PHMSA
Safety of Gas
Gathering and Transmission Rule

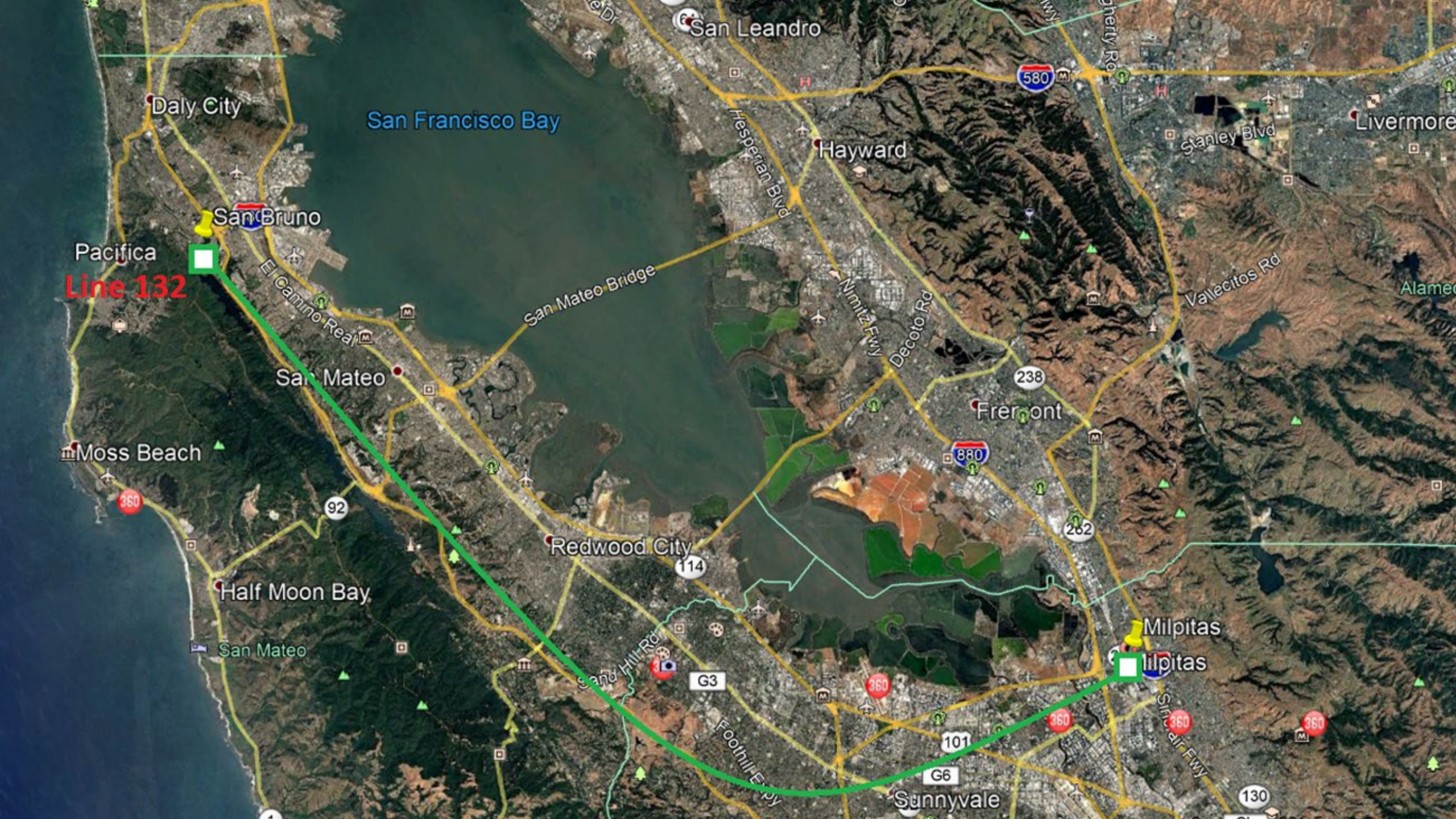
A.K.A – The “Mega Rule”

Why did this Rulemaking Occur?

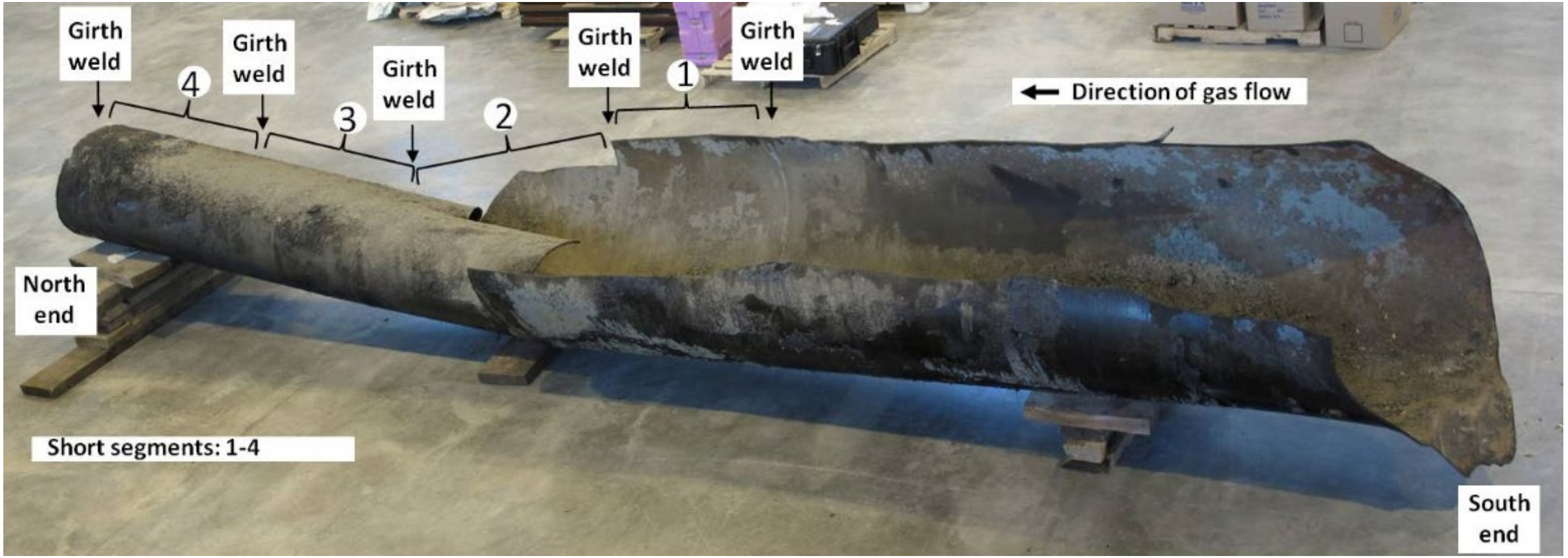
History of the Gas Rule

September 9, 2010 – San Bruno, CA

- 8 people killed
- 51 injured
- Destroys 38 homes
- Damages 70 homes


San Leandro
Daly City
San Francisco Bay
Hayward
Livermore
San Bruno
Pacifica
Line 132
El Camino Real
San Mateo Bridge
Hesperian Blvd
Nimitz Fwy
Decoto Rd
Vallecitos Rd
San Mateo
Fremont
Moss Beach
Redwood City
Half Moon Bay
Milpitas
Sand Hill Rd
Foothill Expy
Sunnyvale
Stanley Blvd
580
880
238
262
92
114
101
G3
G6
130
360

San Bruno


Girth weld
4
Girth weld
3
Girth weld
2
Girth weld
1
Girth weld
Direction of gas flow
North end
Short segments: 1-4
South end

Line 132

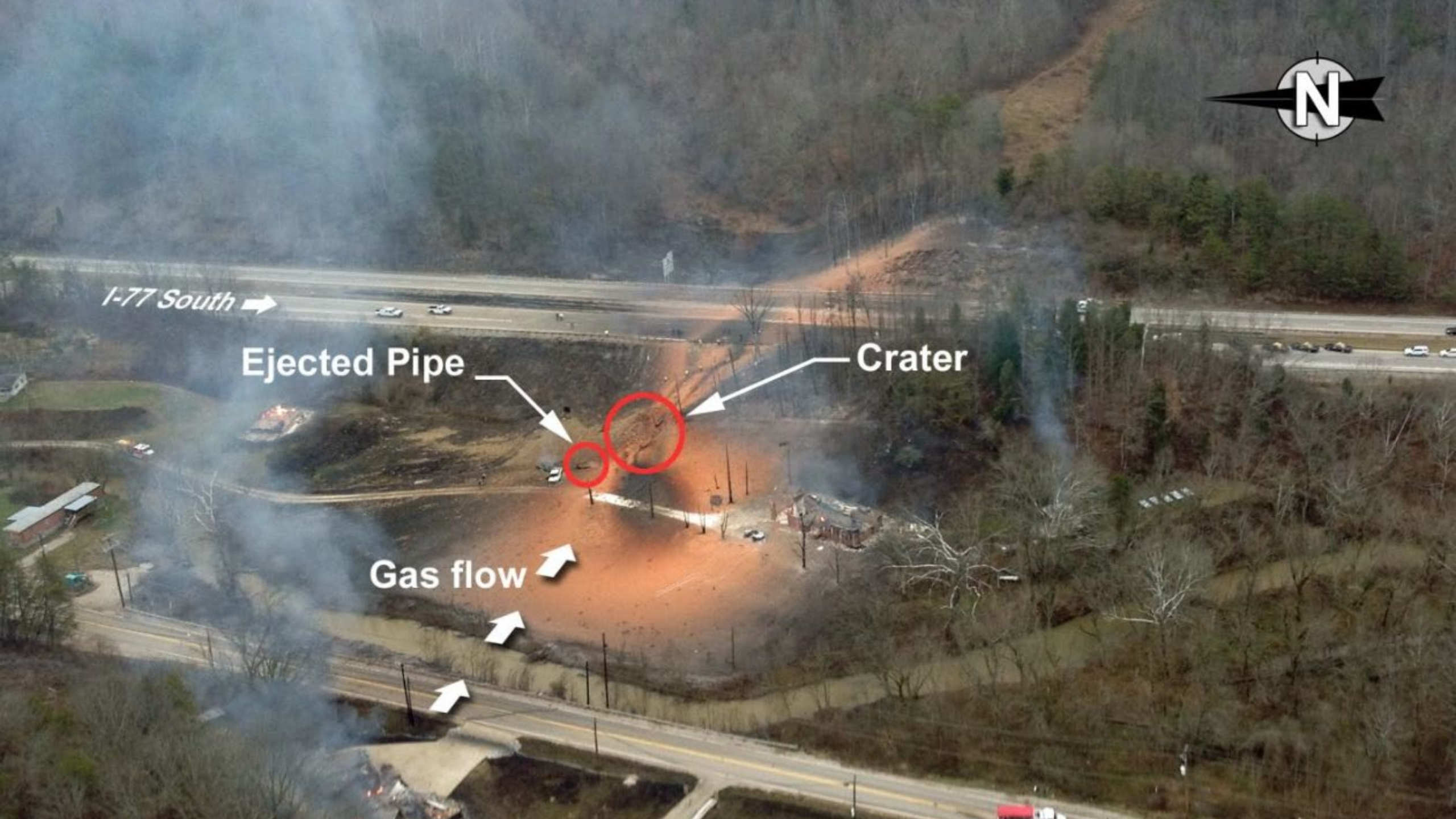
- 1948 Installed
- 1956 Relocated

San Bruno

- Immediately after the San Bruno, CA accident, NTSB recommended that PG&E:
  - Conduct an immediate search for missing records
  - Use verifiable records to determine a valid MAOP, and
  - If a valid MAOP cannot be substantiated, conduct pressure tests to re-establish a valid MAOP
- The results of the PG&E review revealed that PG&E could not substantiate MAOP for a significant amount of PG&E's transmission system

Sissonville, West Virginia

- December 11, 2012
- Columbia Gas Transmission
- 20” natural gas service


I-77 South
Ejected Pipe
Crater
Gas flow
N

Why did This Rulemaking Occur?

Reauthorization Hearings

- Eight hearings
  - 5 in 2010
  - 3 in 2011
- Data requests

Pipeline Safety Act 2011?

§60139

a) (1) … verification of the records of the owner or operator relating to the interstate and intrastate gas transmission pipelines … in class 3 and class 4 locations and class 1 and class 2 locations in high- consequence areas

b) … purpose of the verification shall be to ensure that the records accurately reflect the physical and operational characteristics of the pipelines described in paragraph (1) and confirm the established MAOP

Pipeline Safety Act 2011?

§60139

b) (1) … for which the records of the owner or operator are insufficient to confirm the established maximum allowable operating pressure

d) (1) … Not later than 18 months … issue regulations for conducting tests to confirm the material strength of previously untested …

April 8, 2016

DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Parts 191 and 192

[Docket No. PHMSA–2011–0023]

RIN 2137–AE72

Pipeline Safety: Safety of Gas Transmission and Gathering Pipelines

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT.

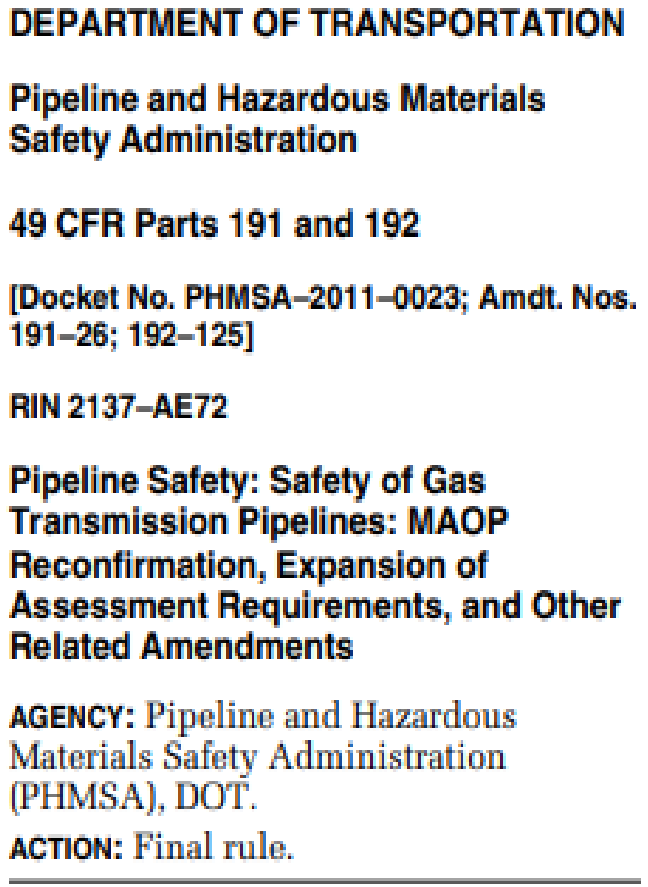
Mega Rule – Role Out

PHMSA split this rulemaking into 3 different rulemakings -

1st - MAOP Reconfirmation, Expansion of Assessment Requirements, and Other Related

- 6-month grace period for 7-calendar-year reassessment intervals
- Seismicity
- MAOP exceedance reporting
- Material verification, MAOP reconfirmation, & amendments related to §192.619
- Non-HCA assessments and MCA definition
- Safety features on ILI launchers and receivers

Published Oct.1 2019
Effective July 1, 2020



DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Parts 191 and 192

[Docket No. PHMSA–2011–0023; Amdt. Nos. 191–26; 192–125]

RIN 2137–AE72

Pipeline Safety: Safety of Gas Transmission Pipelines: MAOP Reconfirmation, Expansion of Assessment Requirements, and Other Related Amendments

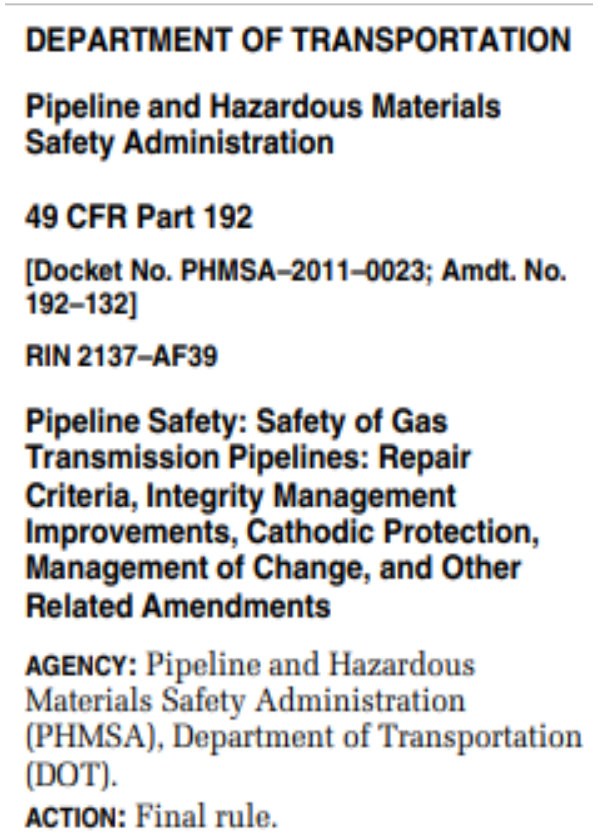
AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), DOT.

ACTION: Final rule.

2nd - Repair Criteria, Integrity Management Improvements, Cathodic Protection, MOC

- Repair criteria (HCA and non-HCA)
- Inspections following extreme events
- Management of change
- Corrosion control
- Integrity management clarifications
- Strengthened assessment requirements

Published Aug. 24, 22
Effective May 24, 23



DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Part 192

[Docket No. PHMSA–2011–0023; Amdt. No. 192–132]

RIN 2137–AF39

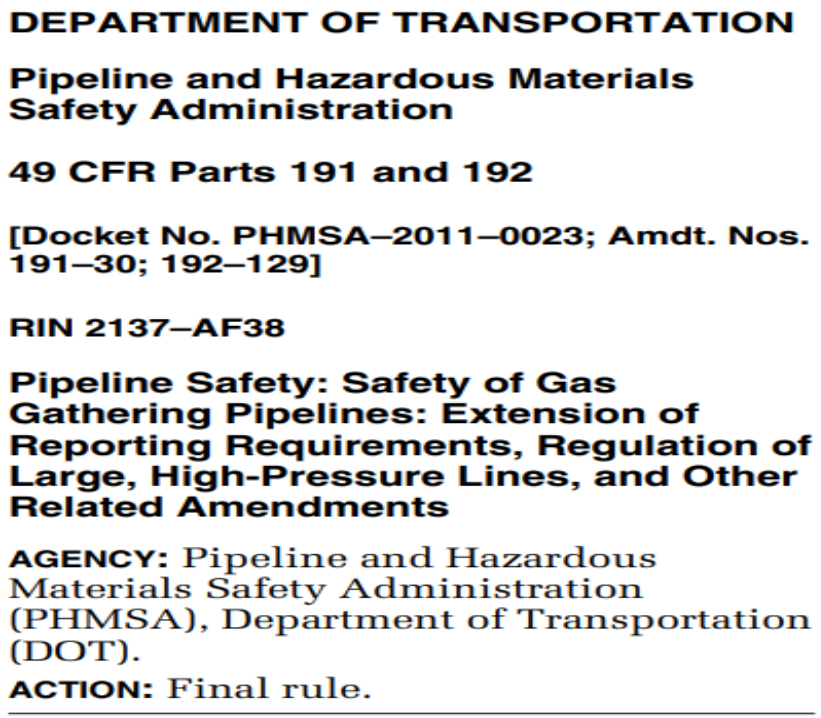
Pipeline Safety: Safety of Gas Transmission Pipelines: Repair Criteria, Integrity Management Improvements, Cathodic Protection, Management of Change, and Other Related Amendments

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation (DOT).

ACTION: Final rule.

3rd -Safety of Gas Gathering Pipelines

- Reporting requirements
- Appropriate safety regulations for gas gathering lines in Class 1 locations
- Definitions related to gas gathering



DEPARTMENT OF TRANSPORTATION

Pipeline and Hazardous Materials Safety Administration

49 CFR Parts 191 and 192

[Docket No. PHMSA–2011–0023; Amdt. Nos. 191–30; 192–129]

RIN 2137–AF38

Pipeline Safety: Safety of Gas Gathering Pipelines: Extension of Reporting Requirements, Regulation of Large, High-Pressure Lines, and Other Related Amendments

AGENCY: Pipeline and Hazardous Materials Safety Administration (PHMSA), Department of Transportation (DOT).

ACTION: Final rule.

Published Nov. 16 2021
Effective May 16, 2022

Docket No: PHMSA-2011-0023 (RIN 1)

Safety of Gas Transmission, MAOP Reconfirmation, Expansion of Assessment Requirements, Non-HCA Assessments and MCA definition, Safety on ILI launchers and receivers

Docket No: PHMSA-2011-0023
Amdt No 192-125

Amdt 192-125

Publication Date: October 01, 2019

Effective Date: July 01, 2020

1. Know your Pipeline System….

Identifying what's in your system

- Pipe Specifications
- Component Specifications
- Pressure Test
- Have Traceable, Verifiable, and Complete records

Amdt 192-127

2. Know where your Pipeline System is…

Identifying where you pipeline is in relation to people and roads.

- Class Location Study
- High Consequence Areas
- Moderate Consequence Areas

Definitions – §192.3

Moderate Consequence Area (MCA) – an onshore area within a PIR containing:

- 5 or more BIHOs; or
- Paved surface, including shoulders*;
  - Interstate
  - Freeway
  - Expressway
  - Principle arterial roadways w 4 or more lanes

*Federal Highway Administration's *Highway Functional Classification Concepts, Criteria and Procedures, Section 3.1*

What do you do?

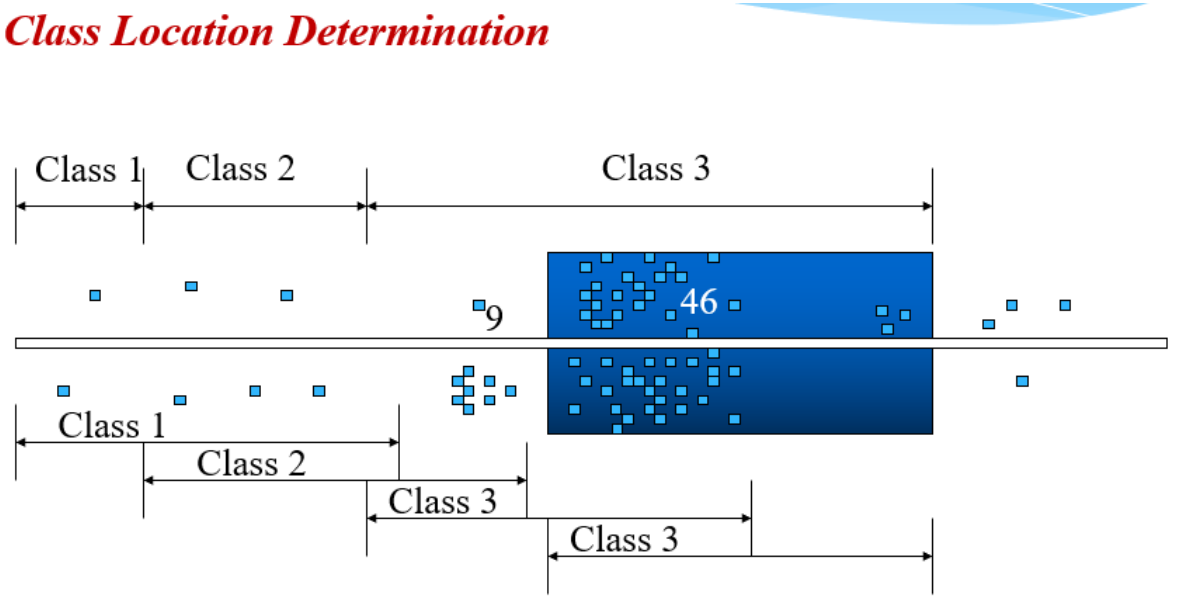
Sept 2020 Conducting MCA analysis

Class Locations – §192.5

Must have records that document

- the current class location of each pipeline segment and
- demonstrate how the operator determined each class location

See Docket ID: PHMSA–2017–0151, PHMSA Class Location ANPRM published July 31, 2018, page 36862.



3. Confirm MAOP – §192.624

- Pipelines w/o TVC Pressure Test Records
  - HCA
  - Class 3 and 4 Locations

- Established by the Grandfather Clause (§192.619(c))
  - HCAs
  - Class 3 and 4 Locations
  - MCAs if piggable

- Procedures by 7-1-2021

4. Verify Pipeline Material - §192.607

- Documentation
  -Diameter
  -Wall Thickness
  -Grade (yield and ultimate tensile)
  -Chemical Composition
  -Pressure Rating
  -Seam Type

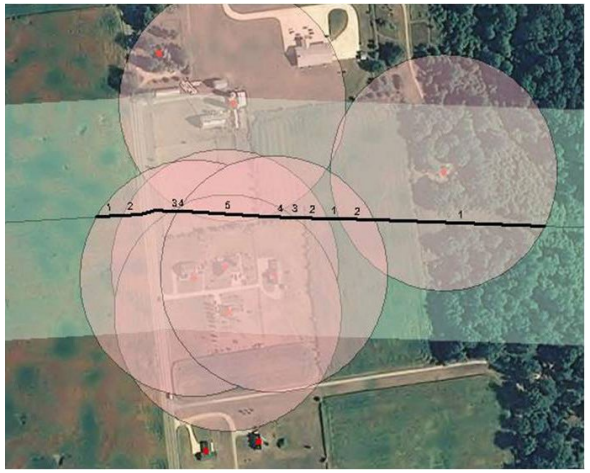
Element	Composition (%)	Element	Composition (%)
C	3.310	V	0.0088
Si	2.190	Ti	0.0120
Mn	0.520	Pb	0.0160
P	0.086	Mg	0.0028
S	0.099	Sn	0.0340
Cr	0.296	As	0.0130
Mo	0.021	Co	0.0084
Ni	0.065	Bi	0.0053
Cu	0.208	Fe	93.100
Al	0.010		

5. Assess Pipelines in HCA's, Class 3 and 4, MCAs if Piggable

- 50% by July 3, 2028
- 100% By July 2, 2035

6. Have to Keep Records: Going Forward…For Life of Pipe

- Materials (§192.67)
- Pipe Design (§192.127)
- Class Location Studies and Determination (§192.5)
- Pipeline Components (§192.205)
- Verification of Materials (§192.607)
- MAOP Confirmation (§192.624)
- Assessments (§192.710)



Docket No: PHMSA-2011-0023 (RIN 2)

Repair Criteria, Integrity Management Improvements, Cathodic Protection, Management of Change, and Other Related Amendments

Docket No: PHMSA-2011-0023
Amdt No 192-132

Amdt 192-132

Publication Date: August 24, 2022

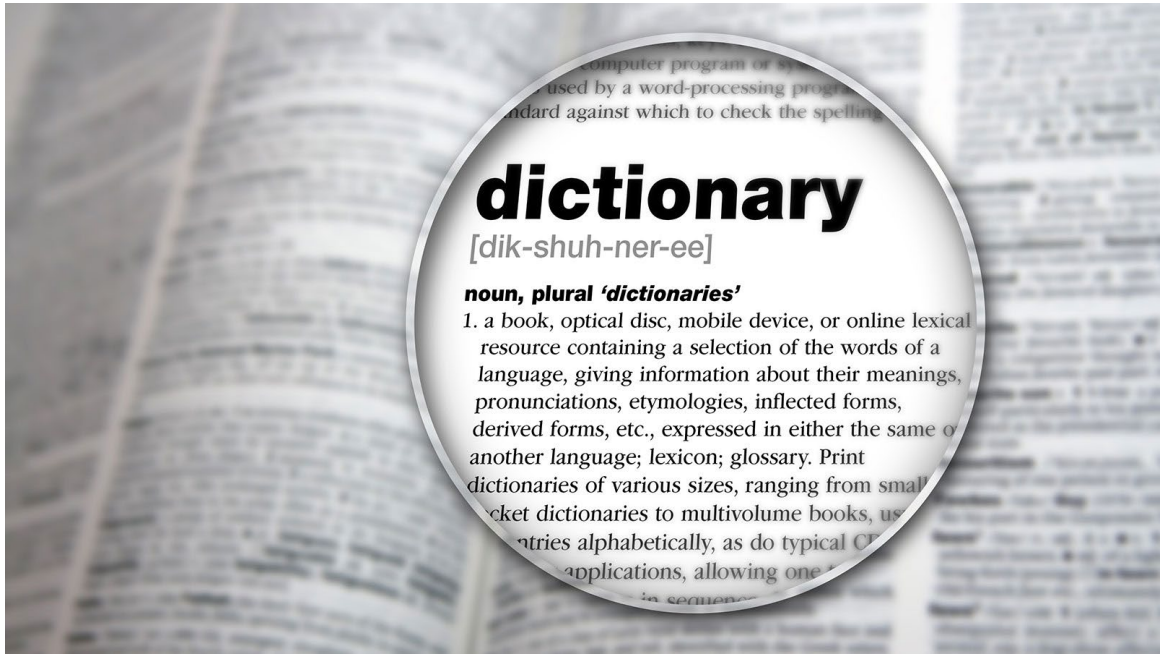
Effective Date: May 24, 2023

Major Provisions

- Definitions—§192.3
- Management of Change—§§ 192.13, 192.911
- Corrosion Control—§§ 192.319, 192.461, 192.465, 192.473, 192.478, 192.935
- Inspections Following Extreme Weather §192.613
- Repair Criteria—§§ 192.714, 192.933
- IM Clarifications—§§ 192.917, 192.935
- Strengthening Assessment Methods—§§ 192.923, 192.927, 192.929

Definitions §192.3

- Transmission Line
- Distribution Center
- 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.

Management of Change §§ 192.13 and 192.911

- Establishes 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(February 26, 2024)
- Evaluate and mitigate significant changes.
- Reason for change, authority for approving changes, analysis of implications, acquisition of required work permits, etc.

Post Construction Inspection Coating Inspection §§ 192.319 and 192.461

- Requires operators to perform an above-ground indirect assessment (ACVG/DCVG/“other technology”) after backfilling is completed and remediate any coating damage found.
- In both O&M and construction sections

Interference currents (192.473)

- 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.

Internal corrosion control – Onshore transmission monitoring and mitigation (§192.478)

- Requires operators of GT pipelines with corrosive constituents in the gas to monitor for gas quality, evaluate gas monitoring data yearly, and evaluate internal corrosion monitoring and mitigation program yearly but not to exceed 15 months to ensure corrosive gas stream constituents are effectively monitored and mitigated.

Inspections Following Extreme Events - §192.613

- Transmission 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.

Repair Criteria - Immediate (§§ 192.714 & 192.933)

- Anomalies where the metal loss is greater than 80 percent of wall thickness.
- Metal loss anomalies with a PFP ≤ 1.1 x 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.

Repair Criteria – Scheduled (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).

Repair Criteria - Monitored

- 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 ≥ 1.39 x MAOP in Class 1 locations or where Class 2 locations have uprated pipe, and that has a PFP ≥ 1.5 x MAOP in all other Class 2, Class 3, and Class 4 locations.

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.

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.

Important Dates:

- **Rule Effective Date: May 24, 2023**
- Management of Change – February 26, 2024
- IM Threats May 24, 2023, complete Feb 26, 2024
- IM Risk Assessment Feb 26, 2024

Docket No: PHMSA-2013-0255

Requirement of Valve Installation and Minimum Rupture Detection Standards

Docket No: PHMSA-2013-0225
Amdt No 192-134

BE AWARE-Valve Rule is also here!!

Publication Date: April 8, 2022

Effective Date: October 05, 2022

Amdt 192-130

Anyone have a friend who owns a pipeline?