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Roles and Responsibilities for Incident Management in Gas Transportation

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THE PIPELINE OPERATOR

PIPELINE OPERATOR: KEEPING SAFETY FIRST

- Focus on the job in front of you
 - It starts with the workers
 - Avoid distractions and bad habits
 - Don't focus on making the boss look good (by failing to report short-cuts or tasks that do not result in overall pipeline operations safety)

PIPELINE OPERATOR: CREATE A SAFETY CULTURE

- The president or chief executive of the pipeline must be committed to safety
- He/she must require that same commitment from the middle management
- They all must require that same commitment from the line workers
- Internal audit team
- Support workers when safety issues are identified

PIPELINE OPERATOR: MEASURE & DOCUMENT

- Establish metrics for improvement
- Examine metrics of similar pipeline operations to evaluate robustness of metrics
- Document metrics with regular periodicity
- Report metrics with regular periodicity to regulatory agency

PIPELINE OPERATOR: COMMUNICATE

- Regular dialogue of safety issues:
 - In leadership meetings
 - In mandatory staff meetings for employees and contractors
 - With regulators
 - With end-users and communities served

THE PIPELINE REGULATOR

PIPELINE REGULATOR

- Require operators to develop and implement a pipeline integrity management program
 - Identification of high consequence areas
 - Create a baseline assessment plan
 - Identify potential threats
 - Direct remediation actions on issues identified in assessments

High Consequence Areas (“HCA”s)

Locations where people congregate

- Potential impact circle
 - Identified site
 - 20 or more buildings intended for human occupancy
 - Size of area determined by maximum allowable operating pressure and diameter of pipeline

Potential Threats

- Corrosion
 - Internal corrosion
 - External corrosion
- Stress corrosion cracking
- Manufacturing defects
- Welding/fabricating
- Equipment
- 3rd party or mechanical damage
- Incorrect operations
- Weather or other outside force
- Human error

Integrity Assessment Options

- In-line inspection (“smart pigging”)
- Pressure testing
- Direct assessment (visual & physical inspection)
- Other

Process Model

- HCA Identification
- Data
- Risk assessment
- Identification of potential threats
- Integrity assessment
- Responses and mitigation
- Repeat, beginning with Data (above)

REQUIRED ELEMENTS OF INTEGRITY MANAGEMENT PROGRAM

- Knowledge
- Identify threats
- Evaluate and prioritize risks
- Remediation measures addressing risk
- Measure performance, monitor results & evaluate effectiveness
- Periodically evaluate and improve program
- Report results

KNOWLEDGE

- Understand pipeline system
 - From reasonably available information:
 - Surveillance records
 - Repair records
 - Construction specifications
 - Operating records
 - Subdivide system into segments with shared characteristics, threats and risks
 - Information gaps must be identified and filled

IDENTIFY THREATS

- Corrosion (both internal and external)
- Natural forces
- 3rd party damage
- Other outside forces
- Material, weld or joint failure
- Equipment failure
- Incorrect operation
- Other

EVALUTATING RISK

Risk = Likelihood x Consequences

Risk: can be compared only if using same parameters to assess risk

Likelihood:

- Some threats more likely to occur than others
- Usually expressed as a “Likelihood Index” on a percentage basis

Consequence:

- Loss of gas, property, or life
- Usually expressed as a “Consequence Index”

Risk Factors

- Location of pipeline
- Operating pressure of pipeline
- Potential size of leak
- Ability to quickly identify and isolate a leak
- Do ignition sources exist near the pipeline segment?

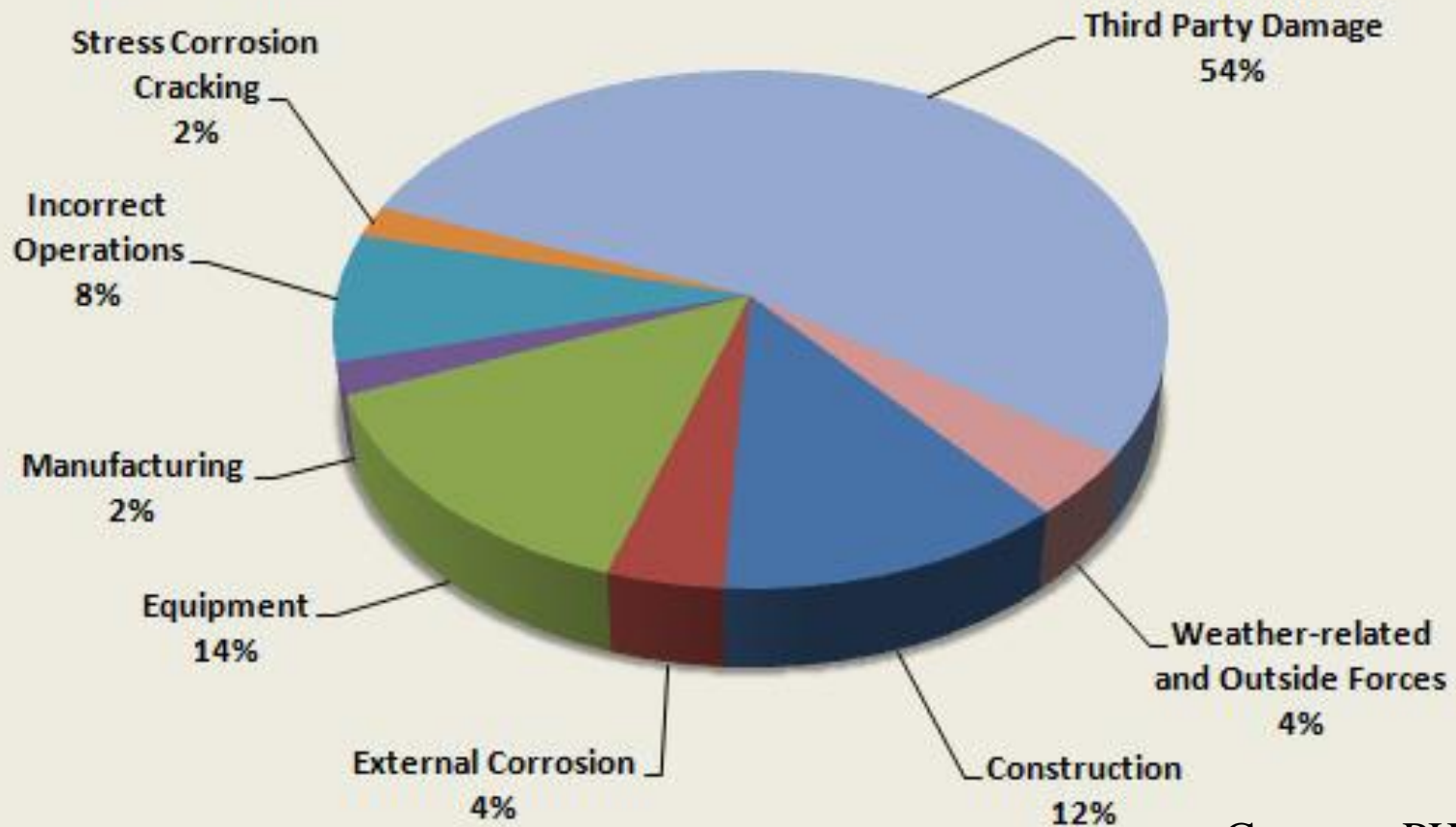
U.S. Department of Transportation

PHMSA

- Natural gas pipeline operators must submit:
 - Semi-annual Integrity Management Program performance measure reports
 - Annual pipeline infrastructure reports
- To monitor industry compliance
- To prioritize regulatory inspections
- To respond to inquiries about PHMSA's regulatory oversight

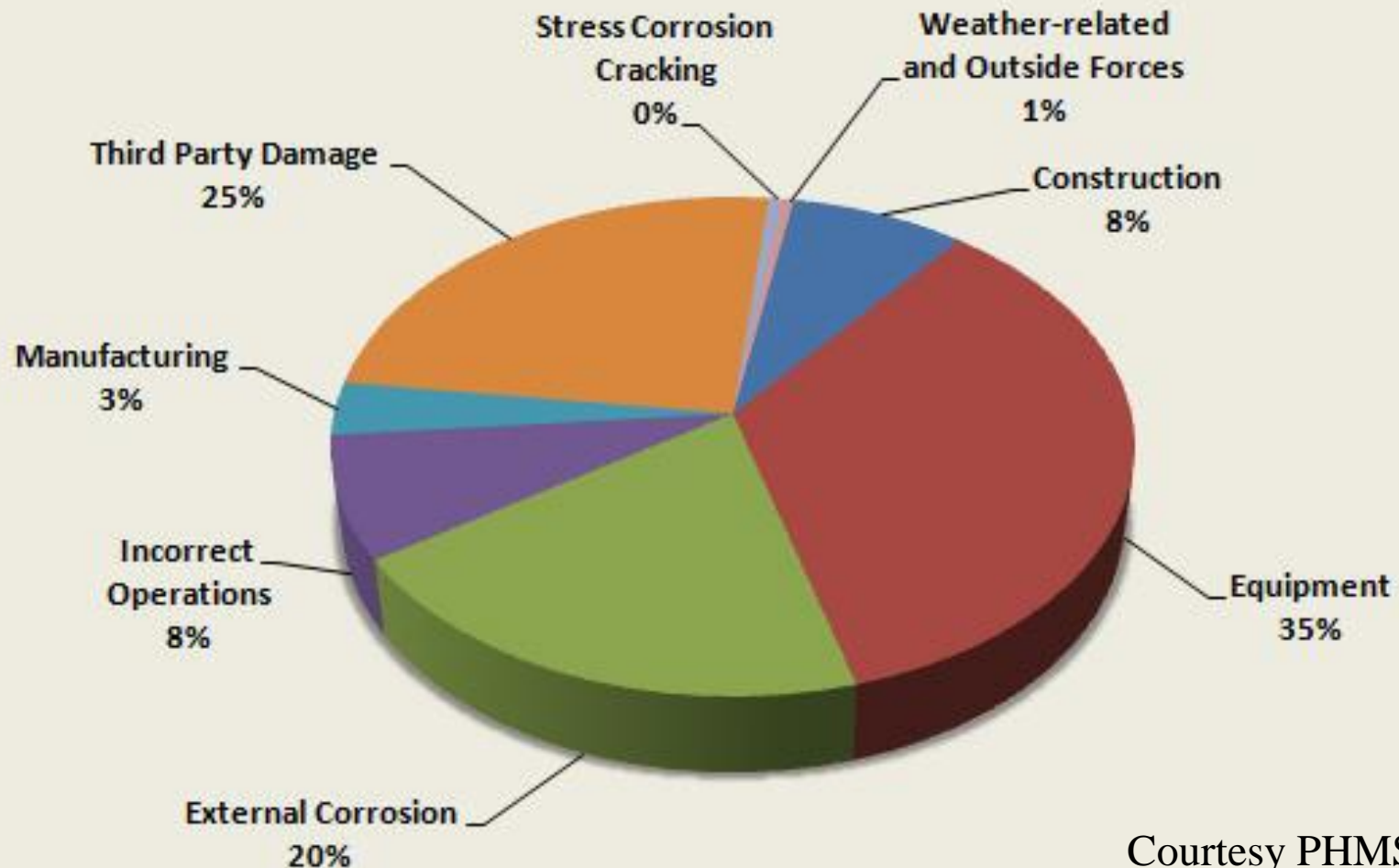
Summary of Natural Gas Pipeline Repairs 2004-2009							
Repairs in HCA Segments	2004	2005	2006	2007	2008	2009	TOTAL
* Immediate category	104	261	159	258	146	124	1,052
*Scheduled category	599	378	342	452	217	251	2,239
Total repairs in HCA segments	703	639	501	710	363	375	3,291
Repairs outside of HCA	Not available – reporting not required						
The Gas IM Rule has resulted in a consistent, year-by-year improvement in the integrity of the nation’s gas transmission pipelines.							

Pipeline Failures by Cause 2004-2009



Courtesy PHMSA

Pipeline Incidents by Cause 2004-2009

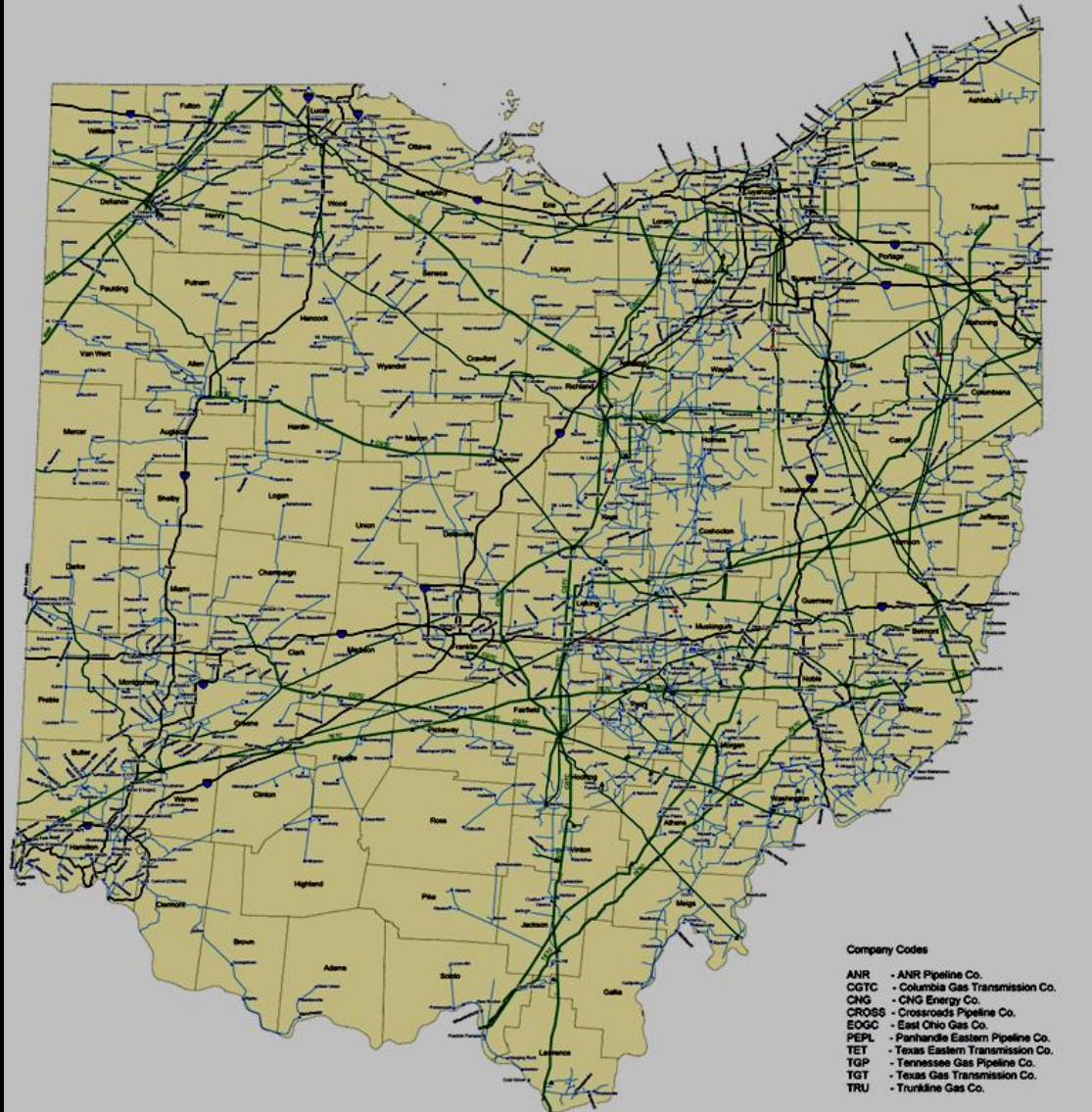


Courtesy PHMSA

RECENT OHIO PIPELINE INCIDENTS

Natural Gas Transmission System in Ohio

State of Ohio
Public Utilities Commission



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- Meter Station
- Pump or Compressor Station
- Storage

- Multiple main line
- Single main line
- Secondary Line
- Interstate Highway

Ohio's Recent Major Incidents

- January 24, 2011 – Dominion East Ohio facility ruptures; 1 building exploded, several destroyed, and 15 reported fires
- February 10, 2011 – Tennessee Gas Pipe Line ruptures near Hanoverton in rural northeastern Ohio; investigation completed and turned over to PHMSA; little property damage
- March, 2011 – Tennessee Gas Pipe Line leak in northeastern Ohio
- November 2011 – Tennessee Gas Pipe Line ruptures near Glouster in rural southeastern Ohio; investigation on-going; at least 2 homes destroyed and another damaged



Morning Journal/Associated Press

Questions?

Thank you!

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