



# Pipeline Safety – Final Rule

## Safety of Gas Transmission Pipelines - RIN-2

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U.S. Department of Transportation  
Pipeline and Hazardous Materials  
Safety Administration

PHMSA: Your Safety is Our Mission



# **Repair Criteria, IM Improvements, Cathodic Protection, Management of Change, and Other Related Amendments**

**RIN: 2137-AE72**

**Docket: PHMSA-2011-0023**

**Published: August 24, 2022**

**Effective Date: May 24, 2023**

**As amended by Amdt No. 192-138**

**Effective: Jan 15, 2025**



# Brief History of Gas Rule

- Why was this rule updated needed?
- Major incidents that prompted rule making effort
- Post incident actions taken





# September 9, 2010 -PG&E incident at San Bruno, CA



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# Brief History of Gas Rule



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# Brief History of Gas Rule

- PG&E incident at San Bruno, CA, September 9, 2010
- PHMSA issues Gas ANPRM on August 25, 2011
  - Sought public comment on 15 topics / 122 questions. Received 103 responses containing thousands of comments.
- NTSB issues 32 recommendations to PHMSA, CPUC, PG&E, AGA, and INGAA on August 30, 2011
- Pipeline Safety Act of 2011 issued on January 3, 2012
  - Includes several mandates correlating to PG&E investigation findings

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# Dec.11, 2012 - Incident near Sissonville, WV

- Columbia Gas Transmission
- 20” natural gas transmission pipeline



# December 11, 2012 - Incident near Sissonville, WV





# Brief History of Gas Rule

- Incident near Sissonville, WV, on December 11, 2012
  - Destroys 3 homes, damages several other houses, shuts down I-77 for 19 hours
- NTSB issues 4 recommendations to PHMSA and Columbia Gas on February 19, 2014
- PHMSA issues Gas NPRM on April 8, 2016
  - Approximately 300 responses received containing thousands of comments



# Brief History of Gas Rule

- 5 GPAC meetings held January 2017 to March 2018
  - Rule found to be technically feasible, reasonable, cost-effective, and practicable if certain changes were made
- Decision made in February 2018 to split Gas Rule into 3 final rules:
  - RIN-1 (issued October 2019) – MAOP Reconfirmation, Expansion of Assessment Requirements, and Other Related Amendments
  - **RIN-2 (this rule – issued August 2022)** – Repair Criteria, IM Improvements, CP, MOC, and Other Related Amendments
  - RIN-3 (issued November 2021) – Gas Gathering

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# Major Areas Revised

- Definitions (§ 192.3)
- Management of Change (§§ 192.13 & 192.911)
- Corrosion Control (§§ 192.319, 192.461, 192.465, 192.473, 192.935)
- Inspections Following Extreme Events (§ 192.613)
- Repair Criteria (§§ 192.711, 192.714, 192.933)
- IM Clarifications (§§ 192.917 (a) – (d), 192.935(a))
- Strengthening Requirements for Assessment Methods (§§ 192.923, 192.927, 192.929)

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# Summary of Changes to Definitions

## § 192.3

- **Amends the definition of “transmission line.”**
  - Transmission lines can be a “connected series of pipelines.”
  - Has MAOP of 20% or more of SMYS (previously defined as operating at hoop stress of 20% or more of SMYS).
  - Transmission lines can be voluntarily designated by the operator.
- **Adds a new definition for “distribution center.”**
  - Initial point where gas enters piping used primarily to deliver gas to customers who purchase it for consumption, as opposed to customers who purchase it for resale (metering location / pressure reduction location / lateral off a transmission line).

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# Summary of Changes to Definitions

## § 192.3

- **Adds new definitions for:**
  - Close Interval Survey
  - Dry Gas or Dry Natural Gas
  - Hard Spot
  - In-line Inspection
  - In-line Inspection Tool or Instrumented Internal Inspection Device
  - Wrinkle Bend
- The definitions clarify technical terms used in part 192 or in this rulemaking.

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# Summary of Changes to Management of Change §§ 192.13 and 192.911

- **Establishes a general clause, for all GT pipelines, that invokes the requirements for the management of change process in ASME/ANSI B31.8S, section 11.**
  - Previously management of change needed for High Consequence Areas (HCAs) only.
  - 18-month compliance period for non-HCAs; can request extension.
  - Evaluate and mitigate significant changes.
- **Articulates the requirements that are already incorporated by reference for a management of change process for GT pipelines.**
  - Reason for change, authority for approving changes, analysis of implications, acquisition of required work permits, etc.

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# Summary of Changes to Corrosion Control

§§ 192.319, 192.461, 192.465, 192.473, & 192.935

- **Installation of pipe in a ditch & External corrosion control – protective coating (192.319 & 192.461)**
  - Requires operators to perform an above-ground assessment (ACVG/DCVG/“other technology”) after backfilling is completed and remediate any coating damage found.( projects of 1000 feet or more)
  - In both O&M and construction sections
- **External corrosion control – monitoring/remediation (192.465)**
  - Requires remediation of Cathodic Protection (CP) deficiencies within 1 year
    - Previously were to take “prompt remedial action.”
  - Requires evaluation of areas where annual test station readings indicate CP levels below the required levels of Appendix D
    - Perform Close Interval Survey (CIS) and remediate to address systemic causes.
    - Investigate and mitigate non-systemic causes.

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# Summary of Changes to Corrosion Control

§§ 192.319, 192.461, 192.465, 192.473 & 192.935

- **External corrosion control – Interference currents (192.473)**
  - Specifies interference survey requirements in an operator’s corrosion control program.
    - Requires interference surveys when potential monitoring indicates significant increase in stray current or when new potential stray current sources (pipelines, HVAC power lines, etc.) are introduced.
    - Analysis of results of survey to determine cause of interference and whether it could cause significant corrosion, impede safe operation, or adversely affect environment or public.
    - Development of remedial action plan and remediation within 12 to 15 months after completing survey.

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# Summary of Changes to Corrosion Control §§ 192.319, 192.461, 192.465, 192.473, & 192.935

- **What additional Preventive & Mitigative (P&M) measures must an operator take? (192.935)**
  - Adds additional considerations for P&M measures to address corrosion in HCAs, including recoating damaged, poorly performing, or disbonded coatings, and other areas such as:
    - Correcting the root causes of past incidents to prevent recurrence
    - Installing automatic shutoff valves or remote control valves
    - Installing computerized monitoring and leak detection systems.

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# Summary of Changes to Inspections Following Extreme Events - § 192.613

- **Requires operators to perform inspections of all potentially affected onshore GT pipeline facilities after events that have the likelihood of damaging pipeline facilities and taking appropriate remedial action.**
  - Inspection must commence within 72 hours after the point in time when the operator reasonably determines the affected area can be safely accessed by personnel and equipment, and such personnel and equipment are available. If unable, must notify PHMSA Region Director as soon as practicable.



# Summary of Changes to Repair Criteria

## §§ 192.714 & 192.933

- Establishes repair criteria and pressure reductions for non-HCAs that are structured similarly to the criteria for HCAs (immediate/2-year/monitored conditions).
- Prescribes requirements, including in-situ evaluation, for cracks and crack-like defects.
- Establishes an Engineering Critical Assessment (ECA) method for dents where the repair can be deferred if engineering analyses performed in accordance with § 192.712 demonstrate critical strain levels are not exceeded.
- Updates or specifies certain HCA repair criteria.
- Repairs must be made using pipe and material properties documented in TVC records; if documented data is not available, operators must verify per § 192.607.

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# Summary of Changes to Repair Criteria (immediates, §§ 192.714 & 192.933)

- **Designates the following types of defects as immediate conditions:**
  - Anomalies where the metal loss is greater than 80 percent of wall thickness.
  - Metal loss anomalies with a PFP  $\leq 1.1 \times$  MAOP.
  - A topside dent that has metal loss, cracking, or a stress riser (“unless” ECA in accordance w/§192.712).
  - Anomalies where there is an indication of metal loss affecting certain longitudinal seams.
  - Cracks or crack-like anomalies meeting specified criteria.
  - Indications of anomalies that require immediate action.

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# Summary of Changes to Repair Criteria (scheduled conditions, 192.933 & 192.714 )

- Designates the following types of defects as 1-year / 2-year conditions:
  - Smooth topside dents with a depth greater than 6% of the pipeline diameter (“unless” ECA [...]).
  - Dents greater than 2% of the pipeline diameter located at a girth weld, longitudinal, or spiral seam weld (“unless” ECA [...]).
  - Bottomside dent with metal loss, cracking, or stress riser (“unless” ECA).
  - Metal loss anomalies where a calculation of the remaining strength of the pipe shows a PFP ratio  $< 1.39 \times \text{MAOP}$  for Class 2 locations, or  $< 1.50 \times \text{MAOP}$  for Class 3 and Class 4 locations. For Class 1 locations with a PFP  $> 1.1 \times \text{MAOP}$ , follow B31.8S-2004, section 7, figure 4.
  - Certain metal loss anomalies and cracks with a PFP  $< 1.39 \times \text{MAOP}$  in Class 1 locations or where Class 2 locations have uprated pipe, and that has a PFP  $< 1.5 \times \text{MAOP}$  in all other Class 2, Class 3, and Class 4 locations.



# Summary of Changes to Repair Criteria (monitored conditions, §§ 192.933 & 192.714 )

- Designates the following types of defects as monitored conditions:
  - Bottomside dents with depth greater than 6% (192.714) and where ECA shows critical strain levels are not exceeded (192.933).
  - Dents with depth greater than 2% that affects pipe curvature at a girth weld or longitudinal or helical seam weld, and “where” ECA [...].
  - Dents with metal loss, cracking, or a stress riser, and “where” ECA [...].
  - Certain metal loss anomalies and cracks with a PFP  $\geq 1.39 \times$  MAOP in Class 1 locations or where Class 2 locations have uprated pipe, and that has a PFP  $\geq 1.5 \times$  MAOP in all other Class 2, Class 3, and Class 4 locations.

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# Summary of Changes to IM Clarifications

## §§ 192.917 (a) – (d) & 192.935(c)

- Inserts specific attributes from ASME/ANSI B31.8S into the regulations for risk assessments.
- Specifies operators must perform risk assessments that are adequate for evaluating the effects of interacting threats. Account and compensate for uncertainties in the model and data used.
- Requires operators use validated information and data as inputs and validate their risk models considering incident, leak, and failure history, and other historical information.
- Provides specific examples of integrity threats for plastic pipe that must be addressed.

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# Summary of Changes to ICDA and SCCDA §§ 192.923, 192.927, & 192.929

- Incorporates NACE SP0206-2006 into the regulations for ICDA and establishes additional requirements for ICDA for covered segments.
- Incorporates NACE SP0204-2008 into the regulations for SCCDA and establishes additional requirements for SCCDA.



# Questions?

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