

New PHMSA NPRMs

Gas Pipeline Leak Detection and Repair

- RIN 2137-AF51
- NPRM Published May 18, 2023

Safety of Gas Distribution Pipelines and Other Pipeline Safety Initiatives

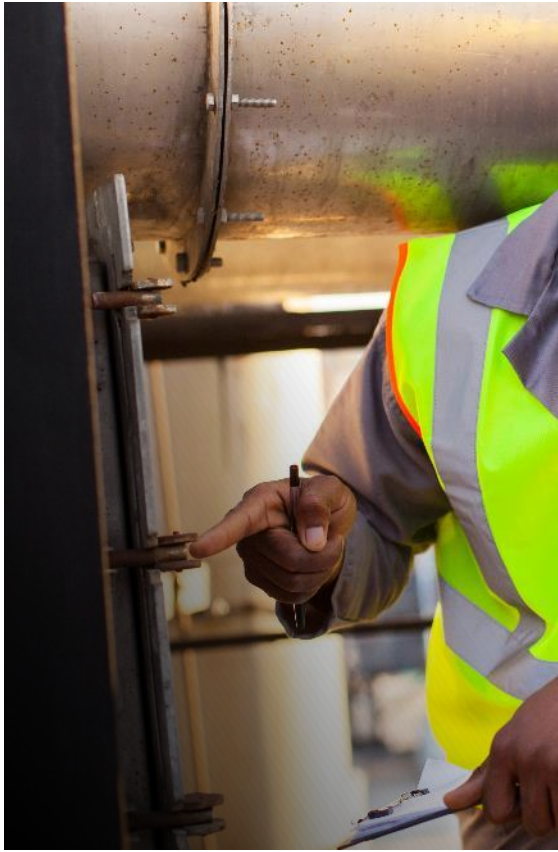
- RIN 2137-AF53
- NPRM Published September 7, 2023



Leak Detection and Repair NPRM

■ Major Topics in the NPRM

- Leak detection and repair (LDAR) program.
- Grade and repair all leaks.
- More frequent leakage surveys and patrols
- Performance standard for LDAR equipment and programs.
- Minimize O&M-related releases.
- Reporting on large releases, leaks discovered, and NPMS participation for regulated gathering.



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PIPES Act of 2020

■ Section 113: Leak Detection and Repair Rulemaking:

- Advanced leak detection programs able to “**identify locate and categorize all leaks**” that are hazardous to human safety or the environment.
- Include **performance standards** reflecting commercially available technology.
- Must require the use of advanced technology.
- Include a **schedule for repairing or replacing each leaking pipe**, except for a pipe with a leak so small that it poses no potential hazard.



Leak Detection and Repair NPRM

- **Section 114: Operations and Maintenance Procedures**
 - O&M procedures must minimize releases of natural gas and the replacement of leak-prone pipelines.
- **Reporting:**
 - Emissions, leaks discovered, and leaks repaired by grade added to annual reports
 - Large volume release reporting: unintentional and intentional releases >1 MMCF
 - NPMS reporting for gas gathering pipelines.



Leak Detection and Repair NPRM

■ **Advanced Leak Detection Program**

- Program Elements
 - List of leak detection equipment
 - Leak detection procedures
 - Periodic evaluation and improvement
- Performance standard
 - Equipment: each leak detection device must have a minimum sensitivity of 5 PPM.
 - Program: ALDP as a whole must be capable of detecting all leaks large enough in volume to produce a reading of 5 ppm when measured within 5 ft from the pipeline.

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Leak Detection and Repair NPRM

- **Distribution-specific amendments (§ 192.723)**
 - Annual leak survey for pipe known to leak
 - More frequent surveys outside business districts



Leakage Surveys: Distribution § 192.723

Facility	Existing	Proposed
Outside of Business Districts	5 years NTE 63 months	3 years NTE 39 months
Leak Prone Pipe (currently just cathodically unprotected)	3 years NTE 39 months	Annually, NTE 15 months
Inside Business District	Annually, NTE 15 months	No change

Additional proposals:

- A survey of known leaks must be performed after environmental changes that can affect gas migration.
- A survey must be performed within 72 hours of extreme weather events.

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Leak Detection and Repair NPRM

- **Transmission-specific amendments**
 - Leak Surveys and patrols (§§ 192.705, 192.706)
 - Require leak detection equipment, except class 1+2 with notification
 - More frequent surveys in HCAs and on assemblies.
 - More frequent patrols
 - Requirement to minimize emissions from routine blowdowns (§ 192.770)
 - Exception for compressor stations in compliance with EPA regulations.



Summary of Transmission and Regulated Gathering Leakage Survey Amendments		
Facility	Existing	Proposed
Non-odorized Class 3	Twice a year not to exceed 7 1/2 months	No change.
Non-odorized Class 4	Four times a year not to exceed 4 1/2 months	No change.
All other transmission	Once a year not to exceed 15 months	No change.
HCA class 1, 2, or 3	No specific standard	Twice a year not to exceed 7 1/2 months.
HCA class 4	No specific standard	Four times a year not to exceed 4 1/2 months.
Valves, flanges, pipeline tie-ins with valves and flanges, ILI launcher and ILI receiver facilities, and leak prone pipe	No specific standard	Same as proposed HCA frequencies.
Leak detection equipment	Only required for non-odorized class 3 and class 4	Required except for non-HCA class 1 and class 2 with a notification.
Regulated gathering	Existing transmission line requirements apply to offshore, Type A, Type B, and certain Type C gathering lines	Require proposed leakage survey requirements for all regulated gathering lines.

Leak Detection and Repair NPRM

- **Gathering specific amendments (§ 192.9)**
 - Proposed rule applies to Type A, B, C and offshore gathering
 - Eliminate leakage survey exception for Type C lines
 - Require patrols for regulated gathering lines.
 - Require § 192.605 procedure manuals for regulated gathering
 - NPMS for regulated gathering lines
- **LNG specific amendment:**
 - Require periodic leak surveys (§ 193.2624).

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Leakage Surveys: Transmission and Gathering §§ 192.9 and 192.706

- Leak detection equipment required except for:
 - Submerged offshore pipelines.
 - Non-HCA Class 1 and 2 locations with § 192.18 notification.
- Greater frequency for:
 - HCAs
 - Valves, flanges, pig launchers, tie-ins to valves and flanges, and
 - Pipelines known to leak based on material, design, or O&M, history.
- Require quarterly leakage surveys for LNG facilities consistent with EPA standards for other fixed facilities.
- Minimum annual survey and non-odorized survey requirements unchanged.

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Leak Grading and Repair § 192.760

- Leak grading follows the **Grade 1-3** framework in the GPTC Guide, with modifications to account for emissions.
- Repair deadlines
 - **Grade 1:** Immediate
 - **Grade 2:** 6 months
 - Transmission/gathering in class 3 or 4: 30 days
 - Operator must have procedures for prioritizing grade 2 leaks.
 - **Grade 3:** 2 years
 - 5-year replacement deadline for leaks on pipelines scheduled for replacement.
 - An operator may request a delayed repair timeline with a § 192.18 notification if repair is impracticable and there is no hazard to public safety.

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Differences from the GPTC Guide

■ Grade 1 Leaks

- No Change in timing – both immediate
- All leaks that can be “seen, heard, or felt” are grade 1 regardless of location.

■ Grade 2 Leaks

- 6-month repair criteria vs 15 months for GPTC
 - GT in HCA, Class 3 & 4 – 30-day repair criteria
- All Transmission leaks are grade 2 at a minimum (rather than >30% SMYS or location).
- New criteria: emissions >10 cubic feet per hour
- Grade 2 is the minimum grade for hydrogen and LPG

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Differences from the GPTC Guide

■ **Grade 3 Leaks**

- Repair all within 24 months - no repair timeframe in GPTC
 - Exception for pipe scheduled to be replaced within 5 years
 - Reevaluate Grade 3 leaks within 6 months vs GPTC 15 month reevaluation standard

■ **Post Repair**

- Repair must be inspected to verify it is no longer leaking.
- Downgrading requires an attempted repair



Timeline for Grade 1-3 Leaks

Type of Leak	GPTC Guidance	Proposal
Grade 1	Immediate	Immediate
Grade 2	15-month deadline	<p>The repair deadline is 6 months.</p> <p>→Transmission/gathering HCAs or class 3 or class 4: 30 days</p> <p>→Operator must have procedures for prioritizing grade 2 leaks.</p>
Grade 3	Suggested no timeframe for repair. Suggested 15 months for reevaluation.	<p>The repair deadline is 2 years.</p> <p>→5-year replacement deadline for leaks on pipelines scheduled for replacement.</p> <p>→An operator may request a delayed repair timeline with a § 192.18 notification if repair is impracticable and there is no hazard to public safety.</p> <p>Reevaluate leaks within 6 months.</p>

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Safety of Gas Distribution Pipelines NPRM

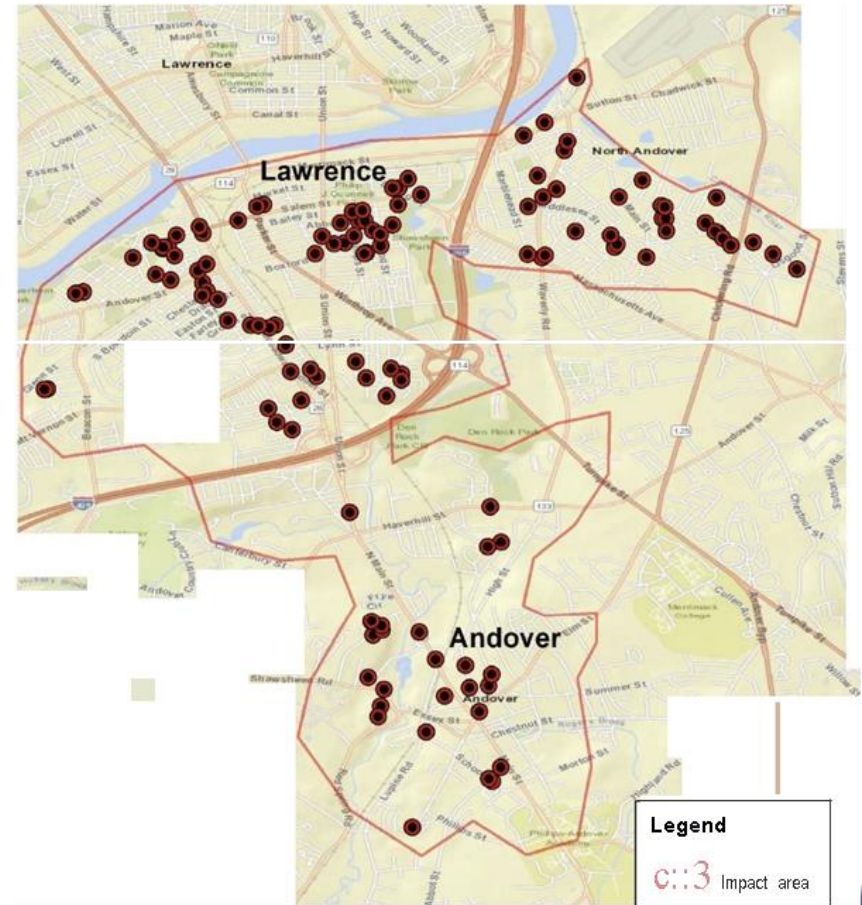
■ Major Topics in the NPRM

- Changes to communications emergency plans
- Requirements for response of over pressure events
- Pressure device record, management, and design requirements
- MOC for distribution
- Pipeline design and construction requirements
- Additional pressure requirements for low pressure distribution



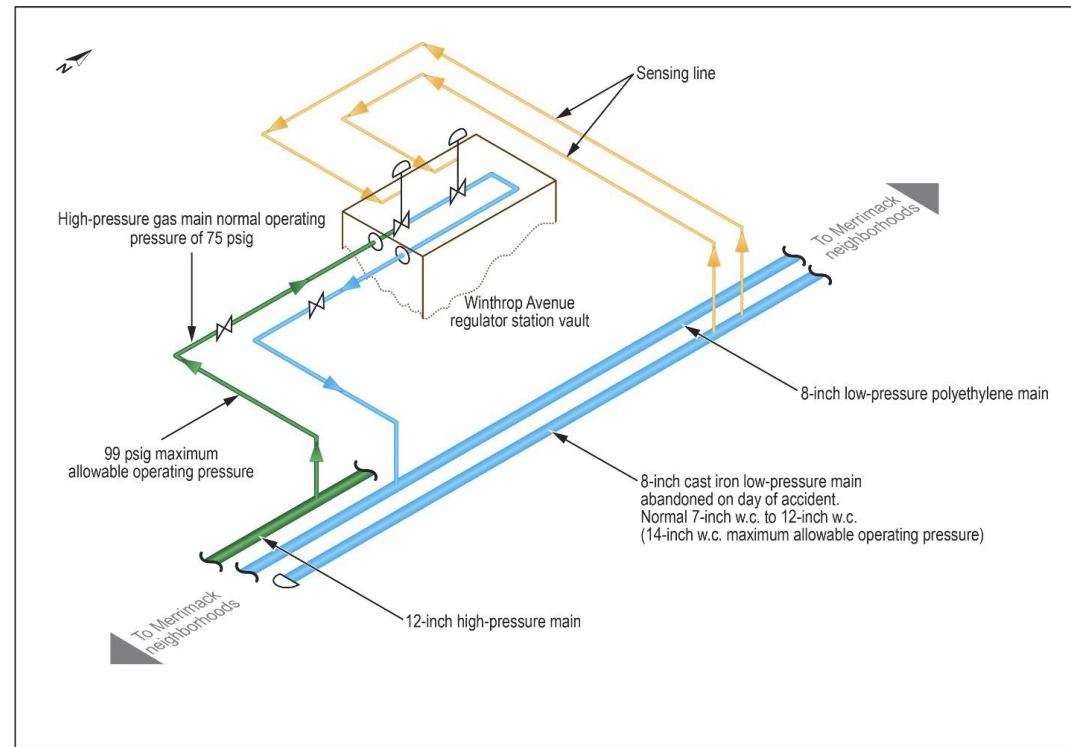
Merrimack Valley Incident

- 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



Regulator Station at Accident Site

- Sensing lines not mapped
- Abandoned 8" cast-iron main
- Regulators opened up



Leonel Rondon Act in the PIPES Act of 2020



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Regulator stations low-pressure distribution system

For stations that are new, replaced, relocated, or otherwise changed

- Must have two methods of overpressure protection
 - relief valve, monitoring regulator, or automatic shutoff valve
- Protection against a failure from a single event
- Remote monitoring equipment near the overpressure equipment

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§192.305

Current Code Language

Each transmission line or main must be inspected to ensure that it is constructed in accordance with this part.

*Code March 11, 2015
(Delayed Indefinitely)*

Each transmission line and main must be inspected to ensure that it is constructed in accordance with this subpart. An operator **must not use operator personnel to perform a required inspection if the operator personnel performed the construction task** requiring inspection. Nothing in this section prohibits the operator from inspecting construction tasks with operator personnel who are involved in other construction tasks.



Proposed §192.305

(a) Each transmission pipeline and main that is new, replaced, relocated, or otherwise changed after “*FR date*” **must be inspected** to ensure that it is constructed in accordance with this subpart. Except as provided in paragraph (b), an operator **must not use operator personnel to perform a required inspection if the operator personnel performed the construction task** requiring inspection. Nothing in this section prohibits the operator from inspecting construction tasks with operator personnel who are involved in other construction tasks.

(b) For the construction inspection of a main that is new, replaced, relocated, or otherwise changed after “*FR date*”, **operator personnel involved in the same construction task may inspect each other’s work in situations where the operator could otherwise only comply with the construction inspection requirement in paragraph (a) of this section by using a third-party inspector.** This justification must be documented and retained for the life of the pipeline.

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§ 192.517 Pressure test records for plastic

- Records must be kept for the life of the pipeline for plastic mains and services
 - The operator's name, the name of the employee responsible for making the test, and the name of the company or contractor used to perform the test.
 - Pipeline segment pressure tested.
 - Test date.
 - Test medium used.
 - Test pressure.
 - Test duration.
 - Leaks and failures noted and their disposition.

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§ 192.605

- Must have specific procedures for responding to, investigating, and correcting, as soon as practicable, the cause of overpressurization indications
- Must have a qualified person to review and certify construction plans before they are carried out
- Ensuring that any hazards introduced by a change are identified, analyzed, and controlled before resuming operations.



§ 192.605

- Management of change for distribution
 - Technology, equipment, procedural, and organizational changes, including:
 - Installations, modifications, replacements, or upgrades to regulators, pressure monitoring locations, or overpressure protection devices
 - Modifications to alarm set points
 - Introduction of new technologies for overpressure protection
 - Revisions, changes, or the introduction of new standard operating procedures for design, construction, installation, maintenance, and emergency response



§ 192.615 Emergency plans

- For distribution line operators only, unintentional release of gas and shutdown of gas service to 50 or more customers or, if the operator has fewer than 100 customers, 50 percent or more of its total customers
 - Notification to 911 and other emergency agencies
 - Notification to the surrounding general public, in appropriate languages, and must continue through event
 - The operator must coordinate and share information with emergency services
 - Provide direction to the public to receive assistance



§ 192.615 Emergency plans

- Distribution operators must develop and implement a system, including written procedures, to rapidly communicate in a gas emergency
 - Must be available to the general public as opt in/out
 - Procedures must include
 - Description of the notification system and how it will be used
 - Who is responsible for the system and how information on the system is delivered
 - Description of the system-wide testing protocol and Maintenance
 - Details regarding how the operator ensures messages are accessible
 - Message content, including updates as the situation changes
 - process to initiate, conduct, and complete notifications
 - Cybersecurity measures



§ 192.638 Distribution lines: Records for pressure controls

- Traceable Verifiable and Complete records of pressure control
 - location information (including maps and schematics) for regulators, valves, and underground piping (including control lines)
 - Attributes of the regulator(s), such as set points, design capacity, and the valve failure position (open/closed)
 - The overpressure protection configuration
- If the records are not available, they must be gathered, updated and made available to personnel



§ 192.640 Distribution lines: Presence of qualified personnel

An operator of a distribution system must conduct a documented evaluation of each construction project that begins after “*FR Date*” to identify any potential project activities during which an overpressurization could occur at a district regulator station. This evaluation must occur before such activities begin.



§ 192.640 Distribution lines: Presence of qualified personnel

- If the system doesn't have remote monitoring and control, and the operator feels that an overpressure event might occur then
 - A qualified person must be present at a district regulator station during the activity
 - Pressure must be monitored
 - Must have the ability to shut off gas flow or control pressure
 - This person must be informed on isolation valves, emergency procedures, and have authority to stop work

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§ 192.1007 What are the required elements of an integrity management plan?

- Changes to threats and threat analysis for low pressure systems
- Notifications to PHMSA
- Low pressure distribution threat evaluations
- P & M measures for low pressure distribution



QUESTIONS?

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