



A Game Changing Incident

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MA Over-Pressurization Incident NiSource/Columbia Gas of MA



9/13/18: Series of fires & explosions in Lawrence, Andover, N. Andover, MA

1 death, 21 injuries, 131 structures damaged, at least 5 homes destroyed



MA Over-Pressurization Incident

- Over-pressurization of low-pressure (utilization pressure) gas distribution system
- Most damage was structure fires ignited by gas-fueled appliances; several explosions
- Contract crew with Columbia Gas inspector, was performing tie-in of new plastic main/abandonment of CI main
- System relied on 14 regulators to reduce pressure from ~75 psig to 12" water column (~0.5 psig) for delivery to customers

MA Over-Pressurization Incident

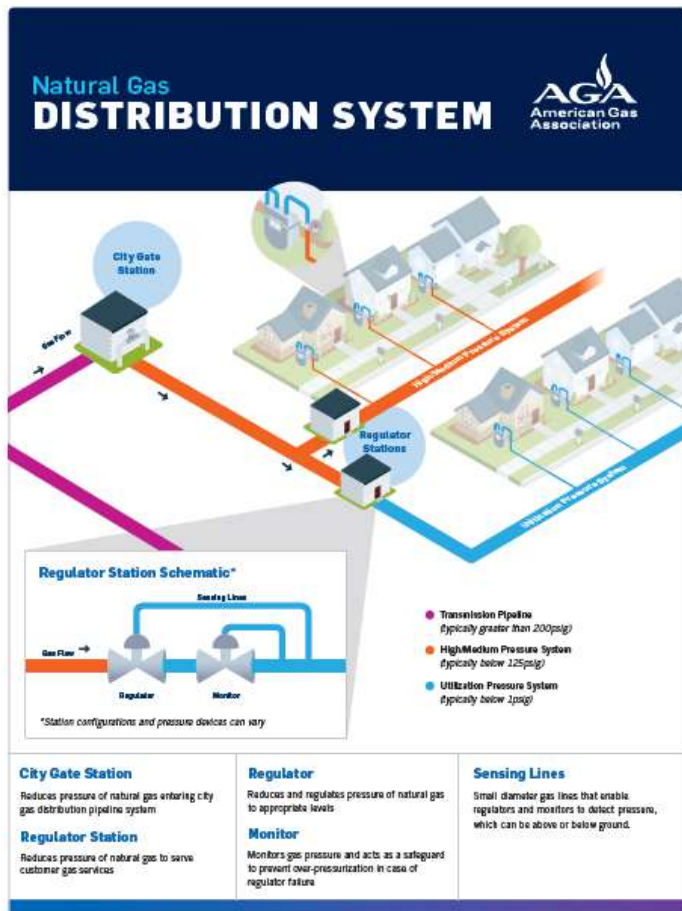
- Main that was abandoned had active regulator sensing lines detecting pressure in system providing input to regulators to control system pressure
- Once crews disconnected the main, sensors noted pressure loss and regulators responded by opening, increasing pressure in system
- Eventually, regulators fully opened

MA Over-Pressurization Incident

- Columbia Gas developed/approved work package executed on day of accident
- Work was performed in accordance with steps laid out in work package
- Work package did not account for sensing line locations or call for relocation to ensure regulators were sensing system pressure
- Columbia Gas has replaced 48 miles of pipe, testing/replacing customer piping, & replacing all gas appliances

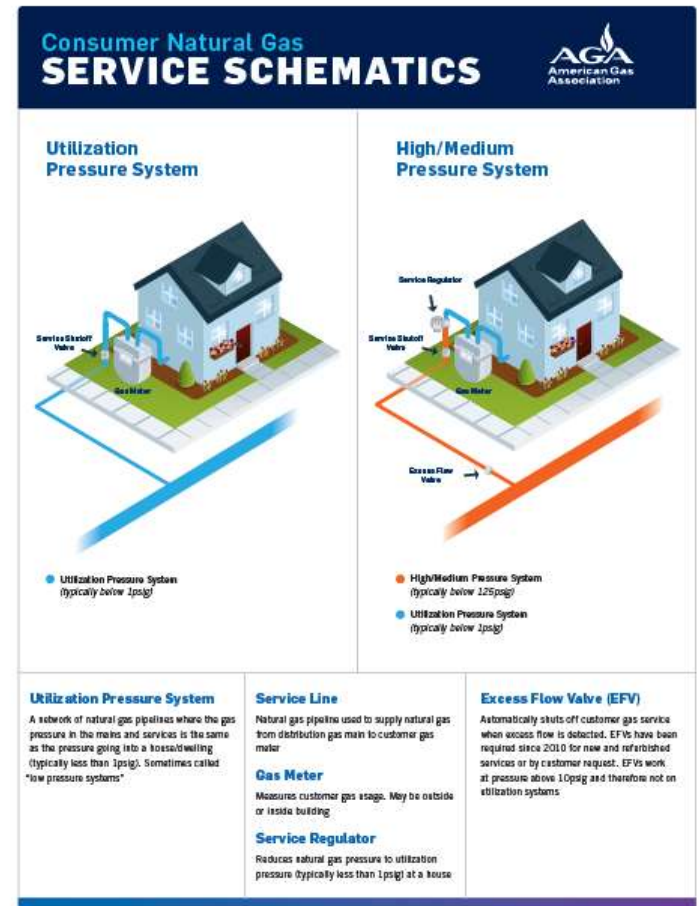
Actions of AGA

- Discussed with Congressional staff to inform on pipelines and over-pressurization
 - Created simple diagrams to explain equipment
- Released Whitepaper “Leading Practices to Prevent Over-pressurization”
- Crisis Communications Workshop
- AGA whitepaper “Skills and Experience for Effectively Designing Natural Gas Systems”
- Work with Sen. Markey staff to craft reasonable bill



Distribution System

- Transmission Pipeline
- City Gate
- Distribution Reg Stations
- Medium and Low Pressure Systems



Gas Service Line Details

- Pressures
- Service Regulator (or absence)
- Shut-Offs
- Excess Flow Valve (or absence)



Leading Practices to Reduce the Possibility of a Natural Gas Over-Pressurization Event

November 26, 2018

Contents

Section 1: Design of Distribution Systems and Regulator Stations.....	4
Background of Natural Gas Systems.....	4
Design Practices For all Pressure Classifications.....	6
Additional Design Practices for Utilization Pressure (i.e. low pressure "LP") Systems.....	9
Section 2: Operating Procedures and Practices.....	10
Regular maintenance for regulator stations.....	10
System Monitoring.....	10
Records.....	11
Damage Prevention.....	11
Construction and Work Permitting Process.....	11
Tie-ins and Uprates.....	11
Standard Operations and Maintenance Practices.....	12
Construction, Tie-Ins, Tapping, Uprates, and Abandonments Practices.....	14
Damage Prevention Practices.....	15
Records Practices.....	16
Section 3: Human Factors.....	18
Management of Change (MOC).....	18
Training for Prevention and Recognition of Abnormal Operating Conditions.....	18
Operator Qualification.....	19
Field Oversight.....	19
Management of Change (MOC) Practices.....	20
Training for Prevention and Recognition of AOCs Practices.....	21
Field Oversight Practices.....	21
Section 4: Managing the Risk of an Over-pressurization Event.....	23
Distribution Integrity Management.....	23
Support from stakeholders, communities, and customers.....	24
General Practices.....	24
Industry practices specific to DIMP:.....	25
Glossary.....	26

How Will This Affect the Industry?

- Some States have revised requirements
- Some States have sent letters to utilities with information requests about over-pressurization
- This may fuel electrification for heat and hot water
- NTSB has made five recommendations in an “Urgent Notice” released on November 15, 2018



National Transportation Safety Board

Washington, DC 20594

Safety Recommendation Report

**Natural Gas Distribution System Project Development and
Review (Urgent)**

NTSB Safety Recommendations

To Massachusetts:

- Eliminate professional engineer (PE) licensure exemption for public utility work and require PE seal on public utility engineering drawings.

To NiSource, Inc.:

- Revise the engineering plan and constructability review process across all subsidiaries to ensure that all applicable departments review construction documents for accuracy, completeness, and correctness, and that the documents or plans be sealed by a professional engineer prior to commencing work.
- Review and ensure that all records and documentation of your natural gas systems are traceable, reliable, and complete.
- Apply management of change (MOC) process to all changes to adequately identify system threats that could result in a common mode failure.
- Develop and implement control procedures during modifications to gas mains to mitigate the risks identified during MOC operations. Gas main pressures should be continually monitored during these modifications and assets should be placed at critical locations to immediately shut down the system if abnormal operations are detected.

Moving *Forward*

- We will all have to make changes to the way we do our jobs
- There may be some discomfort with new rules and regulations
- We all must decide to continuously improve Management of Change, Communication, Safe Work Practices, and Managing Records

**The Natural Gas Distribution business
will be safer, stronger, and more
resilient**

Questions?



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