

Presentation of API RP 1173: Development Process, Essential Elements and Key Concepts

October 20, 2015 - Pipeline Safety Conference

Virginia Beach, VA

Ron McClain – Kinder Morgan – RP Committee Chair

API RP 1173 Update

- The new ANSI/API Recommended Practice 1173 is reality. First Edition, July 2015
- It is the result of over two years of committee work and stakeholder engagement.
- PHMSA hosted three workshops with heavy attendance during development and publication.
- There were 13 revisions within the committee work and 1400 comments were resolved through two balloting efforts.
- There was unanimous approval at the second ballot.
- NTSB concurred the RP satisfied their recommendations to API.
- The published RP has the potential to impact pipeline safety more than other standards because it sets overarching management processes.

Pipeline Safety Management Systems

ANSI/API RECOMMENDED PRACTICE 1173
FIRST EDITION, JULY 2015



AMERICAN PETROLEUM INSTITUTE



NTSB Recommendations to API

- **Implementation of SMSs in transportation systems by elevating SMSs to its Most Wanted List.**
- **SMSs continuously identify, address, and monitor threats to the safety of company operations by doing the following:**
 - Proactively address safety issues before they become incidents/accidents.
 - Document safety procedures and requiring strict adherence to the procedures by safety personnel.
 - Treat operator errors as system deficiencies and not as reasons to punish and intimidate operators.
 - Require senior company management to commit to operational safety.
 - Identify personnel responsible for safety initiatives and oversight.
 - Implement a nonpunitive method for employees to report safety hazards.
 - Continuously identify and address risks in all safety-critical aspects of operations.
 - Provide safety assurance by regularly evaluating (or auditing) operations to identify and address risks.

The Prize is Improved Safety

- **Pipeline safety stakeholders led by the American Petroleum Institute (API) developed an RP as a comprehensive framework of recommended practices for pipeline safety and integrity procedures across the United States.**
- **Result: New API Recommended Practice 1173 – Pipeline Safety Management System specific to pipeline operators across the United States**
- **Key components of RP 1173:**
 - **How top management develops processes to reveal and mitigate safety threats**
 - **Provide for continuous improvement**
 - **Make compliance and risk reduction routine through intentional actions by top management, management and employees**

SMS Development Committee Members

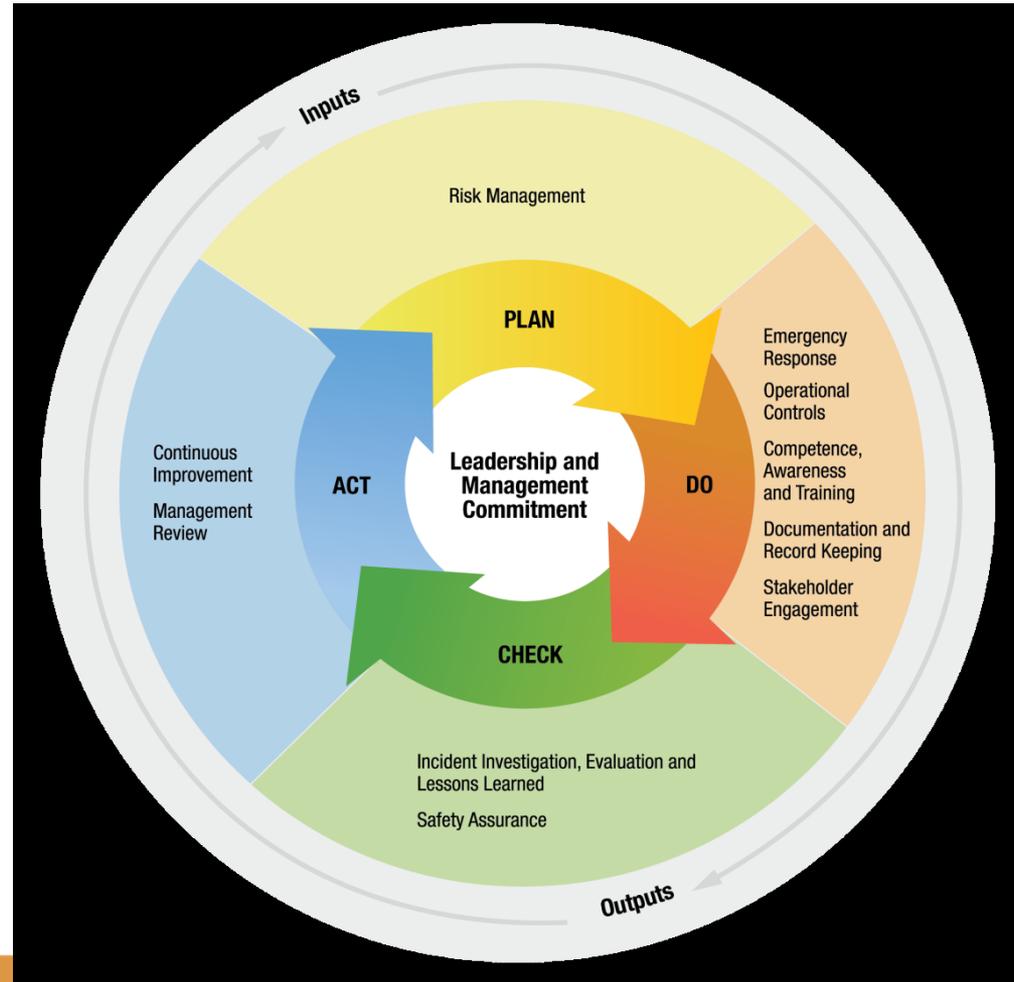
- **Ron McClain, Kinder Morgan , Chair**
- **Mark Hereth, P-PIC, Content Editor**
- **Scott Collier, Buckeye Partners**
- **Tom Jensen , Explorer Pipeline**
- **Paul Eberth, Enbridge Pipelines**
- **Mark Weesner, Exxon Mobil**
- **Brianne Metzger-Doran, Spectra Energy**
- **Tracey Scott, Alliance Pipeline**
- **William Moody, Southwest Gas**
- **Nick Stavropoulos, Pacific Gas and Electric**
- **Steve Prue, Small Gas Distribution**
- **Bill Hoyle, Public – Subject Matter Expert**
- **Stacey Gerard, Public – Subject Matter Expert**
- **Jeff Wiese, PHMSA**
- **Linda Daugherty, PHMSA**
- **Edmund Baniak, API**
- **Robert Miller, AZ Corporation Commission**
- **Massoud Tahamtani, VA State Corporation Commission**
- **Bob Beaton, NTSB (Ex Officio)**
- **John Erickson, APGA**
- **Kate Miller, AGA**
- **Scott Currier, INGAA**
- **Peter Lidiak, API**
- **John Stoodly, AOPL**

Essential Safety Management Systems Elements

- **Leadership and Management Commitment**
- **Stakeholder Engagement**
- **Risk Management**
- **Operational Controls**
- **Incident Investigation, Evaluation, and Lessons Learned**
- **Safety Assurance**
- **Management Review and Continuous Improvement**
- **Emergency Preparedness and Response**
- **Competence, Awareness, and Training**
- **Documentation and Record Keeping**

Plan, Do, Check, and Act - PDCA

- While not specifically required as the only model, the PDCA is one way to pursue continuous improvement.
- Management and Leadership are at the center of this effort, casting vision and adding energy to sustain implementation.



Continuous Improvement and System Maturity

- Think about PSMS implementation as a journey, not a destination.
- Operators will never be ‘finished’ with SMS implementation as continuous improvement will reveal new possibilities.
- While operators should seek to gain conformance to the standard with a sense of urgency, timeframes to reach significant and widespread maturity across all elements are measured in years. As a PSMS matures, it is subject to assessment and continuous improvement.

What is next if you're an operator?

- **The committee's intent was to provide a framework for continuous improvement, scalable for:**
 - Large and Small Operators
 - Operators with highly evolved management systems or those starting from scratch

Beginning implementation steps might consist of:

- 1. Reading the practice several times to gain the overall intent**
- 2. Listing your perception of explicit requirements**
- 3. Gathering your existing procedures and processes, including your MS if you've already started**
- 4. Identification of gaps and prioritized steps to close the gap**
- 5. Repeat . . . PDCA – Watch for assured results**

What is next for the industry?

- **Industry Trade Associations will assist pipeline operators with implementation and assist PHMSA with measurement of RP acceptance. Their first steps are to educate, encourage and provide tools to help operators.**
- **At AOPL, the organization I work with, one of seven strategic initiatives is to promote implementation and adoption by its members.**

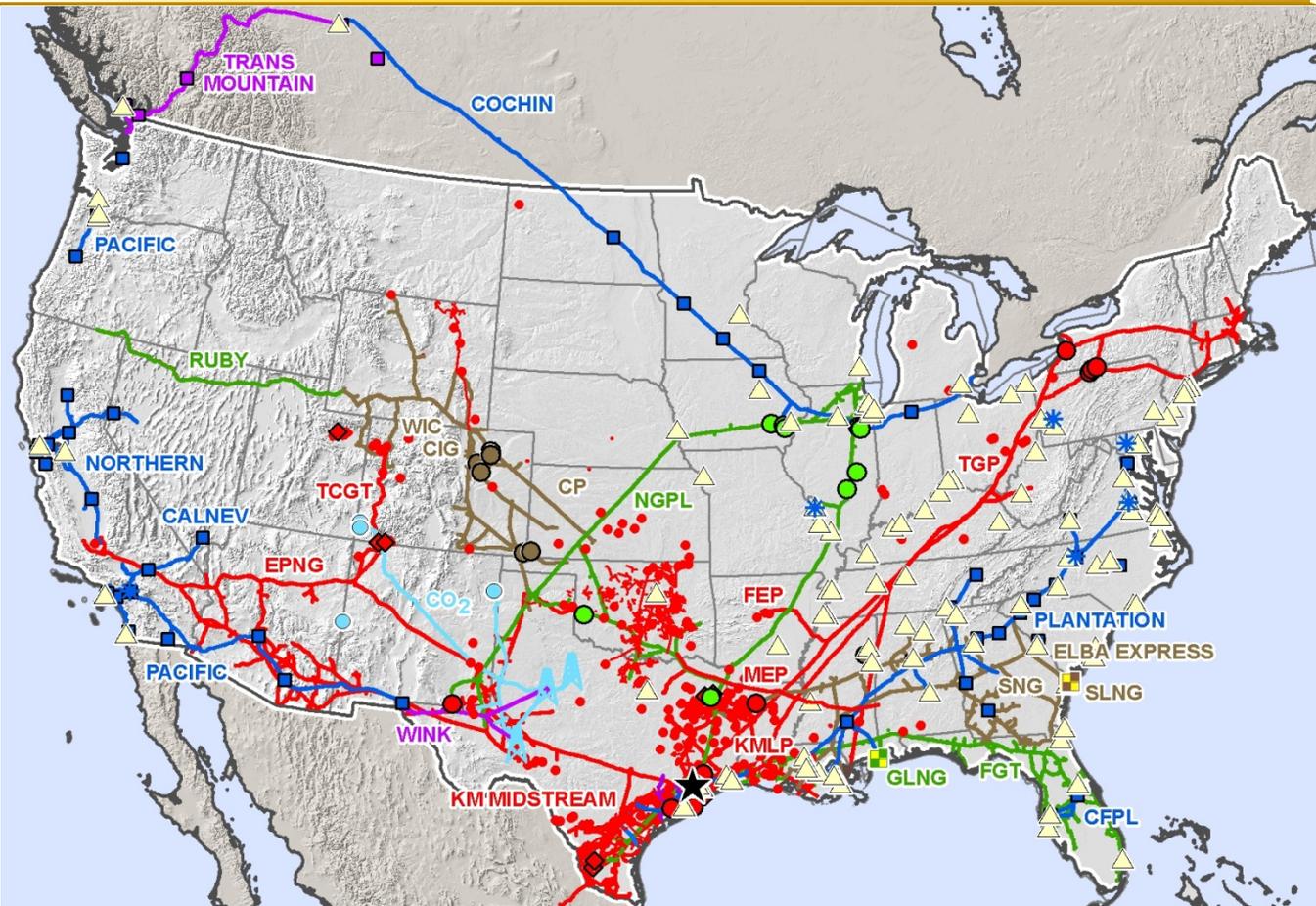
Association for Oil Pipelines - Strategic Goal 3 (2015) Expand Safety Culture and Management Practices through strategic initiatives.

- 1. Implement NEW API Recommended Practice on PSMS**
- 2. Foster Pipeline Safety Culture with an Industry-Wide Sharing, Learning and Improvement Program**
- 3. Develop an Industry-Wide Construction Quality Management System**

No operator left behind is the goal.

Kinder Morgan – Footprint

- 3rd largest energy company in North America with combined enterprise value of approximately \$115 billion ^(a)
- Largest natural gas network in U.S.
 - Own an interest in / operate almost 70,000 miles of natural gas pipeline
 - Connected to every important U.S. natural gas resource play, including: Eagle Ford, Marcellus, Utica, Uinta, Haynesville, Fayetteville and Barnett
- Largest independent transporter of petroleum products in U.S.
 - Transport ~1.9 MMBbl/d ^(b)
- Largest transporter of CO₂ in U.S.
 - Transport ~1.3 Bcf/d of CO₂ ^(b)
- Largest independent terminal operator in U.S.
 - Own an interest in or operate ~180 liquids / dry bulk terminals
 - ~112 MMBbls domestic liquids capacity
 - Handle ~106 MMtons of dry bulk products ^(b)
- Only Oilsands pipe serving West Coast
 - TMPL transports ~300 MBbl/d to Vancouver / Washington State; expansion under way increasing capacity to 890 MBbl/d



KMP GAS PIPELINES	EPB GAS PIPELINES	KMP TERMINALS	KMP CO2 PIPELINES
KMP GAS STORAGE	EPB GAS STORAGE	KMP PRODUCTS PIPELINES	KMP CO2 SOURCE FIELDS
KMP GAS PROCESSING	EPB LNG TERMINALS	KMP PRODUCTS PIPELINES TERMINALS	KMP CO2 OIL FIELDS
KMP GAS TREATERS	KMI GAS PIPELINES	KMP TRANSMIX FACILITIES	KM HEADQUARTERS
	KMI GAS STORAGE	KMP PETROLEUM PIPELINES	
	KMI LNG TERMINALS	KMP PETROLEUM PIPELINES TERMINALS	

Kinder Morgan's Experience with PSMS - Some history

- 2003-2005 Well Intentioned Management Effort
- 2005 Crisis driven management commitment
 - Better Integrity Management
 - Better Damage Prevention
 - Metrics to Gauge Improvement
- 2007 Improvements are clear but ...
 - What are the next steps?
 - Additional Damage Prevention Improvement
 - Written Procedures to Focus on the Important
 - Kinder Morgan OMS Genesis
 - Systems to Schedule and Document All Steps
- Annually thereafter, Continuous Improvement in the OMS and Associated Procedures
- 2015 Gap Analysis OMS to RP 1173

What types of things does the OMS require?

- A rhythm to the business
 - Weekly, monthly, quarterly and annual process
 - Examples of each include:
 - Weekly Management Meetings
 - Monthly Segment Reviews of Goals and Incidents
 - Quarterly Business Review
 - Annual Risk Reviews and Budget Development
 - Constant emphasis to ensure the urgency of each day's email so that problems do not overwhelm the really important processes for risk reduction and continuous improvement. If tasks are not done, all items escalate to the Office of The Chairman.

Since RP 1173 was published ...

- A team reviewed the RP's requirements, which consisted of a list of requirements that constitute conformance to the RP.
- Our OMS was reviewed to ensure each of the identified requirements were clearly reflected in our document and that each one was documented.
- From our assessment, there were 95 explicit RP requirements.
 - We had most of these but 6 were completely missing.
 - Examples include external stakeholder communications and the review of external incidents.
 - We're currently struggling with the requirement for a Maturity Model, but gaining ground.

In conclusion, the RP offers a huge prize of improved safety

Oil Pipelines and their efforts are well underway:

AOPL Strategic Initiative

INGAA and AGA Efforts

API – Leadership for all trade organizations

KM is pretty far down the road for an SMS but we are not satisfied with our current state. We absolutely believe we have benefitted greatly from our journey thus far.

Success is fragile unless you constantly add energy throughout the organization.