

**U.S. DOT
Pipeline and Hazardous Materials
Safety Administration**

**Distribution
Integrity Management
Update**

**Wednesday, April 13, 2016
North Carolina State Seminar
Chris McLaren**



**Know what's below.
Call before you dig.**



April is National Safe Digging Month



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

To Protect People and the Environment From the Risks of
Hazardous Materials Transportation



Today's Topics

- Performance Based Regulations
- Drivers for DIMP
- DIMP Inspections Lessons Learned
- Incidents trends
- Current Topics – like the Proposed Gas Rule



Performance Based Regulations

- Historically, regulation have been prescriptive providing tasks that must be completed to meet established minimum safety requirements
- Performance based regulations provide a framework that an operator tailors to meet their unique operating environment to meet objectives
- Programs are expected to mature and be continuously improved and worked on
- Prescription is added to performance based IM regulations as time goes by to address inadequacies identified in inspections and accident investigations



Management Systems

- PHMSA has worked on Pipeline Risk Management Systems since 1990's
- In the 1990's, PHMSA completed the Risk Management Demonstration & Systems Integrity Projects
- 2000's - Integrity Management (IM) Regulations promulgated for Hazardous Liquid and Gas Transmission pipelines
- 2010's – IM Regulations promulgated for Gas Distribution and Hazardous Liquid Gathering pipelines
- PHMSA has continuously evaluated the implementation of the IM regulations and sought to clarify and improve them thru Rulemaking and Stakeholder Communication

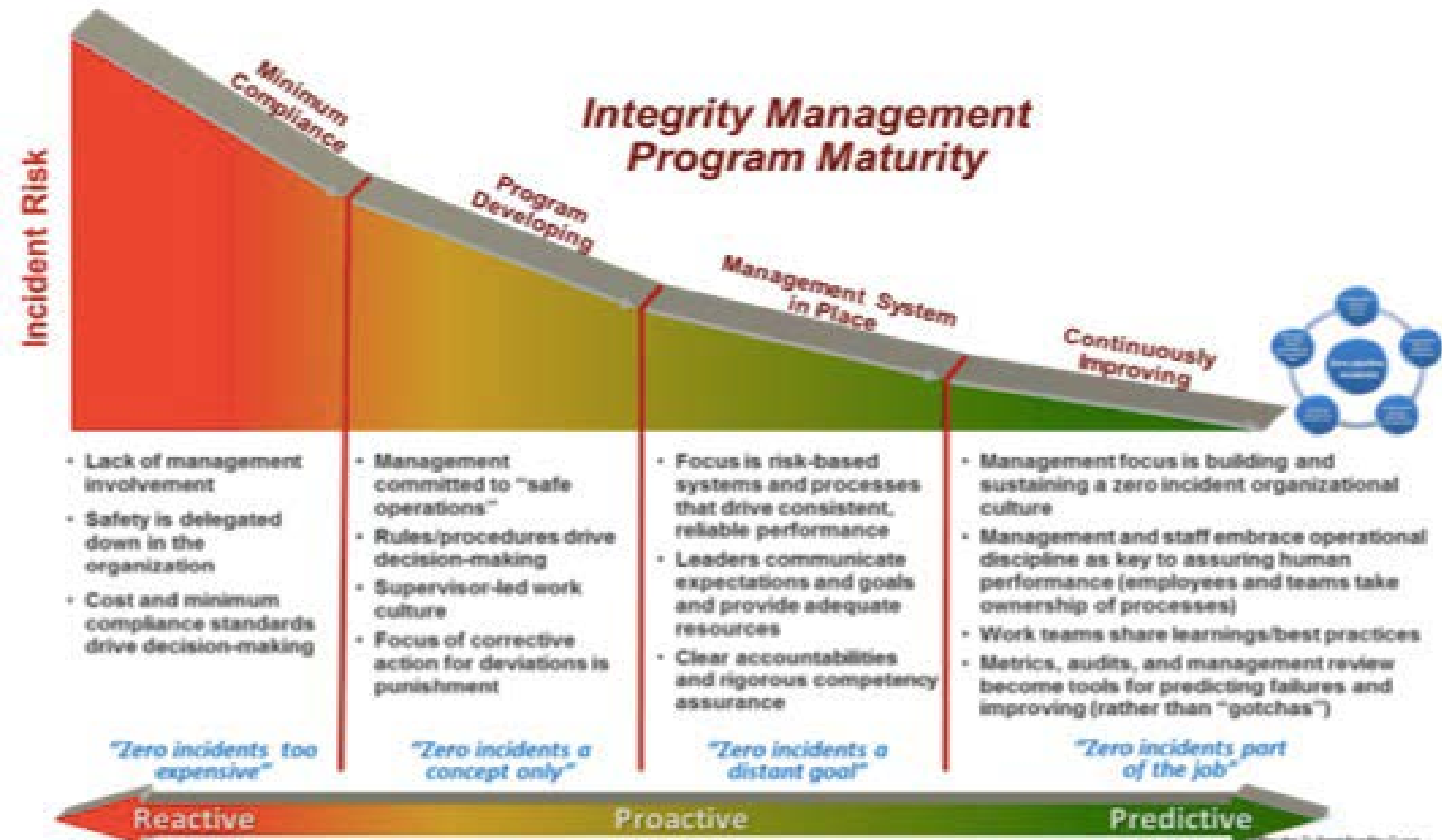


Management Systems

- A framework of policies, processes and procedures used to ensure that an organization can fulfill all tasks required to achieve its objectives.
- Include accountability (an assignment of personal responsibility) and a schedule for activities to be completed, as well as auditing tools to implement corrective actions, creating an upward spiral of continuous improvement.
- A simplified model is the P-D-C-A "Plan, Do, Check, Act/Adjust" cycle of continuous improvement.
- A-D-D-I-E Model is another way to describe a continuous improvement cycle –
 - Analyze, Design, Develop, Implement, & Evaluate



Assessing Maturity

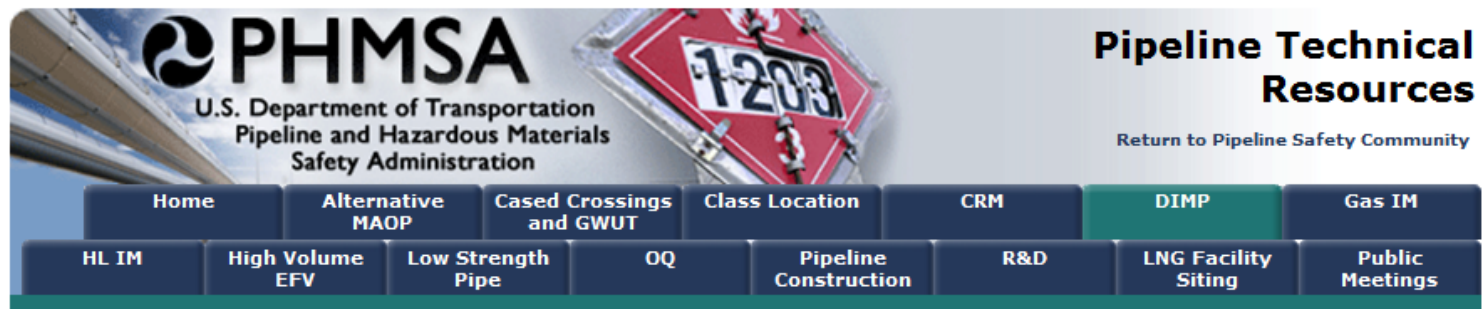


Moving from Compliance to Choice

- Our world must move from a “checkbox” mentality to understanding the health of our pipeline systems by analyzing and understanding data and information and promptly acting to reduce risks
- Safety culture is a term commonly used as a mechanism to change operator behavior from minimum compliance standards towards choosing to do the “right thing” for the safe operation and integrity of the pipeline system



DIMP Home



Gas Distribution Integrity Management Program

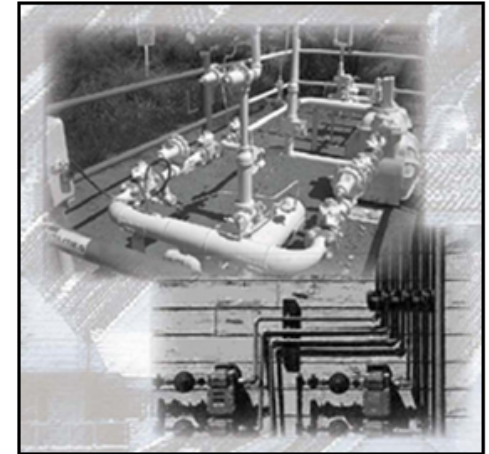
DIMP Menu

- Home
- History
- Meetings
- Resources
- FAQs
- Performance Measures
- Regulator Contacts
- What's New
- Feedback

- Regulations
- Advisory Bulletins
- Interpretations

The Pipeline and Hazardous Materials Safety Administration (PHMSA) published the final rule establishing integrity management requirements for gas distribution pipeline systems on December 4, 2009 (74 FR 63906). The effective date of the rule is February 12, 2010. Operators are given until August 2, 2011 to write and implement their program.

PHMSA previously implemented integrity management regulations for [hazardous liquid](#) and [gas transmission](#) pipelines. These regulations aim to assure pipeline integrity and improve the already admirable safety record for the transportation of energy products. Congress and other stakeholders expressed interest in understanding the nature of similarly focused requirements for gas distribution pipelines. Significant differences in system design and local conditions affecting distribution pipeline safety preclude applying the same tools and management practices as were used for transmission pipeline systems. Therefore, PHMSA took a slightly different approach for distribution integrity management, following a joint effort involving PHMSA, the gas distribution industry, representatives of the public, and the National Association of Pipeline Safety Representatives to explore potential approaches.



<http://primis.phmsa.dot.gov/dimp/index.htm>



National Drivers Continue to Place the Focus on Gas Distribution

- Vintage Pipe Materials
- US DOT Call to action
- Continued Incidents involving Cast Iron Mains
- DIMP
- Methane Emissions
- PHMSA Research and Development Activities



Vintage Pipelines

- The term “Vintage Pipelines” commonly refers to pipe installed prior to the 1970’s.
- Pipe making and construction practices that are no longer used, including some early variations of current practices, are termed historic. Vintage pipelines are those built using pipe or construction practices made with such historic practices.
- Different for Transmission and Distribution in some respects, but used across both.
- For Distribution Infrastructure - cast and wrought iron mains, certain vintages of plastic pipe and mechanical coupling installations, bare steel pipe without adequate corrosion control, and copper piping.



Aging Pipelines

- Pipeline transportation is one of the safest and most cost-effective ways to transport natural gas and hazardous liquid products.
- As the United States continues to develop and place more demands on energy transportation, it becomes necessary to invest in upgrading its infrastructure, including aging pipelines.
- Among other factors, pipeline age and material are significant risk indicators. Pipelines constructed of cast and wrought iron, bare steel, and other vintage plastics are among those pipelines that pose the highest-risk
- In 2011, following major natural gas pipeline incidents, DOT and PHMSA issued a Call to Action to accelerate the repair, rehabilitation, and replacement of the highest-risk pipeline infrastructure.



US DOT Secretary Call to Action

- In March 2011, former Secretary of Transportation Ray LaHood and PHMSA issued a Call to Action to engage all the state pipeline regulatory agencies, technical and subject matter experts, and pipeline operators in accelerating the repair, rehabilitation, and replacement of the highest-risk pipeline infrastructure.



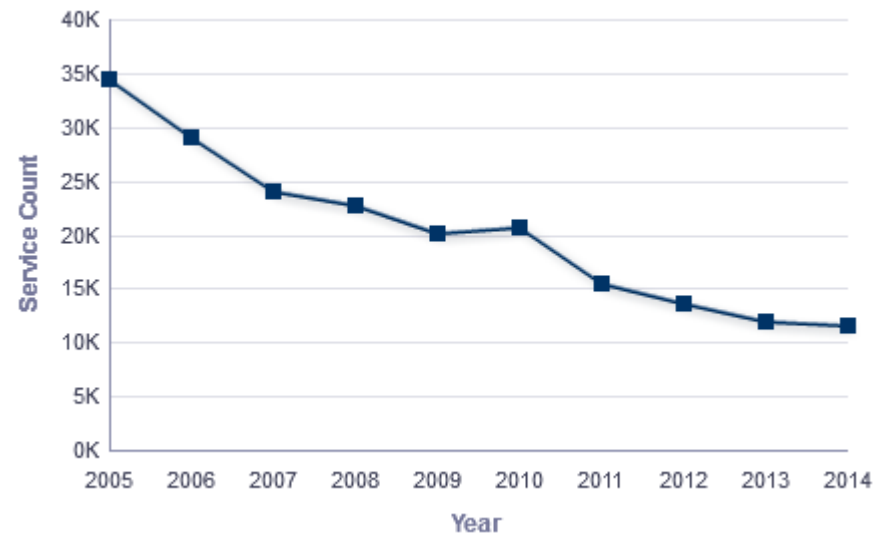
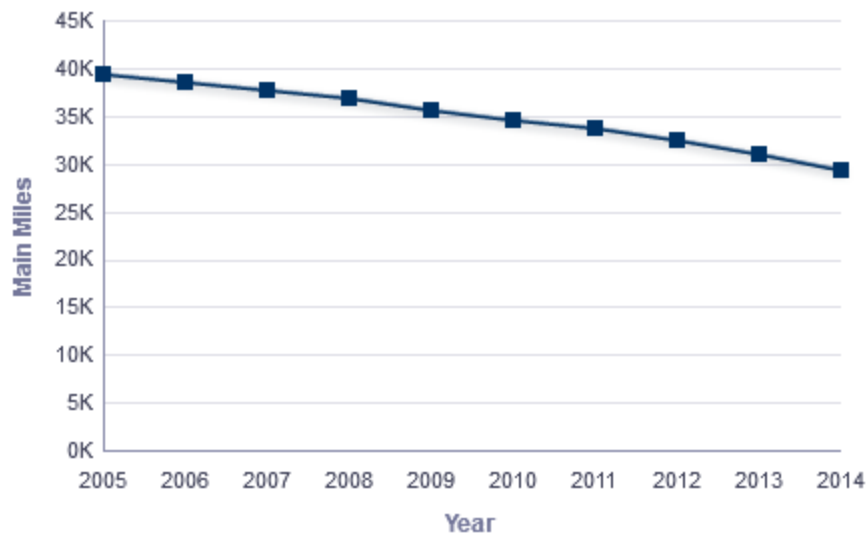
Call to Action Highlights

- Letters requesting for assistance with Cast Iron Replacement to Governors, State Regulators (NAPSR) & Commissioners (NARUC)
- Letters to Industry
- Letters to Technical, Safety, and Environmental Organizations
- Letters to Local and State Organizations
- Letter to Federal Energy Regulatory Commission (FERC)
- White Paper on State Replacement Programs
- Request for State Governors' Assistance with Cast Iron Replacement
- Call to Action - Action Plan



Progress in Modernization

- Gas Distribution Cast/Wrought Iron Main Miles and Service Count Trend
- More progress is needed in accelerating replacements



Distribution IM Impact

- The regulation requires distribution operators to develop and implement a distribution integrity management program with the following elements:
 - Knowledge
 - Identify Threats
 - Evaluate and Rank Risks
 - Identify and Implement Measures to Address Risks
 - Measure Performance, Monitor Results, and Evaluate Effectiveness
 - Periodically Evaluate and Improve Program
 - Report Results



Knowledge

- Data quality is a common concern, and an appropriate level of resource allocation is required;
 - Outdated, incomplete, obvious errors.
 - Outdated data systems difficult to use or sort.
 - Data cleanup and scrubbing is often required.
- Field data acquisition forms and internal IT processes to incorporate new information and correct inaccurate information may need to be modified.
- Procedures for identification and collection of additional and missing information must be included in DIMP to ensure consistent collection and processing.



Identify Existing and Potential Threats

§192.1007 What are the required elements of an integrity management plan? A written integrity management plan must contain procedures for developing and implementing the following elements:

(b) Identify threats. The operator must consider the following categories of threats to each gas distribution pipeline: Corrosion, natural forces, excavation damage, other outside force damage, material or welds, equipment failure, incorrect operations, and other concerns that could threaten the integrity of its pipeline. An operator must consider reasonably available information to identify existing and potential threats. Sources of data may include, but are not limited to, incident and leak history, corrosion control records, continuing surveillance records, patrolling records, maintenance history, and excavation damage experience.



Potential Threats

- Some Operators struggle with potential threats beyond existing threats that are important
 - Threats the Operator has not previously experienced (from industry or PHMSA information)
 - Threats from aging infrastructure and materials with identified performance issues may need to be considered existing threats depending on the materials in question and the operating environment
 - Threats that endangered facilities but have not resulted in a leak (e.g., exposed pipe, near misses).
 - Non-leak threats (overpressure, exposure, outside force)
 - Manufacturing and Construction Threats
 - Maintenance history



Evaluate and Rank Risks

- System subdivision for the evaluation and ranking of risks must be sufficient to appropriately analyze risk(s) present in the Operator's unique operating environment.
- Geographical segmentation may be appropriate when systems are separated by space or a specific, predominate threat exists (e.g., where flooding can be expected, earthquake prone area, uniform construction).
- However, materials or construction may be the predominate threat(s) in a region, and segmentation may need to be refined to accommodate different failure rates to adequately differentiate and identify significant potential and existing threats.



Identify and Implement Measures to Address Risks

- Replacement of Vintage Materials is a Priority to PHMSA, and acceleration in any established replacement programs is warranted
- Increased Leak Survey Frequency to identify emerging threats
- Establish replacement schedules to Repair or replace the problem materials or equipment.
- Monitor coupons & internal pipe conditions when cut (bell hole report)
- Correct cathodic protection deficiencies
- Evaluate gas supply inputs and take corrective action with supplier



Performance Measurement

- A DIMP must include procedures for establishing baselines and monitoring Performance Measures required in 192.1007(e) –
 - Total number of leaks and the Number of hazardous leaks either eliminated or repaired categorized by cause
 - Number of hazardous leaks either eliminated or repaired categorized by material
 - Number of excavation damages and tickets
- Operators must develop and monitor performance measures from an established baseline to evaluate the effectiveness of its IM program.
- Each Activity Implemented to Reduce Risk must have a Performance Measure established to monitor its effectiveness



Periodic Evaluation and Improvement

- 192.1007(f) *Periodic Evaluation and Improvement.*
- An operator must re-evaluate threats and risks on its entire pipeline and consider the relevance of threats in one location to other areas.
- Each operator must determine the appropriate period for conducting complete program evaluations based on the complexity of its system and changes in factors affecting the risk of failure.
- An operator must conduct a complete program re-evaluation at least every five years.
- The operator must consider the results of the performance monitoring in these evaluations.



Form 24 – 1007(f) section

28	.1007 (f)	<p>Did the periodic evaluation include the following:</p> <ul style="list-style-type: none"> • Verification of general system information (e.g., contact information; form names; action schedules, etc.)? • New information acquired since the previous evaluation? • Review of threats and risks? • Was the risk model re-run? • Review of performance measures? • Review of measures to reduce risks? • Evaluation of the effectiveness of measures to reduce risks? • Modification of measures to reduce risks, if necessary? 	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
Inspector Comments						

Form 24 – 1007(f) section

29	.1007 (e)	If any established performance measures indicated an increase in risk beyond an acceptable level (as established in the DIMP plan), did the operator implement new risk reduction measures along with their associated performance measures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspector Comments		<input type="text"/>				
30	.1007 (f)	If the periodic evaluation indicates that <u>implemented measures to reduce risks</u> are NOT effective, were risk <u>reduction</u> measures modified, deleted or added?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspector Comments		<input type="text"/>				



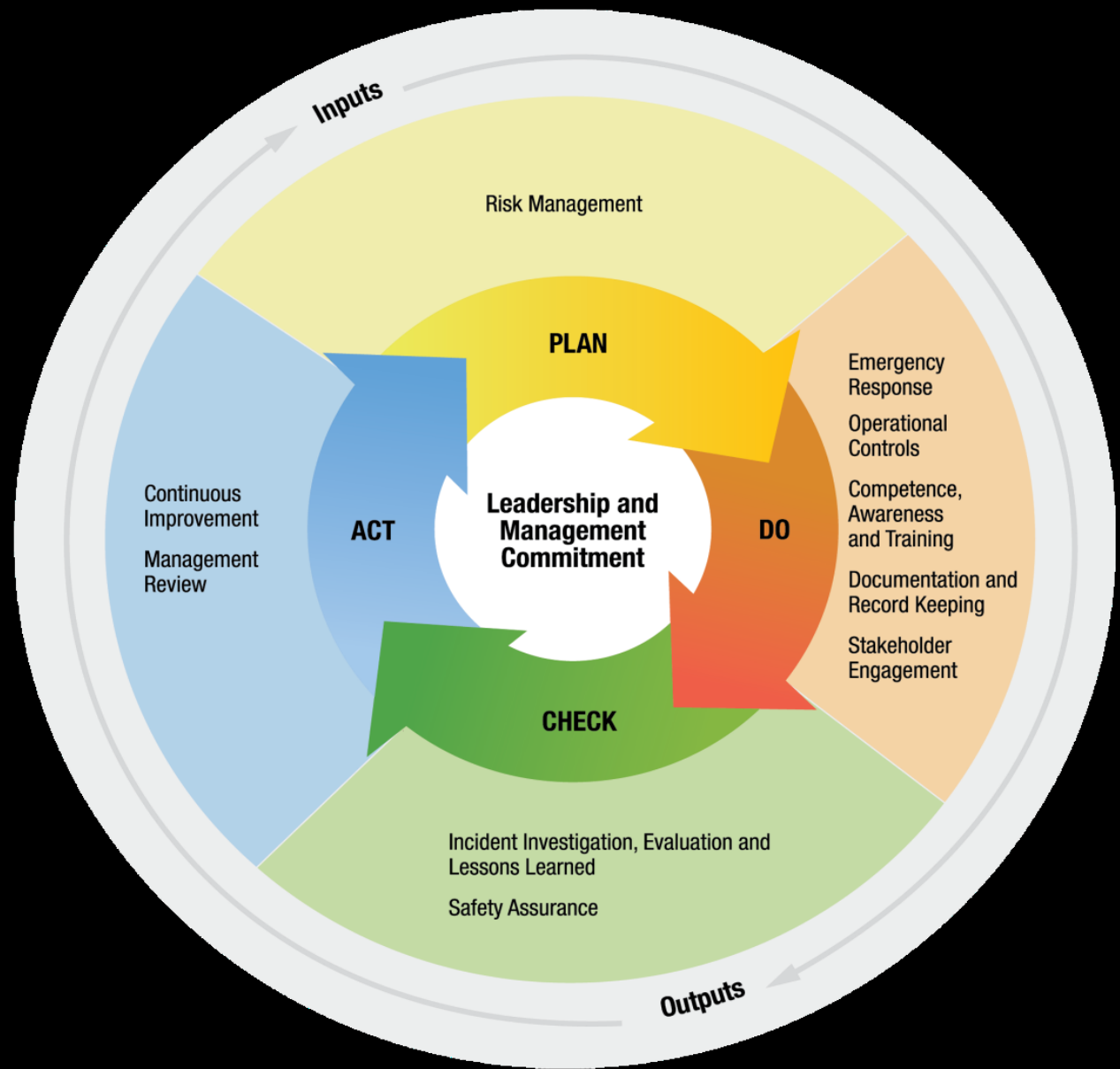
Form 24 – 1007(f) section

31	.1007 (f)	<p>Did the periodic evaluation indicate that the selected <u>performance measures</u> are assessing the effectiveness of risk reduction measures?</p> <p>If not, were performance measures modified, deleted or added? (describe in Inspector comments)</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Inspector Comments		<input type="text"/>				
32	.1007 (f)	<p>Did the operator follow its procedures in conducting periodic evaluation and program improvement?</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

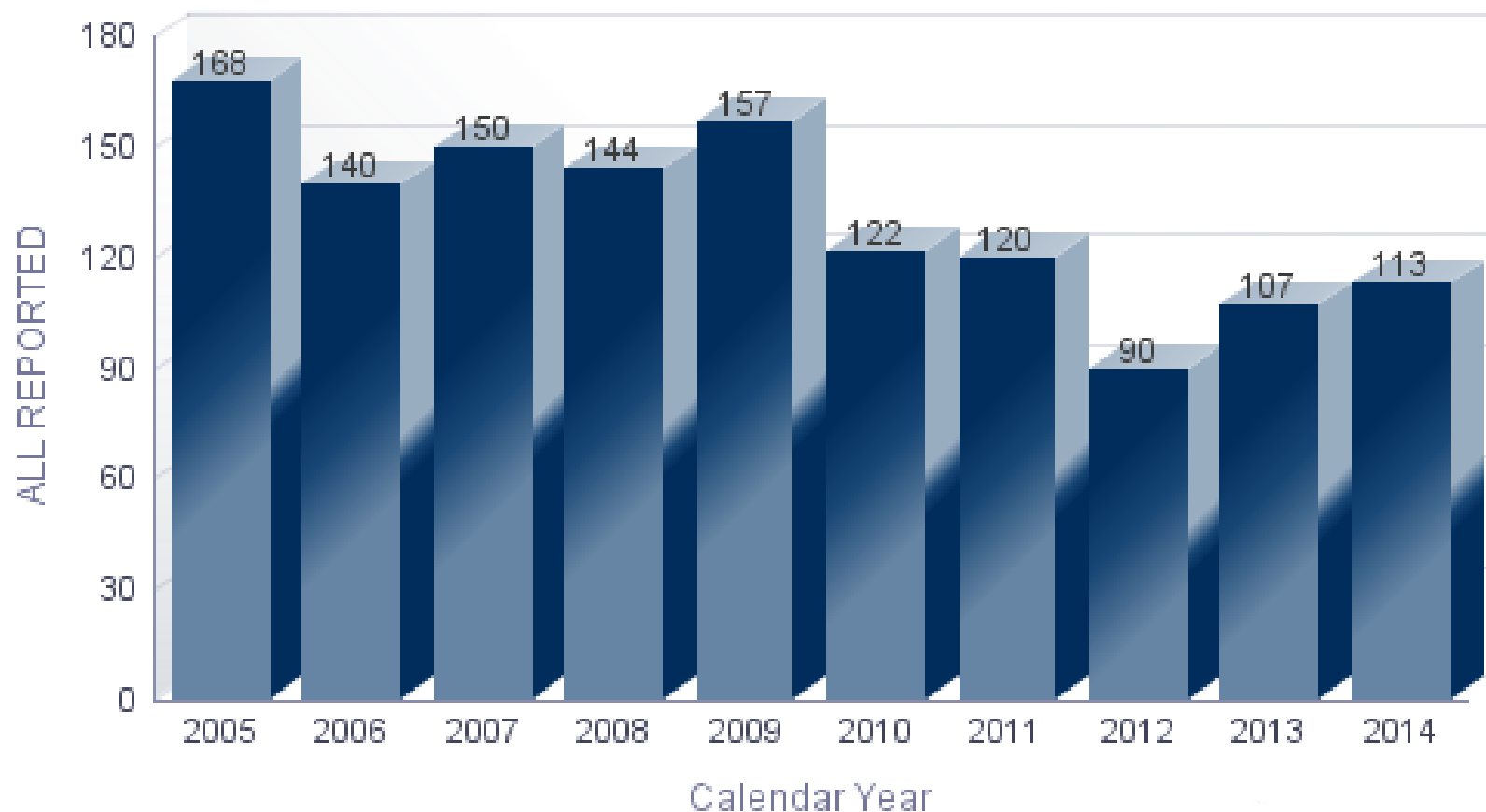


Safety Management Systems - Plan, Do, Check, Act - The core of SMS in API RP 1173

Continuous Improvement is the Goal and a Requirement of IM Programs

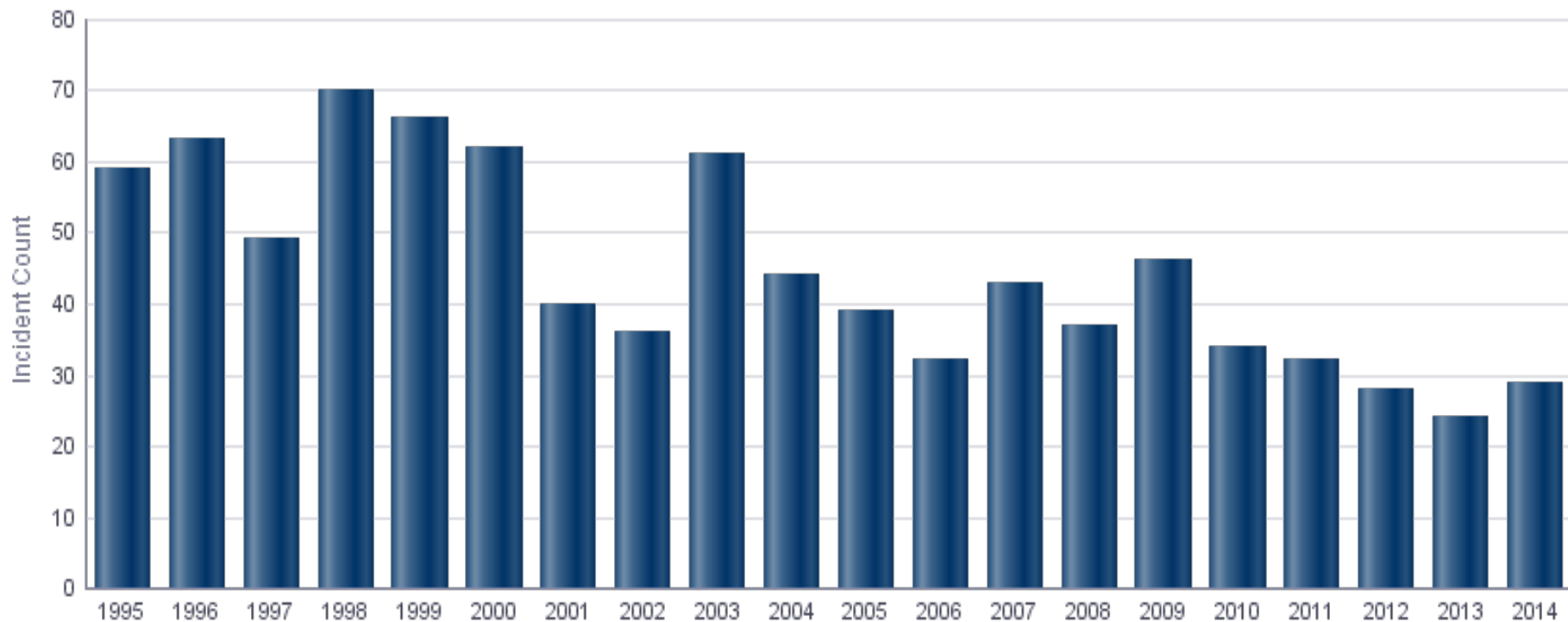


Gas Distribution Incidents



Serious Incidents

All System Types show downward trend with slight rise in 2014



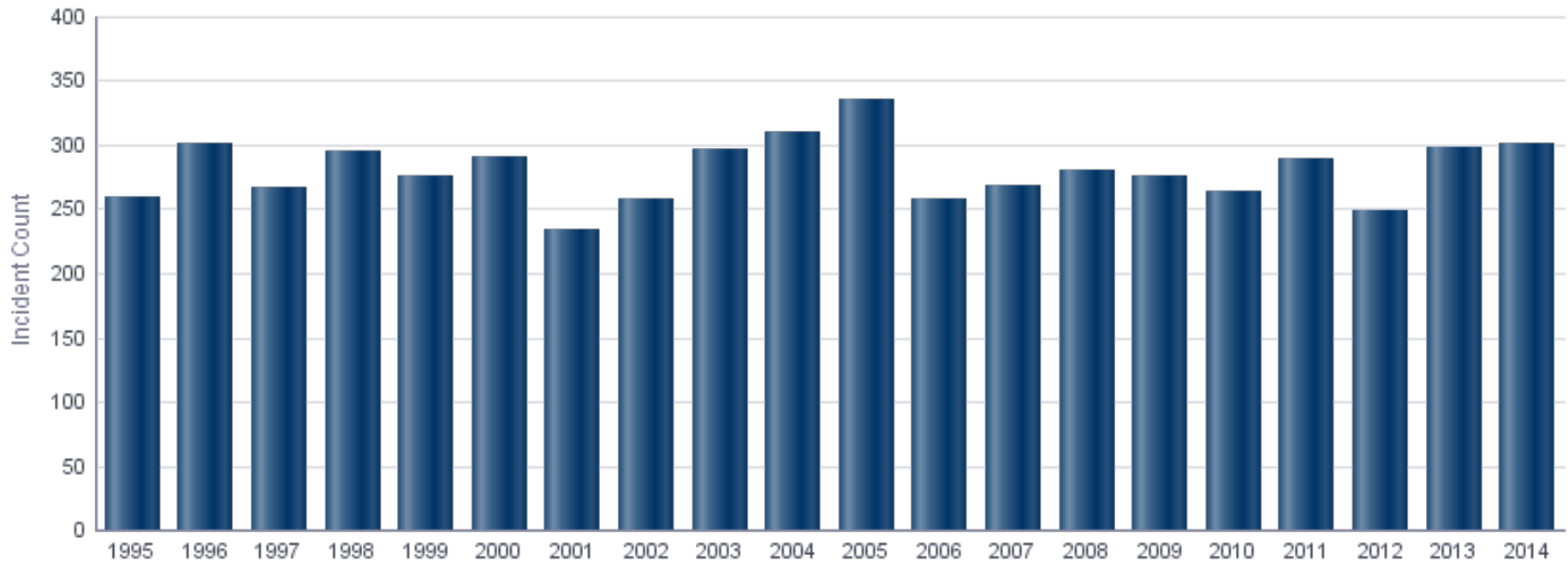
data as-of 2/2/2015

Serious – fatality or injury requiring in-patient hospitalization



Significant Incidents

All System Types seems to have plateaued

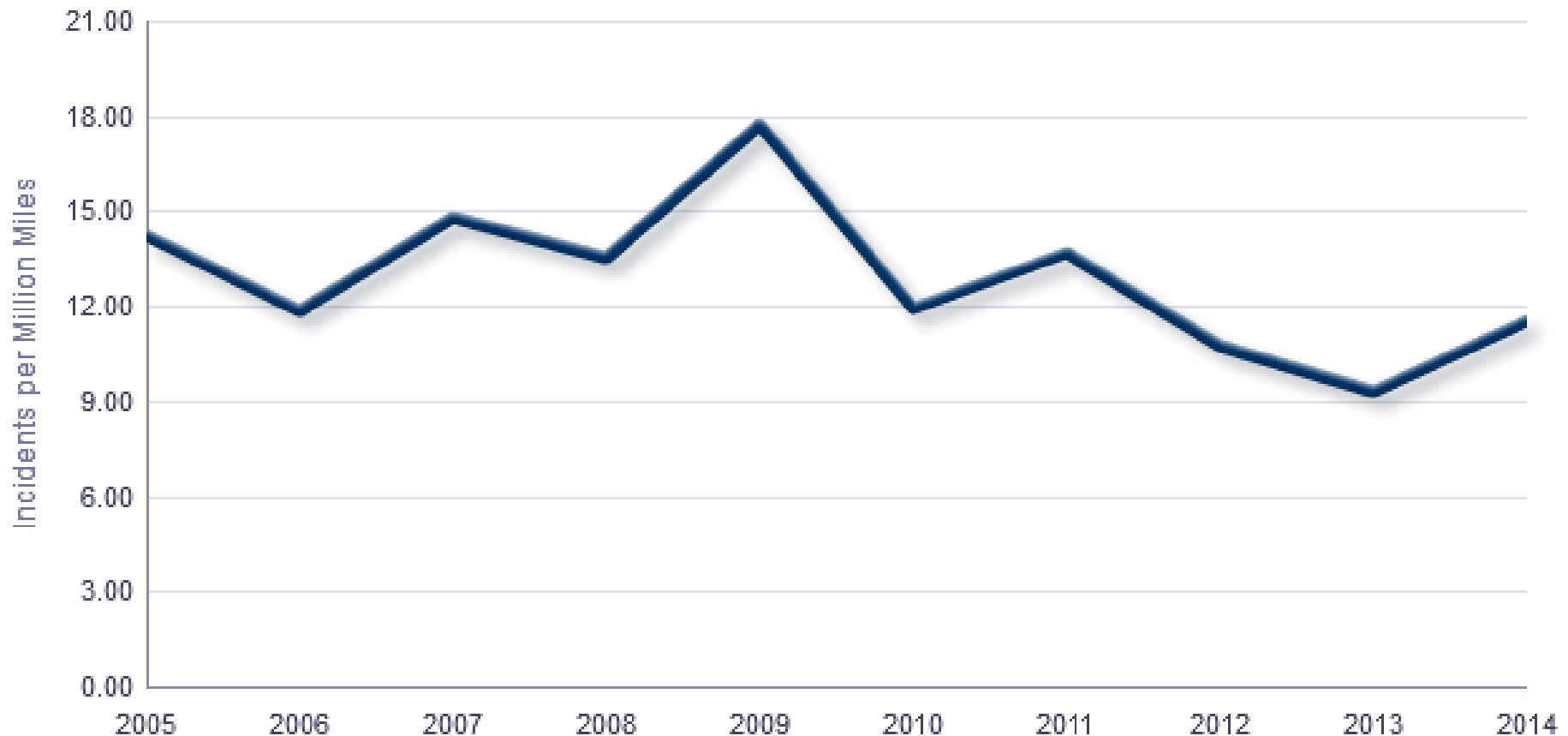


data as-of 2/2/2015

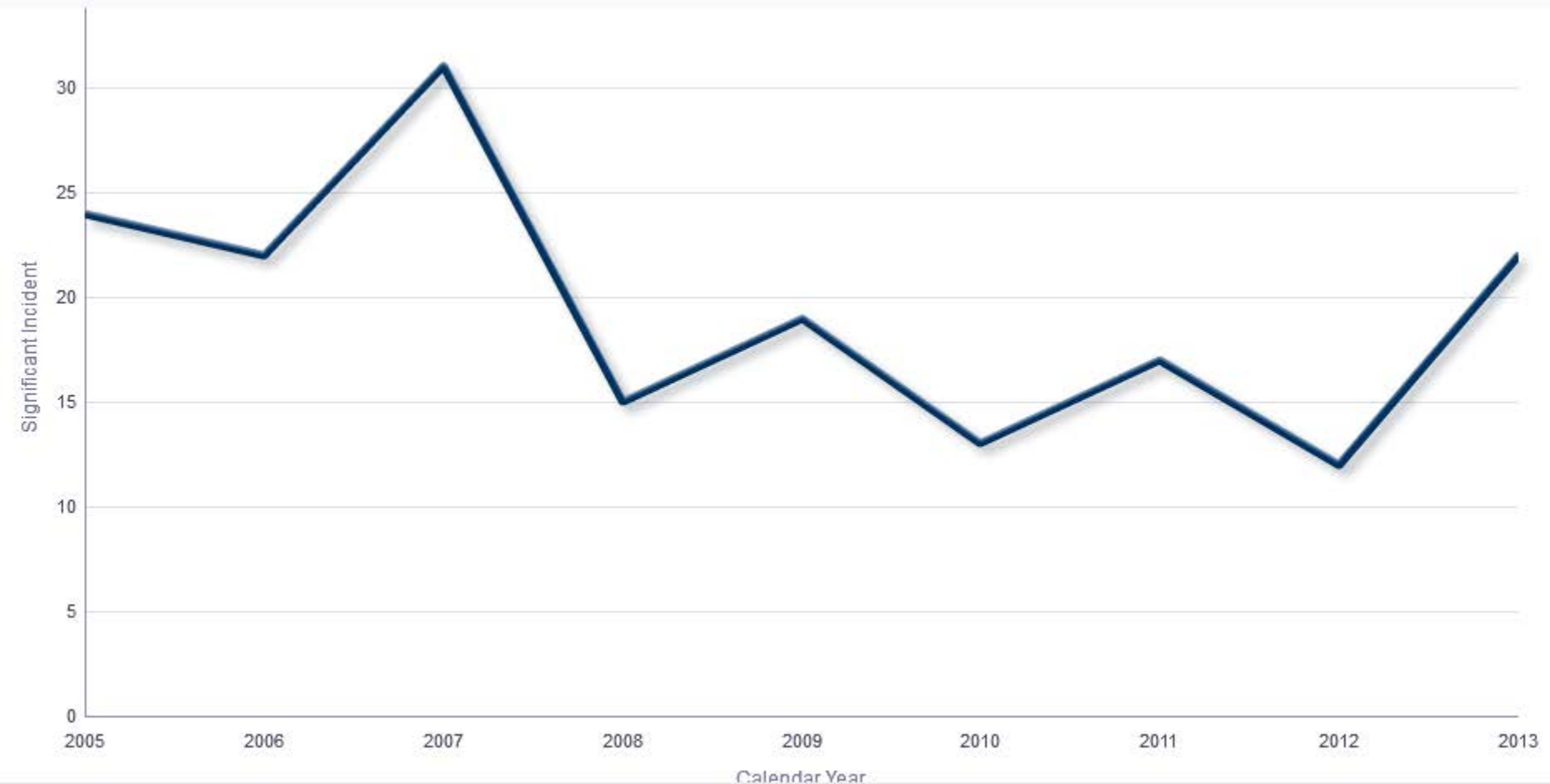
Significant includes Serious incidents as well as incidents costing \$50,000 or more in total costs, measured in 1984 dollars; Highly volatile liquid (HVL) releases of 5 barrels or more; Non-HVL liquid releases of 50 barrels or more; or Liquid releases resulting in an unintentional fire or explosion



Gas Distribution Serious Incidents per Million Miles of Pipe



Gas Distribution Significant Incidents Caused by Excavation Damage



Management Systems are Effective

Management Systems require More

- Intentional and systematic actions
- Diligence and oversight
- Involvement at all levels - communications
- “Go and Check” attitude

The rewards of Management Systems are

- Increased pipeline safety – risk reduction
- Creation/Enhanced safety oriented culture
- Broader organizational involvement



Leadership is everywhere

Top Management- accountable for continuous improvement, routine review of safety performance and communications about safety

Management- ensures process, procedures and training to meet objectives; assess, evaluate and adjust as needed to meet objectives; foster continuous improvement

Employees– identify improvements, reveal risks

Consider employee, public and pipeline safety when stopping work for safety concern

Bring rigor of employee safety to asset protection



Summary of Proposed "Gas Rule"

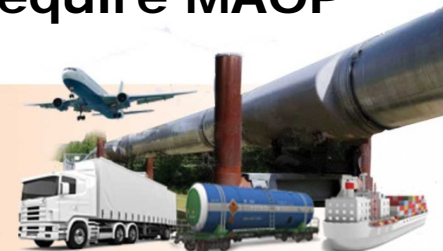
PHMSA proposing rule changes in the following areas for gas transmission and gas gathering pipelines

1. Require Assessments for Non-HCA's
2. Strengthen repair criteria for HCA and Non-HCA
3. Strengthen requirements for Assessment Methods
4. Clarify requirements for validating & integrating pipeline data
5. Clarify functional requirements for risk assessments
6. Clarify requirement to apply knowledge gained through IM
7. Strengthen corrosion control requirements
8. Add requirements for selected P&M measures in HCAs to address internal corrosion and external corrosion
9. Management of change
10. Require pipeline inspection following extreme external events
11. Include 6 month grace period (w/notice) to 7 calendar year reassessment interval (Act § 5(e))
12. Require reporting of MAOP exceedance (Act § 23)
13. Incorporate provisions to address seismicity (Act § 29)
14. Add requirement for safety features on launchers and receivers
15. Gathering lines- Require reporting for all & some regulatory requirements
16. Grandfather clause/Inadequate records - Integrity Verification Process (IVP)



1. Require Assessment for Non-HCAs

- **ISSUE** – Non-HCA pipelines are not currently required to be assessed.
- **PHMSA IS PROPOSING** to require integrity assessments for the following non-HCA segments: All Class 3 and 4 Locations and newly defined Moderate Consequence Area's that are piggable.
 - Initial assessment within 15 years
 - Periodic reassessment every 20 years thereafter
 - Operators can take credit for prior assessments of MCA segments that were conducted in conjunction with and HCA assessment without performing another initial assessment
- **BASIS:**
 - 19,872 miles of GT pipe in HCAs.
 - 30,591 miles in MCAs must be assessed (of which 7,400 have not had a prior assessment and do not require MAOP verification)



1. Require Assessment for Non-HCAs

- **Moderate Consequence Area (MCA):**
 - Non-HCA pipe that are populated in PIR (proposed 5 or more houses or occupied site)
 - House count and occupied site definition same as HCA, except for 5 houses or 5 persons at a site (instead of 20)
 - Also, if interstate highway ROW is within PIR



2. Revise Repair Criteria in HCAs & Apply Same Criteria to Non HCAs**

- **ISSUE** - Greater assurance is needed that injurious anomalies and defects are repaired before the defect can grow to a size that leads to a leak or rupture.
- **PHMSA IS PROPOSING** to add repair criteria to be consistent with HL rule
 - 80% metal loss (immediate)
 - Corrosion near seam (immediate)
 - Areas of general corrosion > 50% wt (one year**)
 - Metal loss calculation that shows a FPR (one year**): \leq less than or equal to 1.25 for Class 1 locations, \leq 1.39 for Class 2 locations, \leq 1.67 for Class 3 locations, and \leq 2.00 for Class 4 locations.
 - Additional dent criteria (one-year**)
 - Selective Seam Corrosion (SSC)/Significant SCC (immediate)
 - All other SCC and crack-like defects (one-year**)

** Except that response time for non-immediate conditions would be tiered. Defects requiring a 1-year response for HCAs would require a 2-year response in non-HCAs.

- **BASIS:**
 - Addresses NTSB P-12-3 (Marshall, MI) for SCC and crack-like defects
 - Addresses existing gaps in repair criteria
 - Would require repairs be made for any defect predicted to fail a Subpart J

pressure test



- **ISSUE** - Current rule is silent on a number of issues that impact the quality and effectiveness of ILI assessments (except for a general reference to ASME B31.8S)
- **PHMSA IS PROPOSING to:**
 - Clarify selection and conduct of ILI per new mandatory reference to NACE, API, and ASNT standards
 - Clarify consideration of uncertainties in ILI reported results.
 - Add the following allowed methods:
 - GWUT in accordance with criteria in a new Appendix F
 - Excavation and *in situ* direct examination
 - "Spike" hydrostatic pressure test
 - Allow Direct Assessment only if line is not piggable.
- **BASIS:**
 - Following the San Bruno accident, determined that Direct Assessment was relied upon by PG&E even when not effective for the specific application
 - Include additional assessment methods known to be effective for specific situations (e.g., GWUT for crossings) or threats (e.g., Spike hydro for SCC)



4. Improving Rqts. for Collecting, Validating & Integrating Pipeline Data

- **ISSUE** - Operators are collecting much information but an integrated and documented analysis is often inadequate.
- **PHMSA IS PROPOSING TO:**
 - Clarify that data be verified and validated
 - Clarify requirements for integrated analysis of data & information
 - Establish minimum pipeline attributes that must be included
 - Require use of validated, objective data whenever practical
 - Address requirements for use of SME input
- **BASIS:**
 - San Bruno highlighted weakness in this area
 - Congressional mandate to validate data



5. Add Specific Requirements for Risk Models

- **ISSUE** – More specificity is needed for the nature and application of risk models to improve the usefulness of these analyses to control risks from pipelines.
- **PHMSA IS PROPOSING** to enhance requirements for performance-based risk assessments to:
 - Add a new definition for “quantitative risk assessment” that adequately evaluates the effects of:
 - interacting threats.
 - Identify the contribution to risk of each risk factor
 - Account for uncertainties in the risk model and data used
 - Require validation of risk models in light of incident, leak, and failure history & other historical information [codifies NTSB P-11-29 recommendation to PG&E]
- **BASIS:**
 - Addresses NTSB recommendations and lessons learned from the San Bruno accident investigation
 - Address input from July 2011 Risk Management workshop



6. Strengthen Requirements for Applying Knowledge Gained Through the IM Program

- **ISSUE** - Strengthening requirements related to operators' use of insights gained from its IM program is prudent to ensure effective risk management.
- **PHMSA IS PROPOSING to:**
 - Clarify expectation that operators use knowledge from risk assessments to establish and implement adequate Preventive & Mitigative measures
 - Provide more explicit examples of the type of P&M measures to be evaluated
 - Clarify requirement that risk models adequately reflect data integration analyses and are validated against incident and failure experience
- **BASIS:**
 - Stronger rule emphasis on fundamental goal of risk based IM
 - Address NTSB recommendations following San Bruno



7. Strengthen Corrosion Control

- **ISSUE** - Current rules for external & internal corrosion need strengthening
- **PHMSA IS PROPOSING to require:**
 - Expansion of corrosion controls required in Subpart I
 - Specific Preventive and Mitigative measures for HCAs to address both external and internal corrosion
 - Similar to measures required for pipe segments operating under the alternate MAOP rule per 192.619
- **BASIS:**
 - Disbonded coating and corrosion were significant contributing factors in the Marshall, MI & Sissonville, WV incidents



8. Add P&M Requirements to Address Ext. Corrosion and Int. Corrosion in HCAs

- **ISSUE** - Prescriptive preventive and mitigative measures are needed to assure that public safety is enhanced in HCAs and affords greater protections for HCAs.
- **PHMSA IS PROPOSING to require:**
 - Enhance internal & external corrosion control programs in HCAs to provide additional protection from corrosion commensurate with Alt MAOP pipelines
 - Consider other measures, such as additional right-of-way patrols and hydrostatic tests in areas where material has quality issues or lost records
 - Address seismicity in evaluating P&M measures for outside force damage
- **BASIS:**
 - Disbonded coating and corrosion were significant contributing factors in the Marshall, MI & Sissonville, WV incidents
 - Implement Act § 29 (seismicity)



9. Management of Change

- **ISSUE** - Codifying the specific attributes of the Management of Change process will enhance the visibility and emphasis on these important program elements.
- **PHMSA IS PROPOSING to:**
 - Codify the specific attributes of the Management of Change process from ASME/ANSI B31.8S, Section 11 (already incorporated by reference).
 - Require operators to develop and follow a Management of Change process and address risk as part of the general requirements of Part 192.
- **BASIS:**
 - Address lessons learned from San Bruno and Marshall, MI with respect to operational and other decision-making that affects risk.



10. Require Pipeline Inspection Following Extreme Events

- **ISSUE** – Current rules do not address extreme events that can damage pipelines or disrupt pipeline operations
- **PHMSA IS PROPOSING to:**
 - Clarify that inspection of pipeline and right-of-way for “other factors affecting safety and operation” includes extreme weather events, man-made, and natural disasters, and similar events
 - Specify the timeframe for performing inspections & remedial actions
- **BASIS:**
 - Recent example of extreme event (Yellowstone River scouring caused by flooding) that resulted in pipeline incident



11. Include 6-month Grace Period to 7-Year Reassessment Interval

- **ISSUE** - Subsection 5(e) of the Pipeline Act of 2011 identifies a technical correction to Title 49 of the United States Code.
- **PHMSA IS PROPOSING to:**
 - Clarify that periodic reassessments must occur, at a minimum of once every 7 calendar years, but that the Secretary may extend such deadline for an additional 6 months if the operator submits written notice to the Secretary with sufficient justification of the need for the extension.
- **BASIS:**
 - This codifies Act § 5(e) technical correction.



12. MAOP Exceedance Reporting

- **ISSUE** - Section 23 of the Act requires PHMSA to promulgate rules for reporting exceedance of the maximum allowable operating pressure (MAOP).
- **PHMSA IS PROPOSING to:**
 - Require operators to report each exceedance of the MAOP that exceeds the build-up allowed for operation of pressure-limiting or control devices.
- **BASIS:**
 - This codifies the specific requirement from Act § 23.



13. Incorporate Provisions to Address Seismicity

- **ISSUE** - Section 29 of the Act states that in identifying and evaluating all potential threats to each pipeline segment, an operator of a pipeline facility shall consider the seismicity of the area.
- **PHMSA IS PROPOSING to:**
 - Include seismicity in evaluating P&M measures for the threat of outside force damage.
 - Include seismicity of the area in the data gathering and integration of information about pipeline attributes and other relevant information.
- **BASIS:**
 - This codifies the specific requirement from Act § 29.



14. Add Requirements for Safety Features on Launchers and Receivers

- **ISSUE** - Current regulations for liquid pipelines (Part 195) contain safety requirements for scraper and sphere facilities. Part 192 does not address this area.
- **PHMSA IS PROPOSING to add a new section to:**
 - Require launchers & receivers be equipped with a device capable of safely relieving pressure in the barrel before insertion or removal of inline inspection tools, scrapers, or spheres.
 - Require use of a suitable device to indicate that pressure has been relieved in the barrel or must provide a means to prevent opening if pressure has not been relieved.
- **BASIS:**
 - Some incidents have occurred at launchers and receiver stations.



15. Expand Requirements for Onshore Gas Gathering Lines

- **ISSUE** - PHMSA determined additional information about gathering lines is needed to fulfill its statutory obligations. Also, recent developments in the field of gas exploration and production, such as shale gas, indicate that the existing framework for regulating gas gathering lines may no longer be appropriate.
- **PHMSA IS PROPOSING to:**
 - Repeal exemption for all gas gathering line operators to report incidents, safety related conditions, & annual pipeline data.
 - Repeal use of API RP 80 for determining gathering lines and add a new definition for “production facility or production operation” and a revised definition for “gathering line”.
 - Extend regulatory safety requirements to Type A lines in Class 1 locations (8” or greater).
- **BASIS:**
 - API RP 80 contains conflicting and ambiguous language.
 - Shale gas gathering lines operate at higher pressures and are a greater hazard than typical legacy gathering lines.



16. Integrity Verification Process (IVP)

- Statutory Mandates and NTSB Rec.
- Records
- Material Documentation
- MAOP Determination



Gas Transmission IM NPRM

- The NPRM **addresses 4 congressional mandates** from the Pipeline Safety Act of 2011, **1 GAO recommendation** from an audit and **6 NTSB recommendations**, including the recommendation adopted in the wake of the San Bruno explosion that pipelines built before 1970 be tested.
- The rule also proposes changes to the way that pipeline operators secure and inspect gas transmission pipeline infrastructure following extreme weather events, such as hurricanes and flooding.
- The proposed changes are expected to result in fewer incidents, which could lead to a reduction in gas released into the atmosphere as greenhouse gases (GHG). The proposed rule is expected to result in net annual average reductions of 900-1,500 metric tons of carbon dioxide and 4,600-8,100 metric tons of methane, a greenhouse gas.



Climate Change Impact

- Growing focus on mitigating fugitive methane
- EPA to potentially regulate LDCs via the Clean Air Act
- Studies by the Environmental Defense Fund illustrate volumes released by LDCs and that replacement/rehabilitation of old pipe breeds rapid/large reductions



Mitigating Fugitive Methane

- PHMSA closely following issues and policy development by others - White House, Congress and Industry
- Coordinating with EPA with data sharing, meetings and PHMSA participation at EPA Gas Star Program events
- Coordinating with the Environmental Defense Fund efforts and added EDF representation on PHMSA's congressionally mandated Pipeline Advisory Committee
- Reviewing natural gas regulations to understand leak paths and possible actions germane to our statutory mission
 - However, safety case largely already made in support of hazardous leak reductions
 - Remaining non-hazardous leaks generally economic in nature
 - NARUC, FERC and the Congress



Downstream Natural Gas Initiative

- The Downstream Natural Gas Initiative is a group of natural gas utilities collaborating to address key technical and regulatory factors affecting methane emission reduction opportunities from natural gas distribution systems.
- Partners will work to identify and encourage programs that accelerate investments in infrastructure and promote outstanding operations, including modernizing their systems, utilizing next generation technologies, and quantifying emissions.
- The initiative is focused on opportunities that can substantially reduce methane emissions and support safe, reliable, and cost-effective service
- <http://www.mjbradley.com/content/downstream-natural-gas-initiative>



PHMSA R&D on Methane Emissions

- **Emissions Quantification Validation Process**
<http://primis.phmsa.dot.gov/matrix/PrjHome.rdm?prj=647>
- The main objective of this project is to identify, apply and test a methodology or methodologies that validate quantified methane emissions rate measurements in gas distribution systems. This project will build on current and evolving understanding related to the practical application of methane emissions quantification technologies for non-hazardous grade 3 leaks.
- If successful in validating a technology or combination of technologies that can apply to accurately quantify methane emissions, the proposed effort would allow more data driven decisions based on the greenhouse gas emissions contribution of individual non-hazardous leaks. This validated quantitative flow rate information could aid in prioritization of repair decisions.



PHMSA Websites

Please regularly use PHMSA websites as they are a primary form of communication with Stakeholders

PHMSA Office of Pipeline safety

<http://phmsa.dot.gov/pipeline>

DIMP Home Page

<http://primis.phmsa.dot.gov/dimp/index.htm>

Pipeline Safety Stakeholder Communications

<http://primis.phmsa.dot.gov/comm/>

Pipeline Replacement Updates

http://opsweb.phmsa.dot.gov/pipeline_replacement/



Thank you for Your participation in Pipeline Safety



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Call before you dig.**



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

To Protect People and the Environment From the Risks of
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