Pipeline Infrastructure: Replacement and Expansion Needs

NCSL Natural Gas Policy Institute

PHMSA Pipeline Safety Program Updates

September 9, 2015
Topics for Today

- Introductions
- Who “We” are and What “We” regulate
- Performance Trends: Aggregate and Focus on LDC’s
  - More than you may want, so put most in Appendix
- Contextual Comments
- What’s Coming Down the “Pipeline”
- Reauthorization
- “Ask” for States
- Appendices with additional regulatory and performance data
Introductions

• Anthony Foxx – U.S. Secretary of Transportation
• Marie Therese Dominguez – Administrator
  – Jeff Wiese – Associate Administrator for Pipeline Safety
• Alan Mayberry – Deputy Associate Administrator for Policy and Programs
  – Zach Barrett – State Programs Director
• Linda Daugherty – Deputy Associate Administrator for Field Operations
Who “We” Are

• Congress Sets Forth the National Pipeline Safety Program
  – Responsibility and accountability to the Secretary
  – Enables Federal-State Pipeline Safety Partnership
    • Roughly a $50MM annual grant program
    • All States besides Alaska and Hawaii
    • State “jurisdiction” varies according to agreement
      – LDC’s, transmission (NG+HL), LNG, agent, etc.
  • For great detail on your state visit our State pages:
  • Reauthorizes the Pipeline Safety Program Every 4 years
# What We Regulate

<table>
<thead>
<tr>
<th>System Type</th>
<th>Miles</th>
<th>% Miles</th>
<th># Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hazardous Liquid</td>
<td>192,388</td>
<td>7%</td>
<td>442</td>
</tr>
<tr>
<td></td>
<td>6,970 Tanks</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gas Transmission</td>
<td>302,811</td>
<td>11%</td>
<td>993</td>
</tr>
<tr>
<td>Gas Gathering</td>
<td>17,437</td>
<td>1%</td>
<td>357</td>
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<tr>
<td>Gas Distribution (Mains &amp; Services)</td>
<td>2,149,291</td>
<td>81%</td>
<td>1,371</td>
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<tr>
<td>Total</td>
<td>2,661,927</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Liquefied Natural Gas</td>
<td>133 Plants</td>
<td></td>
<td>83</td>
</tr>
<tr>
<td></td>
<td>203 Tanks</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Some Operators have multiple System Types
Pipeline Safety with Context Measures (1988-2014)

Index
(1988 = 1)

Calendar Year

Data Sources: Energy Information Administration, Census Bureau, PHMSA Annual Report Data, PHMSA Incident Data -- as of September 1, 2015.
Pipeline Incidents with Death or Major Injury (1988-2014)

Actual with Trendline (1988-2014) ... declining about 10% every 3 years

± 1 Standard Deviation from Trendline shows normal range

Source: DOT-PHMSA Incident Data -- as of June 26, 2015.
Major Hazardous Liquid Pipeline Spills (1986-2014)

Actual with Trendline (1986-2014)
... declining about 10% every 2 years

± 1 Standard Deviation from Trendline shows normal range

Source: DOT-PHMSA Incident Data -- as of June 26, 2015.
Categories of Incident Reports

**Serious** – fatality or injury requiring in-patient hospitalization, but **Fire First** excluded.

**Fire First** are gas distribution incidents with a cause of “Other Outside Force Damage” and sub-cause of “Nearby Industrial, Man-made, or Other Fire/Explosion”

**Significant** include any of the following, but **Fire First** excluded:
1. Fatality or injury requiring in-patient hospitalization
2. $50,000 or more in total costs, measured in 1984 dollars
3. Highly volatile liquid (HVL) releases of 5 barrels or more
4. Non-HVL liquid releases of 50 barrels or more
5. Liquid releases resulting in an unintentional fire or explosion
Serious Incidents
All System Type rises slightly in 2014

29 each in CY 2014
90% Gas Distribution
7% Gas Transmission
3% LNG

data as-of 2/2/2015
Gas Distribution Serious Incidents

CY 2014 Leading Causes:
Other Outside Force Damage
Other
Excavation Damage

data as-of 2/2/2015
Significant Incidents

All System Types rises slightly in 2014

310 in CY 2014

21% Gas Dist
25% Gas Trans
1% LNG

3% Gas Gather
50% Haz Liq

data as-of 5/18/2015
Gas Distribution Significant Incidents

CY 2014 Leading Causes:
- Excavation Damage
- Other Outside Force Damage
- Other

Data as-of 2/2/2015
Context

• Looking back at last year:
  – Energy picture and policy quickly evolving
  – Pipelines on national stage, but joined by crude by rail
  – Media becoming more interested in PHMSA and States
  – Agenda set by serious accidents, despite overall trend
  – DOT Call to Action: Continued focus within DOT and industry on infrastructure modernization and rehabilitation
    – major focus on riskier pipe replacement

• Reauthorization process has begun

• Continued calls for PHMSA/OPS to do more

• Administration continues call for increased resources for OPS
Coming Down the Pipeline

• Growing Recognition of the State Role in Pipeline Safety
  – DOT/IG Top 10 Management Challenge
  – NTSB Integrity Management Audit
  – Data: 75% of all human consequences at State level
  – States Lead on Issue of Damage Prevention
  – Drive for More Prescriptive Rulemaking

• Methane Emission Reduction – From All Sources
  – Keeping it in the Pipe

• Pressure on Infrastructure Modernization
  – High risk pipe replacement:
    http://opsweb.phmsa.dot.gov/pipeline_replacement/
  – Innovative rate recovery:
    https://www.aga.org/sites/default/files/agastatereplacementactivity.docx
Rulemaking

• Miscellaneous Rulemaking (Final Rule)
• Standards Update (Final Rule)
• Excavation Damage Prevention (Final Rule)
• Plastic Pipe (NPRM)
• EFV Expansion beyond Single Family Residences (NPRM)
• Operator Qualification, Cost Recovery and Other Pipeline Safety Proposed Changes (NPRM)
• Safety of Gas Transmission and Gathering Lines (NPRM)
• Safety of On-Shore Hazardous Liquid Pipelines (NPRM)
• Rupture Detection and Valve Rule (NPRM)
Top Priorities for FY 2015

Anticipate & Avert High Consequence Events by:

i. Issue High Priority Rulemakings
ii. Improve State Program Oversight
iii. Implementing Congressional Act Mandates and Recommendations

Build & Broadcast Understanding of Safety Risks by:

i. Engage, Educate, and Empower the Public and ER Community (Damage Prevention, PIPA, 811, ER Training)
ii. IMP-2.0 – Sharpening Understanding and Communication
iii. Sharpening our Focus on Risk to include Pipeline Safety Management Systems and Safety Culture
iv. Promoting Pipeline R&D and Technological Advancement

Catalog & Curtail Highest Risks by:

i. Improve Consistency, Unification and Data Driven Inspections for Federal and State Actions
ii. Develop and Deploy a Pipeline Safety Workforce Management Strategy (succession planning, training, resource allocation)
iii. Conduct hiring surge; develop and implement workforce management strategy
iv. Identify and Promote a Suite of Meaningful Performance Metrics
Reauthorization

• We’ve addressed many of the mandates and recommendations yet we remain vulnerable to criticism
  – Mandates and recommendations
  – Reports to Congress
  – Addressing our own agenda
• PHMSA is actively discussing ideas
• “Straight” reauthorization?
• Issues in play
Ask for States

- Understand More About Pipelines

- Understand the Pipeline Risks in Your State
  - http://opsweb.phmsa.dot.gov/pipeline_replacement

- Understand Your State’s Pipeline Safety Program
  - http://phmsa.dot.gov/pipeline/stateprograms (general)

- Look into Your State’s Damage Prevention Program
  - For Good, Big Picture Background see:
  - For information on your (and other) State’s laws:
Thank you
Appendix – Regulatory Background Information
Current Rulemakings in Process

Safety of On-Shore Hazardous Liquid Pipelines
(NPRM stage)

- NPRM moved past DOT (OST)
- ANPRM published 10/18/2010
- Major topics under consideration:
  - Assessments beyond High Consequence Areas (HCAs)
  - Leak detection beyond HCAs
  - Repair criteria in HCA and non-HCA areas
  - Piggability of lines
  - Reporting requirements for Gathering lines
  - Gravity Line exception
Current Rulemakings in Process

Safety of Gas Transmission and Gathering Lines
(NPRM stage)

- NPRM moved past PHMSA
- ANPRM Published 8/25/2011
- Major Topics under consideration:
  - Expansion of IM requirements beyond HCA’s
  - Repair criteria for both HCA and non-HCA areas
  - Assessment methods
  - Corrosion control
  - Gas gathering
  - Assessment methods for GT Lines (NACE petition)
Current Rulemakings in Process

Safety of Gas Transmission and Gathering Lines
(Integrity Verification Process)

- Recommendations from NTSB
- Congressional mandates
- Data from revised Gas Transmission Annual Report
- Pipe of concern
  - Grandfather pipe
  - Pipe with inadequate records
  - Legacy pipe
  - Pipe tested below 1.1 MAOP
Current Rulemakings in Process

Excavation Damage Prevention
(Final Rule stage)

- Final Rule published
- Adv. Committee approval vote December 2012
- NPRM published 4/2/2012
- Major Topic
  - Enforce damage protection laws in States that have inadequate enforcement to protect safety. Complies with PIPE’s Act 60114(f).
Current Rulemakings in Process

Miscellaneous Rulemaking
(Final Rule stage)

- Final Rule published 3/11/2015
  - Effective date 10/1/2015
  - Immediate compliance authorized
- NPRM published 11/29/2011
- Major Topics
  - performance of post-construction inspections
  - leak surveys of Type B onshore gas gathering lines
  - requirements for qualifying plastic pipe joiners
  - regulation of ethanol
  - the transportation of pipe
Current Rulemakings in Process

EFV Expansion beyond Single Family Residences (NPRM stage)

- NPRM published
- ANPRM published 11/25/2011
- Major Topics
  - Rule will propose to require EFVs for:
    - branched service lines serving more than one single family residence
    - multi-family residential dwellings
    - commercial buildings
Standards Update
(Final Rule stage)

- Final Rule published 1/5/2015
  - Effective March 5, 2015
- Addresses the set of IBR standards throughout PHMSA’s part 192, Part 193 and Part 195 code with updated revisions of standards from all standard organization bodies.
- This NPRM would impact 22 of the 60+ standards that we currently IBR.
- Per recent statute (Section 24, revised) all IBR standards pertaining to PSR must be available for free to the public. (Most SDOs comply)
- Non-significant rulemaking action
Current Rulemakings in Process

Operator Qualification, Cost Recovery and Other Pipeline Safety Proposed Changes
(NPRM stage)

- NPRM published

- This rule will address reauthorization issues related to:
  - Operator Qualification for new construction
  - Incident Reporting
  - Cost Recovery
  - Assessment methods for HL lines (NACE petition)
  - Renewal process for special permits
  - API 1104 and in-service welding
Current Rulemakings in Process

Plastic Pipe
(NPRM stage)

- Non-significant, to be published Feb 2015
- Address the following plastic pipe topics:
  - Authorized use of PA12
  - AGA petition to raise D.F. from 0.32 to 0.40 for PE pipe
  - Enhanced Tracking and traceability
  - Miscellaneous revisions for PE and PA11 pipelines
  - Additional provisions for fittings used on plastic pipe
Current Rulemakings in Process

Rupture Detection and Valve Rule
(NPRM stage)

- This rule responds to:

Requirements of the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 (The Act):

- Section 4: ASV/RCV or equivalent technology be installed on newly constructed or entirely replaced natural gas and hazardous liquid transmission pipelines 2 years after the act was issued
- Section 8: Require operators of hazardous liquid pipeline facilities to use leak detection systems and establish standards for their use.
- The Act also mandated two studies of leak detection and response, one by the GAO, and one by PHMSA.
- Two NTSB Recommendations related to valves and leak detection
Current Rulemakings in Process

Rupture Detection and Valve Rule
(NPRM stage) (cont.)

- This rule would establish and define rupture detection and response time metrics including the integration of Automatic Shutoff Valves (ASV) and Remote Control Valve (RCV) placement as necessary, with the objective of improving overall incident response
Appendix

ADDITIONAL METRICS
Significant Incidents

All System Types
flat in 2014

Gas Gathering slight rise in 2014

data as-of 2/2/2015
Gas Gathering Significant Incidents

CY 2014 Leading Causes:
Corrosion
Material/Weld/Equipment Failure
Other

Data as-of 2/2/2015
Serious Incidents

All System Types rises slightly in 2014

Gas Transmission rises to two in 2014

data as-of 2/2/2015
Significant Incidents

All System Types flat in 2014

Gas Transmission rises in 2014

Data as of 2/2/2015
Gas Transmission Significant Incidents
Inter vs Intra

Interstate Miles approximately twice Intrastate Miles

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*Data as-of 1/15/2015*
Gas Transmission Significant Incidents

CY 2014 Leading Causes:
- Material/Weld/Equipment Failure
- Corrosion
- Natural Force Damage

Data as-of 2/2/2015
Interstate Gas Transmission
Significant Incidents

Top 3 Causes: Equipment, Corrosion, Pipe/Weld Failure

data as-of 1/15/2015
Intrastate Gas Transmission
Significant Incidents

Top 3 Causes: Equipment, Corrosion, Excavation Damage

Data as of 1/15/2015

To Protect People and the Environment From the Risks of Hazardous Materials Transportation
GT Significant Incidents in HCA

Interstate and Intrastate rates comparable in CY 2013

data as-of 2/2/2015  CY 2014 data will be available March 15, 2015
Serious Incidents

All System Types rises slightly in 2014

Hazardous Liquid and Carbon Dioxide perfect zero in 2014

data as-of 2/2/2015
Significant Incidents

All System Types flat in 2014

Hazardous Liquid and Carbon Dioxide dips in 2014
Hazardous Liquid and Carbon Dioxide Significant Incidents

CY 2014 Leading Causes:
- Material/Weld/Equipment Failure
- Corrosion
- Other

Data as of 2/2/2015
Hazardous Liquid and Carbon Dioxide Significant Incidents
Large Spills are accidents including one or more of these consequences:

- death or personal injury requiring hospitalization
- property damage greater than $50,000 in 1984 dollars
- more than 5 barrels released
- fire or explosion
- pollution of water

Data as-of 2/2/2015
CY 2014 data will be available June 15, 2015
Serious Incidents

All System Types rises slightly in 2014

Gas Distribution rises in 2014  

data as-of 2/2/2015
2014 Fatalities

Rise to 2010 value
45% from a March 2014 New York City apartment explosion

data as-of 2/2/2015
Rise nearly to 2010 value
50% from a March 2014 New York City apartment explosion

data as-of 2/2/2015