



# Gas Pipeline Safety Federal Regulatory Update



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# Stays of Enforcement

- On 3/20/2020 PHMSA issued a “Stay of Enforcement”. It says PHMSA will temporarily halt enforcement of OQ, control room management, and drug testing due to COVID-19.
- “Does not relieve operators of their safety responsibility to use trained, non-impaired workers to perform operation and maintenance tasks.”
- PHMSA also “encourages state pipeline safety partners to consider suspending certain enforcement efforts for noncompliance”.





# Stays of Enforcement

- PHMSA also extended the deadline for implementation of the Transmission Part 1 rule from 7/1/2020 to 12/31/2020.
- Note the stay of enforcement does not include corrosion inspection and leak survey of piping associated with inside customer meters.
- Ohio program intends to follow PHMSA's guidance and extend it to internal meter inspection.
- You can ask the Commission for a waiver or trust us and document what you are doing.





# PHMSA Rule Amendments

- Safety of Gas Transmission Pipelines – Part 1. Issued on 10/1/2019.
- Safety of Gas Transmission Pipelines – Part 2. No release date, goal was end of 2020 but will likely extend into 2021.
- Safety of Gas Gathering Pipelines. No release date set currently.





# PHMSA Rule Amendments

- Valve installation and Minimum Rupture Detection Standards. NPRM issued by PHMSA on 2/6/2020.
- Gas Pipeline Regulatory Reform rule. Idea is to ease regulatory burdens on construction and operation of pipeline systems. NPRM issued by PHMSA on 7/16/2020.
- Class Location Requirements rule. Operators may perform IM measures when class location changes instead of reducing pressure, pressure testing, or replacement. ANPR came out in 2018.





# Transmission Rule – Part 1

- MAOP Reconfirmation
- Material Verification
- Assessment in Moderate Consequence Areas (MCA)
- Subpart O Modifications (Transmission IM)
- Launching and Receiving ILI's
- Various other requirements





## MAOP Reconfirmation

- Operators must reconfirm MAOP of lines (over 30% SMYS) in HCA's, Class 3 or 4 locations - for instances where records are not “traceable, verifiable and complete” (TVC) and/or where MAOP was established using 192.619(c).
- Operators must have eligible piping identified by 7/1/21, half done by 6/3/28 and all done by 7/2/35.
- Can reconfirm by pressure testing, piping replacement, take a pressure reduction, perform an “engineering critical assessment”, or use an alternative technology.





## MAOP Reconfirmation

- An Engineering Critical Assessment requires knowledge of pipe material properties. It is an analysis of predicted failure pressure considering dents and gouges, corrosion, crack propagation and fracture mechanics. Described in 192.632.
- 192.619 modified to reflect MAOP reconfirmation requirements and boosts pressure test design factor in Class 1 locations from 1.1 to 1.25.
- Record retention required to substantiate MAOP for the life of the pipe.







## Material Verification

- Operators must have TVC records for pipe diameter, wall thickness, strength, seam type and coating type.
- If you don't have it, must get it through destructive or non-destructive testing. HCA, MCA, Class 3, 4.
- Opportunistic sampling – when excavations occur for other purposes such as direct examination, repairs, maintenance, or replacement.
- Minimum 1 dig per mile.





## Moderate Consequence Areas

- A Moderate Consequence Area (MCA) has 5+ buildings or a roadway with 4+ lanes in its Potential Impact Radius (PIR).
- Pipelines with MAOP 30% or more of SMYS in a Class 3 or 4 location or in an MCA must be assessed for pipeline integrity.
- Assessment can be ILI, pressure test or spike test, direct visual examination and NDT, guided wave ultrasonic testing, or direct assessment.
- Initial assessment by 7/3/34 and every 10 years after that.



## Transmission IM Changes

- Operators must specifically look at seismicity and soil stability as part of threat identification.
- Assessment methods allowed for IM are expanded to include spike tests, guided wave ultrasonic testing (GWUT), and excavation with direct visual examination.
- New Appendix F provides guidance on GWUT
- Industry standards on these methods incorporated by reference.





## Other Requirements

- Rules for safe pigging operation.
- MAOP exceedance reporting requirements worked into Part 191.
- Operators must retain records documenting the current class location of each pipeline segment and how the class location was determined.
- Operators must retain records demonstrating welding qualifications and joining qualifications for five years starting on 7/1/2021.





## Transmission Rule – Part 2

- Adjustments to repair criteria for pipelines in HCA's (Subpart O) and non-HCA's (192.711 through 192.719).
- Inspections following extreme weather events
- Corrosion control improvements
  - DCVG/ACVG gradient survey for new construction to verify adequate coating
  - Interference surveys around HVAC power lines
  - Guidance on internal corrosion monitoring





## Transmission Rule – Part 2

- Management of change requirements as outlined in ASME B31.8S.
- Assessment requirements for issues associated with flow reversal.
- Other clarifications and possibly increased assessment requirements to Subpart O (Transmission Integrity Management)





## Gathering Rule

- Reporting requirements for Gathering lines
- MAOP and leak repair for all Gathering
- Safety regulations extended to some gas gathering lines in Class 1 locations.  
Requirements are basically the same requirements as in the Ohio Gas Gathering rule. Type of piping it applies to may be different- focus on pipe diameter ( $> 12''$ ).
- Gathering related definitions





## Valve Installation and Minimum Rupture Detection Standards

- Operators must install automatic shutoff valves (ASV) or remote-controlled valves (RCV) or equivalent technology on all new transmission lines 6" or greater unless the operator can justify the installation of a manual valve. Must upgrade when 2 or more miles of contiguous miles of pipe are replaced with new pipe.
- Operators have 24 months to install required new valves when piping is replaced to meet MAOP requirements due to a class location change.







## Valve Installation and Minimum Rupture Detection Standards

- Must be able to isolate a piping segment within 30 minutes of confirmed rupture notification.
- Must be able to isolate segments between rupture mitigation valves from 8 to 20 miles long depending on class location.
- Provisions for valve shut-off time and capacity, actuator testing, monitoring and maintenance.
- Requirements for interacting with 911 call centers. Procedures for investigating and analyzing rupture incidents (includes Distribution operators).





## Gas Regulatory Reform

- Adjusting the Incident definition to account for inflation (the \$50,000 property damage).
- Clarified that individual service lines off unregulated gathering or production are not reported on the 7100 annual reports.
- Updated effective dates for standards API D2513 (PE pipe - 2018) and F2620 (Heat fusion – 2019)
- Reduced minimum wall thickness for pipe where a DF of 0.4 may be used (mostly 1" CTS), raised the PE pipe maximum diameter to up to 24".





## Gas Regulatory Reform

- Extending allowance for pre-tested short sections of pipe and pre-fabricated components to piping operating at  $< 30\%$  SMYS (and above 100 psig).
- Test factor for pressure vessels reduced from 1.5 to 1.3 to be consistent with ASME BPVC.
- Welding re-qualification period changed from one weld every 6 months to twice annually, NTE 7 ½ months.





## Gas Regulatory Reform

- Increase inspection interval for atmospheric corrosion to once every 5 years for service lines.
- Allow for remote monitoring of rectifiers.
- Operators now have the option of accounting for farm taps in a DIMP program instead of inspecting farm taps once every 3 years for operation as required by 192.740.
- Master Meter systems to be exempt from DIMP
- Discontinue Mechanical Coupling Failure Reports





## Class Location

- Congress required PHMSA to look at replacing the class location concept as part of the 2011 reauthorization. Conclusion was they should not.
- PHMSA is looking at requirements for changes in class location for transmission piping operating at over 40% SMYS (192.609, 611). Should IM type assessment methods be allowed instead of MAOP reduction / piping replacement.





## Plastic Pipe Rule Implementation

- Rule is now fully effective as of 1/22/2020
- Allows design pressure up to 125 psig for certain polyethylene and 250 psig for certain polyamide plastic piping.
- What do you have to do under this new rule?  
What is the PUCO looking at?





## Plastic Pipe Rule Implementation

- Have and follow written procedures for storage and handling of plastic pipe and components.
- Risers must meet certain design and testing requirements. Risers attached to regulator stations have to be rigid and resist lateral movement.
- Pipes pulled through the ground as part of trenchless excavation must have a “weak link”





## Plastic Pipe Rule Implementation

- Category 1 mechanical fittings. We understand some manufacturers were not able to offer these fittings until recently. Recommend you keep correspondence with the manufacturer to show your efforts to obtain these fittings.
- Electrically isolated metal alloy fittings on plastic pipe must be cathodically protected. Can be maintained in accordance with your DIMP plan.







## Plastic Pipe Rule Implementation

- Mechanical leak repair clamps may not be used as a permanent repair method for plastic pipe.
- Maintain joining equipment in accordance with written procedures or manufacturers recommendations. Fusion plates should be clean and wiped down.





# Low Pressure Systems

- Accident in N. Andover MA in September 2018 resulting in over-pressurization of approximately 6,000 customers, one fatality.
- Cause was accidental isolation and depressurization of a segment of the LP system connected to the regulator station control lines during a construction project.
- Congressional reauthorization of the pipeline safety act is stalled, LP systems are a topic.





# LP Systems – NTSB Recommendations

- Require a professional engineer's seal on public utility engineering drawings. (Not recommended for OH)
- Make sure all applicable departments get to review construction documents before you start work.
- Make sure your LP regulator station records are TVC.
- Apply management of change process 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 management of change 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.





## LP Systems – What the GPS Staff thinks

- Put a relief valve on your LP systems if you can.
- Know where your sensing lines are. If they are buried go locate them and make sure your drawings get updated.
- If sensing lines go off the station footprint, have that flagged as high priority for one call tickets in the area.
- Don't let anyone work on a LP station regulator by themselves. Have a second person monitoring pressure.
- Realize sometimes it takes a little while for pressure to stabilize after a maintenance job.
- Make sure your paperwork is set up so your operational people know what's going on before you depressurize a LP segment during construction.





**WARNING**  
**NATURAL GAS PIPELINE**  
In Case of Emergency Contact:

**DANGER**  
NO SMOKING,  
MATCHES OR  
OPEN LIGHTS



## OAC Rule Change

- PUCO is looking at the OAC 4901:1-16 “Gas Pipeline Safety” as part of a 5-year rule revision. Not in effect yet.
- Case # 19-0047-GA-ORD
- Requires operators to maintain a list of inactive service lines >24 months and abandon those that have no reasonable prospect of re-use. Guidance for removal timetables and for unrecorded inactive lines found during construction, etc.





## Inside Meters – NTSB Recommendations

- Last year NTSB issued some recommendations in response to an apartment building fire that killed seven people in MD.
- Cause was an unconnected regulator vent line on an inside meter assembly.
- NTSB recommended all new service regulators be installed outside, and all existing interior service regulators be relocated outside when the service line, meter, or regulator is replaced.
- This is going to be a recommended best practice and not a mandate, state programs must offer operator training on regulations applicable to indoor meter sets.





# PHMSA / PUCO joint operator training

- Required to be offered at least once every three years.
- Re-scheduled for week of October 26-30.
- May have to be done on-line.
- Proposed topics include updates from PHMSA, inside meter assemblies, plastic pipe rule, incident investigation, damage prevention, implementing management of change, how to get to TVC records, interaction and outreach with local FD's,







## OAC Rule Change

- Removed redundant requirements to submit annual summaries of construction projects and incidents / service failures.
- Adding a requirement for gas gathering operators to give us counties of operation and pipeline mileage on their emergency contact forms.
- Construction reporting requirements cut from three reports to two. 14 days before you start (but not more than 60 days) and the second after project completion.





## OAC Rule Change

- Clarifies leak repair re-inspections are for below grade hazardous leak repairs only.
- Added the ability to serve notices and investigation findings from the Staff to Operators by electronic mail in addition to certified mail, courier service, etc.
- Raised the level of forfeitures Staff can negotiate with Operators for violations without a written settlement agreement from \$1,000 to \$10,000.

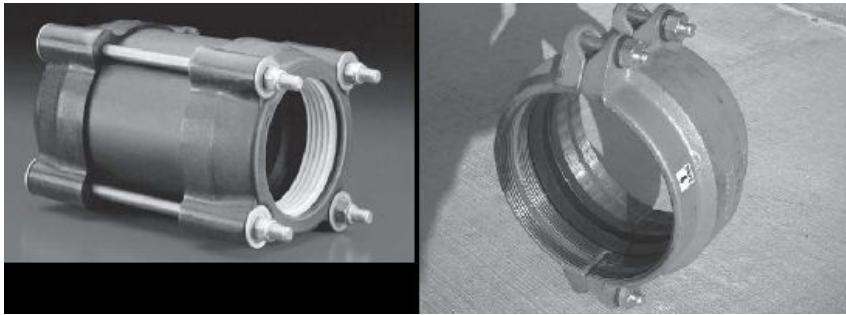




## MFFR Data



### Bolted Coupling



### Nut Follower



### Stab Fitting



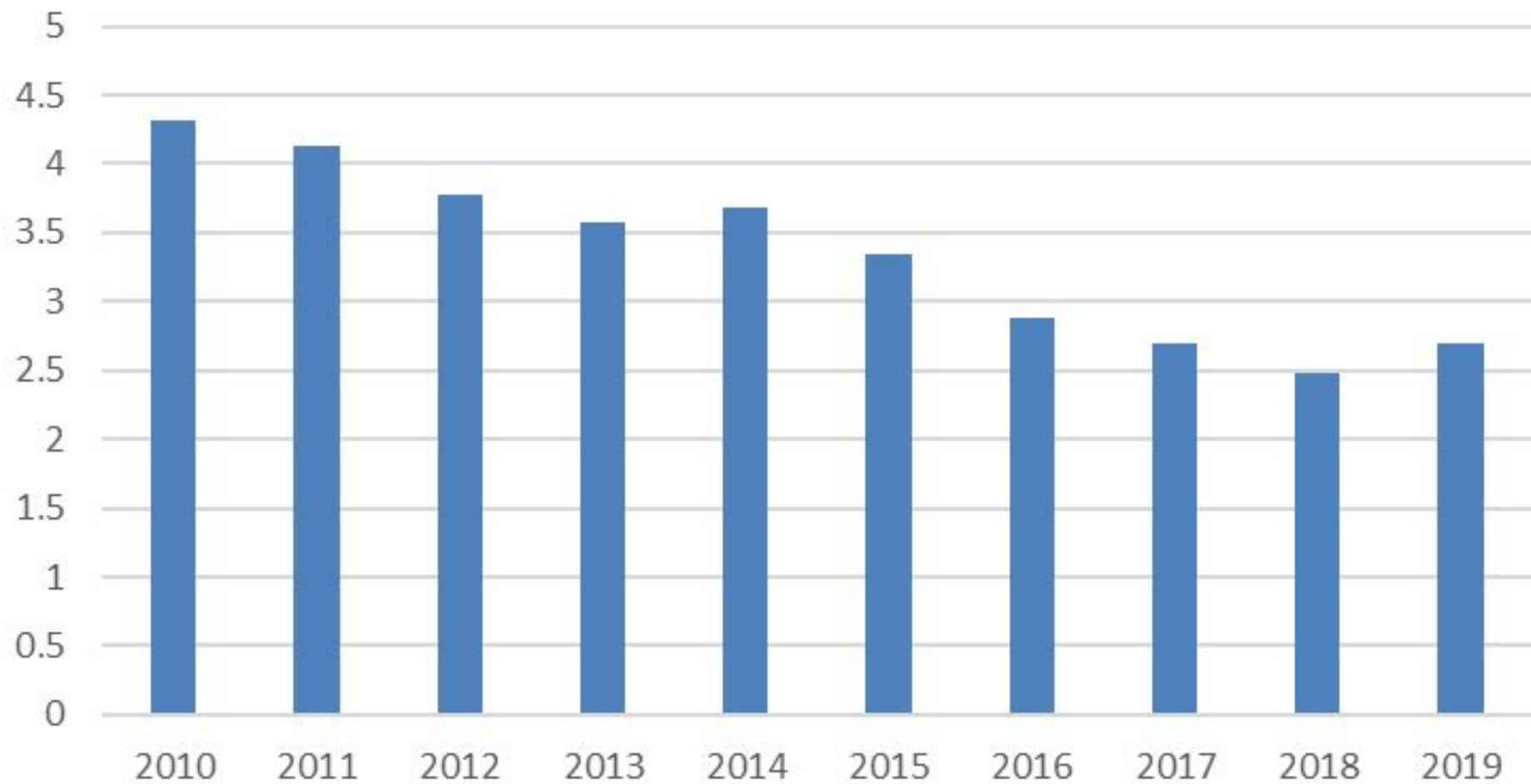


## MFFR Data

- Search “MFFR Data Analysis” for PHMSA report.
- Conclusions:
  - Equipment Failure is the leading cause of leaks (42%) followed by Natural Forces (18%)
  - Majority of failures occur outside (99%), below ground (90%) and involve service-to-service connections (62%)
  - Steel fittings (62%) most represented, plastic is 25%
  - Most represented type coupling type is Nut Follower (62%), then Other (18%), Bolted (10%), Stab (10%).
  - Average time to failure for steel is 46 years, plastic is 26 years.



## OH Damages per 1,000 Locate Requests





# Statewide Trends

- Statewide root causes (2015-2017):
  - One Call practices not sufficient 23%
  - Locating practices not sufficient: 35%
  - Excavation practices not sufficient: 36%
  - Other: 6%
- Categories can and should be broken down more finely. Ex: Common Ground Alliance DIRT report.



# From DIRT Field Form

**\*Part I – Description of the Root Cause** \*Please choose one

## **One-Call Notification Practices Not Sufficient**

- No notification made to the One-Call Center
- Notification to one-call center made, but not sufficient
- Wrong information provided to One Call Center

## **Excavation Practices Not Sufficient**

- Failure to maintain marks
- Failure to support exposed facilities
- Failure to use hand tools where required
- Failure to test-hole (pot-hole)
- Improper backfilling practices
- Failure to maintain clearance
- Other insufficient excavation practices

## **Locating Practices Not Sufficient**

- Facility could not be found or located
- Facility marking or location not sufficient
- Facility was not located or marked
- Incorrect facility records/maps

## **Miscellaneous Root Causes**

- One-Call Center error
- Abandoned facility
- Deteriorated facility
- Previous damage
- Data Not Collected
- Other



# Questions?

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