US DOT
Pipeline and Hazardous Materials
Safety Administration

The Changing Face of Accountability

October 21, 2016
Chris Hoidal
What Work’s & What’s Needed?

- Third Party Inspectors & Audits
- External Advisory Panels
- Indicators
Third Party Inspectors & Audits

• PHMSA does use third parties to supplement both our workforce and subject matter expertise.

• Oak Ridge National Laboratories:
  – Construction Oversight
  – Subject Matter Expertise – Welding, Metallurgical Examination, In-line Inspection Data Analysis, etc.

• Serve as our eyes and ears.
  – Third parties are not enforcement officials.
  – They do not make compliance/enforcement decisions.
External Advisory Panels

- Hazardous Liquid and Natural Gas Pipeline Advisory Committees
  - aka the Liquid (LPAC) and Gas (GPAC)
  - Mandated by law
  - Operate under the Federal Advisory Committee Act (FACA)
    - Strict rules on how the committee functions.
    - Each committee has 15 members with equal representation from the public, government (federal and state) and industry.
    - They review PHMSA's proposed regulatory initiatives to assure the technical feasibility, reasonableness, cost-effectiveness and practicability of each proposal. The committees also evaluate the cost-benefit analysis and risk assessment information of the proposals.
External Advisory Panels

- New Advisory Committee from 2016 Pipeline Reauthorization

Convene a working group to consider the development of a voluntary information-sharing system to encourage collaborative efforts to improve inspection information feedback and information sharing with the purpose of improving gas transmission and hazardous liquid pipeline facility integrity risk analysis.

Publish the recommendations on a publicly available Web site of the Department of Transportation.
External Advisory Panels

• New Advisory Committee from 2016 Pipeline Reauthorization

(1) the need for, and the identification of, a system to ensure that dig verification data are shared with in-line inspection operators to the extent consistent with the need to maintain proprietary and security-sensitive data in a confidential manner to improve pipeline safety and inspection technology;

(2) ways to encourage the exchange of pipeline inspection information and the development of advanced pipeline inspection technologies and enhanced risk analysis;

(3) opportunities to share data, including dig verification data between operators of pipeline facilities and in-line inspector vendors to expand knowledge of the advantages and disadvantages of the different types of in-line inspection technology and methodologies;
External Advisory Panels

- New Advisory Committee from 2016 Pipeline Reauthorization

(4) options to create a secure system that protects proprietary data while encouraging the exchange of pipeline inspection information and the development of advanced pipeline inspection technologies and enhanced risk analysis;

(5) means and best practices for the protection of safety and security-sensitive information and proprietary information;

and

(6) regulatory, funding, and legal barriers to sharing the information described in paragraphs (1) through (4).
## What We Regulate

### Pipeline Facilities by System Type – CY 2015  
Data as-of 10/4/2016

<table>
<thead>
<tr>
<th>System Type</th>
<th>Miles</th>
<th>% Miles</th>
<th># Operators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Hazardous Liquid</strong></td>
<td>207,981</td>
<td>8%</td>
<td>482</td>
</tr>
<tr>
<td></td>
<td>7,571 Tanks</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gas Transmission</strong></td>
<td>301,257</td>
<td>11%</td>
<td>1,026</td>
</tr>
<tr>
<td><strong>Gas Gathering</strong></td>
<td>17,711</td>
<td>1%</td>
<td>369</td>
</tr>
<tr>
<td><strong>Gas Distribution</strong></td>
<td>2,168,599</td>
<td>80%</td>
<td>1,343</td>
</tr>
<tr>
<td>(Mains &amp; Services )</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>2,717,634</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td><strong>Liquefied Natural Gas</strong></td>
<td>148 Plants</td>
<td></td>
<td>83</td>
</tr>
</tbody>
</table>

Some Operators have multiple System Types.

Index (1988 = 1)

Calendar Year

Data Sources: Energy Information Administration, Census Bureau, PHMSA Annual Report Data, PHMSA Incident Data -- as of February 24, 2016.
Pipeline Incidents with Death or Major Injury (1988-2015)

Includes Fire First Incidents

Actual with Trendline (1988-2015) ... declining about 10% every 3 years

± 1 Standard Deviation from Trendline shows normal range

Source: DOT-PHMSA Incident Data -- as of January 28, 2016.
Major Hazardous Liquid Pipeline Spills (1986-2015)

2010+ includes controlled release (blowdown) volume for HVL excludes CO2

Actual with Trendline (1986-2015)
... declining about 10% every 2 years

± 1 Standard Deviation from Trendline shows normal range

Source: DOT-PHMSA Incident Data -- as of January 28, 2016.
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
Gas Distribution Performance Measures


**Serious Incident per Mile**  trend & cause pie

**Significant Incident per Mile**  3 trends

**Leaks per Mile**  3 trends & 2 cause pies

**Excavation Damage**  2 trends

**Cast and Wrought Iron**  2 trends

**Steel Miles – Bare and Unprotected**  3 trends

**Miles by Decade Installed**  6 trends
Gas Transmission Performance Measures


**Serious Incident per Mile** trend & cause pie

**Onshore Significant Incident per Mile** 3 trends, also **HCA and non-HCA** trends & cause pies

**HCA Immediate Repair per Mile** trend

**HCA Leaks & ILI Detectability** 2 trends & cause pies

**Steel Miles – Bare and Unprotected** 2 trends

**Miles by Decade Installed** 5 trends

**Onshore Pipeline Significant Incident Rates per Decade** rate chart and cause chart
Thank you
Pipeline Performance Measure Anatomy

Title & Date

Analysis

Chart

Report Details

Operator View

Numerator & Denominator

Terms & Definitions

Safety Program View

- 18 -
Pipeline Performance Measure Anatomy

Title & Date

Data generally refreshed each business day

Gas Transmission Onshore Significant Incidents per 1,000 Miles

Time run: 11/12/2015 4:48:30 PM

Data Source: US DOT Pipeline and Hazardous Materials Safety Administration

Data as of 11/11/2015
Pipeline Performance Measure Anatomy Analysis

The gas transmission Significant Incident per 1,000 mile rate has fluctuated since 2005 and remained flat overall.

People have been evacuated from buildings near the incident in only 17% of the Significant Incidents. The rate of Significant Incidents with evacuation has remained flat since 2005.

Property not owned by the pipeline operator is damaged in about one quarter of the Significant Incidents. The rate of Significant Incidents with public property damage has doubled since 2005.
Pipeline Performance Measure Anatomy

Chart

Line, bar, or pie

Incident Rate


All Significant

With Evacuation

With Public

Property Damage

U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

“...by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives...”
Pipeline Performance Measure Anatomy

Numerator & Denominator

When the measure includes a rate per mile, the numerator and denominator are displayed below the chart:

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Significant Incidents</td>
<td>63</td>
<td>59</td>
<td>55</td>
<td>47</td>
<td>60</td>
<td>58</td>
<td>71</td>
<td>47</td>
<td>59</td>
<td>63</td>
</tr>
<tr>
<td>Onshore Miles</td>
<td>294,800</td>
<td>293,706</td>
<td>294,939</td>
<td>297,267</td>
<td>298,977</td>
<td>299,358</td>
<td>299,730</td>
<td>298,571</td>
<td>298,287</td>
<td>297,892</td>
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<tr>
<td>Significant Incidents with Evacuation</td>
<td>10</td>
<td>10</td>
<td>15</td>
<td>10</td>
<td>15</td>
<td>6</td>
<td>11</td>
<td>4</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Significant Incidents with Public Property Damage</td>
<td>8</td>
<td>11</td>
<td>14</td>
<td>17</td>
<td>10</td>
<td>13</td>
<td>16</td>
<td>16</td>
<td>14</td>
<td>18</td>
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</tbody>
</table>
Significant Incidents include a fatality, or an injury requiring overnight, in-patient hospitalization, or $50,000 or more in total costs, measured in 1984 dollars.
Pipeline Performance Measure Anatomy

“Report Details” Link

When the measure includes incidents, this link load a report with incident details and link to Pdf of the entire report.
Pipeline Performance Measure Anatomy

“Operator View” Link

Loads a report of the measure ranking individual operators

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**Gas Transmission Onshore Significant Incidents per 1,000 Miles – Operators with 100 or more onshore miles**

**Time run:** 11/12/2015 5:47:40 PM

**Data Source:** US DOT Pipeline and Hazardous Materials Safety Administration

**Data as of:** 11/11/2015

<table>
<thead>
<tr>
<th>Operator ID</th>
<th>Operator Name</th>
<th>10 Year Average (incidents per 1,000 miles)</th>
<th>5 Year Average (incidents per 1,000 miles)</th>
<th>(\uparrow \downarrow)</th>
<th>10 Year Significant Incident Count</th>
<th>5 Year Significant Incident Count</th>
<th>2014 Miles</th>
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<tbody>
<tr>
<td>32262</td>
<td>PAA NATURAL GAS STORAGE, LLC</td>
<td>1.15</td>
<td>2.30</td>
<td>(\uparrow)</td>
<td>2</td>
<td>2</td>
<td>174</td>
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<tr>
<td>12350</td>
<td>CENTERPOINT ENERGY RESOURCES CORP., DBA CENTERPOINT ENERGY MINNESOTA GAS</td>
<td>1.15</td>
<td>2.29</td>
<td>(\uparrow)</td>
<td>2</td>
<td>2</td>
<td>157</td>
</tr>
<tr>
<td>2596</td>
<td>COLUMBIA GAS OF OHIO INC</td>
<td>0.77</td>
<td>1.54</td>
<td>(\uparrow)</td>
<td>1</td>
<td>1</td>
<td>130</td>
</tr>
<tr>
<td>32113</td>
<td>ENLINK NORTH TEXAS PIPELINE, LP</td>
<td>0.74</td>
<td>1.47</td>
<td>(\uparrow)</td>
<td>1</td>
<td>1</td>
<td>136</td>
</tr>
</tbody>
</table>

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U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration

“To protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives.”
Pipeline Performance Measure Anatomy

“Safety Program View” Link

Loads a report of the measure ranking safety programs

<table>
<thead>
<tr>
<th>IM Safety Program Name</th>
<th>2012 and Forward (incidents per 1,000 miles)</th>
<th>2012 and Forward Significant Incident Count</th>
<th>2014 Onshore Miles</th>
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</thead>
<tbody>
<tr>
<td>PLAINS</td>
<td>3.83</td>
<td>2</td>
<td>174</td>
</tr>
<tr>
<td>COLUMBIA GAS OF OHIO INC</td>
<td>2.57</td>
<td>1</td>
<td>130</td>
</tr>
<tr>
<td>CENTERPOINT ENERGY RESOURCES CORP., DBA CENTERPOINT ENERGY MINNESOTA GAS</td>
<td>2.12</td>
<td>1</td>
<td>157</td>
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<tr>
<td>VIRGINIA NATURAL GAS</td>
<td>1.74</td>
<td>1</td>
<td>191</td>
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<tr>
<td>LACLEDE GAS CO</td>
<td>1.44</td>
<td>1</td>
<td>231</td>
</tr>
<tr>
<td>TARGA</td>
<td>1.08</td>
<td>1</td>
<td>219</td>
</tr>
</tbody>
</table>
Serious Incidents

All System Types rises slightly in 2015

29 in CY 2015

86%  Gas Distribution  10%  Gas Transmission
3%  Hazardous Liquid  0%  LNG and Gas Gathering

data as-of 3/27/2016
Serious Incidents

All System Types rises slightly in 2015

data as-of 2/26/2016

Gas Distribution flat in 2015
Gas Distribution Serious Incidents

CY 2015 Leading Causes:
Other
Other Outside Force Damage
Excavation Damage

Data as-of 2/26/2016
Significant Incidents

All System Types
Slight rise in 2015

data as-of 2/26/2016

Gas Distribution slight rise in 2015
Gas Distribution Significant Incidents

CY 2015 Leading Causes:
- Excavation Damage
- Other Outside Force Damage
- Other

Data as-of 2/26/2016
Serious Incidents

All System Types rises slightly in 2015
data as-of 2/26/2016

Gas Transmission rises to three in 2015
Significant Incidents

All System Types rises slightly in 2015

data as-of 2/26/2016

Gas Transmission decreases in 2015
Gas Transmission Significant Incidents

CY 2015 Leading Causes:
Material/Weld/Equipment Failure
Corrosion
Excavation Damage

Data as-of 2/26/2016
Serious Incidents

All System Types rises slightly in 2015

data as-of 2/26/2016

Hazardous Liquid and Carbon Dioxide rises to one in 2015
Significant Incidents

All System Types rises slightly in 2015
data as-of 2/26/2016

Hazardous Liquid and Carbon Dioxide rises in 2015
Hazardous Liquid and Carbon Dioxide Significant Incidents

CY 2015 Leading Causes:
- Material/Weld/Equipment Failure
- Corrosion
- Incorrect Operation

Data as-of 2/26/2016