

LFG Pipelines: What Regulations Apply and How to be in Compliance

Presented by
Ryan P. Estabrook of

DOUGLAS
PIPELINE COMPANY

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Presentation Overview

- ❑ About Douglas Pipeline
- ❑ Who regulates natural gas and hazardous liquid pipelines?
- ❑ What pipelines fall under Federal and state pipeline safety regulations?
- ❑ Are the Federal pipeline safety regulations applicable to LFG systems?
- ❑ What are the minimum Federal safety regulations for an LFG pipeline?
- ❑ Tips & Advice

DOUGLAS

PIPELINE COMPANY



3829 Willow Avenue Suite 203 Pittsburgh, Pennsylvania 15234
412.531.2440 phone 888.717.7444 fax

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**Providing project development, operations,
and regulatory compliance services for
natural gas pipeline owners**



About Douglas Pipeline Company

- ❑ Douglas Pipeline has been providing project development, operation, and regulatory compliance services for natural gas pipeline owners nationwide since 1993.
- ❑ As a 3rd Party Operator we have service contracts in place with our clients to ensure their pipelines are operated and maintained in compliance with state and federal regulations.
- ❑ Many of the pipelines we have developed and operate supply gas to industrial end-users or power generation facilities directly from FERC regulated transmission lines or landfills.

Clients

Aiken Housing Authority

ALCOA

Alliant Energy Services

Allegheny Technologies

BASF

CertainTeed

Columbian Chemical

DuPont

Eastman Chemical

Engelhard Corporation

First Quality Products

FPL Energy

GE Energy

Georgia Pacific Corporation

Hoffman-La Roche Inc.

IBM Corporation

Idaho Power

ISP

Johns Manville International

Kimberly Clark Corporation

Kohler

Lafarge North America

Methane Power

Michelin North America, Inc.

National Gypsum

NextEra Energy

Osram Sylvania, Inc.

PPG Industries

Pittsburgh Corning Corporation

Rockingham County

Saint-Gobain Containers

Shaw Industries

Sony

Standard Steel Corp.

United States Gypsum

Wyeth

**Who regulates natural gas and
hazardous liquid pipelines?**

Pipeline Safety Regulations



- ❑ U.S. Department of Transportation
- ❑ Pipeline and Hazardous Materials Safety Administration (PHMSA)
- ❑ PHMSA is responsible for regulating and ensuring the safe and secure movement of hazardous materials to industry and consumers by all modes of transportation, including pipelines.
- ❑ The Office of Pipeline Safety is the Federal safety authority for the nation's 2.3 million miles of natural gas and hazardous liquid pipelines.
- ❑ The Office of Pipeline Safety ensures safety in the design, construction, operation and maintenance, and spill response planning of natural gas and hazardous liquid transportation pipelines.

Pipeline Safety Regulations

- ❑ Pipeline systems under the jurisdiction of PHMSA are subject to the regulations as set forth in 49 CFR Parts 191 & 192 in addition to the regulations of the state in which the pipeline system resides.
- ❑ Most states have chosen to adopt PHMSA's regulations.
- ❑ Many states have nuances and portions of their pipeline safety regulations that differ slightly from PHMSA's regulations. Often the state specific regulations are a result of policies put in place from a pipeline incident in their state.
- ❑ If the gas pipeline system is an interstate pipeline system, the enforcement, inspections, and audits of that pipeline system are handled by a regional PHMSA office.
- ❑ If the gas pipeline system is an intrastate pipeline system, the enforcement, inspections, and audits of that pipeline system are handled by state officials of the state in which the pipeline system resides.
- ❑ The utility commissions of the states have pipeline inspectors that act as agent for PHMSA for intrastate pipeline systems.

What pipelines fall under Federal & state pipeline safety regulations?

What pipelines are regulated by PHMSA?

- ❑ PHMSA’s definition of “Transportation of gas” is the gathering, transmission, or distribution of gas by pipeline, or the storage of gas in or affecting interstate or foreign commerce.

- ❑ The different designations given to pipeline systems by PHMSA include:
 - ❑ Master Meter Systems
 - ❑ LNG facilities
 - ❑ Offshore
 - ❑ Gathering
 - ❑ Distribution
 - ❑ Transmission

What pipelines are regulated by PHMSA?

PHMSA's definitions for the three major pipeline distinctions:

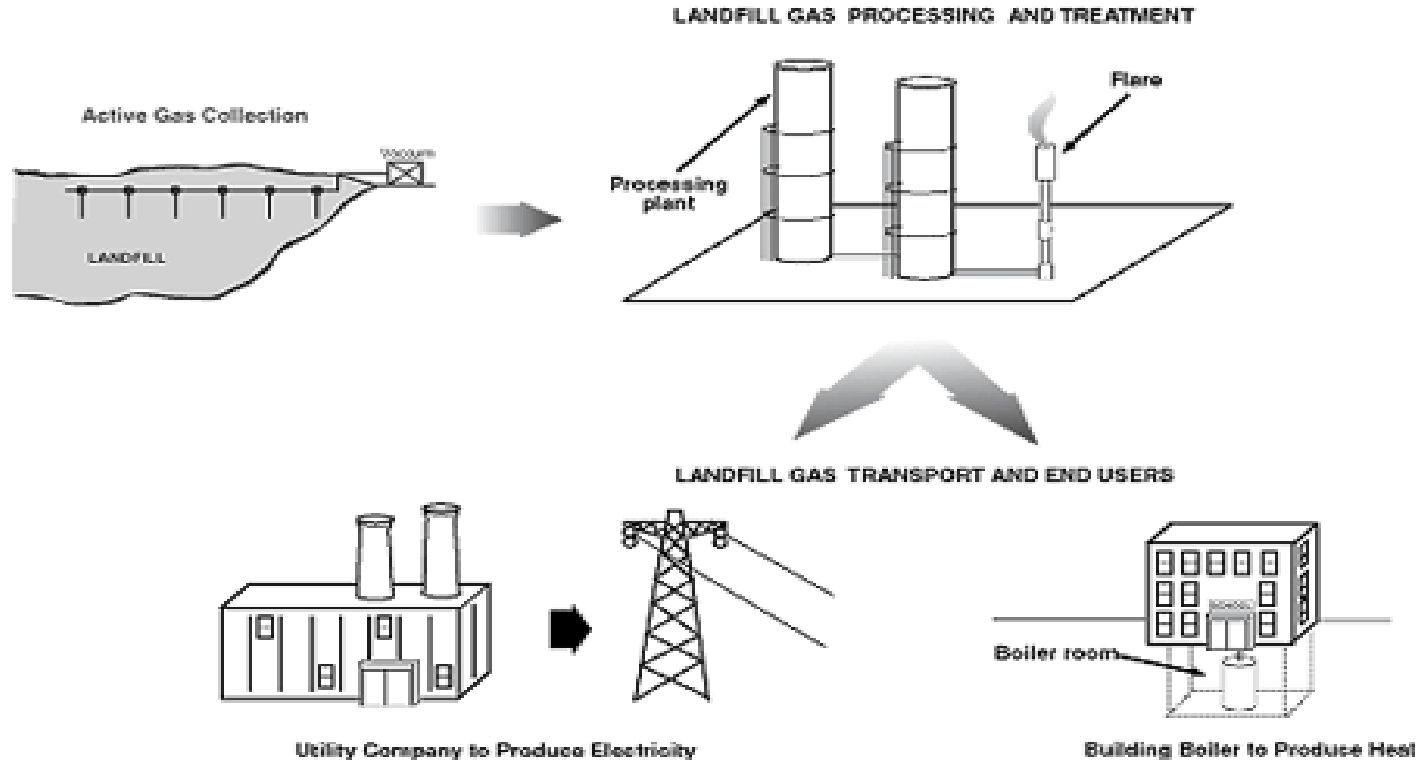
- ❑ Gathering Line – a pipeline that transports gas from a current production facility to a transmission line or main.
- ❑ Distribution Line – a pipeline other than a gathering or transmission line.
- ❑ Transmission Line – a pipeline, other than a gathering line, that:
 - 1) transports gas from a gathering line or storage facility to a gas distribution center, storage facility, or large volume customer that is not down-stream from a gas distribution center;
 - 2) operates at a hoop stress of 20 percent or more of SMYS; or
 - 3) transports gas within a storage field.

Are PHMSA's pipeline safety regulations
applicable to LFG systems?

Yes.

What portions of LFG systems are subject to PHMSA's regulations and why?

LFG System Components



LFG Collection Piping & Processing

Additional defining characteristics of “Gathering Lines” by PHMSA

- ❑ The endpoint of gathering may not extend beyond the first downstream natural gas processing plant, unless the operator can demonstrate, using sound engineering principles, that gathering extends to a further downstream plant.
- ❑ The endpoint of gathering may not extend beyond the furthestmost downstream compressor used to increase gathering line pressure for delivery to another pipeline.

So the pipeline systems at landfills piping methane to a gas processing skid where the gas is compressed and cleaned up are onshore “gathering lines.”

But.....not all “Gathering Lines” are subject to PHMSA’s minimum pipeline safety standards

Gathering Lines Subject to PHMSA Regulations

Type	Feature	Area	Safety Buffer
A	<p>—Metallic and the MAOP produces a hoop stress of 20 percent or more of SMYS. If the stress level is unknown, an operator must determine the stress level according to the applicable provisions in subpart C of this part</p> <p>—Non-metallic and the MAOP is more than 125 psig (862 kPa)</p>	Class 2, 3, or 4 location (<i>see</i> 192.5)	None
B	<p>—Metallic and the MAOP produces a hoop stress of less than 20 percent of SMYS. If the stress level is unknown, an operator must determine the stress level according to the applicable provisions in subpart C of this part</p> <p>—Non-metallic and the MAOP is 125 psig (862 kPa) or less</p>	<p><i>Area 1.</i> Class 3 or 4 location</p> <p><i>Area 2.</i> An area within a Class 2 location the operator determines by using any of the following three methods:</p> <p>(a) A Class 2 location.</p> <p>(b) An area extending 150 feet (45.7 m) on each side of the centerline of any continuous 1 mile (1.6 km) of pipeline and including more than 10 but fewer than 46 dwellings</p> <p>(c) An area extending 150 feet (45.7 m) on each side of the centerline of any continuous 1000 feet (305 m) of pipeline and including 5 or more dwellings</p>	If the gathering line is in Area 2(b) or 2(c), the additional lengths of line extend upstream and downstream from the area to a point where the line is at least 150 feet (45.7 m) from the nearest dwelling in the area. However, if a cluster of dwellings in Area 2 (b) or 2(c) qualifies a line as Type B, the Type B classification ends 150 feet (45.7 m) from the nearest dwelling in the cluster.

LFG Collection Piping & Processing

- ❑ Gathering Lines subject to PHMSA's minimum pipeline safety standards include:
 - Each onshore gathering line with a feature described in the second column that lies in a area described in the third column (see graph on previous slide); and
 - As applicable, additional lengths of line described in the forth column to provide a safety buffer (see graph on previous slide).

Therefore, it is safe to say that most landfill collection lines are not subject to Federal pipeline safety regulations (49 CFR Parts 191 & 192).

LFG Pipelines

- ❑ LFG pipeline applications include:
 - Powering sewage treatment plants,
 - Cleaning the LFG and injecting into pipeline facilities for distribution operations, or
 - Transporting directly to an end-user such as an industrial facility or power plant.

- ❑ The first definition of “transmission line” in Part 192.1 of PHMSA’s regulations is:
 - “Transports gas from a gathering line or storage facility to a gas distribution center, storage facility, or large volume customer that is not down-stream from a gas distribution center.”

- ❑ Since LFG pipelines meet the “transmission line” definition, are they regulated under Part 192?
 - Yes.

LFG Pipelines

- ❑ An interpretation on whether LFG pipelines are jurisdictional was published by PHMSA on July 14, 2009.
- ❑ The specific LFG pipeline that PHMSA gave an interpretation on runs from the Bradley Landfill to the Penrose Landfill Gas to Energy Power Plant in Los Angeles County, California.
- ❑ PHMSA stated in this interpretation that LFG pipelines are subject to 49 CFR Part 192 and that LFG pipelines meet the definition of a transmission line under 192.3.

LFG Pipelines

Are there exceptions where a LFG pipeline is not subject to PHMSA's regulations?

- In situations where the LFG pipeline is located entirely on landfill or industrial property and not running in rights-of-way similar to those of a natural gas pipeline.
- The piping in these circumstances is considered plant piping and is not subject to Federal pipeline safety regulations.

What are the minimum Federal safety standards for a LFG pipeline?

Design & Construction Requirements

- ❑ The LFG pipeline must be designed and constructed in accordance with the federal and state regulations.
- ❑ Part 192 states minimum requirements for the design and installation of pipeline components and facilities.
- ❑ Each component of a pipeline system has stated minimum Federal requirements. Sections of the regulations include:
 - Valves
 - Design of plastic pipe
 - Welding
 - Supports and anchors
 - Requirements for design pressure relief and limiting devices
 - General construction requirements
 - Test requirements for plastic pipelines
 - Record keeping

Operation & Maintenance Requirements

- ❑ In order to operate a pipeline in accordance with Federal and state regulations, the LFG pipeline owner is required to either declare itself a pipeline operator and register for an operator identification number with the Department of Transportation, or have a registered pipeline operator designated as the operator of these facilities.
- ❑ As a pipeline operator of a jurisdictional LFG pipeline, the operator is subject to the D.O.T.'s Code of Federal Regulations 49 CFR Parts 191 and 192. As a part of this regulatory process, the operator is subject to an annual audit of the operator's manuals, operations procedures, personnel qualifications, etc.

Operation & Maintenance Requirements

- ❑ Operator Qualification Plan
 - Implement and maintain an OQ Plan that has all individuals who operate and maintain the pipeline facilities be qualified as required by the U.S. Department of Transportation.
 - Any person performing any task on a PHMSA regulated pipeline must be qualified to perform that task.

- ❑ DOT Approved Drug & Alcohol Plan
 - This requirement is described in CFR 40 Part 199.
 - Pipeline personnel must be enrolled in a drug plan that randomly selects 25 percent of the participants to be tested on an annual basis.

- ❑ Operation & Maintenance Manual
 - Prepare and follow a manual of written procedures for conducting operations and maintenance activities specific to your pipeline.
 - Annual review and updating of manual with designated employee.

Operation & Maintenance Requirements

❑ Emergency Plan

- Prepare a written procedure to minimize the hazard resulting from a gas pipeline emergency. Includes: classification of natural gas emergencies, phone notification procedure plan, and establishing and maintaining communication with public officials.

❑ Line Leak Surveys

- Leak surveys are required to be performed on the pipeline.
- A Flame Ionization Unit is required, and a hand held gas detector is also recommended.

❑ Class Location Surveys

- Determination of the class location under which the pipeline falls into.
- Perform a class location survey documenting the number of buildings intended for human occupancy, well-defined outside areas occupied by 20 or more persons on at least 5 days a week for 10 weeks, buildings with four or more stories, etc.
- Annual update of the class location survey.

Operation & Maintenance Requirements

- ❑ High Consequence Area (HCA) Analysis
 - Complete an HCA Analysis to identify if any identified sites exists within the potential impact radius.
 - Any identified sites require the pipeline has an Integrity Management Plan.

- ❑ Integrity Management Plan
 - an operator of a covered pipeline segment must develop and follow a written integrity management program that addresses the risks on each covered transmission pipeline segment.

- ❑ National Pipeline Mapping System
 - Provide initial submittal and update a complete data submission to the OPS including operator information, geospatial data, and metric data for the pipeline.

Operation & Maintenance Requirements

- ❑ Management of the One Call or 811 Call Before You Dig Program
 - Owners of utilities are required by law to be a member of One Call
 - Mapping of your system on the state's One Call web based system
 - Responding to One Call tickets issued as a result of an excavation occurring near your pipeline system.
 - Personnel handling line locates and excavation watches must be Operator Qualified.

Operation & Maintenance Requirements

Public Awareness (PA) Program

- Implement and update a PA program. This will consist of establishing a continuing program to educate the public on the use of a one-call notification system and possible hazards associated with the pipeline.
- Four (4) Stakeholder Audiences:
 - Excavators
 - Public Officials
 - General Public
 - First Responders
- Baseline activities as a part of RP 1162 such as distribution of PA materials to the stakeholder audiences and the supplemental activity of contacting local public officials and emergency responders so they are made aware of the pipeline in their area and of the consequences in the event of an accident/incident.
- The measurement of the effectiveness of the PA program. This is a requirement of RP 1162 that has to be in place by June 20, 2010 for all PHMSA jurisdictional pipeline systems.
- Continually improving the plan.

Operation & Maintenance Requirements

- Patrolling by Operator Qualified personnel.
- Inspect, exercise, and maintain each jurisdictional pipeline valve on an annual basis.
- Test the effectiveness of the cathodic protection on the pipeline.
- Record keeping of all testing and patrols.
- Filing of annual report with PHMSA.
- Install and maintain pipeline markers and road crossings.
- Perform annual audits with state pipeline inspectors.
- Maintain communication with PHMSA for new recommended practices and other new regulations that come online.

Tips & Advice

- ❑ Demand the Operator Qualification and Drug & Alcohol records from the pipeline contractor prior to them performing the installation.

- ❑ Documentation is of paramount importance.
 - If it wasn't documented, it didn't happen.

- ❑ Identify the class location prior to construction.

- ❑ Perform a High Consequence Area (HCA) Analysis prior to construction.

- ❑ Review the location of the plant delivery station with regards to the potential impact radius.

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