# PHMSA ADVISORY BULLETINS



#### WHAT IS AN ADVISORY BULLETIN?

- Alerts operators to safety threats and best practices.
- May also be used to request operators perform certain actions or collect data/information.
- Advisory Bulletins are published in the Federal Register and on PHMSA's website.

# WHERE CAN I FIND ADVISORY BULLETINS?

 https://www.phmsa.dot.gov/reg ulations/federal-registerdocuments?title=&topics=pipeli ne-safety&abstract=All

# ARE ADVISORY BULLETINS ENFORCEABLE?

- NO--Bulletins have not gone through the rule development process and are not legally binding
- Explains how PHMSA understands and intends to enforce their regulations
- Helps your organization learn from other operator experiences and best practices.

# ADB-2020-01--DOCKET NO. PHMSA-2020-0115 INSIDE METERS AND REGULATORS

- ▶ 7 Deaths, 65 transported to hospital, Including 3 firefighters, damage exceeded 1 million
- ► Maryland Apartment complex in which an inside UNVENTED to outside atmosphere of a Mercury service regulator
- ► Advisory bulletin to alert owners and operators of natural gas distribution pipelines to the consequences of failures of inside meters and regulators
- ► If you have inside regulators—please ensure they are vented properly—operators are replacing mercury filled regulators





#### **Contains mercury**

Mercury cup located underneath a horizontally-positioned regulator with a large hexagon nut on the side.

#### Does not contain mercury

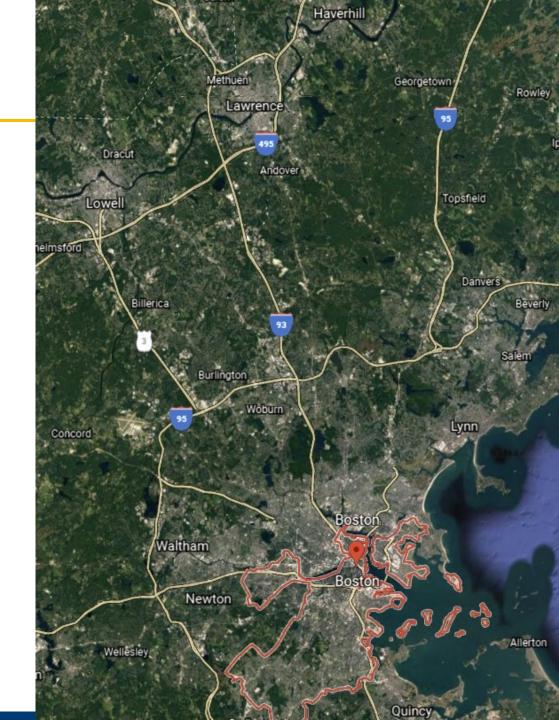
Vertically-positioned regulator indicates that it is a spring-activated device, containing no mercury.

# ADB-2020-02--DOCKET NO. PHMSA-2020-0025 OVERPRESSURE PROTECTION ON LOW-PRESSURE NATURAL GAS DISTRIBUTION SYSTEMS

#### Merrimack Valley

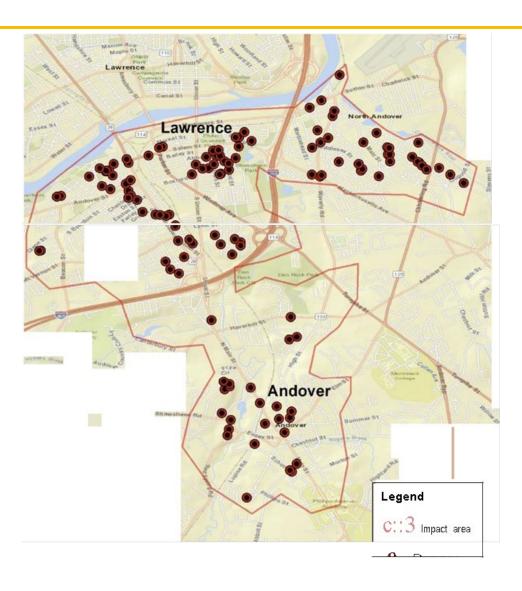
 Region along the Merrimack River of New Hampshire and Massachusetts.





#### Merrimack Valley Incident

- September 13, 2018
- Affecting the towns of Lawrence,
   North Andover and Andover
- 1 fatality
- 22 injuries, 3 were firefighters
- Impacted over 10,000 customers
- 180 Fire Depts
- 140 Law Enforcement Agencies



#### Additional Resources and Tools

PHMSA Homepage, Office of Pipeline Safety <a href="https://www.phmsa.dot.gov">www.phmsa.dot.gov</a>

Standards & Rulemaking <a href="http://www.phmsa.dot.gov/pipeline/regs">http://www.phmsa.dot.gov/pipeline/regs</a>

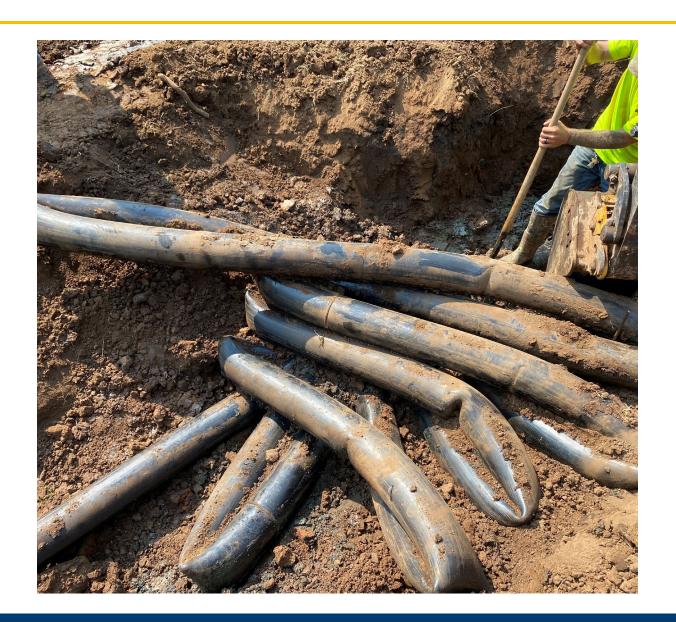
PHMSA Technical Resources

https://www.phmsa.dot.gov/technical-resources/pipeline/pipeline-technical-resources-overview

GPAC Meeting slides for reference at "Public Meetings" tab (<a href="https://primis.phmsa.dot.gov/meetings/">https://primis.phmsa.dot.gov/meetings/</a>)

PHMSA's Stakeholder Communications Site <a href="http://primis.phmsa.dot.gov/com">http://primis.phmsa.dot.gov/com</a>

For Federal Regulations (Official Version) <a href="https://www.ecfr.gov">www.ecfr.gov</a>



Not a good day non regulated single well gathering-a mixture of overpressure and closure of the wrong valve.

## ADB-2021-01 DOCKET NO. PHMSA-2021-0050 SECTION 114 ADVISORY

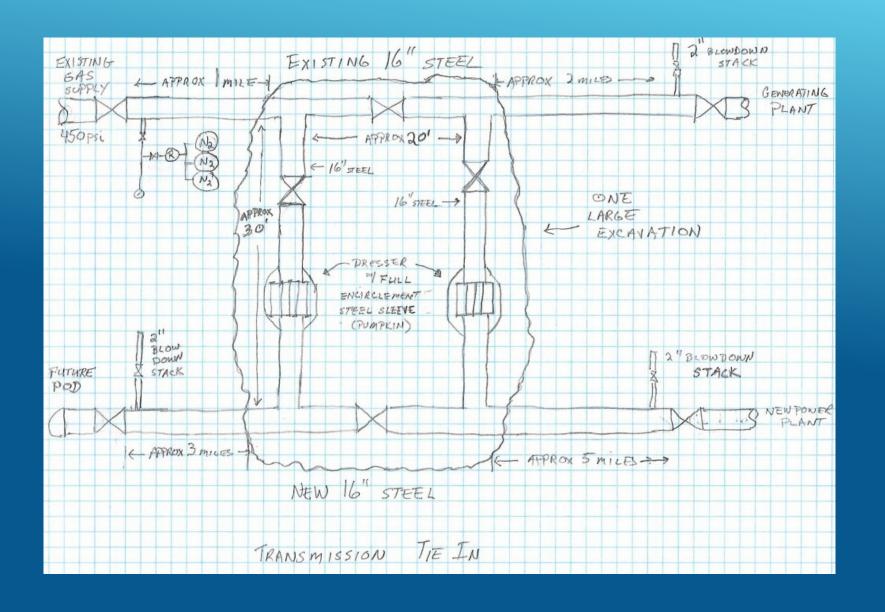
- Reminds operators that the Congressional mandate from the 2020 PIPES Act, Section 114 is "self-executing" and does not require a regulation to have effect
- Operators must update their inspection and maintenance plans to address eliminating hazardous leaks and minimizing releases of natural gas (including intentional venting during normal operations) from their pipeline facilities
- Operators must also revise their plans to address the replacement or remediation of pipeline facilities that are known to leak based on their material, design, or past operating and maintenance history.
- ▶ The statute requires pipeline operators to complete these updates by December 27, 2021.
- ► Operators should review the Advisory Bulletin and Section 114 to ensure these items are addressed in their O&M Plans

### HOW COULD I REDUCE EMISSIONS

- ► Fix all leaks—Do not monitor leaks
- ▶ Use inert gas/air to pop test relief valves
- ► Ensure Leak detection equipment is properly calibrated
- Use leak detection equipment capable of detecting all leaks
- ► Capture residual gas when purging piping

#### PURGING PROCEDURE EXAMPLE

#### SAFETY MOMENT



#### SAFETY

- Vent points above ground a minimum of 6 feet
- ► Check for overhead lines at all discharge locations
- Control static electricity and stray currents with proper grounding
- ▶ Avoid creating combustible mixtures-mixing and/or stratification
- ▶ Be aware of the potential for asphyxiation
- ▶ Use proper PPE
- ▶ Have a calibrated CGI and backup CGI available- check operability
- ► Establish communications with all involved parties/locations
- Ensure adequate purge gas is available when needed (make sure to order extra in case of problems)
- ► Minimize release of green house gases
- ▶ Have a plan, follow the plan, STOP and reassess when needed

#### PURGING BASIC CONCEPTS

- ▶ Isolation
- ▶ Depressurization
- ► Purging out of Service-Clearing
- ► Purging into Service

#### ISOLATION

- ▶ It is essential for every purge to have a good isolation from the adjoining system when the purge is underway.
- ▶ The best method for isolation is physical separation but often this is not a practical option
- ▶ The next best option is the use of valves with double block and bleed- again not always strategically available
- ▶ The most common methods for isolation are squeeze for plastic and stoppers and bags for cast iron and steel. Both of these methods present problems which must be addressed by the purge plan and the individuals performing the purge.
- Double isolation should be pursued and weighted heavily when planning for purge activities
- Air compressors and air movers can dislodge bags and stoppers and even pull gas thru closed valves. It is important to ensure pressures (including vacuum) during the purge are adequately understood and controlled

#### Depressurization

- Once isolated it is important to depressurize the "out of service" piping prior to purging. This includes releasing pressure following pressure testing of new or retested piping.
- Pausing following depressurization, is also important, to verify adequate isolation before proceeding with purging.
  - An overnight pause may be appropriate for larger systems
- Consideration must be given to avoid depressurizing by purging large volumes of Natural Gas or CO2 to the atmosphere.
  - Higher pressure systems can be partially depressurized to nearby lower pressure systems.

Note: Care must be taken to ensure the lower pressure system is not over pressurized and has adequate take away to accommodate the desired flow. This has occurred—200 psig transmission line hand feeding into a 60 psig system and using a 1000 psig gauge—over pressured and company had several miles to leak survey, plus write a procedure stating on a 60 psig system—can only use a 100 psig gauge.

 Draw down compressors can be used to pump gas to higher pressure systems and pull the remaining gas from the pipe.

#### ENVIRONMENTAL IMPACTS OF PURGING

- ▶ Measures must be taken to minimize the release of green house gases to the environment. This includes Natural Gas (21 times more potent as a green house gas than CO2) and CO2 purge gas.
- Measures that should be considered are;
  - ▶ Injection of natural gas into a lower pressure system during depressurization
  - ▶ Use of a draw down compressor to pull natural gas from the system to be purged and injected in a nearby operating system at a higher pressure
  - Use of flaring devices to burn the natural gas rather than emitting directly to the atmosphere
  - ► Avoid using CO2 and engine exhaust gas as a purge gas

#### **Engine**

Ford 302

Operating range - 1000 to 2400 RPM

4-cycle, 8-cylinder dual-purpose natural gas engine

4 cylinders for power and 4 cylinders for compression

Reserve horsepower when operating compressor at rated

capacity and pressure

Parts available locally

Liquid cooled

#### **Compressor Specifications**

Suction 0 psi to 9 psi
Discharge--up to 100 psi depending on suction pressure.
Volume up to 300 MSCFD

#### DRAWDOWN COMPRESSOR



#### Transmission Gathering Distribution

Decommissioning/Installation of a pipeline—

Operators will set up compressors to remove residual gas from a pipeline for abandonment and/or for commissioning new pipelines—gas is put into tankage and recycled back into the system.







#### PURGING METHODS

- ► Three basic methods
  - ▶ **Direct Purge with air-** Simple but high potential to create combustible gas mixtures if not administered properly. Allowed with pipe diameters 4" diameter and smaller provided the purge velocity is maintained above recommended minimums to prevent stratification and minimize mixing
  - ▶ Complete displacement- used where the hazards of creating a combustible mixture cannot be tolerated or used for short lengths of pipe and/or small diameters.

#### PURGING "OUT OF" VS. "INTO" SERVICE

#### Purging "out of" service (clearing)

- Requires a method to remove the natural gas from the pipeline and replace it with air while minimizing the potential for a combustible air-gas mixture
- Normally accomplished for distribution piping using direct purge with air method
- Air compressors can be used to <u>push</u> out the natural gas; also requires an opening to vent gas
- Air movers can be used to <u>pull</u> out the natural gas; also requires an opening to allow air in

#### ► Purging "into" service

- Requires a method to remove the air from the pipeline and replace it with natural gas while minimizing the potential for a combustible air-gas mixture
- Normally accomplished using direct gas input from a valve, fitting or squeeze

#### STRATIFICATION (GROUPING) AND MIXING

- The AGA Purging Standard has been developed to address the issues of stratification and Mixing when purging.
- Stratification is the phenomenon experienced when purge gases separate into layers when they interact
- Mixing is the phenomenon experienced when purge gases blend together
- Both are undesirable and can adversely impact purging activities
- High velocity results in excess mixing; Low velocity results in stratification

## ONLINE ADB & NOTICES

ADBs and Notices

## QUESTIONS?

