DIMP IMPLEMENTATION

National Association of Pipeline Safety Representatives

US DOT PHMSA Office of Pipeline Safety

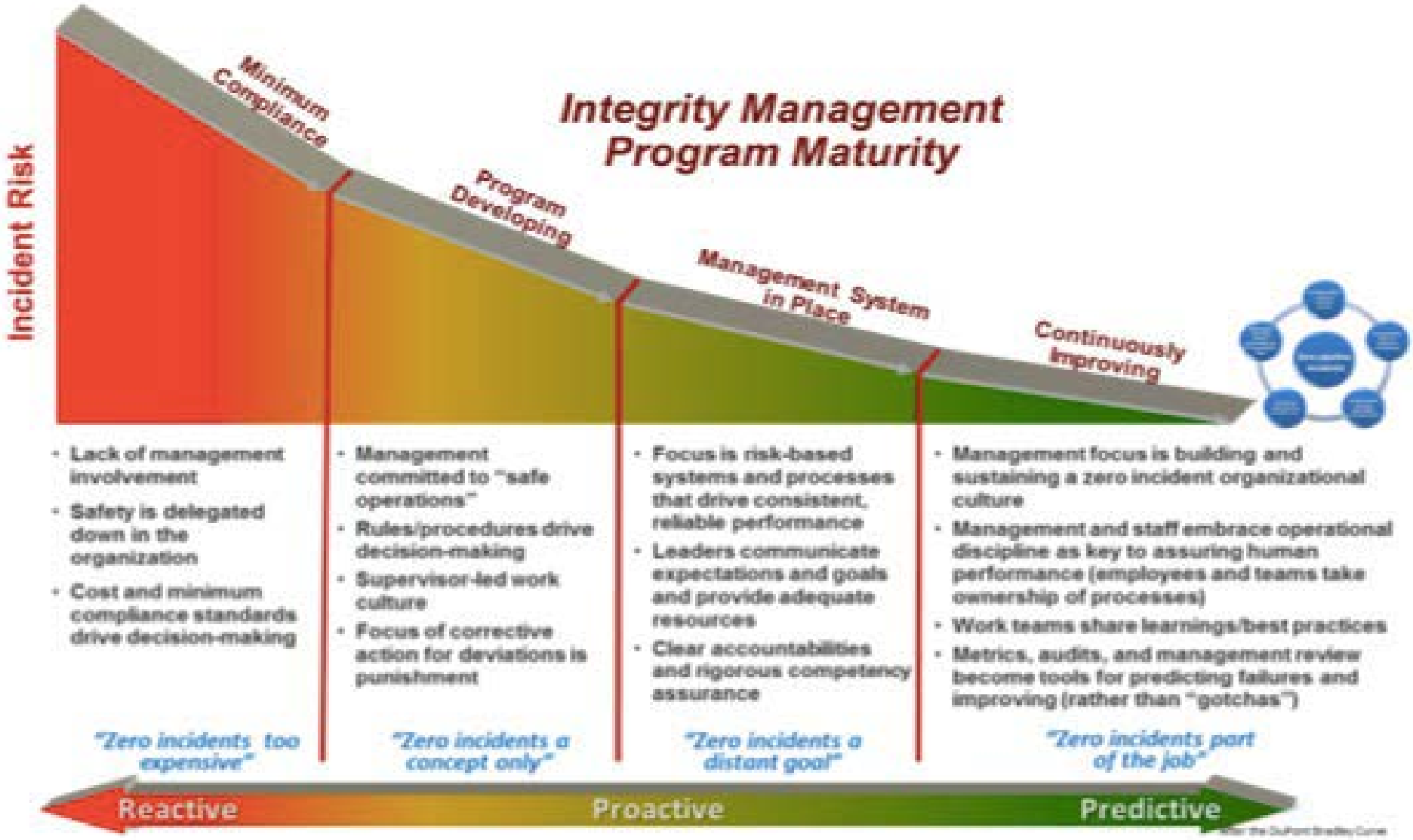
Topics Areas for Discussion

- Safety Culture
- Inspection Results and Findings
- Performance Measures
- Regulatory Update
- DIMP Inspection Forms - New PHMSA Form 24
- DIMP Website and Performance Measures Reporting
- Questions and Answers

Underlying Principles

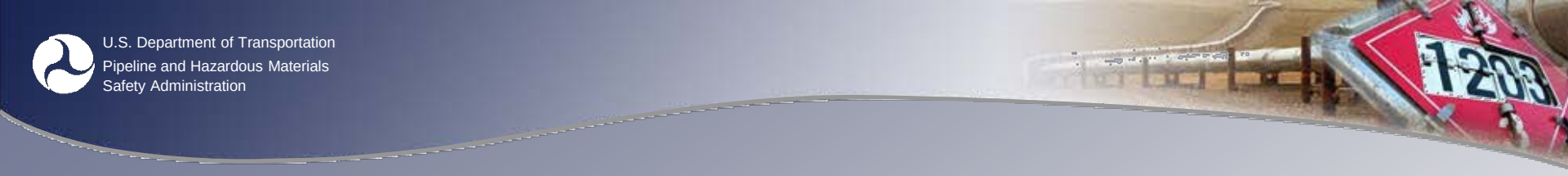
- The Pipeline Operator Alone is Responsible for Safe Operations:
  - It is the responsibility of pipeline operators to understand and manage the risks associated with their pipelines.
- The Regulator Can Influence Operator Performance by establishing minimum safety standards
- Regulators strive to impact operator performance beyond mere compliance with the regulations
- More must be done by both the Operator and Regulator to ensure public safety
- Safety culture is a critical foundation for continually improving industry's performance. All involved must understand and support the IM programs to realize the improved safety and reliability that proactive management systems result in.

Assessing Maturity



Moving from Compliance to Choice

- Our world must move from a "checkbox" mentality to understanding the health of our pipeline systems
- Operators must analyze and understand data and information and promptly acting to reduce risks



NTSB Recommendations

- NTSB Recommendations from Enbridge Marshall, MI (2012) accident included a finding of probable cause: The rupture and prolonged release were made possible by pervasive organizational failures
- Finding No. 28. Pipeline safety would be enhanced if pipeline companies implemented safety management systems
- Recommendation to API: Facilitate the development of a SMS standard specific to the pipeline industry that is similar in scope to API RP 750, Management of Process Hazards.

Safety Management Systems

- SMS has entered the discussion with the development of API RP 1173
- Public Meeting was held July 2, 2014 to preview the content of the current draft of API's RP 1173 and communicate the Path Forward
- This was the 2nd Public Meeting on SMS. 1st Public Meeting on SMS held discussed many of the underlying concepts of SMS
- https://primis.phmsa.dot.gov/meetings

Safety Culture

- Safety Culture is defined by DOT as the shared values, actions, and behaviors that demonstrate a commitment to safety over competing goals and demands. The following are critical elements of a strong safety culture:

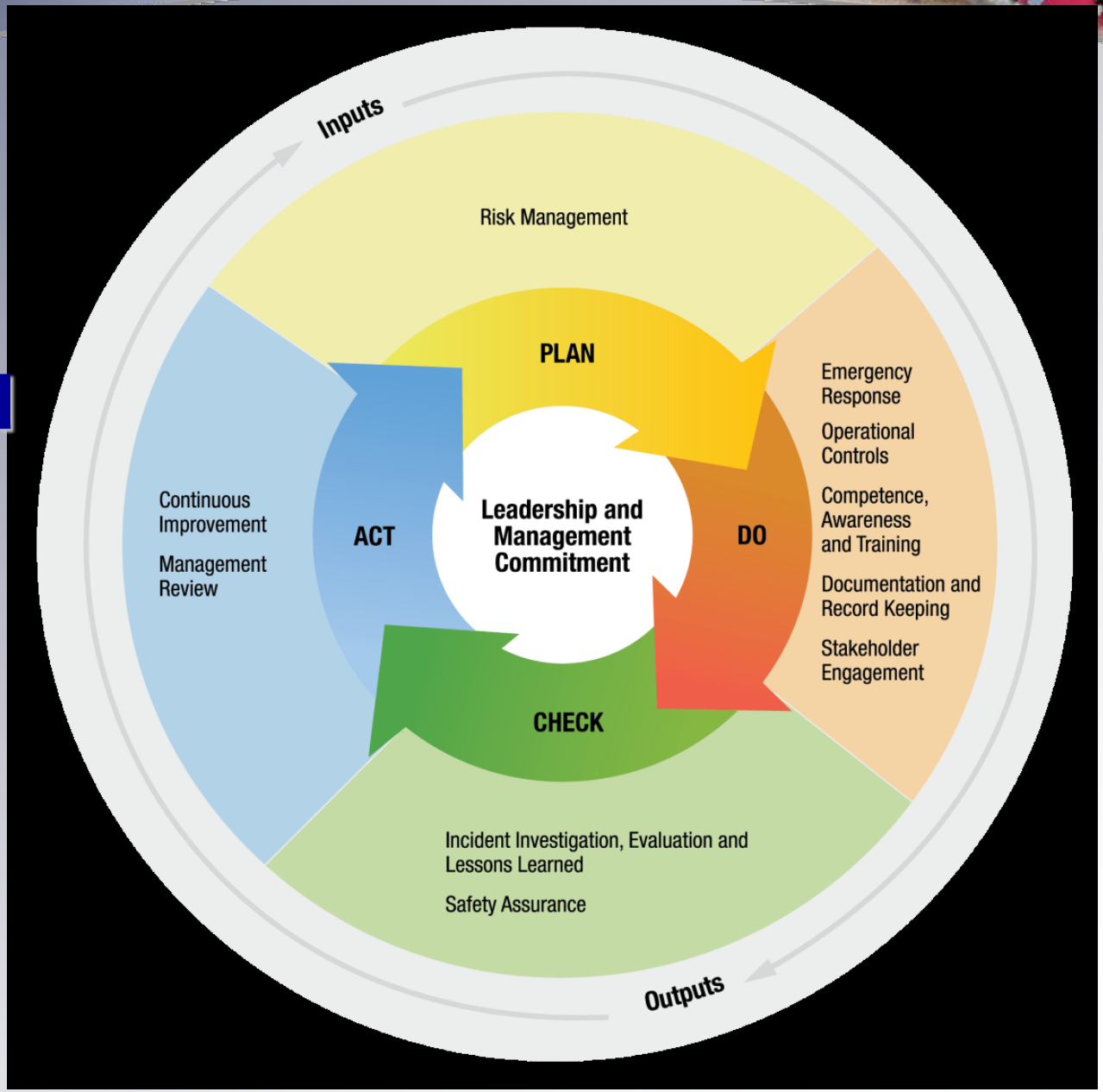
1. Leadership is Clearly Committed to Safety;
2. There is Open and Effective Communication Across the Organization;
3. Employees Feel Personally Responsible for Safety;
4. The Organization Practices Continuous Learning;
5. There is a Safety Conscious Work Environment;
6. Reporting Systems are Clearly Defined and Non-Punitive;
7. Decisions Demonstrate that Safety is Prioritized Over Competing Demands;
8. Mutual Trust is Fostered between Employees and the Organization;
9. The Organization is Fair and Consistent in Responding to Safety Concerns; and
10. Training and Resources are Available to Support Safety.

Safety Management Systems

- API RP 1173 embodies the Best of a Dozen Other Approaches from Other High Hazard Industries
- Based on “Plan – Do - Check – Act” Continuous Improvement Model, but Organized Along More Traditional Lines
- Adds Dimensions Missing from Integrity Management – Safety Culture Elements and Emphasis on the Largely Missing, but Vital Check-Act Elements
- Workgroup and PHMSA Intend to continue to communicate SMS Through Webinars and Workshops

Plan, Do, Check, Act The core of the standard

Continuous Improvement is the Goal of the standard



Gas Transmission ANPRM

M. Quality Management Systems (QMS)

- Quality management includes the activities and processes that an organization uses to achieve quality including formulating policy, setting objectives, planning, quality control, quality assurance, [performance-based assessments], performance monitoring, and quality improvement.
- Should PHMSA establish requirements for QMS?
- Do gas transmission pipeline operators require their construction contractors to maintain and use formal QMS?

DIMP Inspection Results and Findings

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A Snapshot pertinent to SGA's Requested Topics

High Level Observations

- DIMPs need to Mature and be Continuously improved
- The DIMP Rule was designed as a performance based regulation to be flexible and allow operators to implement their DIMP in the most efficient and effective manners to improve pipeline safety.
- Regulators have identified the need/requirement for operators to work with their DIMP on a continuous basis so that programs mature to fit the operator's unique operating environment.
- Findings indicate that operators need to do more work implementing DIMPs to reduce risks.

DIMP Inspections

- Plan development and implementation were required to be complete on August 2, 2011.
- First Round of DIMP Inspections is expected to be completed by the end of 2014.
- For inspections of performance based regulatory programs (Like DIMP), adequate time is required for drill downs of data sets to gather a comprehensive understanding of an operator's system.
- Vacancies created by an aging workforce (turn-over) have created voids in operating knowledge of pipeline systems, and trained personnel have not always been available.

Risk Reduction Measures

- Do Regulators see mitigation requirements for specific risk types becoming more prescriptive as we move forward? If yes, identify those risk types.
- Excavation may be an example of this. You may see damage numbers having the right trend, but to make further progress, you may need to see what causes the "hits".
  - For example, mismarks are caused by bad records, training issues, bad/damaged tracer wires, etc.

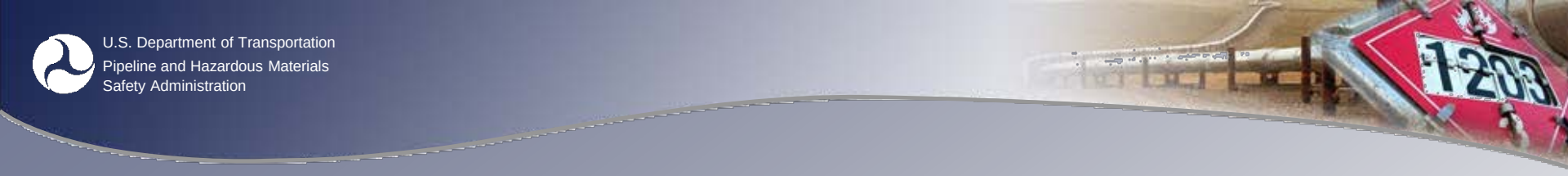
Measure to Address Risks (Threats)

- Table 1 in PHMSA DIMP Inspection Forms 22 & 23 provides a quick overview of risk reduction and monitoring methods

	Primary Threat Category	Threat Subcategory, as appropriate	Measure to Reduce Risk	Performance Measure
1	Corrosion	External Corrosion on Copper Service Lines	Replace approximately 100 copper service lines each calendar year	Track number of leaks caused by external corrosion per 1000 copper service lines annually
2	Excavation Damage	Third Party Damage	Conduct pre-construction meetings or Monitor locate for life of ticket	Track frequency of failures per 1000 excavation tickets annually
3	Equipment Failure	Mechanical Fittings, Couplings or Caps/Seals	Repair or replace problem materials as found	Track frequency of failures by equipment type annually

Performance Measurement

- A DIMP must include procedures for establishing baselines for Performance Measures required in 192.1007(e)
- Operators must develop and monitor performance measures from an established baseline to evaluate the effectiveness of its IM program.
- Each Measure Implemented to Reduce Risk must have a Performance Measure established to monitor its effectiveness
- Operators may identify a single performance measure to evaluate the effectiveness of multiple risk control measures



Report Results

- If a State agency exercises jurisdiction and requires reporting, a procedure must include instruction to send reporting information to the state pipeline safety authority.
- While Performance Measures 192.1007(e)(v) & (vi) are not required to be reported, they must be monitored by the operator and maintained for inspections. Operators are failing to collect and analyze these performance measures that address hazardous leaks eliminated or repaired categorized by material ((e)(v)) and performance measures developed to monitor actions implemented to control identified threats and reduce risks ((e)(vi)).

Regulatory Update

Are there proposed rule changes on the horizon that will change DIMP Regulations?

- Grade 1, 2 & 3 Leaks are all getting attention
- vintage pipe replacement have been highlighted by the DOT Secretary's Call to Action http://opsweb.phmsa.dot.gov/pipeline_replacement
- Risks introduced by improper construction and operation. Contractors are doing almost all construction with little oversight. Issues of today will create the real risk of tomorrow

MFFR Data Analysis

- 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 *(03/31/2014)*:
  - MFFRs submitted in 2011 – 8349
  - MFFRs submitted in 2012 – 7585
  - MFFRs submitted in 2013 – 9240
- Data submitted for 2013 shows similar trends to previous 2 years of data collection.

MFFR Data Analysis

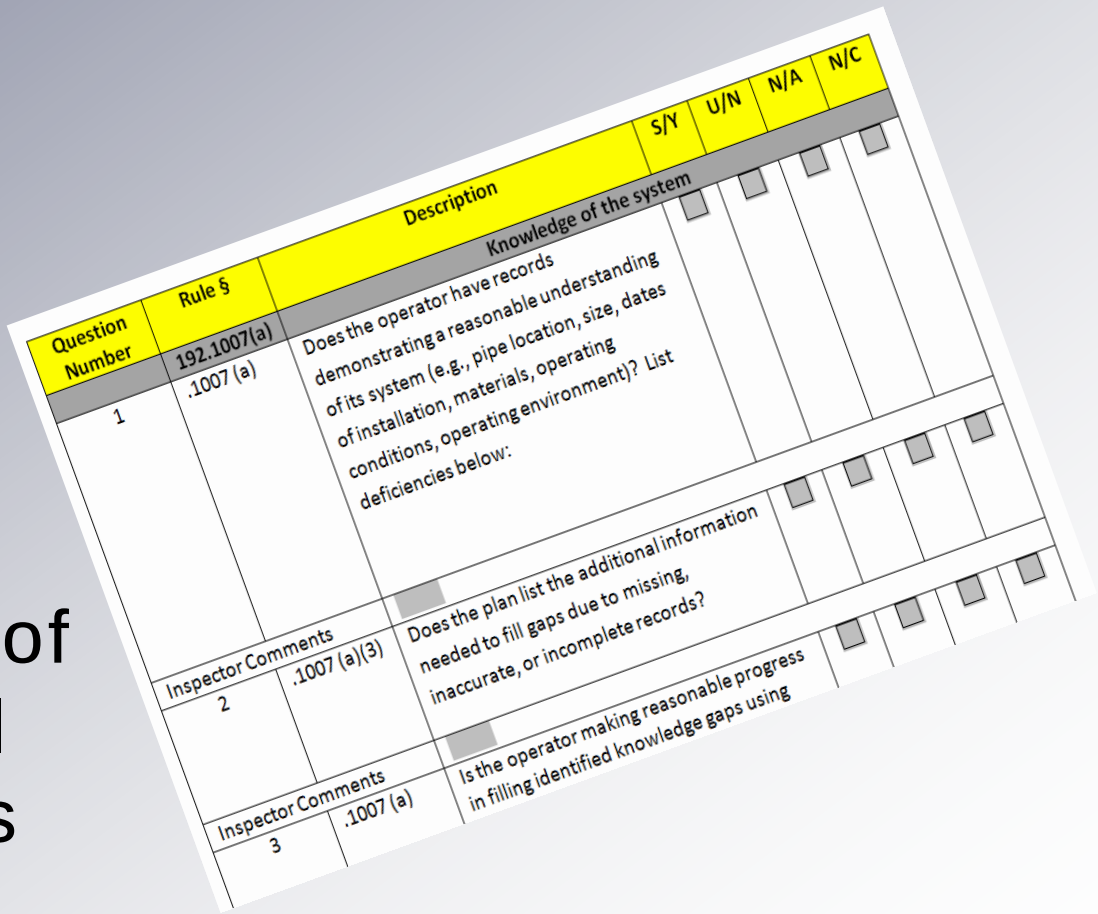
- The majority of mechanical fitting failures resulting in a hazardous leak involve nut-follower, coupling type fittings.
- Valves are involved in 14% of reported failures.
- Equipment failure is the leading reported cause of leaks (41%), and Natural forces is second (17%).
- The majority of leaks occur outside (98%), belowground (87%) involving service-to-service connections (60%).
- Steel fittings (62%) are involved the majority of reports, and plastic fittings are second (26%).

DIMP Inspection Forms

- PHMSA DIMP Inspection Forms for 192.1005 and 192.1015 distribution operators are available at http://primis.phmsa.dot.gov/dimp/resources.htm as well as the PHMSA Forms Library at http://phmsa.dot.gov/pipeline/library/forms
- Revisions were implemented in September, 2011 that made the forms more user friendly for Inspectors.
- Recently, Question 19 on Form 22 has been approved by PHMSA Legal to be regulatory required rather than for information only.

Record and Field Inspection Form

- PHMSA Form 24 has been posted for use
- Intended for inspections of Implementation of DIMP after initial DIMP inspections



Question Number	Rule §	Description	S/Y	U/N	N/A	N/C
		Knowledge of the system				
1	192.1007(a) .1007 (a)	Does the operator have records demonstrating a reasonable understanding of its system (e.g., pipe location, size, dates of installation, materials, operating conditions, operating environment)? List deficiencies below:				
Inspector Comments						
2	.1007 (a)(3)	Does the plan list the additional information needed to fill gaps due to missing, inaccurate, or incomplete records?				
Inspector Comments						
3	.1007 (a)	Is the operator making reasonable progress in filling identified knowledge gaps using				

PHMSA Form 24

- 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 DIMP required elements.

DIMP Enforcement Guidance

- DIMP Enforcement Guidance is posted and publicly available on PHMSA's website with the other Enforcement Guidance documents at http://www.phmsa.dot.gov/foia/e-reading-room
- This posting allows Operators to understand Regulators' expectations with regards to the DIMP Regulation

Questions and Answers

Thank you for participating