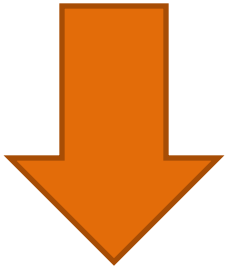
PHMSA Regulatory Update

APGA SECURITY & INTEGRITY FOUNDATION

OPERATIONS CONFERENCE

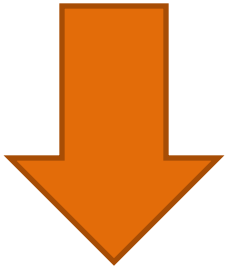
Tuesday, March 29, 2016

Gas NPRMs can be found here



FEDERAL REGISTER

The Daily Journal of the United States Government



or linked on the PHMSA website

PHMSA Website Locations for Regulatory Status

Interpretations (Search by date or regulation)
http://www.phmsa.dot.gov/pipeline/regs/interps

Special Permits and State Waivers
http://www.phmsa.dot.gov/pipeline/regs/special-permits

Rulemakings (tabular with links to detail)
http://www.phmsa.dot.gov/pipeline/regs/rulemaking

Advisory Bulletins (tabular with links to detail)
http://www.phmsa.dot.gov/pipeline/regs/advisory-bulletin

And more ....

Safety of Gas Transmission and Gathering Lines

NPRM published 3/17/2016

- Requiring additional post-construction quality inspections to address coating integrity and cathodic protection issues,
- Requiring new safety features for pipeline launchers and receivers, and
- Requiring a systematic approach to verify a pipeline's maximum allowable operating pressure (MAOP) and requiring operators to report MAOP exceedances.

Safety of Gas Transmission and Gathering Lines

NPRM topics continued

- Modifying repair criteria for pipelines inside and outside of high consequence areas (MCA),
- Providing additional direction on how to evaluate internal inspection results to identify anomalies,
- Clarifying requirements for conducting risk assessment for integrity management, including addressing seismic risk,
- Expanding mandatory data collection and integration requirements for integrity management, including data validation and seismicity,

Gas Transmission IM NPRM

- The proposed regulations **address four congressional mandates** from the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011, **one GAO recommendation** and **six NTSB recommendations**, including the recommendation adopted in the wake of the San Bruno explosion that pipelines built before 1970 be tested.

Gas Transmission IM NPRM

- The proposed changes to gas transmission safety regulations 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 powerful greenhouse gas.

Gas Transmission IM NPRM

- 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.

Plastic Pipe Rule

NPRM published May 21, 2015

- Tracking and traceability
- Design factor for PE (.40 vs .32) or up to 150psi
- 2”-6” PA-11&12 with higher HDB (250 psi)
- Risers outside of services
- Class 1 mechanical fittings only
- Monitoring and cathodic protection for isolated fittings
- Storage and handling requirements
- New testing and design requirements
- New standards by PPI, ASTM, etc.

OQ, Cost Recovery, Accident/ Incident Notification, and Other Changes

NPRM published Jul 10, 2015

- OQ for new construction
- Removal of farm taps from DIMP
- Additional inspection req. for farm taps
- Reporting of flow reversals/product changes
- Post accident drug testing
- Incorporate new inspection technologies
- Recovering cost of reviewing operator data

EFV Expansion

NPRM published 7/15/2015

ANPRM 11/25/2011

- Published Rule will propose to require EFVs for:
  - branched service lines serving more than one single family residence > 10 PSI
  - multi-family residential dwellings and commercial buildings < 1,000 SCFH
  - Curb valves for services over 1,000 SCFH
- Existing customers may request EFVs

Report on DOT Significant Rulemakings

- https://www.transportation.gov/regulations/report-on-significant-rulemakings
- The Significant Rulemakings Report provides a summary and the status for all significant rulemakings that DOT currently has pending or has issued recently.
  - Excess Flow Valves In Applications Other Than Single-Family Residences in Gas Distribution Systems
  - Gas Transmission
  - Amendments to Parts 192 and 195 to require Valve installation and Minimum Rupture Detection Standards

Final Rules

Incorporated by Reference Final Rule

Periodic Updates of Regulatory References to Technical Standards and Miscellaneous Amendments

- Impacts 49 CFR Parts 191, 192 and 195
- Effective March 6, 2015
- Replaces 22 of the 60+ referenced standards
- **Remember**!
  - When there is a contradiction with a referenced standard, the regulation takes precedence!
    (exceptions with propane … NFPA 58 and 59 prevail)

IBR Rulemaking Plastic Pipe

ASTM D2513–09a

"Standard Specification for Polyethylene (PE) Gas Pressure Pipe, Tubing, and Fittings" omitting section 4.2 for regrind

- HD PE, 4710, up to 10 years
- MD PE, 2708, up to 3 years

No PE with regrind or single stamped 2406 or 3408 can be purchased for use after March 6th

Miscellaneous Changes to Pipeline Safety Regulations

Miscellaneous Rule Updates

- Impacts 49 CFR
  - 191, 192 and 195
- Effective
  - October 1, 2015

Miscellaneous Final Rule

Postponed!

§ 192.305 Inspection: General.

- Each transmission line and main must be inspected to ensure that it is constructed in accordance with this subpart. An operator must not use operator personnel to perform a required inspection if the operator personnel performed the construction task requiring inspection. Nothing in this section prohibits the operator from inspecting construction tasks with operator personnel who are involved in other construction tasks.

Miscellaneous Final Rule

Construction Inspection (Cont'd)

Responsibility to Conduct Construction Inspections § § 192.305 and 195.204

Postponed!

- PHMSA proposed to revise § 192.305 to specify that a transmission pipeline or main cannot be inspected by someone who participated in its construction. i.e., the individual who performed the construction task that requires inspection

Miscellaneous Final Rule

Postponed!

Construction Inspection (Cont'd)

- PHMSA believes that allowing individuals to inspect their own work defeats, in part, the measure of safety garnered from such inspections.
- PHMSA was **not intending** to require third-party inspections or **attempting to prohibit** any person from a company to inspect the work of another person from the same company.

Miscellaneous Final Rule

Qualifying Plastic Pipe Joiners

§ 192.285(c)

A person must be re-qualified under an applicable procedure once each calendar year at intervals not exceeding 15 months, or after any production joint is found unacceptable by testing under § 192.513.

Miscellaneous Final Rule

§ 192.3 Definitions.

Welder means a person who performs manual or semi-automatic welding.

Welding operator means a person who operates machine or automatic welding equipment.

Miscellaneous Final Rule

§ 192.243 Nondestructive testing.

(e) Except for a welder or welding operator whose work is isolated from the principal welding activity, a sample of each welder or welding operator's work for each day must be nondestructively tested, when nondestructive testing is required under § 192.241(b).

Miscellaneous Final Rule

§ 192.805 Qualification program.

Notification of “Significant” changes in OQ programs is required

Damage Prevention Final Rule

Pipeline Damage Prevention Programs

- Effective January 1, 2016
- Affects 49 CFR Parts 196 and 198
  - Sets criteria for State damage prevention laws
  - If States can't or don't meet criteria PHMSA can take over jurisdiction
  - Exceptions are possible, however they must be approved and justified

Damage Prevention Final Rule

"For the reasons discussed above, PHMSA is not considering alternatives 1 and 3. Under alternative 2, PHMSA will enforce a minimum Federal safety requirement against any excavator who violates applicable damage prevention requirements in a State with an excavation damage prevention enforcement program determined to be inadequate."


Advisory Bulletins

ADB-2016-03

- Owners and Operators of Petroleum Gas and Natural Gas Facilities in Areas Subject to Heavy Snowfall or Abnormally Icy Weather
- Dangers of Abnormal Snow and Ice Build-up on Gas Distribution Systems
- To remind owners and operators of the need to (1) monitor the potential impact of excessive snow and ice on these facilities; and (2) inform the public about possible hazards from snow and ice accumulation on regulators and other pipeline facilities

ADB-2016-03

- Notify customers and other entities of the need for caution associated with excessive accumulation and removal of snow and ice
- Pay attention to snow and ice related situations that may cause operational problems for pressure control and other equipment
- Monitor the accumulation of moisture in equipment and snow or ice blocking regulator or relief valve vents which could prevent regulators and relief valves from functioning properly

ADB–2016–02

- Owners and Operators of Underground Pipeline and Storage Facilities regarding the Safe Operation of Underground Storage Facilities for Natural Gas
- Operators of underground storage facilities used for the storage of natural gas, as defined in 49 CFR Part 192, should review their O,M & ER activities to ensure the integrity of underground storage facilities are properly maintained

ADB–2016–02

- In addition, operator's O&M processes and procedures should be reviewed and updated at least annually, unless operational inspections for integrity warrant shorter review periods.
- O&M processes and procedures should include data collection and integration, risk assessments, monitoring, operational limits, mitigation measures, and record keeping for any underground storage facility threat that could impact public safety, operating personnel, or the environment due to leakage, failure, or abnormal operating conditions whether above ground or underground.

ADB-2016-01

Potential for Damage to Pipeline Facilities Caused by Flooding*, River Scour, and River Channel Migration

ADB 2016-01

Potential for Damage to Pipeline Facilities Caused by Flooding*, River Scour, and River Channel Migration

- Operators should ensure the integrity of pipelines in the event of flooding, river scour, and river channel migration.
- PHMSA has released five Advisory Bulletins on this subject.
- Each of these bulletins followed an event that involved severe flooding that affected pipelines in the areas of rising waters.

***2.4 million gallons spilled since 1993; only 400,000 gallons recovered – Associated Press**

ADB 2016-01

On July 1, 2011, ExxonMobil Pipeline Company experienced a pipeline failure near Laurel, Montana.

- 63,000 gallons of crude oil spilled into the Yellowstone River.
- PHMSA's accident investigation found the rupture was caused by channel migration and river bottom scouring, leaving a large span of the pipeline exposed to prolonged current forces and debris washing downstream in the river. Those external forces damaged the exposed pipeline.

ADB 2016-01

On July 15, 2011, NuStar Pipeline Operating Partnership, L.P. reported a 4,200 gallon (100 barrels) anhydrous ammonia spill in the Missouri River in Nebraska requiring extensive environmental response and causing supply disruption.

- The 6-inch-diameter pipeline was exposed by scouring during extreme flooding.

ADB 2016-01

On January 17, 2015, a breach in the Bridger Pipeline Company's Poplar System resulted in another spill into the Yellowstone River near the town of Glendive, Montana, releasing an estimated 28,434 gallons of crude oil into the river and impacting local water supplies.

- Preliminary information indicates over 100 feet of pipeline was exposed on the river bottom, and a release point was near a girth weld.

ADB 2016-01

On August 13, 2011, Enterprise Products Operating, LLC discovered a release of 28,350 gallons (675 barrels) of natural gasoline in the Missouri River in Iowa.

- The rupture, according to the metallurgical report, was the result of fatigue crack growth driven by vibrations in the pipe from vortex shedding.

ADB 2016-01

Operators are urged to take the following actions:

- Determine the maximum flow or flooding conditions at rivers where pipeline integrity is at risk in the event of flooding (e.g., where scour can occur) and have contingency plans to shut down and isolate those pipelines when those conditions occur.

ADB 2016-01

- Evaluate the accessibility of pipeline facilities and components that may be in jeopardy, such as valve settings, which are needed to isolate water crossings or other sections of pipelines.
- Extend regulator vents and relief stacks above the level of anticipated flooding as appropriate.

ADB 2016-01

- Coordinate with emergency and spill responders on pipeline locations, crossing conditions and the commodities transported. Provide maps and other relevant information to such responders so they can develop appropriate response strategies.
- Coordinate with other pipeline operators in flood areas and establish emergency response centers to act as a liaison for pipeline problems and solutions.

ADB 2016-01

- Deploy personnel so that they will be in position to shut down, isolate, contain, or perform any other emergency action on an affected pipeline.
- Determine if facilities that are normally above ground (e.g., valves, regulators, relief sets, etc.) have become submerged and are in danger of being struck by vessels or debris and, if possible, mark such facilities with U.S. Coast Guard approval and an appropriate buoy.

ADB 2016-01

- Perform frequent patrols, including appropriate overflights, to evaluate right-of-way conditions at water crossings during flooding and after waters subside.
- Report any flooding, either localized or systemic, to integrity staff to determine if pipeline crossings may have been damaged or would be in imminent jeopardy from future flooding.

ADB 2016-01

- Have open communications with local and State officials to address their concerns regarding observed pipeline exposures, localized flooding, ice dams, debris dams and extensive bank erosion that may affect the integrity of pipeline crossings.
- Following floods and when safe river access is first available, determine if flooding has exposed or undermined pipelines because of new river channel profiles. This is best done by a depth of cover survey.

ADB 2016-01

- Ensure that line markers are still in place or are replaced in a timely manner.
- Notify contractors, highway departments and others involved in post-flood restoration activities of the presence of pipelines and the risks posed by reduced cover.

ADB 2016-01

- If a pipeline has suffered damage or is shut-in, the operator should advise the appropriate pipeline safety authority before returning the line to service, increasing its operating pressure, or otherwise changing its operating status.
- Reporting under §§ 191.23 and 195.55 may also be required.

ADB–2015–02

- Potential for damage to pipeline facilities caused by hurricanes
- Operators have a general obligation to identify any conditions that can adversely affect the operation of their pipelines and to take appropriate corrective measures upon discovering such conditions. Specifically, § 192.613 *Continuing Surveillance*.

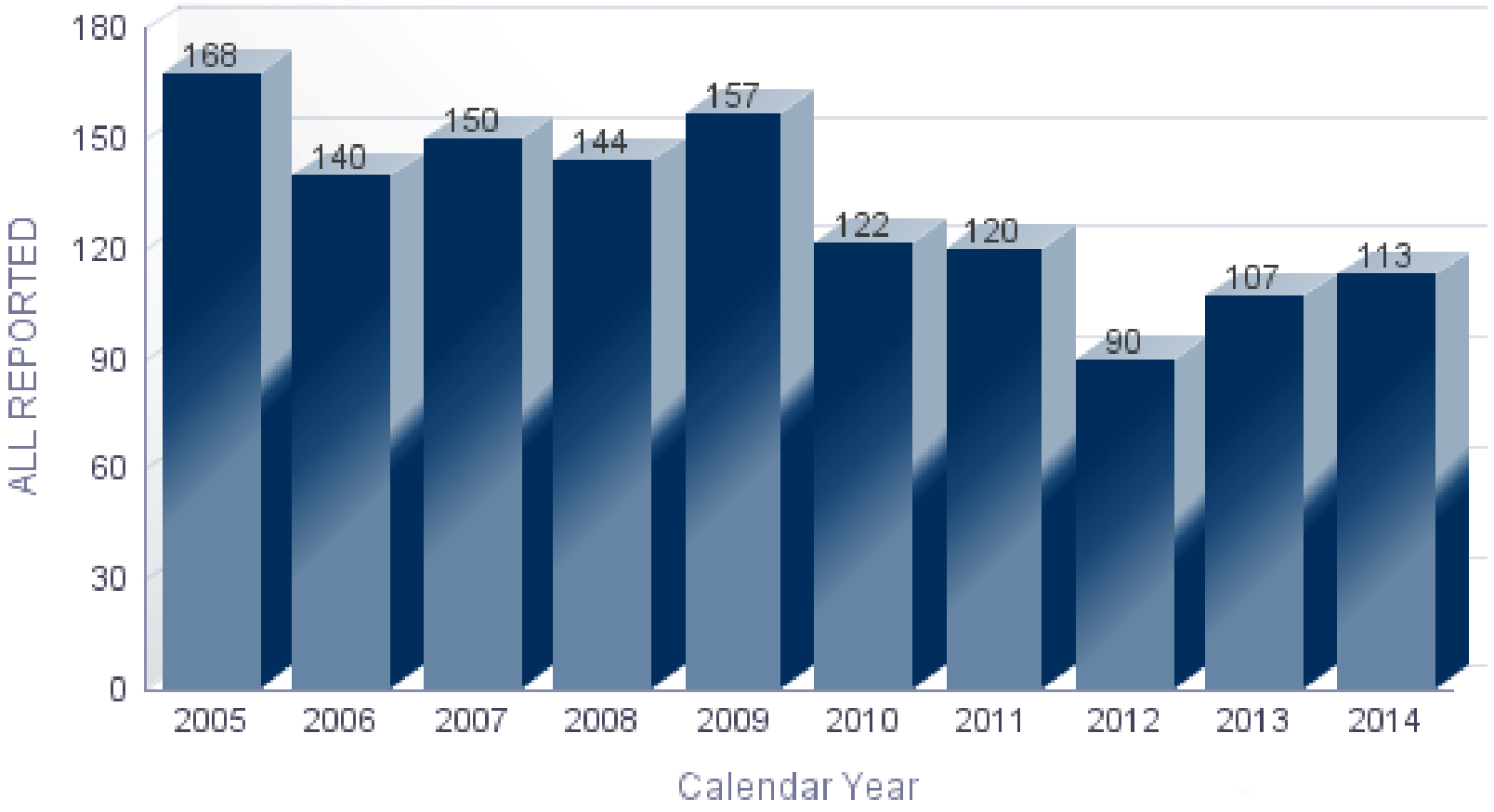
Mechanical ~~Fitting~~ Joint Failure Reporting

- Communication of Performance Data is through the DIMP web page. To view MFFR data, go to:
- http://primis.phmsa.dot.gov/dimp/perfmeasures.htm
- Total Report Submitted Numbers (03/17/2016):
  - MFFRs submitted for 2011 – 8,342
  - MFFRs submitted for 2012 – 7,607
  - MFFRs submitted for 2013 – 9,916
  - MFFRs submitted for 2014 – 11,665
  - MFFRs submitted for 2015 – 12,790
- Data currently submitted for 2015 shows similar trends to previous 4 years of data collection.

MFJFR Data Analysis

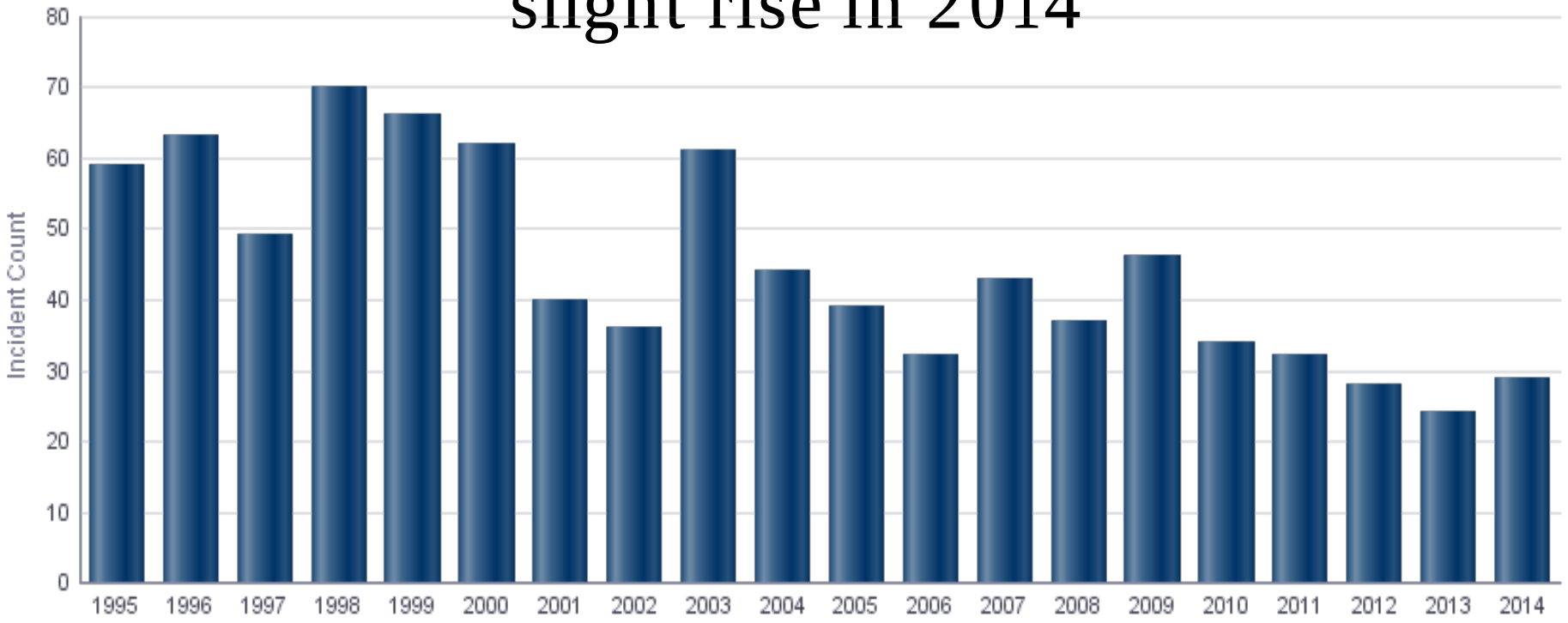
- Mechanical Joint Failures are being identified in many DIMPs as a significant threat requiring risk mitigation measures.
  - 6% of hazardous leaks eliminated/repaired involve a mechanical fitting
- The majority of mechanical joint failures resulting in a hazardous leak involve nut-follower, coupling types.
- Steel fittings are involved the majority of reports, and plastic fittings are second.
- The majority of leaks occur outside, belowground involving service-to-service connections.
- Equipment failure is the leading reported cause of leaks, and Natural forces is second.

Gas Distribution Incidents



Serious Incidents

All System Types show downward trend with slight rise in 2014

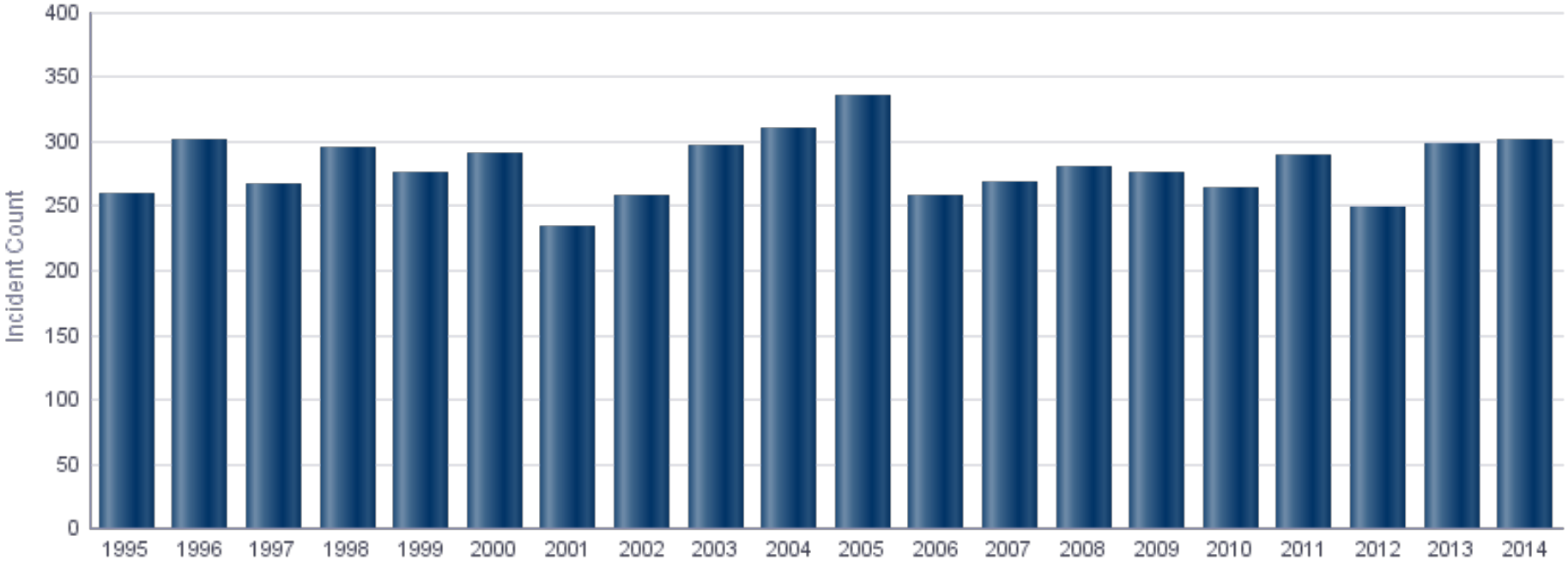


data as-of 2/2/2015

Serious – fatality or injury requiring in-patient hospitalization

Significant Incidents

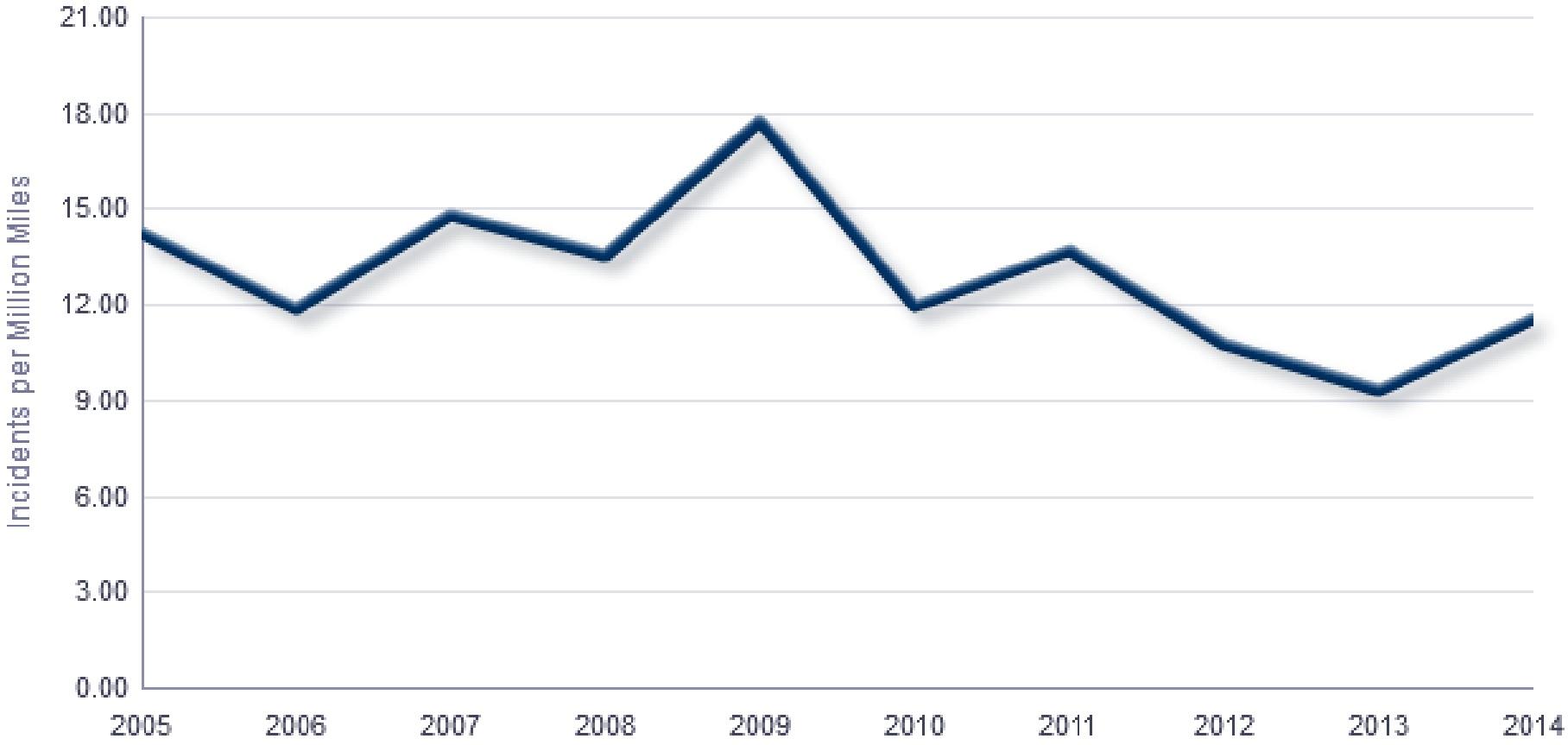
All System Types seems to have plateaued



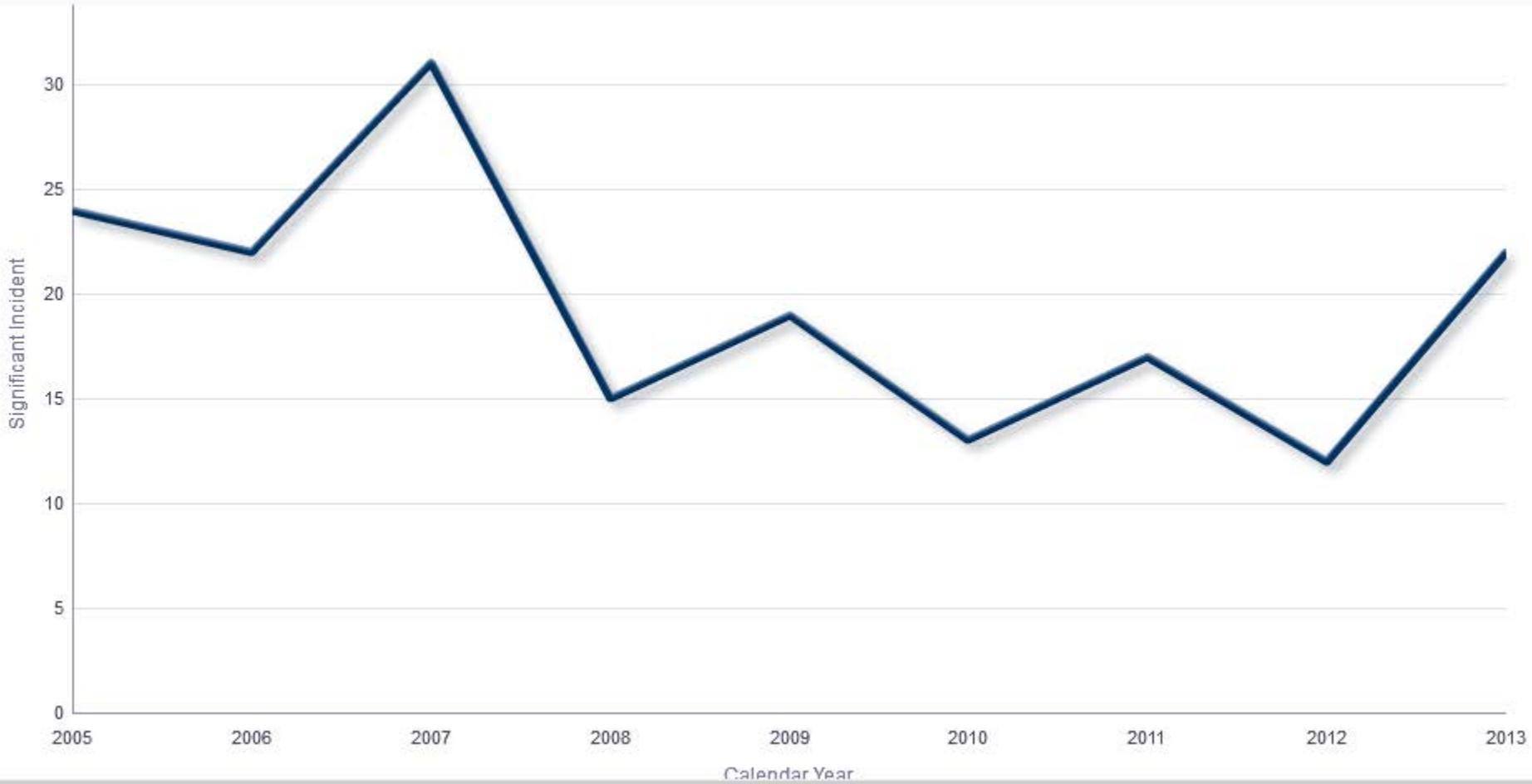
data as-of 2/2/2015

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



PHMSA Form 24

- NAPSR and PHMSA are looking to incorporate field investigation and verification of the Operator's DIMP Implementation into regulatory inspection programs with the new "Records and Field Implementation" Inspection Form
- PHMSA Form 24 is for the evaluation of an operator's implementation of its DIMP through a review of its records and actions performed on pipeline facilities.
- Intended for inspections of Implementation of DIMP after initial DIMP inspections
- The form asks inspectors to review records and perform field observations regarding the implementation of the required DIMP elements.

PHMSA Form 24 Example

PHMSA Form 24 - Gas Distribution System DIMP Implementation Inspection, July 7, 2014, Rev 0

Question Number	Rule §	Description	S/Y	U/N	N/A	N/C
	192.1005	Issues Identified in previous Integrity Management Inspection(s)				
1	* - If not satisfactory, insert appropriate code section(s)	Have all issues raised in previous DIMP inspections been satisfactorily addressed? Provide comments below.	☐	☐	☐	☐
Inspector Comments						
	192.1007(a)	Knowledge of the system				
2	.1007 (a)(3)	Is the operator collecting the missing or incomplete system information and data needed to fill knowledge gaps to assess existing and potential threats?	☐	☐	☐	☐
Inspector Comments						
3	.1007 (a)(3)	Is the operator collecting the missing or incomplete system information and data using the procedures prescribed in its DIMP plan?	☐	☐	☐	☐

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**

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 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/

Any Questions??