



**Marcellus Shale Natural Gas Extraction Study
2011 Addendum**

**Pipeline
Inspection and Enforcement**

© 2011 League of Women Voters of Pennsylvania

Leagues of Women Voters of Southeastern Pennsylvania
and
Indiana County

Study Committee

Roberta Winters, Chair
Alma Forsyth, LWV of Chester County
Barbara Schraudenbach, LWV of Radnor Township
Linda Sall, LWV of Radnor Township
Bonnie Kauffman, LWV of Lower Merion and Narberth
John Shaw, LWV of Central Delaware County
Mary Beth Sweeney, LWV of Indiana County
Susan McClure, LWV of Indiana County

League of Women Voters of Southeastern Pennsylvania
Extracting Natural Gas from Marcellus Shale Addendum Study
2011
Study Guide IV

PIPELINE
Inspection and Enforcement

The League of Women Voters of Pennsylvania has adopted a position regarding extracting natural gas from Marcellus Shale that includes support for:

- the maximum protection of public health and the environment by promoting comprehensive regulation and adequate staffing across government agencies in all aspects of Marcellus Shale natural gas production, site restoration, and delivery to the customer
- legislation that provides for the establishment of an efficient and effective oversight system for reporting potential violations and accidents.

To ensure that regulations are implemented, inspection and enforcement need to be examined. In light of the expanding natural gas pipeline infrastructure within our Commonwealth and recent fatal pipeline explosions in Philadelphia¹ and Allentown², this is an area of increasing concern. How are pipelines inspected and how are regulations enforced?

The Inspection Process

The Pipeline and Hazardous Materials Safety Agency (PHMSA), through its Office of Pipeline Safety (OPS) has an Inspection and Enforcement (I&E) provisions. While the number of inspectors throughout the country may vary, Congress authorized additional staff in the 2009-2010 budget to bring the total number of inspectors across the country to 113.³ The primary responsibility of the OPS inspectors is the interstate pipeline system. To do their job in overseeing the pipeline transmission system, these inspectors at the federal level rely on inspectors at the state level. As of March 2011, the PA Public Utility Commission had eight (8) certified gas safety engineer inspectors and was seeking to obtain authorization from the legislature for an additional twelve (12) staff positions.⁴

How can so few staff inspect hundreds of thousands of miles of pipelines? Inspectors spend a great deal of their time reviewing data provided by the pipeline companies and following up with on-site inspections as needed. There are several different types of pipeline inspections as summarized on the following table.]

¹ <http://www.pbs.org/wnet/need-to-know/the-daily-need/fatal-gas-explosion-in-philadelphia-kills-one-and-injures-five/6465/>

² <http://abcnews.go.com/Business/pennsylvania-natural-gas-explosion-leaves-dead/story?id=12883552>

³ <http://primis.phmsa.dot.gov/comm/InspectionEnforcement.htm?nocache=1433>

⁴ Testimony provided by PUC Commissioner Wayne Gardner on March 7, 2011 in Upper Merion Township at congressional roundtable on gas pipeline safety convened by U.S. Rep. Shuster (R-9), chair of the House Transportation subcommittee that oversees pipeline safety.

Pipeline Inspections⁵

TYPE of INSPECTION	NATURE of INSPECTON
<p>Standard Reviews</p> <ul style="list-style-type: none"> • take about a week • done every 2-3 years • done more frequently as needed 	<p>Examine operator’s records and equipment for compliance</p> <p>Check if required surveillance and testing is done within prescribed timeframes</p> <p>Review current and historical records checking maximum pressure relative to safe limits</p> <p>Examine emergency procedures</p> <p>Field visits include</p> <ul style="list-style-type: none"> • measuring corrosion control equipment and testing valves, • checking instruments and equipment to protect the system from events that could put too much pressure on a pipeline • observe right of way (ROW) markers
<p style="text-align: center;">Operations and Maintenance Manual Reviews</p> <ul style="list-style-type: none"> • overview of manuals maintained by operators according to required, established procedures • more time intense than a Standard Review 	<p>Important areas of procedural review include:</p> <ul style="list-style-type: none"> • proper construction, repair, testing, and maintenance • repairing or replacing pipe, welding, valve maintenance, and testing and maintenance of overpressure protection devices • prevention of damage due to excavation activities, including right-of-way maintenance, maintaining line markers, participation in One-Call programs, and periodic surveillance of the pipeline right-of-way. • minimizing the hazards from a gas pipeline emergency
<p style="text-align: center;">Operator Qualification (OQ) Inspections</p>	<ul style="list-style-type: none"> • identify those who perform maintenance and safety-sensitive operations on a pipeline for operators • identify tasks performed by these employees or contractors • ensure those who are doing the jobs have knowledge and skills to perform given task through documented tests, records and actions • observe personnel conducting tasks and assess that safety plans are implemented effectively via a series of inspection protocols
<p style="text-align: center;">Integrity Management Inspections*</p> <ul style="list-style-type: none"> • comprehensive process to prevent pipeline leaks or ruptures • conducted by a team of inspectors over a two-week period <p>* most frequent in HCA</p>	<ul style="list-style-type: none"> • assess “integrity” of pipeline through in-line inspections, hydrostatic pressure testing, and/or direct assessment • determine any potential defects for repair • develop and implement of a set of safety management and analytical processes, i.e. an integrity management program (IMP) • ensure pipeline operators have a comprehensive, well-documented process in place to protect high consequence areas (HCAs) where pipeline failure would lead to devastating results.

Other types of inspections involve other operators including gas transmission operators, gas distribution operators, liquefied natural gas facilities, breakout tanks, gas storage fields, and construction.⁶

⁵ <http://primis.phmsa.dot.gov/comm/Inspection.htm?nocache=2674>

⁶ <http://primis.phmsa.dot.gov/comm/InspectionDetails.htm?nocache=5986>

To prevent failure, pipeline integrity testing has grown increasingly more high-tech. Visual inspections look at corrosion. Hydrostatic inspections force water through pipelines at high pressure to determine if the pipeline can withstand forces above its maximum operating pressure. “Smart pigs” assess the pipeline from the inside and can measure the thickness of the pipe and identify corrosion as well as other flaws before leaks and ruptures occur.⁷ Pipeline inspection gauges (pigs) perform inspections without stopping the flow of natural gas. Although initially used to clean pipes, mini-sensors and computerized systems allow “smart” pigs to conduct numerous tests designed to reduce pipeline hazards.

The Gas Safety Division of the PA PUC conducts inspections in a manner similar to PHMSA. Wayne Gardner, a PUC Commissioner assigned to gas safety, has found pipelines to be an incredibly safe way to transport natural gas.⁸ In 2010, PUC’s nine inspectors conducted about 1200 inspections. Although some of the inspections are conducted on-site, the methodology used by the gas inspectors allows them to determine areas of interest without leaving their offices. Companies, under the supervision of PUC, are required to do a high level of self-reporting. These reports provide insight not only into the on-going operations of facilities but also give clues about the overall attitude of the company toward critical issues such as safety. Reports are compiled by inspectors who summarize their findings.

Safe and secure gas pipelines are in best interest of companies who pay the price for lost gas and damages. However, the frequency and nature of the testing by pipeline companies is self-determined.

Enforcement

In addition to inspection, PHMSA has an enforcement program to monitor and enforce compliance of operators to meet standards for safe, reliable, and environmentally sound practices and procedures.⁹ A flow chart¹⁰ showing the interrelationship of enforcement and inspection begins with determining whether jurisdiction begins at the state or federal level. Actions then are divided between concerns that relate to standards and programs. Appropriate inspections and data are collected before consequences are determined. Based on the transgression, actions include warnings, reviews, hearings, fines, and a range of other tools to ensure that operators take appropriate and timely corrective actions and prevent future failures or non-compliance issues.

During the past decade, PHMSA reports indicate that between 100 and 300 cases are initiated and resolved annually.¹¹ During the same period, they issued about 100 warning letters, 100 notices of amendments, between 40 and 99 notices of probable violation, between 5 and 20 corrective action orders, and a maximum of 3 notices of proposed safety orders.¹²

The PUC has jurisdiction to conduct investigations regarding all methods or practices of pipeline companies, including reports, records and other information. Investigators may look at the property, buildings, plants and offices of the pipeline companies and inspect books, records, paper, email and documents relevant to the enforcement of the rules and regulations. If evidence is found, violation

⁷http://pstrust.org/cgi-bin/search.cgi?zoom_query=Pig&zoom_per_page=10&zoom_and=0

⁸ Based on the presentation by Wayne Gardner at the October 9, 2010 LWV of Southeastern PA forum on gas pipelines held at the Radnor Township Municipal Building, Wayne, PA.

⁹ <http://primis.phmsa.dot.gov/comm/reports/enforce/Enforcement.html?nocache=5774>

¹⁰ <http://primis.phmsa.dot.gov/comm/EnforcementFlowchart1.htm?nocache=2655>

¹¹ <http://primis.phmsa.dot.gov/comm/reports/enforce/EnfHome.html?nocache=1175>

¹² http://primis.phmsa.dot.gov/comm/reports/enforce/Actions_opid_0.html?nocache=8300

reports are written, and the gas utility is given a written citation regarding specifics of the violation.¹³

In Pennsylvania, during the 2009-2010 fiscal year, Commissioner Gardner reported that PUC conducted three investigations of reportable incidents involving the hit and near hit of pipelines, issued 63 warnings or letters of non compliance, and handled 190 gas safety violations. Of the 190 violations, 151 were handled with letters and 39 instances were dealt with by the enforcement staff. As a rule, once companies are cited, they tend to correct the issue and settle out of court. If no agreement is reached, the Gas Safety Division refers the problem to the PUC for formal resolution by issuing a complaint, setting a penalty, or seeking enforcement through the courts. In the case of a major event such as an explosion, fire, or significant outage, the PUC investigates and conducts a hearing. As a result, companies may be fined. For instance, an \$80,000 civil fine was imposed along with an \$80,000 mandated contribution to a “low income use” program for a company involved in a gas explosion. The PUC does not take a company to court to pay the damage cost for damages or settle liability issues. Other examples include a \$15,000 fine for mistaken location of a gas line that resulted in a hit by an excavator and a \$600,000 cumulative fine to a single company for air quality violations.¹⁴

Both PHMSA and the Gas Safety Division of the PUC have comprehensive websites that includes presentations, statistics, links to regulations, definitions, reports, and hearing transcripts.¹⁵

¹³ http://www.puc.state.pa.us/transport/gassafe/gassafe_jurisdiction.aspx

¹⁴ Based on comments made by Commissioner Wayne Gardner at a LWV of Southeastern PA pipeline forum held at the Radnor Township Municipal Building in Wayne, PA on October 9, 2010.

¹⁵ Links are <http://www.phmsa.dot.gov/> and http://www.puc.state.pa.us/naturalgas/naturalgas_index.aspx respectively.

References

- Gardner, Wayne. (2011, March 7). Congressional Roundtable Testimony at U.S. Rep. Shuster's Congressional Roundtable, Upper Merion Township, PA.
- Gardner, Wayne. (2010, October 9). LWV of Southeastern PA Presentation, Radnor, PA.
- Kennedy, Lucy. (2011, January 19). Natural gas explosion in Philadelphia kills worker. *PBS*. Retrieved from: <http://www.pbs.org/wnet/need-to-know/the-daily-need/fatal-gas-explosion-in-philadelphia-kills-one-and-injures-five/6465/>
- Little, Lyneka and Alan Farnham (2011, February 10) Allentown, pa, explosion leaves five dead. Retrieved from <http://abcnews.go.com/Business/pennsylvania-natural-gas-explosion-leaves-dead/story?id=12883552>
- Pennsylvania Utilities Commission. (2011). Jurisdiction. Retrieved from http://www.puc.state.pa.us/transport/gassafe/gassafe_jurisdiction.aspx
- Pennsylvania Utilities Commission. (2011). Natural Gas. Retrieved from http://www.puc.state.pa.us/naturalgas/naturalgas_index.aspx
- Pipeline Safety Trust (N.D.) Pipeline Safety Trust Search – pig. Retrieved from http://pstrust.org/cgi-bin/search.cgi?zoom_query=Pig&zoom_per_page=10&zoom_and=0
- U.S. Department of Transportation. (2011). Briefing: Additional Details on Standard Inspections. *PHMSA Stakeholder Communications*. Retrieved from <http://primis.phmsa.dot.gov/comm/InspectionDetails.htm?nocache=5986>
- U.S. Department of Transportation. (2011). Briefing: Pipeline Safety Inspections. *PHMSA Stakeholder Communications*. Retrieved from <http://primis.phmsa.dot.gov/comm/Inspection.htm?nocache=2674>
- U.S. Department of Transportation. (2011). Enforcement. *PHMSA Stakeholder Communications*. Retrieved from <http://primis.phmsa.dot.gov/comm/reports/enforce/Enforcement.html?nocache=5774>
- U.S. Department of Transportation. (2011). Inspection. *PHMSA Stakeholder Communications*. Retrieved from <http://primis.phmsa.dot.gov/comm/InspectionEnforcement.htm?nocache=1433>
- U.S. Department of Transportation. (2011). Inspection and Enforcement Flowchart 1. *PHMSA Stakeholder Communications*. Retrieved from <http://primis.phmsa.dot.gov/comm/EnforcementFlowchart1.htm?nocache=2655>
- U.S. Department of Transportation. (2011). Pipeline Safety Awareness Site. Retrieved from <http://www.phmsa.dot.gov/>

U.S. Department of Transportation. (2011). Summary of Enforcement Actions. *PHMSA Stakeholder Communications*. Retrieved from http://primis.phmsa.dot.gov/comm/reports/enforce/Actions_opid_0.html?nocache=8300

U.S. Department of Transportation. (2011). Summary of Enforcement Activity – Nationwide. *PHMSA Stakeholder Communications*. Retrieved from <http://primis.phmsa.dot.gov/comm/reports/enforce/EnfHome.html?nocache=1175>