

# **Safety of Gas Transmission and Gathering Pipelines**

RIN: 2137-AE72

Docket: PHMSA - 2011 – 0023

**Gas Pipeline Advisory Committee Meeting**

**March 19, 2018 – Committee Pre-briefing**

**March 26 - 28, 2018**



# Recap of January 11 - 12, 2017 Meetings

Topic	Result
6-month Grace Period for 7 calendar year Reassessment Intervals § 192.939(b)	Vote: Passed
Safety Features on ILI Launchers/Receivers § 192.750	
Seismicity § 192.917	
Inspections Following Extreme Events § 192.613	
Management of Change § 192.911	
<b>Corrosion Control</b>	<b>Discussed: Vote Postponed</b>
<b>Records</b>	
<b>IM Clarifications</b>	



# Recap of June 6 - 7, 2017 Meetings

Topic	Result
Corrosion Control; §§ 192.319, 192.461, 192.465, 192.473, 192.478, 192.935(f) & (g), Appendix D	Vote: Passed
Records; §§ 192.5(d), 192.227(c), 192.285(e)	
IM Clarifications; §§ 192.917(a), (b), (c), (d), & (e)(2), 192.935(a)	
MAOP Exceedances; §§ 191.1, 191.23, 191.25, 191.29	
<b>Records; §§ 192.13(e), 192.67, 192.127, 192.205, 192.619(f)</b>	<b>Discussed: Vote Postponed</b>
<b>IM Clarifications; §§ 192.917 (e)(3) &amp; (e)(4)</b>	
<b>Material Documentation; § 192.607</b>	



# Recap of December 14 - 15, 2017 Meetings

Topic	Result
Material Documentation; § 192.607	Vote: Passed
Strengthened Assessment Requirements (ICDA, 192.937)	
Strengthened Assessment Requirements (SCCDA, 192.939)	
Strengthened Assessment Requirements (Guided Wave Ultrasonics, Appendix F)	
Strengthened Assessment Requirements (Passage of ILI Devices, 192.150)	
<b>MAOP Reconfirmation (192.624)</b>	<b>Discussed: Vote Postponed</b>
<b>Strengthened Assessment Requirements (192.493, 192.506, &amp; 192.921)</b>	



# Recap of March 2, 2018 Meeting

Topic	Result
Strengthened Assessment Requirements (ILI Standards, 192.493)	Vote: Passed
Strengthened Assessment Requirements (Spike pressure test, 192.506 )	
Strengthened Assessment Requirements (HCA assessment requirements, 192.921(a))	
Assessments Outside of HCAs (192.3 (MCA definition); 192.710)	
Records (192.13(e); 192.67; 192.127; 192.205; Appendix A)	
<b>Repair Criteria (192.711; 192.713; 192.933; 192.485(c))</b>	<b>Discussed: Vote Postponed</b>



# Agenda for March 26 - 28, 2018 Meetings

1. Gathering (191.23 & 191.25 (reporting); 192.8; 192.9; 192.13)
  
2. A. MAOP Reconfirmation (192.624(a) – Scope)  
B. MAOP Reconfirmation (192.624(b) – Schedule)  
C. MAOP Reconfirmation (192.624(c) – Methods)  
D. MAOP Reconfirmation (192.624(d) – Fracture Mechanics)  
E. MAOP Reconfirmation (192.624(e) – Notifications)  
F. MAOP Reconfirmation (192.624(f) – Records)



# Agenda for March 26 - 28, 2018 Meetings

3. A. MAOP (192.619(e) – 192.624 as official MAOP)  
B. MAOP (192.503 – Conforming edit)  
C. MAOP (192.619(a)(4)) – Require use of 192.607)  
D. MAOP (192.619(a)(2) – Update CL Safety Factors)  
E. MAOP records (192.619(f))  
F. O&M Protection of MAOP (192.605(b)(5))
4. IMP 192.917(e)(3) and (e)(4) – Update to address crack defects in IM (not in 192.624 - MAOP Reconfirmation)
5. Other proposed definitions not previously addressed (192.3)
6. Topics from March 2<sup>nd</sup> meeting not concluded (192.485(c); 192.711; 192.713; 192.933 – Repair Criteria)



# Remaining Agenda Items for Future Meetings (Scheduled: June 12 – 14, 2018)

- Gathering Lines
  - Reporting (Part 191)
  - Definitions related to gas gathering (192.3)
  - Gas gathering safety (192.8; 192.9; other conforming changes)
- Other topics not previously voted upon



# 1. Gas Gathering Discussion

## Overview of Approach to Address Gas Gathering



## **2. MAOP Reconfirmation and Related Items**

**A. 192.624(a) – Scope**

**B. 192.624(b) – Completion Date**

**C. 192.624(c) – MAOP Reconfirmation Methods**

**D. 192.624(d) – Fracture Mechanics**

**E. 192.624(e) – Notifications**

**F. 192.624(f) – Records**



## 2. MAOP Reconfirmation

- **At the Dec. 2017 meeting, PHMSA suggested some changes in response to the comments received in response to the NPRM**
- **The public provided additional comments and the committee considered the MAOP reconfirmation proposed rule at length.**
- **PHMSA has evaluated the comments and considerations provided by the public and the Committee, and will provide:**
  - Responses to comments and suggestions
  - Suggested revisions for the Committee to consider for the final rule



## 2. MAOP Reconfirmation

- **PHMSA suggestions for the final rule will address:**
  - Revising scope to remove segments with prior crack-related failures
  - Creating new requirements to address crack threats within the IM portion of the rulemaking
  - Limiting applicability of MAOP Reconfirmation for grandfathered lines to segments with  $MAOP \geq 30\% SMYS$
  - Deleting spike test requirements for pressure test method 1
  - Expanding look-back period to five years for pressure reduction method 2



## 2. MAOP Reconfirmation

- **PHMSA suggestions for the final rule will address:**
  - Moving fracture mechanics requirements to a new section 192.712 and rewriting to reflect latest research
  - Clarifying that default Charpy values apply to pipe with known or suspected low-toughness properties
  - Clarifying that operators may use other default Charpy values with notification to PHMSA
  - Streamlining and simplifying the scope and process for the low-stress pressure reduction method 5



# **3. Other Proposed Rule Amendments Related to MAOP**

- A. 192.619(e) – Require 192.624 for MAOP of Applicable Segments**
- B. 192.503 – Conforming edit to 192.503 to reference 192.624**
- C. 192.619(a)(4) – Refer to 192.607, Mat'l Doc.**
- D. 192.619(a)(2) – Update class 1 pressure test factor**
- E. 192.619(f) – MAOP Records**
- F. 192.605(b)(5) – Operations & Maintenance (O&M)**



# 3. Other Proposed Rule Amendments Related to MAOP

- At the Dec. 2017 meeting, PHMSA proposed some changes in response to comments received in response to NPRM
- The public provided additional comments and the committee considered the MAOP reconfirmation proposed rule at length.
- In addition, other changes related to MAOP have not yet been discussed by the Committee.
- **PHMSA** has evaluated NPRM comments, as well as the comments and considerations provided by the public and the Committee at the Dec. 2017 meeting, and will provide:
  - Responses to comments and suggestions
  - Suggested revisions for the Committee to consider for the final rule



### 3. Other Proposed Rule Amendments Related to MAOP

- **PHMSA suggestions for the final rule will address:**
  - Shortening and clarifying 192.619(e) to remove text that duplicates the scope in 192.624(a)
  - Clarifying that 192.607 does not apply to all segments (including distribution lines) when determining MAOP by adding “if applicable” after the reference to 192.607 in 192.619(a)(4)
  - Clarifying 192.619(f) to state that it only applies to records needed to demonstrate compliance with 192.619(a) – (e)



### 3. Other Proposed Rule Amendments Related to MAOP

- **PHMSA suggestions for the final rule will address:**
  - Revising 192.619(f) to clarify that new MAOP records requirements are not retroactive
  - Withdrawing the proposed revision to 192.503 (not needed since 192.503 already invokes 192.619)
  - Withdrawing the proposed revision to 192.605(b)(5)



## 4. Integrity Management §§ 192.917(e)(3) and (e)(4)

- **At the Dec. 2017 meeting, PHMSA proposed changes in response to comments received in response to the NPRM**
- **The public provided additional comments and the Committee considered the MAOP reconfirmation proposed rule at length and how integrity management and MAOP reconfirmation should have complimentary, but not overlapping, roles in the rulemaking.**
- **PHMSA has evaluated the comments and considerations provided by the public and the Committee, and will provide:**
  - Responses to comments and suggestions
  - Suggested revisions for the Committee to consider for the final rule



## 4. Integrity Management §§ 192.917(e)(3) and (e)(4)

- **PHMSA suggestions for the final rule will address:**
  - In conjunction with striking the previously proposed 192.624(a)(1), revising proposed 192.917(e)(3) to delete reference to 192.624, MAOP reconfirmation, and replacing with reference to lines that have experienced failures due to crack-related defects since the most recent pressure test
  - In paragraph 192.917(e)(4), deleting the reference to 192.624(c) and (d) and replacing with 192.712.
  - Adding a new paragraph (e)(6) for the discovery of crack-related defects within the integrity management program



# 5. Definitions

## § 192.3

- **At the March 26-28, 2018 meeting, PHMSA will review the status of Committee discussions and votes related to new or revised definitions proposed for 192.3**
- **Definitions previously voted upon at the March 2, 2018 meeting:**
  - **Moderate consequence area**
  - **Occupied site**



# 5. Definitions

## § 192.3

- **Definitions scheduled for discussion at March 26-28, 2018 meeting:**
- Agenda Item 2, MAOP reconfirmation. PHMSA suggests deleting these 3 proposed definitions in conjunction with changes to the scope of 192.624 - MAOP reconfirmation
  - Legacy construction techniques
  - Legacy pipe
  - Modern pipe



# 5. Definitions

## § 192.3

- **The following definitions relate to topics previously discussed and voted upon, but the vote did not explicitly include a vote on related definitions. Take up the following definitions at this time:**
  - Electrical survey
  - Close interval survey
  - Dry gas or dry natural gas
  - Transmission line
  - Distribution center
  - In-line inspection (ILI)
  - ILI tool or instrumented internal inspection device
  - Pipe segment can accommodate inspection by means of instrumented inline inspection tools (new)
  - Traceable, verifiable, and complete records (new)



# 5. Definitions

## § 192.3

- **The following definitions will be addressed in conjunction with the repair criteria:**
  - [Agenda item 6, repair criteria]
    - Significant Seam Cracking
    - Significant Stress Corrosion Cracking
    - Significant Selective Seam Weld Corrosion (new)
    - Wrinkle bend
    - Hard spot



# 5. Definitions

## § 192.3

- Discussion of the following **definitions relate to the gas gathering topic will be deferred to the next meeting:**
  - Revised Definition:
    - Gathering line
  - New Definitions
    - Gas processing plant
    - Gas treatment facility
    - Onshore production facility/operation



# 6. Repair Criteria Revisions

## 192.711, 192.713, 192.933

- **At the March 2, 2018 meeting, PHMSA proposed some changes to repair criteria in response to the comments received in response to the NPRM**
- **The public provided additional comments and the Committee considered the proposed repair criteria at length.**
- **PHMSA has evaluated the comments and considerations provided by the public and the Committee, and will provide:**
  - Responses to comments and suggestions
  - Suggested revisions for the Committee to consider for the final rule



# 6. Repair Criteria Revisions

## 192.711, 192.713, 192.933

- **PHMSA suggestions for the final rule will address:**
  - Retaining the longstanding remediation process (instead of splitting “response” and “repair” into two requirements)
  - Incorporating an engineering critical assessment (ECA) process to evaluate dents
  - Clarifying that, in the absence of TVC records, when grading ILI logs operators may use conservative material strength for Class A pipe and use best available information upon which the current MAOP is based until pipe properties can be verified using the material documentation process specified in 192.607.



# 6. Repair Criteria Revisions

## 192.711, 192.713, 192.933

- **PHMSA suggestions for the final rule will address:**
  - Modifying the proposed rule at 192.713(d)(2) to strike the phrase “the lower of.” The effect would be that operators would not always be required to use the class location factors when determining the amount of pressure reduction. Operators may choose to use either:
    - Calculated safe operating pressure based on Class Location,
    - 80% of the operating pressure at the time of discovery, or
    - 1.1 times the predicted failure pressure (based upon situational safety impacts to public/operator personnel).



## **6. Repair Criteria Revisions**

**192.485(c); 192.711; 192.713; 192.933**

**A summary of the changes PHMSA is proposing to the specific repair criteria is provided in the table on the following slides**



# 6. Proposed Repair Criteria **(REVISED)**

Proposed Repair Criteria NPRM	Proposed Repair Criteria Revised for Final Rule
<b>Immediate Conditions (HCA &amp; non-HCA)</b>	
PFP $\leq 1.1 \times$ MAOP	PFP $\leq 1.1 \times$ MAOP
Dent w/Metal Loss (ML), cracking, or stress riser	<b>Topside</b> Dent w/ML, cracking, or stress riser <b>unless ECA demonstrates critical strain levels not exceeded</b>
Metal loss >80%	Metal loss >80%
Metal loss affecting DC/LF/HF ERW/EFW seam	Metal loss <b>preferentially</b> affecting DC/LF/HF-ERW/EFW seam <b>unless PFP exceeds 1.25 x MAOP</b>
Significant SCC & Significant Seam Cracking	<b>Crack or Crack-like defect (i) <math>\geq 50\%</math> wt, (ii) exceeds detection limit of ILI tool, or (iii) PFP &lt; 1.25 x MAOP</b>
Any other anomaly requiring immediate action	Any other anomaly requiring immediate action



# 6. Proposed Repair Criteria **(REVISED)**

Proposed Repair Criteria NPRM	Proposed Repair Criteria Revised for Final Rule
<b>Scheduled Conditions (HCA - 1 Yr. / Non-HCA – 2 Yr.)</b>	
N/A	<b>Bottom-side Dent w/ML, cracking, or stress riser unless ECA demonstrates critical strain levels not exceeded</b>
Topside smooth dent > 6%	Topside smooth dent > 6% <b>unless ECA demonstrates critical strain levels not exceeded</b>
Dent > 2% at girth or seam weld	Dent > 2% at girth or seam weld <b>unless ECA demonstrates critical strain levels not exceeded</b>
PFP ≤ 1.25 (Class 1); 1.39 (Class 2); 1.67 (Class 3); 2.00 (Class 4)	PFP ≤ 1.25 (Class 1); 1.39 (Class 2); 1.67 (Class 3); 2.00 (Class 4)
General corrosion > 50%	<b>[Deleted]</b>



# 6. Proposed Repair Criteria (REVISED)

Proposed Repair Criteria NPRM	Proposed Repair Criteria Revised for Final Rule
<b>Scheduled Conditions (HCA - 1 Yr. / Non-HCA – 2 Yr.) - Continued</b>	
ML > 50% at crossing/ circumferential/girth weld	ML > 50% at crossing/ circumferential/girth weld
Gouge or groove > 12.5%	[Deleted]
Any indication of crack or crack-like defect that is not an immediate condition	Crack or Crack-like defect (i) $\geq 50\%$ wt, (ii) PFP < 1.39 x MAOP (Class 1) or 1.5 x MAOP (Class 2, 3, 4)
<b>Monitored Conditions (HCA &amp; non-HCA)</b>	
Bottom Side Dent (BSD) > 6%	Bottom Side Dent (BSD) > 6%
TSD > 6%; analysis demonstrates critical strain levels not exceeded	TSD > 6%; analysis demonstrates critical strain levels not exceeded



# 6. Proposed Repair Criteria (REVISED)

Proposed Repair Criteria NPRM	Proposed Repair Criteria Revised for Final Rule
<b>Monitored Conditions (HCA &amp; non-HCA) - continued</b>	
Dent > 2% at girth or long seam weld; analysis demonstrates critical strain levels not exceeded.	Dent > 2% at girth or long seam weld; and ECA demonstrates critical strain levels not exceeded. [same for HCA; added for non-HCA]
N/A	A dent that has metal loss, cracking or a stress riser and ECA demonstrates critical strain levels not exceeded.
N/A	Metal loss preferentially affecting DC/LF/ERW/EFW seam and PFP > 1.25 times MAOP
N/A	Crack or crack-like anomaly for which fracture mechanics analysis determined a PFP $\geq 1.39 \times$ MAOP (Class 1) or $1.50 \times$ MAOP (Class 2, 3, & 4)



# Any Questions



## Thank You

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