Safety of Gas Gathering Pipelines

RIN: 2137-AF38

Docket: PHMSA – 2011 – 0023

Gas Pipeline Advisory Committee Meeting
Pre-briefing

June 19, 2019





Agenda Items

- 1. What should pipeline safety be based upon for gas gathering pipelines?
- 2. Brief Overview of the PHMSA Recommended Gas Gathering Rule
- 3. Overview of the Gas Gathering Rulemaking to Date
- 4. Existing Gas Gathering Regulations
- 5. Unregulated and Regulated Gas Gathering Mileage
- 6. Proposed Gas Gathering Rulemaking
 - Summary, Public Comments and Proposed Rule



U.S. Department of Transportation

Safety Administration

Pipeline and Hazardous Materials



What should pipeline safety be based upon for gas gathering pipelines?

- Base considerations for any new gas gathering regulations?
 - Pipeline location
 - Human dwellings near the pipeline
 - Diameter
 - Operating pressure
 - Operations and maintenance
 - Design and materials
 - Incident prevention
- Should the safety of gas gathering lines be different from gas transmission or gas distribution lines?





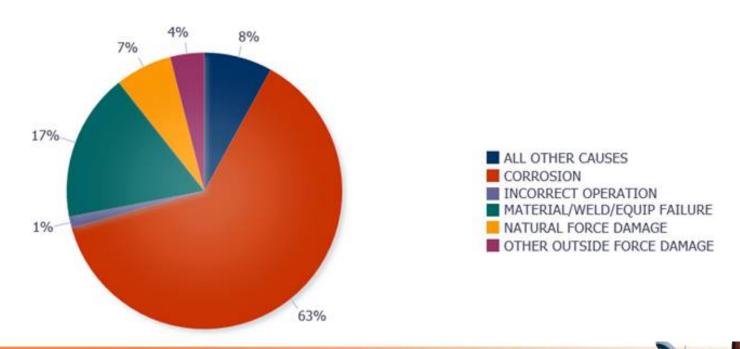
What incident causes should we consider? Regulated Gas Gathering Significant Incidents – 2008-2017

CY 2008 to 2017 Leading Causes:

Corrosion - 63% Material/Weld/Equipment Failure - 17% All Other Causes - 8%

Significant Incident Cause Breakdown 10 Year Average (2008-2017)

System Type: GAS GATHERING State: (All Column Values) Offshore: (All Column Values)







What does PHMSA propose for the Gas Gathering Rulemaking?

- How do the proposed rules impact human safety?
 - More pipe is proposed to be regulated based upon pipeline diameter, pressure, and location proximity in the following areas:
- 1. Design, installation, construction, inspection and testing
- 2. Corrosion control
- 3. Damage prevention
- 4. Public awareness
- 5. Establish maximum allowable operating pressure
- 6. Line markers
- 7. Leakage surveys and repairs
- 8. Emergency plans and implementation





Scope of Newly Regulated Gas Gathering - § 192.8(b) and(c)

PHMSA s	suggests	the (Commi	ittee	consid	er:
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Type	Feature (Summary)	Area (Summary)
A	 For Type A, Area 1: Metallic with MAOP ≥ 20% of SMYS. If the stress level is unknown, an operator must determine the stress level according to the applicable provisions in subpart C of this part. For Type A Area 2: Metallic with MAOP ≥ 20% of SMYS, or if the stress level is unknown and MAOP > 125 psig. Non-metallic with MAOP > 125 psig. 	Area 1. Class 2, 3, or 4 location (see § 192.5) Area 2. Class 1 location with a diameter of greater than 12.75 inches up through and including 16 inches with at least 1 building for human occupancy in the PIR, and all segments with a diameter of greater than 16 inches.
В	 Metallic with MAOP < 20% of SMYS. <p>If the stress level is unknown, an operator must determine the stress level according to the applicable provisions in subpart C of this part. </p> Non-metallic with MAOP ≤ 125 psig 	Area 1. Class 3 or 4 location Area 2. An area within a Class 2 location the operator determines by using any of the three methods given in the current regulation



Safety Requirements - Newly Regulated Gas Gathering - §§ 192.9 and 192.619

- PHMSA suggests the committee consider:
- Issue the minimum safety standards for regulated gas gathering pipelines as PHMSA proposed in the NPRM. (The listing below is a summary of the requirements proposed for § 192.9(d) in the NPRM):
 - For Type A, Area 2 and Type B lines. An operator of a Type A, Area 2 or Type B regulated onshore gathering line must comply with the 7 items of the existing Type B requirements.
 - 1. Design, installation, construction, and initial inspection and testing for new or replaced lines
 - 2. Corrosion control per subpart I (metallic and composite (with metal) lines only)
 - 3. Plastic pipe requirements (added in the 2018 plastic pipe final rule)
 - 4. Damage prevention (§ 192.614) (cont.)





Safety Requirements - Newly Regulated Gas Gathering - §§ 192.9 and 192.619

PHMSA suggests the committee consider: (cont.)

- 5. Public awareness (education) (§ 192.616)
- 6. Establish maximum allowable operating pressure (for existing lines, based on the 5 year high operating pressure of the line, would be allowed) (§ 192.619)
- 7. Line markers (§ 192.707)
- 8. Leakage surveys (§ 192.706) and repairs (§ 192.703(c))
- 9. For Type A, Area 2, regulated onshore gathering line only, develop procedures, training, notifications, emergency plans and implement as described in § 192.615.





Overview of Gas Gathering Lines Rulemaking to Date

- **1. August 25, 2011** PHMSA issues the Advanced Notice of Proposed Rulemaking (ANPRM) soliciting comments with respect to improving regulation of onshore gas gathering lines (Topic O).
- 2. January 2012 The Pipeline Act of 2011, Section 21, mandated that DOT review existing gathering line regulations and report to congress on the sufficiency of existing Federal and State laws and the need to modify or revoke existing exemptions from Federal regulation for gathering lines.





Overview of Gas Gathering Lines Rulemaking to Date

- **3. March 2012** Government Accounting Office (GAO) issues recommendation GAO-12-388 for PHMSA to collect data on currently unregulated hazardous liquid and gas gathering pipelines.
- 4. August 2014 GAO issues recommendation 14-667 for PHMSA to move forward with NPRM to address gathering pipeline safety that addresses the risks of larger-diameter, higher-pressure gathering pipelines, including subjecting such pipelines to emergency response planning requirements that currently do not apply.



Overview of Gas Gathering Lines Rulemaking to Date

5. April 6, 2016 – PHMSA issues the Notice of Proposed Rulemaking (NPRM) responding to comments received from the ANPRM and included proposed rulemaking for gas gathering lines.

In addition to the GAO recommendation, the NPRM discusses the following basis for changes to gas gathering line regulations:





Overview of Gas Gathering Lines Rulemaking to Date (cont'd)

5. NPRM (cont'd)

- The use of API RP 80 for defining what constitutes onshore gas gathering lines lacks clarity and, as a result, is not consistently applied, especially with respect to incidental gathering line designation.
- Expanded development in areas like the gathering of shale gas has resulted in the use of much higher pressures and larger diameter gathering lines.
- Unregulated large-diameter, high-pressure lines exist in Class 1 locations and in some Class 2 locations and may present undue risk.



Existing Gas Gathering Regulations

- Extent of Currently Regulated Gas Gathering - § 192.8
 - Approximately 17,845 miles of Gas Gathering (GG) is currently regulated, per 2018 Annual Reports (See following slides)
- Only regulated Gas Gathering must comply with reporting requirements in Part 191.





Gas Gathering Estimate of Unregulated Mileage

Gas Gathering – Unregulated – PHMSA Estimate – through 2018					Total Miles
Current Estimate					426,109
Gas Gathering - Type A, Area 2 (high stress, ≥ 8.625") Proposed in Rulemaking - 2018 Estimate					
Diameter	≥ 8.625" to < 12.75"	12.75	> 12.75" to ≤ 16"	> 16"	Total Miles

Estimate through 2018

46,094

19,665 12,604 12,500 90,863

> 12.75" diameter gas gathering~ 25,104 miles





Regulated Gas Gathering Mileage by Class Location

Facility Type	Class 1	Class 2	Class 3	Class 4	Total
Onshore Type A	NA	5,616	2,665	7	8,288
Onshore Type B	NA	1,677	1,670	26	3,373
Offshore	6,183	NA	NA	NA	6,183
Total	6,183	7,293	4,335	33	17,845

2018 Gas Transmission and Gas Gathering Annual Report NA – not applicable





Regulated Gas Gathering Mileage by **Diameter**

Pipe Type	12.75- inches or Less	Greater than 12.75- inches	Total
Onshore Type A	6,720	1,568	8,288
Onshore Type B	3,223	150	3,373
Offshore	1,867	4,316	6,183
Total	11,810	6,035	17,845

2018 Gas Transmission and Gas Gathering Annual Report

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Hazardous Materials Transportation









Existing Gas Gathering Regulations

Type	Feature	Area
A	 Metallic with MAOP ≥ 20% of SMYS. If the stress level is unknown, an operator must determine the stress level according to the applicable provisions in subpart C of this part. Non-metallic (plastics and composites) with MAOP > 125 psig 	Class 2, 3, or 4 location (see § 192.5)
В	 Metallic with MAOP < 20% of SMYS. If the stress level is unknown, an operator must determine the stress level according to the applicable provisions in subpart C of this part. Non-metallic (plastics and composites) with MAOP ≤ 125 psig 	Area 1. Class 3 or 4 location Area 2. An area within a Class 2 location the operator determines by using any of the three methods given in the current regulation.



Existing Gas Gathering Regulations (cont'd)

- Current Safety Requirements for Type A
 Regulated Onshore Gas Gathering § 192.9(c)
 - Type A lines (metallic ≥ 20% SMYS or non-metallic > 125 psig) must meet safety requirements of Part 192 applicable to transmission lines, except for:
 - Requirements in § 192.150 inline inspection tools
 - Subpart O integrity management
 - Type A lines in Class 2 locations may demonstrate subpart N (Qualification of Personnel) compliance using alternative process descriptions





Existing Gas Gathering Regulations (cont'd)

- Current Safety Requirements for Type B
 Regulated Onshore Gas Gathering § 192.9(d)
 - Type B lines (metallic < 20% SMYS or non-metallic ≤ 125 psig) must meet a small subset of Part 192:</p>
 - (1) If new, replaced, relocated, or otherwise changed, must meet design, installation, construction, initial inspection, and initial testing requirements applicable to transmission lines;
 - (2) If the pipeline is metallic, control corrosion per subpart I;
 - (3) If the pipeline contains plastic pipe or components, the operator must comply with all applicable requirements of this part for plastic pipe components;*



Existing Gas Gathering Regulations (cont'd)

- Type B lines

- (4) Damage prevention program under § 192.614;
- (5) Public education program under § 192.616;
- (6) Establish the MAOP of the line under § 192.619; and
- (7) Install and maintain line markers per § 192.707.
- (8) Conduct leakage surveys in accordance with § 192.706 using leak detection equipment and promptly repair hazardous leaks per § 192.703(c).
- *Note: § 192.9(d)(3) was added in the 2018 plastic pipe rule





Agenda Items - Remaining

- 1. Summary of proposed gas gathering (GG) rulemaking
- 2~6. Discuss comments received from the NPRM
 - 2. General comments
 - 3. Reporting (Part 191)
 - 4. Definitions related to gas gathering (§ 192.3)
 - 5. Scope of newly regulated gas gathering (§ 192.8)
 - 6. Safety requirements for newly regulated gas gathering (§ 192.9 and § 192.619)





1. Summary of proposed GG Rulemaking §§ 191.1(a); 191.23; 191.25; 191.29; 192.3; 192.8; 192.9; and 192.619

ISSUE:

- Historically, gathering operations tended to be small diameter, low pressure systems.
- Drilling technology has greatly increased gas production.
- Unregulated gathering lines from productive fields can have operating characteristics (diameter and operating pressures) and hazards comparable to cross-country transmission lines.
- Unregulated higher stress lines exist in Class 1 locations and may present undue risk. (cont.)



1. Summary of proposed GG Rulemaking §§ 191.1(a); 191.23; 191.25; 191.29; 192.3; 192.8; 192.9; and 192.619

ISSUE: (cont.)

- Pipeline Safety Act of 2011, Section 21, mandated that DOT:
 - Review existing gathering line regulations and report to Congress on:
 - The sufficiency of existing Federal and State laws;
 - The impact, technical practicability, and challenges of applying existing Federal regulations to gathering lines that are not currently subject to Federal regulation;
 - The need to modify or revoke existing exemptions from Federal regulation for gathering lines; (cont'd)





1. Summary of proposed GG Rulemaking §§ 191.1(a); 191.23; 191.25; 191.29; 192.3; 192.8; 192.9; and 192.619

ISSUE: (cont.)

- In addition, at the request of US Senate Committee on Commerce, Science, and Transportation, GAO reviewed gathering pipeline safety, and recommended, in part, that DOT collect data on currently unregulated hazardous liquid and gas gathering pipelines.
- PHMSA determined additional data and regulation of currently unregulated gas gathering lines is needed to fulfill statutory obligations.

(cont.)





1. Summary of proposed GG Rulemaking §§ 191.1(a); 191.23; 191.25; 191.29; 192.3; 192.8; 192.9; and 192.619 ISSUE: (cont.)

PHMSA PROPOSED TO:

- Subject all gas gathering line operators to report incidents & annual pipeline data.
- Repeal use of API RP 80 for determining gathering lines and add a new definition for "production facility or production operation," "gas treatment facility," and "gas processing plant" and a revised definition for "gathering line."
- Extend regulatory safety requirements to Type A lines in Class 1 locations with a diameter of 8.625-inches or greater.
- **BASIS:** Review conducted in accordance with Section 21 of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (The Act)



1. Summary of proposed GG Rulemaking Part 191.1(a)

- Specific Revisions PHMSA Proposed for Gas Gathering Lines
 - Part 191.1(a): Revise the scope of Part 191 to apply to all gas gathering lines and require that all gathering lines:
 - Obtain an operator identification number using the National Registry
 - Report incidents modified
 - Submit annual reports modified





1. Summary of proposed GG Rulemaking §§ 192.3 and 192.8

- Specific Revisions PHMSA Proposed for Gas Gathering Lines
 - §§ 192.3 & 192.8(a): Repeal use of API RP 80 for determining gathering lines and add/revise definitions for:
 - Gathering line
 - Gas processing plant
 - Gas treatment facility
 - Onshore production facility or onshore production operation



1. Summary of proposed GG rulemaking §§ 192.3 and 192.8

- Specific Revisions PHMSA Proposed for Gas Gathering Lines
 - § 192.8(c): Define a new category of regulated gas gathering lines (Type A, Area 2) meeting all of the following:
 - Metallic with MAOP ≥ 20% SMYS or Non-metallic with MAOP > 125 psig, and
 - Class 1 location, and
 - Diameter \geq 8.625-inches
 - § 192.8(b): Operators would have 6 months from effective date of the rule to determine applicability under § 192.8(c)



1. Summary of proposed GG Rulemaking §§ 192.3 and 192.8

Type	Feature	Area
A	 Metallic with MAOP > 20% of SMYS. Non-metallic (plastics and composites) with MAOP > 125 psig 	 Area 1. Class 2, 3, or 4 location (see § 192.5) Area 2. Class 1 location with diameter ≥ 8.625-inches.
В	 Metallic with MAOP 20% of SMYS. Non-metallic with MAOP ≤ 125 psig 	Area 1. Class 3 or 4 location Area 2. An area within a Class 2 location the operator determines by using any of the three methods given in the current regulation.





1. Summary of proposed GG rulemaking § 192.9

- Specific Revisions PHMSA Proposed for Gas Gathering Lines
 - § 192.9: Type A, Area 2 gathering lines would be subject to the following limited requirements in Part 192:
 - Initial inspection and initial testing requirements for new or replaced lines*
 - Control corrosion per subpart I (metallic lines only)*
 - Damage prevention (§ 192.614)*
 - Public awareness (education) (§ 192.616)*
 - Maximum allowable operating pressure (§ 192.619)*
 - Line markers (§ 192.707)*
 - Leakage surveys (§ 192.706)*

*Same as requirements for Type B lines at the time of publication (cont'd)



1. Summary of proposed GG Rulemaking § 192.9

- Specific Revisions PHMSA Proposed for Gas Gathering Lines
 - § 192.9 (cont'd):
 - Procedures, training, notifications, and emergency plans (§ 192.615)
 - Regulated onshore gathering lines would have 2 years to comply [§ 192.9(e)] and if future class changes resulted in newly regulated GG lines, operators would have 1 year (Type A, Area 2 and Type B) or 2 years (Type A, Area 1) to comply [§ 192.9(f)].





1. Summary of proposed Gas Gathering Rulemaking - § 192.619

- Specific Revisions PHMSA Proposed for Gas Gathering Lines
 - § 192.619: Changes were proposed to the MAOP regulations to allow newly regulated onshore gas gathering lines to establish MAOP based on previous operating pressure (i.e., grandfathered).
 - Other conforming changes were also included in the NPRM:
 - § 192.13 effective date for newly regulated GG;
 - § 192.452(b) effective date for class changes;
 - Effective date for MAOP determination in § 192.619(a)(3).
 - Minimum safety standards for currently regulated gathering lines would not change.



2. PHMSA will address the comments received from the NPRM and propose that the GPAC consider the changes to the Gas Gathering Rule during the June 2019 GPAC meeting.





2. Overview of NPRM Comments

- PHMSA received approximately 200 comments on the Gas Gathering proposed rule from a diverse group of stakeholders:
 - Industry/Operator: Dominion, Kinder Morgan,
 National Fuel, Atmos Energy, Chevron, Rice Energy,
 Spectra, Enlink Midstream, Vectren, & North Bay
 Energy
 - Industry Service Providers: Flexsteel, GPTC,
 Oleska & Assoc., & Plastic Pipe Institute
 - Industry Trades: API, AGA, APGA, INGAA, IPAA,
 TPA, GPA Midstream, Marcellus Shale Coalition,
 Oklahoma Oil & Gas Assoc., & Domestic Energy
 Producers Alliance (cont.)



2. Overview of NPRM Comments (cont.)

- PHMSA received approximately 200 comments on the Gas Gathering proposed rule from a diverse group of stakeholders:
 - Government: NAPSR, Arkansas PSC, WV PSC, & MI PSC
 - Public Advocacy Groups: Pipeline Safety Trust,
 Environmental Defense Fund, Earthworks, Physicians for Social Responsibility, Laborers Union, & Accufacts
 - Commenters: Gas Rule received approximately 418 commenters.





2. Overview of NPRM Comments

- Most individuals, public advocacy groups, and government comments supported the proposed regulations with most supporting the regulation of gas gathering lines ≥ 8.625-inch diameter.
- Most operator, industry service providers, and industry trade organizations advocated limiting new Gas Gathering regulations based upon larger diameter pipelines.
- PHMSA has prepared recommended changes for the GPAC to consider based on the agency's evaluation of all comments related to gas gathering received on the NPRM.
- These recommendations are summarized on the following slides.



3. Reporting Requirements Part 191

PHMSA suggests the committee consider:

- Adoption of annual reports and incident reports for all gas gathering pipelines.
- **Note:** PHMSA previously clarified that there was an error in the NPRM and will clarify in the rule that Safety Related Condition (SRC) reporting will not be required for gas gathering pipelines that are not regulated under part 192.





4. Definitions and Endpoints of Gas Gathering - §§ 192.3 and 192.8(a)

- **PHMSA**: Acknowledges that any change to the definition of GG lines is a complicated and consequential change. After the NPRM was published, API established a working group to consider revisions to API RP 80 to address the issues that led to the proposed changes published in the NPRM. The API RP 80 Working Group is making progress to address the definition issues.
 - PHMSA is monitoring the API group's progress in developing the API RP 80 "Guidelines for the Definition of Onshore Gas Gathering Lines" and API RP 1182 "Risk Assessment for Larger Diameter Gas Gathering Lines or Safety Provisions for Onshore Gas Gathering Lines."



4. Definitions and Endpoints of Gas Gathering - §§ 192.3 and 192.8(a)

- PHMSA suggests the committee consider:
 - Withdrawing the proposed changes to the definition of Gas Gathering from this rulemaking at this time;
 - PHMSA will:
 - Monitor the outcome of the API working group effort, and any subsequent revisions to API RP 80 and API RP 1182;
 - Consider potential changes to the definition of gas gathering lines, if needed, in future rulemaking.





5. Scope of Newly Regulated Gas Gathering - § 192.8(b) and(c)

PHMSA suggests the committee consider:

- Extending the deadline in § 192.8(b) for determining applicability from 6 months to 2 years after the effective date of the rule.





5. Scope of Newly Regulated Gas Gathering - § 192.8(b) and(c)

PHMSA suggests the Committee consider:

- Revise the criteria in 192.8(c) for the new category of gas gathering lines (Type A, Area 2) which are metallic with a MAOP > 20% SMYS* or non-metallic with a MAOP > 125 psig as follows:
 - in a Class 1 location with a pipe diameter greater than 12.75 inch up through 16-inch and with at least 1 building for human occupancy in the PIR.
 - in a Class 1 location with a pipe diameter greater than 16inch diameter for both metallic and non-metallic pipelines (no PIR limitations).
 - * Steel Pipe with unknown SMYS/properties defaults to > 125 psig (Type A, Area 2).



5. Scope of Newly Regulated Gas Gathering - § 192.8(b) and(c)

Type	Feature (Summary)	Area (Summary)
A	 For Type A, Area 1: Metallic with MAOP ≥ 20% of SMYS. If the stress level is unknown, an operator must determine the stress level according to the applicable provisions in subpart C of this part. For Type A Area 2: Metallic with MAOP ≥ 20% of SMYS, or if the stress level is unknown and MAOP > 125 psig. Non-metallic with MAOP > 125 psig. 	Area 1. Class 2, 3, or 4 location (see § 192.5) Area 2. Class 1 location with a diameter of greater than 12.75 inches up through and including 16 inches with at least 1 building for human occupancy in the PIR, and all segments with a diameter of greater than 16 inches.
В	 Metallic with MAOP < 20% of SMYS. <p>If the stress level is unknown, an operator must determine the stress level according to the applicable provisions in subpart C of this part. </p> Non-metallic with MAOP < 125 psig 	Area 1. Class 3 or 4 location Area 2. An area within a Class 2 location the operator determines by using any of the three methods given in the current regulation





6. Safety Requirements - Newly Regulated Gas Gathering - §§ 192.9 and 192.619

- PHMSA suggests the committee consider:
- Issue the minimum safety standards for regulated gas gathering pipelines as PHMSA proposed in the NPRM. (The listing below is a summary of the requirements proposed for § 192.9(d) in the NPRM):
 - For Type A, Area 2 and Type B lines. An operator of a Type A, Area 2 or Type B regulated onshore gathering line must comply with the existing Type B requirements.
 - 1. Design, installation, construction, and initial inspection and testing for new or replaced lines
 - 2. Corrosion Control per subpart I (metallic and composite (with metal) lines only)
 - 3. Plastic Pipe Requirements*
 - 4. Damage prevention (§ 192.614) (cont.)
 - * Note: Added in the 2018 plastic pipe final rule





6. Safety Requirements - Newly Regulated Gas Gathering - §§ 192.9 and 192.619

PHMSA suggests the committee consider: (cont.)

- 5. Public awareness (education) (§ 192.616)
- 6. Establish maximum allowable operating pressure (for existing lines, based on the 5 year high operating pressure of the line, would be allowed) (§ 192.619)
- 7. Line markers (§ 192.707)
- 8. Leakage surveys (§ 192.706) and repairs (§ 192.703(c))
- 9. For Type A, Area 2, regulated onshore gathering line only, develop procedures, training, notifications, emergency plans and implement as described in § 192.615.





6. Safety Requirements - Newly Regulated Gas Gathering - §§ 192.9 and 192.619

PHMSA suggests the committee consider: (cont.)

- If, after [effective date of the rule], a change in class location or increase in dwelling density causes an onshore gathering line to be regulated, the operator has two years for newly regulated gas gathering pipelines after the line becomes a regulated onshore gathering line to comply with § 192.9.
- If a regulated onshore gathering line existing on [effective date of the rule] was not previously subject to this part, an operator has until three years to comply with the applicable requirements of this section, unless the Administrator finds a later deadline is justified in a particular case.
- Descriptions of § 192.9(c) and (d) subsections will be updated for Type A, Area 1 or 2, as appropriate.



6. Safety Requirements - Newly Regulated Gas Gathering - §§ 192.9(c)~(e) and 192.619

In light of public comments from the NPRM, PHMSA suggests the Committee consider:

- **PHMSA:** (cont'd)
- Allow usage of "Existing" Composite Pipelines:
 - Require operator notification to PHMSA and receipt of PHMSA "no objection" letter for use of Composite Pipe in Type A, Area 2 lines
- Usage of Composites for new pipelines:
 - Require operator notification to PHMSA and receipt of PHMSA "no objection" letter for use of Composite Pipe in Type A, Area 2 lines
 - Note: An operator would also be able to apply for Special Permit under § 190.341.



Meeting Wrap Up





Thank You



