an increase of line locate requests in 2013.

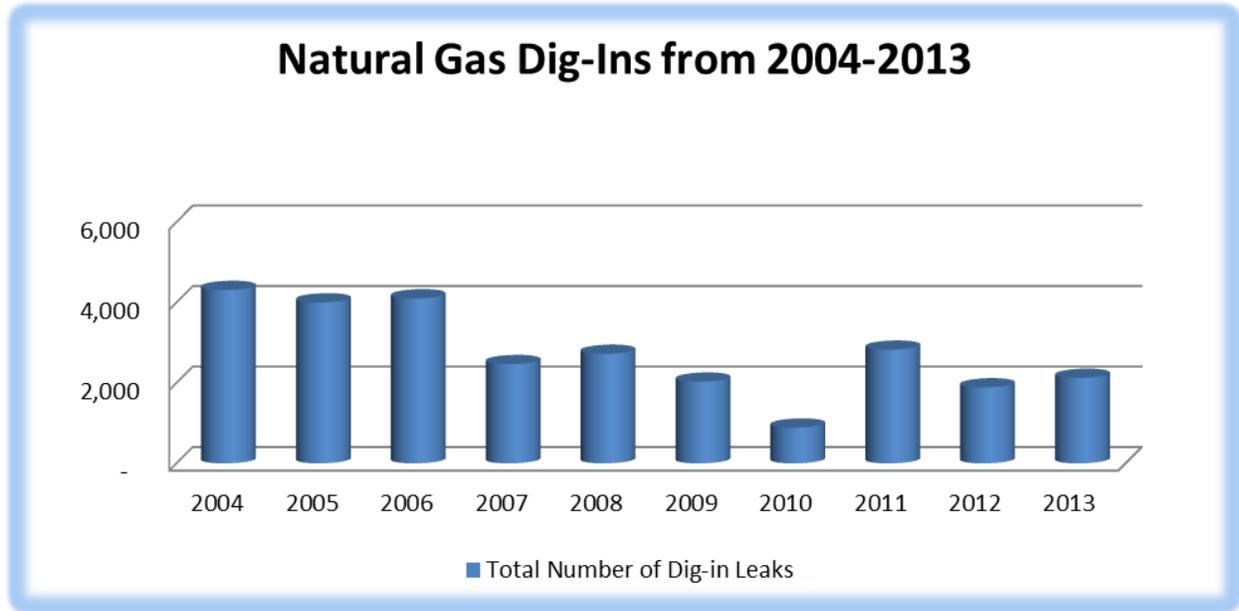
Figure 7: Gas Locate Requests from 2004-2013



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.

Figure 8 shows the total number of dig-ins in Florida over the past ten years.

Figure 8: Natural Gas Dig-Ins from 2004-2013



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>.

INSPECTION RESULTS

PHMSA requires the state to report by operator type, the number of inspection person-days spent during the calendar year on inspections. Commission staff gas inspectors keep a weekly summary of hours spent engaged in these activities by gas system. These activities are broken down into 20 categories as shown below, with a code associated for each activity:

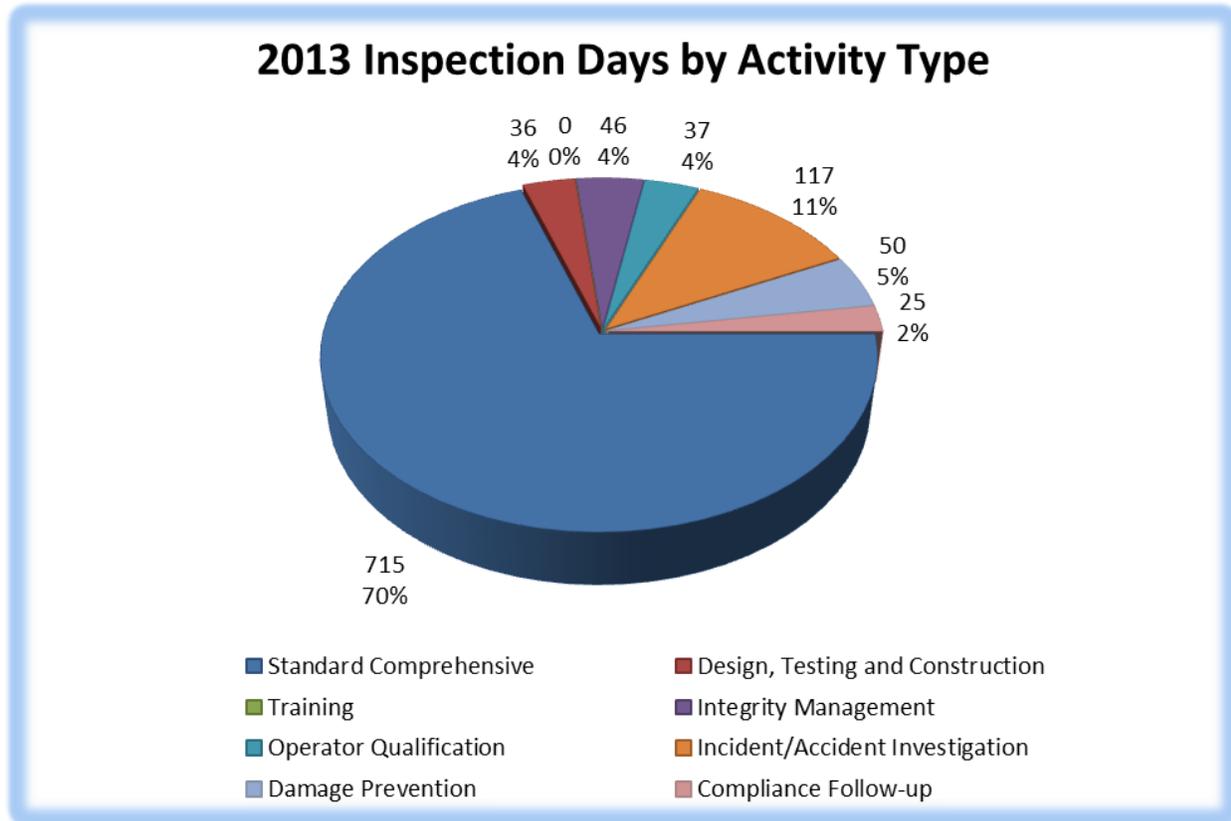
<i>Code</i>	<i>Activity</i>
<i>1</i>	<i>Record Verification</i>
<i>2</i>	<i>Facility Evaluation</i>
<i>3</i>	<i>Construction Inspection</i>
<i>4</i>	<i>Procedures/Plans Review</i>
<i>5</i>	<i>Accident/Incident Reporting</i>
<i>6</i>	<i>Customer Complaint</i>
<i>7</i>	<i>Conference Utility</i>
<i>8</i>	<i>Economic Regulation</i>
<i>9</i>	<i>Progress Report</i>
<i>10</i>	<i>Report Writing</i>
<i>11</i>	<i>Preparatory/Planning</i>
<i>12</i>	<i>Training & Instruction</i>
<i>13</i>	<i>Personnel</i>
<i>14</i>	<i>Assignment Related Travel</i>
<i>15</i>	<i>Leave and absence time</i>
<i>16</i>	<i>Emergency Operations</i>
<i>17</i>	<i>Integrity Management</i>
<i>18</i>	<i>Operator Qualifications</i>
<i>19</i>	<i>Damage Prevention</i>
<i>20</i>	<i>Drug & Alcohol Inspections</i>

These hours are tracked throughout the year, and summarized for the certification report provided to PHMSA. State inspection activity used for this report is broken down by: Standard Comprehensive (sum of codes 1, 2, 4, 7, 11, and 14), Design, Testing and Construction (code 3), Incident/Accident Investigation (code 5), Compliance Follow-up (code 9), Training (code 12), Integrity Management (code 17), Operator Qualification (code 18), and Damage Prevention (code 19). These codes define the direct evaluation time spent on gas safety compliance.

Commission inspectors used 1,024 direct evaluation person-days for 2013. The direct evaluation person-day is an eight hour calculated day (in the field), checking safety compliance only. The remaining hours were spent for travel time, report writing, interviews, training, and administrative time.

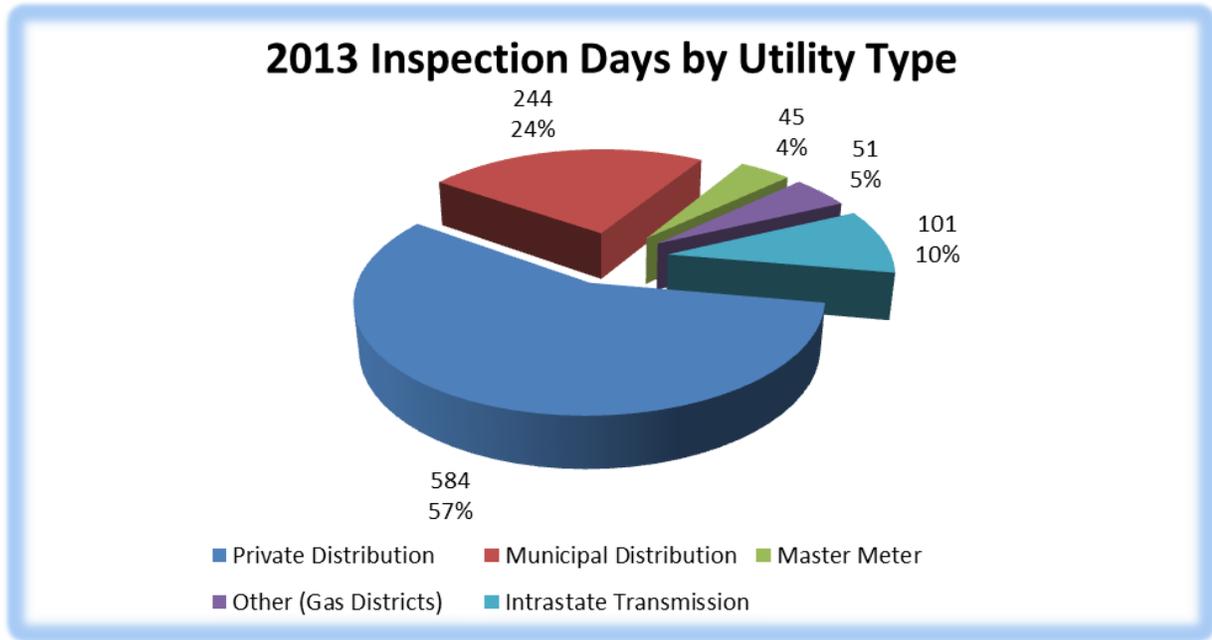
As shown below in Figure 9, the standard hours accounted for 70 percent of inspector time during 2013.

Figure 9: 2013 Inspection Days by Activity Type



The following figure categorizes the inspection days by utility type. During 2013, the private distribution utilities accounted for the majority of inspector time.

Figure 10: 2013 Inspection Days by Utility Type



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.

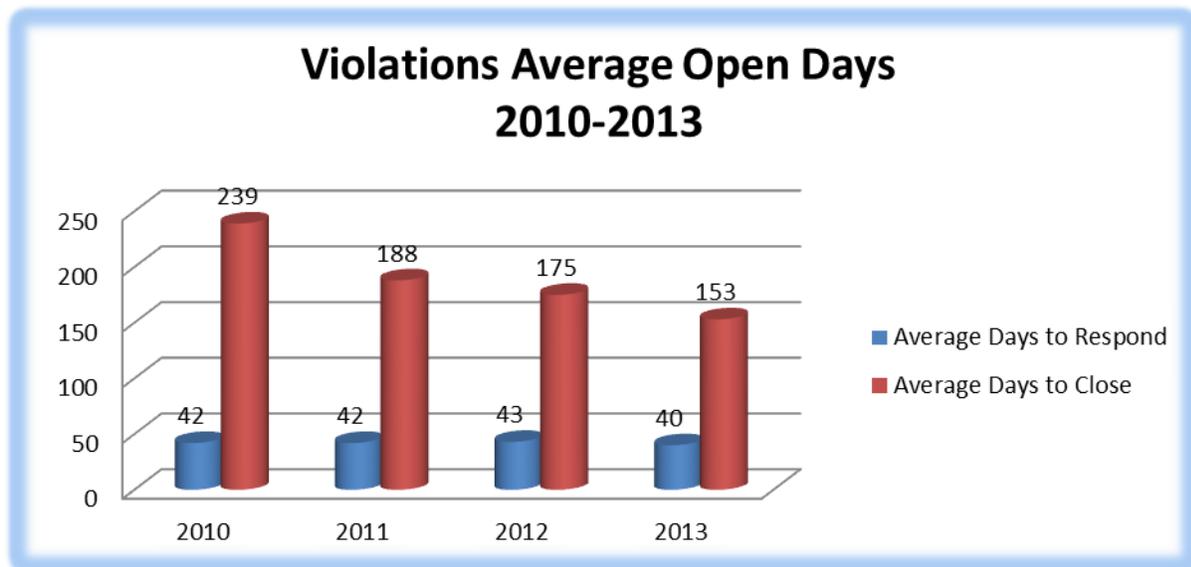
During 2013, there were 134 total violations with 69 percent attributed to PHMSA regulations and 31 percent to FPSC regulations.

Figure 11: Violations Found 2010-2013



During 2013, the average number of days between a violation notice being issued and the date the violation closed was 153 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 40 days during 2013. 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.

Figure 12: Violations Average Days Open 2010-2013



There were 55 compliance actions during 2013, 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 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.

The table below only presents the number of federal regulations violated due to commonalities in both federal and state rules.

Table 2: PHMSA Rule Violations 2009-2013

	Number of Federal Regulations Violated During Year	Number Corrected During Calendar Year	Compliance Actions
2009	125	155	62
2010	83	97	46
2011	98	114	52
2012	74	75	50
2013	92	59	55

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

DIMP Key Items during 2013

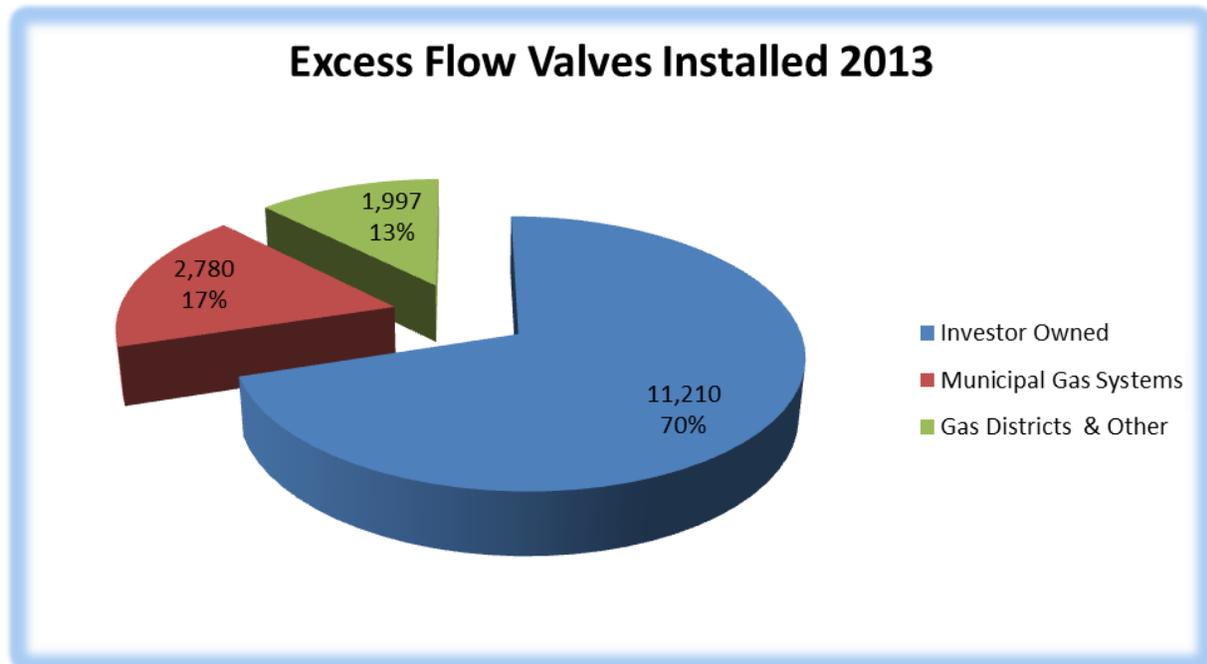
- 2013 – FPSC completed DIMP inspections for gas distribution operators in Florida.
- 2013 – DIMP evaluations were uploaded to PHMSA.

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.

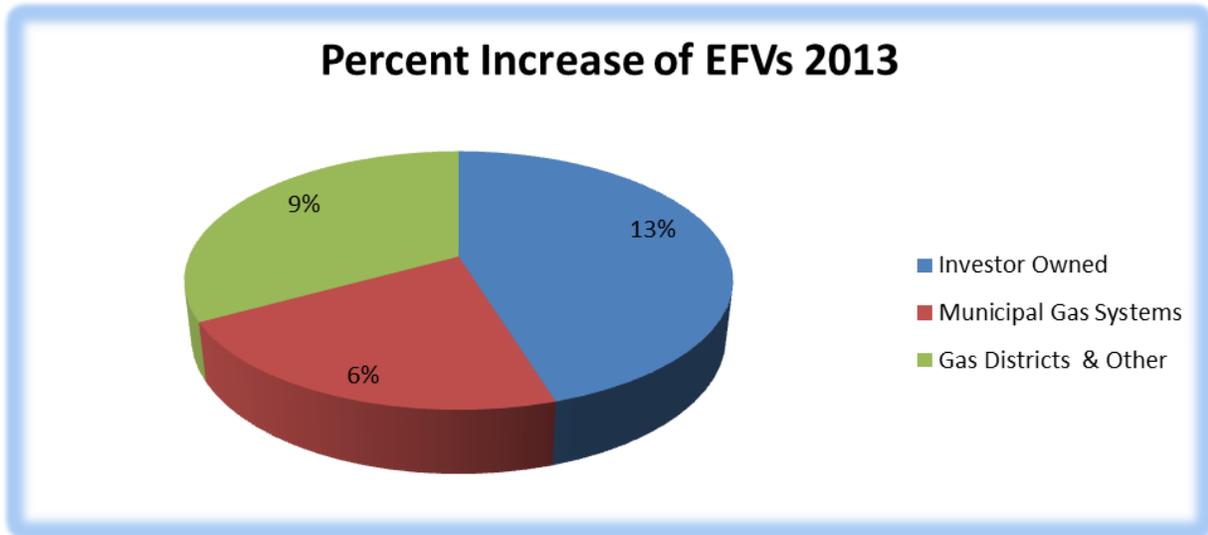
EFVs became a reportable item during calendar year 2011, however, operators had until 2012 to do an inventory and provide accurate numbers of EFVs placed during the calendar year and balance at the end of the year. Effective 2012, the FPSC began to closely monitor the installation of EFVs to insure proactive responses by the gas operators. Figure 13 shows the number of EFV's each utility type installed during the year 2013.

Figure 13: Excess Flow Valves Installed in 2013



The chart in Figure 14 illustrates the percent increase of EFVs installed over the past year. It is categorized by utility type.

Figure 14: Percent Increase of EFVs in 2013



HISTORY OF REPORTABLE NATURAL GAS INJURIES AND FATALITIES

The Commission’s natural gas pipeline safety program has injury and fatality data since the beginning of the program in 1972. The following is a *national* chart depicting the serious incidents, broken down between Injuries and Fatalities, for the 20-year period of 1994 through 2013.

Figure 15: Injuries Reported Nationwide from 1994-2013

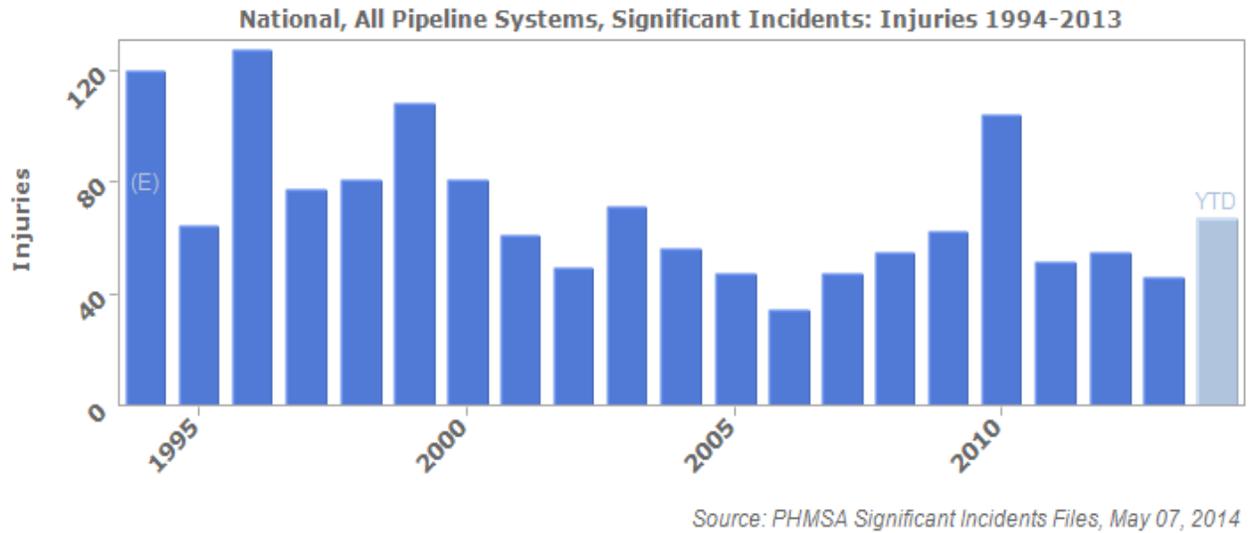
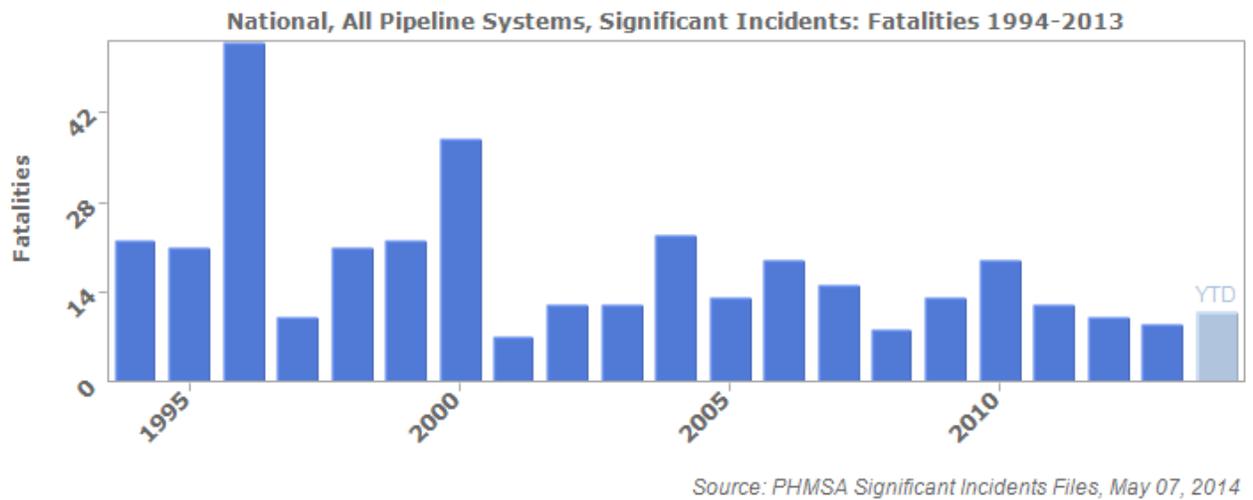
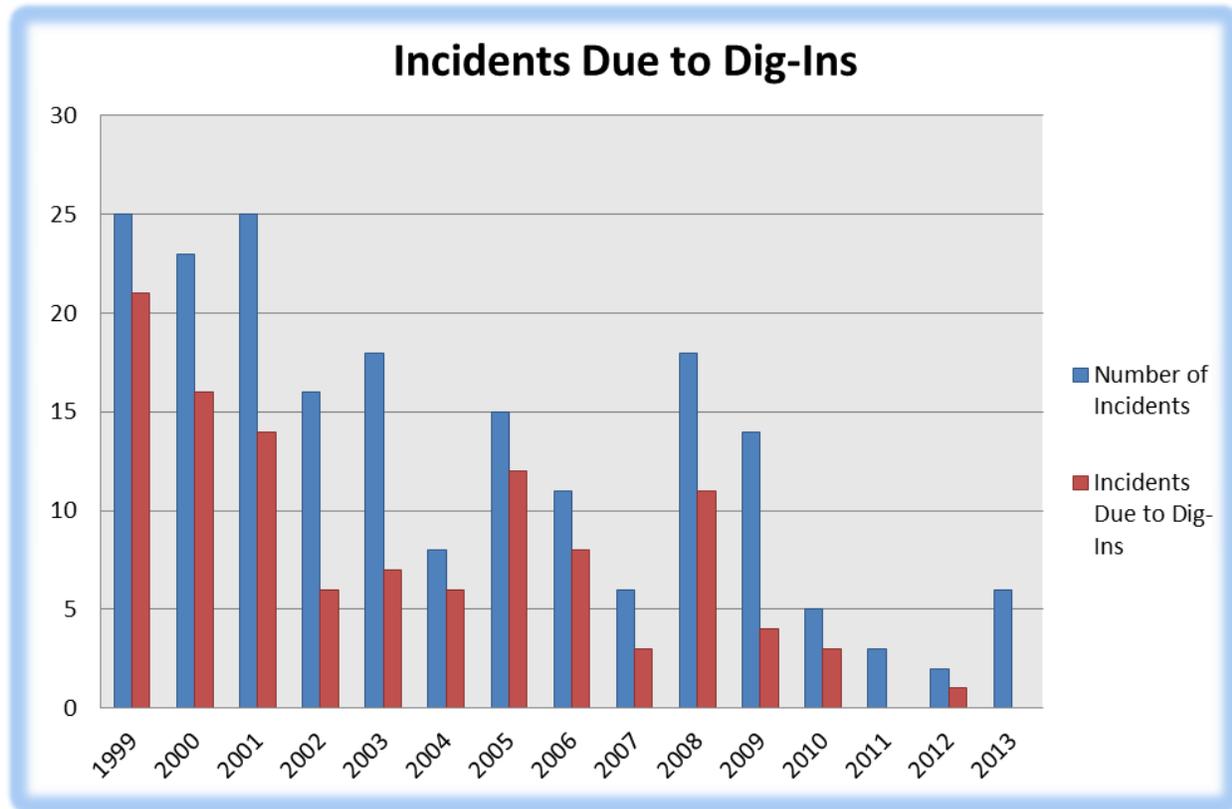


Figure 16: Fatalities Reported Nationwide from 1994-2013



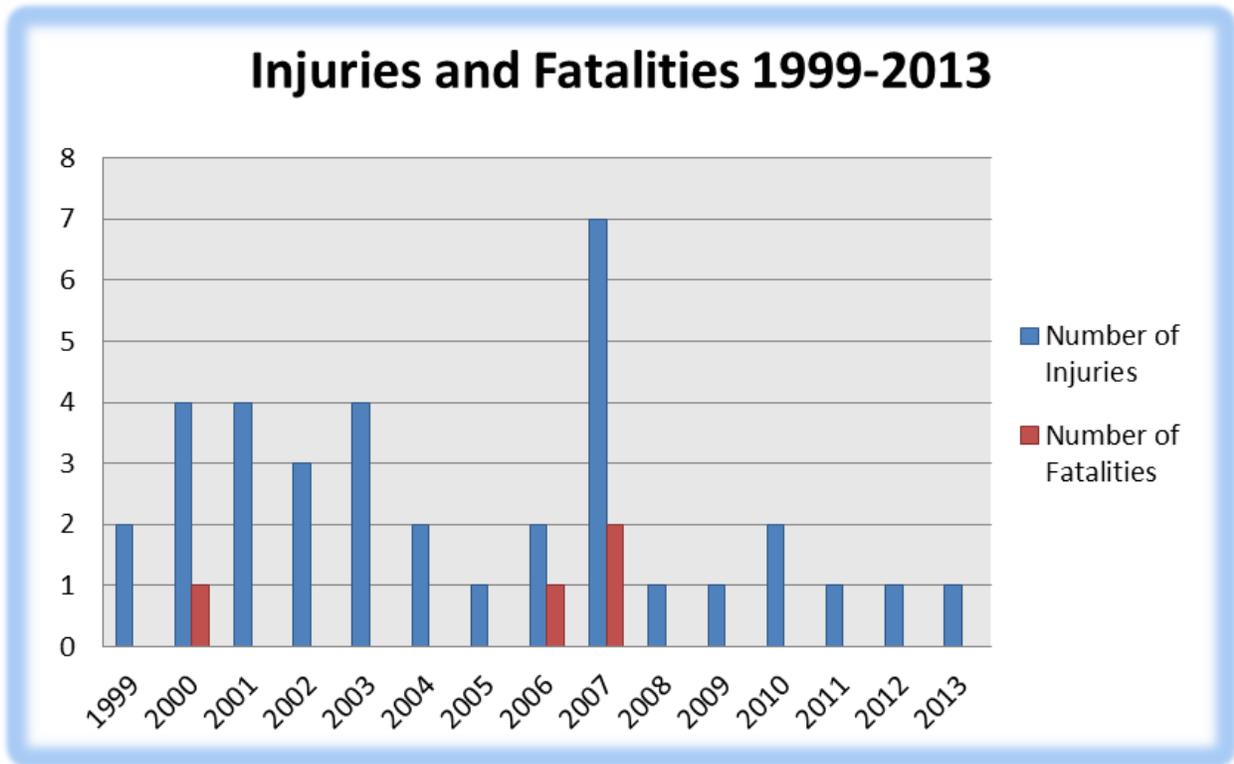
In the state of Florida, natural gas accidents and outages are reported to the FPSC in accordance with Commission Rule 25-12.084 F.A.C. In 2013, Florida had six incidents with one injury and zero fatalities. The reportable incidents include, but are not limited to: a lightning strike causing a gas line to ignite and a motor vehicle damaging meter sets leading to ignition. The number of incidents due to dig-ins has tapered off significantly during the past five years as shown below in Figure 17, which could be attributed to the continued emphasis on calling for underground utility locations before taking any action (digging).

Figure 17: FPSC Incidents Due to Dig-Ins 1999-2013



The following figure presents the natural gas injuries and fatalities reported to the FPSC from 1999-2013. Since 2007, there has not been a natural gas related fatality in the state of Florida.

Figure 18: Injuries and Fatalities Reported in Florida 1999-2013



OTHER RESPONSIBILITIES

The 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.⁴ 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.

The following is contact information pertaining to pipelines in Florida:

Florida Public Service Commission

2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850
Bureau Chief Safety: Rick Moses
Office: 850-413-6582
Cell: 850-408-4757
E-mail: rmoses@psc.state.fl.us

PHMSA Pipeline Safety - Southern Region Office

233 Peachtree Street, N.E., Suite 600
Atlanta, GA 30303
Telephone: 404-832-1147
Fax: 404-832-1169
Director: Wayne Lemoi
Email: wayne.lemoi@dot.gov
Outreach: Community Assistance and Technical Services: Arthur Buff: 404-832-1155
E-mail: arthur.buff@dot.gov
Joseph Mataich: 404-832-1159
E-mail: joseph.mataich@dot.gov

U.S. Department of Transportation

Pipeline and Hazardous Materials Safety Administration
East Building, 2nd Floor
Mail Stop: E24-455
1200 New Jersey Ave., SE
Washington, DC 20590

Email: phmsa.pipelinesafety@dot.gov

⁴ State Emergency Response Team provides updated information to other agencies and the public, during any emergency condition involving electric or natural gas threats.

