



# Pipeline Safety Management System

Joint Meeting of the  
Gas and Liquid Pipeline Advisory Committees  
October 20, 2021



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

PHMSA: Your Safety is Our Mission



# Pipeline Safety Management System

- NTSB found that implementation of a PSMS would enhance safety performance of pipelines.
- API issued RP 1173 in 2015



# PSMS

- SMS is the key to closing the safety gaps that cause incidents.
- Minimum regulations alone will not get us there.
- Implementation of a PSMS underpinned by a culture of safety is needed to get us to our goal of zero incidents.



# Current Expectations

- **PHMSA's Expectation:** Adoption of PSMS by the pipeline industry.
- **Section 205 of PIPES Act:** Mandates PHMSA submit a report to Congress on distribution operators' implementation of PSMS .



# Report by December 2023

- The number of natural gas distribution operators who have implemented a PSMS in accordance with RP1173.
- The progress made by operators who have implemented or are in the process of implementing a PSMS.
- The feasibility of an operator implementing a PSMS based on the size of the operator.



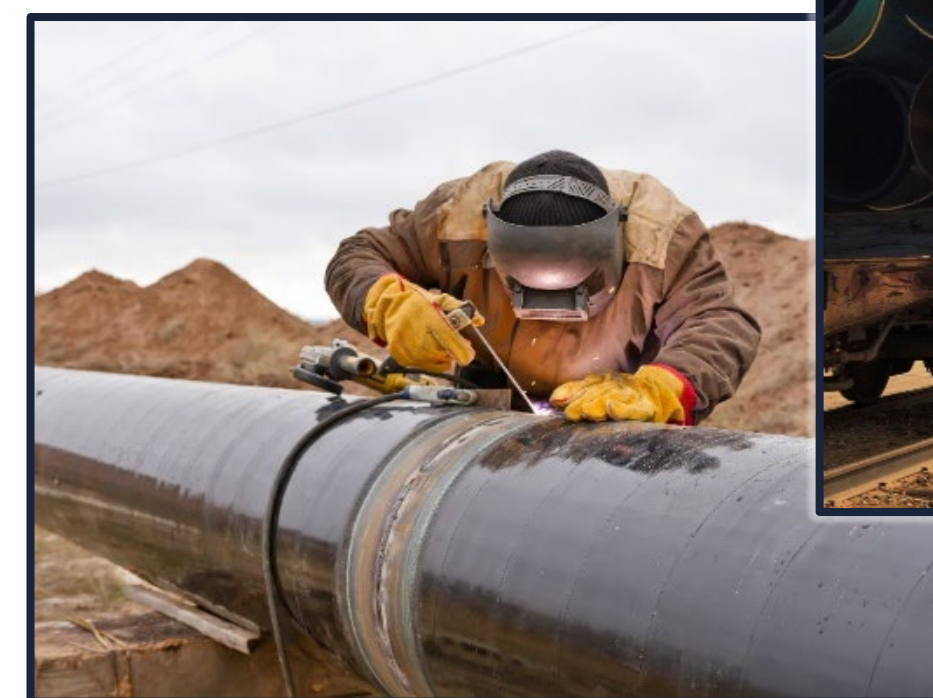
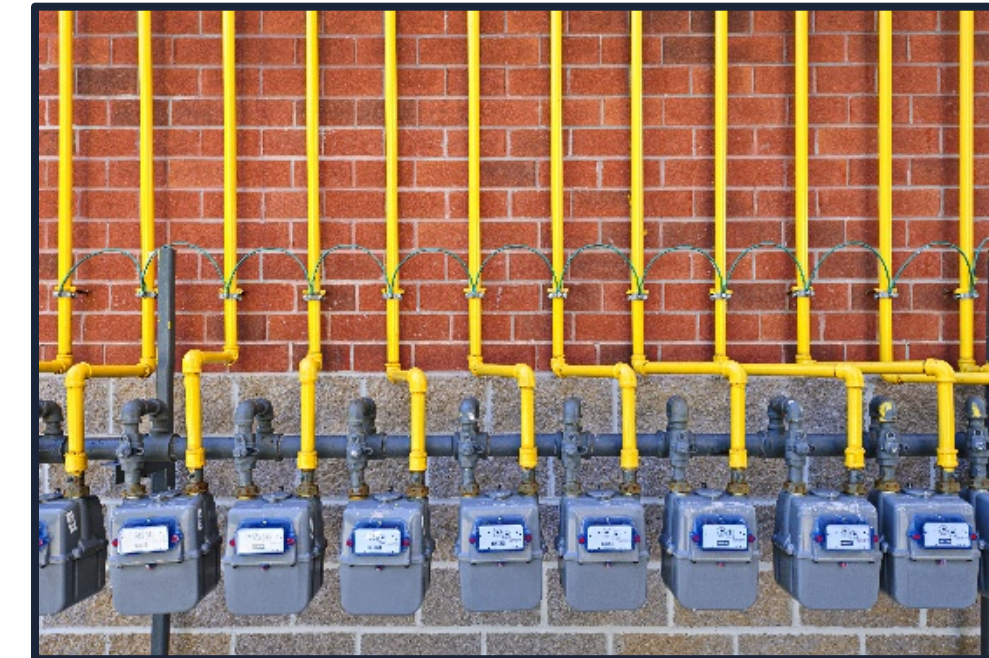
# PSMS

- Secretary shall provide guidance or recommendations that would further the adoption of PSMS.
- Secretary and states shall promote and assess PSMS frameworks developed by operators.



# Where We Are Going...

Implementation of PSMS with an emphasis on a strong Safety Culture.



# Actions We are Taking

- Promotion of SMS in the Regulated Industries
- SMS foundational training
- SMS Policy – under development
- PHMSA Plus – Our own SMS program
- Identification of Key Performance Indicators (underway)





# Awareness / Training

## PHMSA PLUS SAFETY MANAGEMENT SYSTEM (SMS) AWARENESS TRAINING

A structured approach to organizational management that **prioritizes safety** in its programs, policies, and procedures.



### SAFETY PROMOTION

an organization's commitment to developing a safety culture that prioritizes awareness and competency training.



### SAFETY POLICY

provides comprehensive guidance and standards that help define an organization's approach to safety.



### RISK MANAGEMENT

an organization's ability to manage risk as well as recognize the level of risk posed by its operations.



### SAFETY ASSURANCE

ensures that risk control strategies are implemented, appropriate, effective, and sufficient.

## HELP FULFILL PHMSA'S MISSION, MOVING TOWARDS ITS GOAL OF ZERO INCIDENTS

### CONSIDER...

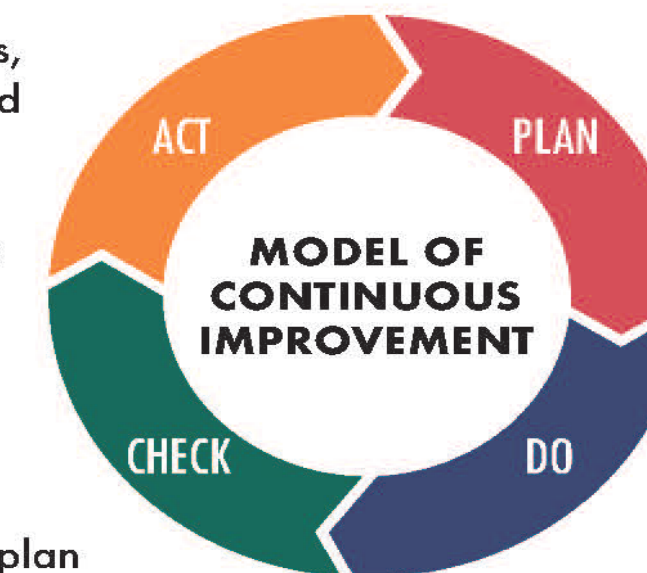
- ✓ How do I improve processes for delivering a core function of my job?
- ✓ How can I emphasize the importance of safety to my teammates?
- ✓ What are some things I can do when I recognize a safety or efficiency issue?

**PLAN:** Develop plans, processes, and practices

**DO:** Execute plans

**CHECK:** Evaluate performance

**ACT:** Implement improvement plan



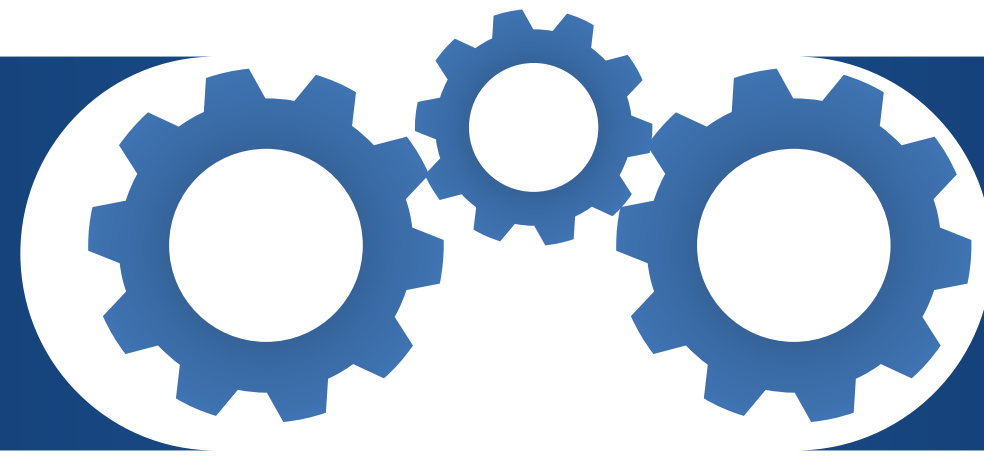
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# PHMSA PLUS

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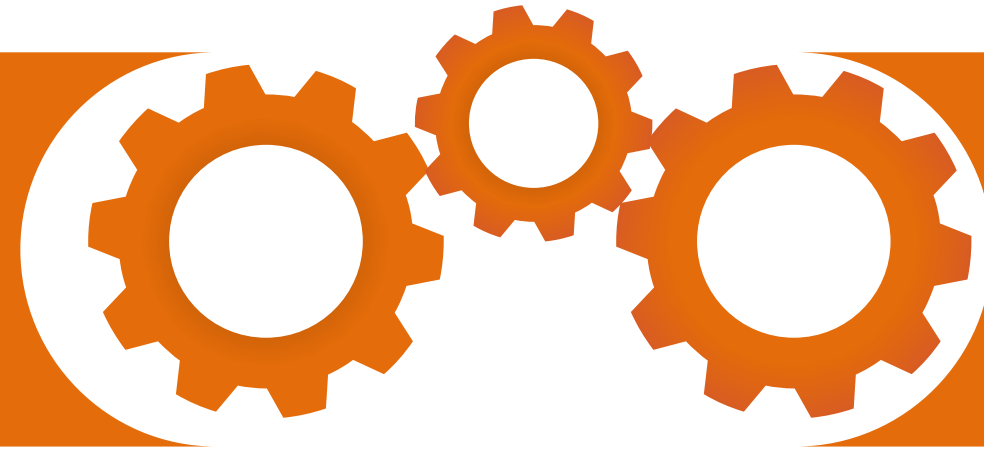
Perform at a high standard



Performing

L

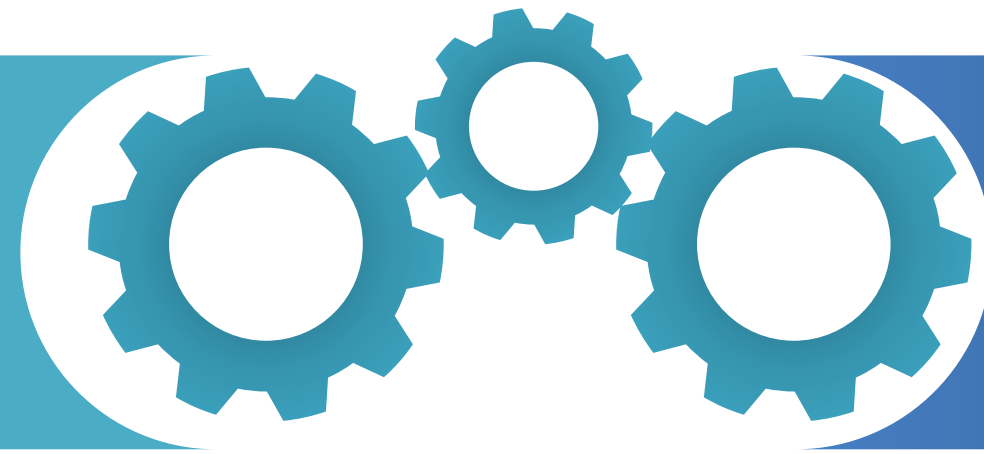
Lead by example



Leading

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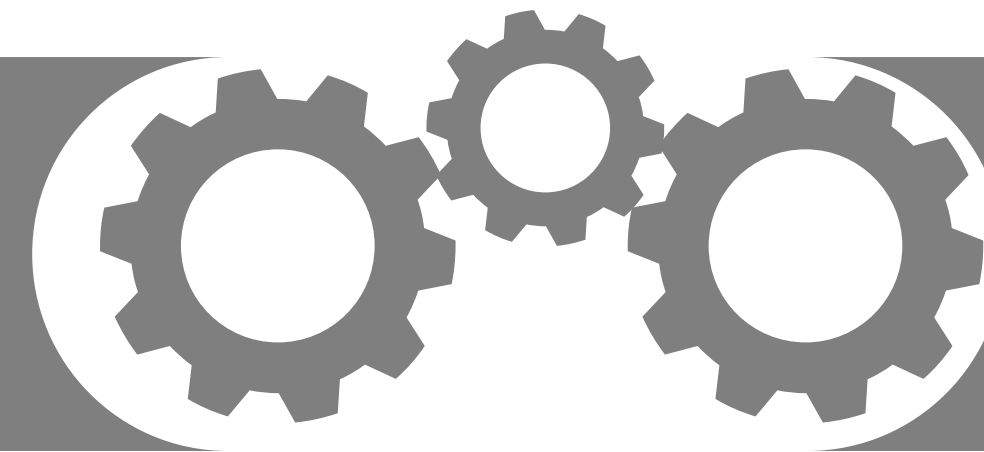
Unify all areas of PHMSA



Unifying

S

Safety is our top priority



Safety



# PHMSA PLUS

## Management System Elements



# P D C A



# LPAC/GPAC Update on Pipeline SMS

John Hill, Black Hills Energy & Industry Team Chair

Cindy Graham, Enbridge Inc. & Vice Chair



**Pipeline SMS**



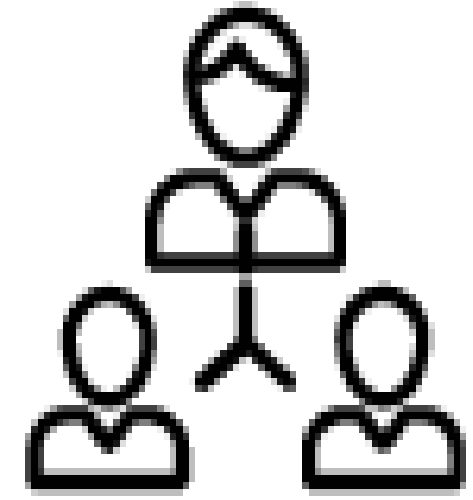
# 2021 Pipeline SMS Industry Team



- Serves to enhance safe pipeline operations by supporting operators' adoption, implementation, and conformance to API RP 1173 since 2015;
- Approximately 30 members, representing gathering, transmission, distribution, nine trade associations, and the contractor community;
- Four strategic focus areas for 2021: industry participation, external engagement, operator journeys, and governance;
- Supporting operator journeys with 56% of all pipeline industry mileage responding to 2020 Annual Survey and showing progress in voluntary implementation.



# COVID-19 Impact



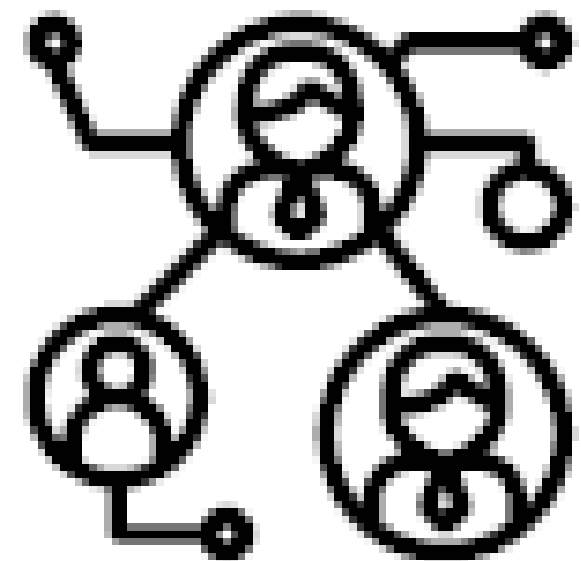
## LEADERSHIP AND MANAGEMENT COMMITMENT

Leadership and senior management demonstrated their commitment to safety during COVID-19 by activating Incident Command Structures, serving on crisis management teams, and frequently communicating with employees to reinforce safety culture and support business continuity.



## OPERATIONAL CONTROLS

Using PSMS, pipeline operators developed COVID-19 related procedures to ensure that employees, including critical control room personnel, have the planning, resources, and technology needed to perform their duties. This includes utilizing backup control locations, alternating between locations, deep-cleaning procedures, and following management of change processes to ensure safe operations.



## STAKEHOLDER ENGAGEMENT

Pipeline operators maintained frequent and proactive communication with the public on their commitment to the safe delivery of energy, as well as with employees, contractors, federal and state regulators, and emergency responders. During COVID, operators rolled out technology to enhance socially-distanced collaboration between internal and external stakeholders.



## EMERGENCY PREPAREDNESS & RESPONSE

Pipeline operators had to quickly adapt traditional Emergency Response Plans and contingency guidelines to include the latest COVID-19 protocols. Additionally, companies stood up Incident or Unified Command Systems to appropriately manage risk, allocate resources, and operate safely during pandemic response.

# 2020 Survey Results



- “Check” is a vital component of the Pipeline SMS Plan-Do-Check-Act process. Each year the pipeline industry checks its progress through an annual survey.
- Pipeline operators representing more than half the pipeline industry mileage responded to the 2020 survey, showing significant implementation progress despite COVID-19.
- In 2020, operators responded that the most challenging elements to implement were: 1) Operational Controls, 2) Documentation & Record Keeping, 3) Risk Management, 4) Stakeholder Engagement, & 5) Management Review.

**+26%**

Conducted Gap Assessments

**+24%**

Developed Closure Plans to Address Recommendations

**+22%**

Conducted Safety Culture Surveys

**+21%**

Conducted Management Reviews

**+14%**

Participated in Sharing Events

**+9%**

Expressed New Management Commitment



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# Barriers to Implementation

As identified in the 2020 survey, some of the barriers to Pipeline SMS implementation, including staff and resources constraints, were:

Include some additional tools that could help small operators like **examples of management reviews, KPI's, etc**

External Industry **lessons learned and sharing platform** would be helpful.

The Industry Team has and could continue to provide suggestions and **support for smaller departments**, highlighting the pitfalls that could be avoided with more experience.

Top leadership does not take an active role in communicating objectives and expectations of the PSMS.

An executive session for senior leaders to understand **the business value of implementing a SMS**, transitioning into risk-based decision making.

We had a **retirement of an individual** that was in charge of the PSMS program. There was little knowledge transfer, and we are going through a period of transition and learning with a new group.

We need to investigate more into what 1173 is and how we can **incorporate it into our pipeline safety.**

Projects/papers on **implementing PSMS with contractors**

**Absence of performance metrics** prevents us from moving forward.

Understanding the **requirements of each element.** Continued webinars for each element.

# 2020 & 2021 Industry Highlights



## Operator Support:

- Hosted virtual workshop series in October 2020 averaging over 100 attendees per session and day-long workshop on October 19, 2021, with over 100 attendees;
- Conducted first liquid pipeline safety culture survey, with each question mapping back to Pipeline SMS Program Elements;
- Initiated AGA Virtual Assessment Pilot Program focused on Elements 5 & 9 to provide recommendations and help operators close identified gaps.
- Supported API Pipeline SMS Third-Party Assessment Program conducting six to eight assessments by the end of 2021.

## Industry Participation:

- Fielded 2020 Annual Survey showing more than half of all pipeline mileage is committed to implementation and highlighting barriers to entry and training needs for 2021. 2021 survey is currently being fielded;
- Held APGA PSMS Virtual Workshop Series and incorporated a commitment to SMS and evidence of progress in association's System Operational Achievement Recognition (SOAR) program;
- Developed AGA PSMS Executive Steering Committee, Safety Committee, and Operational Risk Data Committee to increase member implementation and determine trends for industry action.

## External Engagement:

- Regular engagement with federal and state regulators, including PHMSA, NTSB, NAPSR, and NARUC, as well as pipeline public safety advocates such as PST and PSC on 2020 Annual Report and implementation progress;
- Conducted sharing and best practice exchange with state and regional trades as well as damage prevention advocates and contractor representatives.



# API RP 1173 Path Forward



## Under API / ANSI requirements API RP 1173 is due for a “standards action” by July 2022

- All standards must be extended, revised, reaffirmed within 5-years of last action (RP 1173 published in July 2015)



- API published RP 1173 in July 2015, after more than one year in development

- Under API/ANSI requirements, RP 1173 was due for ‘standards action’ by July 2020
- API Committee on Pipeline Standards (COPS) granted two-year extension to July 2022

- Reports to Industry Team SMS Steering Committee
- Identifies and collects proposed revisions to the first edition
- Formed in 2021 and met twice to date

- Develop and implement voting group to vote on proposed changes from Policy Group
- Must be OPEN and BALANCED

- The Voting Group will determine the next standards action based on the scope of proposed revisions for RP 1173 in 2022, including a five-year reaffirmation or revision



# Safety Culture



“An effective Pipeline SMS cannot exist without a positive safety culture” – *API RP 1173*

- Safety culture can predict accident/incident rates and show how effective your SMS is;
- Safety culture facilitates SMS implementation by providing a layered approach to pipeline safety to prevent rare, complex-cause incidents beyond one-size-fits-all regulatory compliance programs;
- Last fall, eight liquid pipeline operators and API/AOPL members conducted their first safety culture survey, surveying nearly 7,500 employees and leveraging INGAA/CEPA historical surveys; all survey questions mapped back to at least one SMS Program Element to help operators identify gaps;
- Operators also participated in a virtual safety culture workshop last November to review survey results and exchange best practices for action planning and gap closures;
- API/AOPL members plan to join with US & Canadian transmission operators during their next triennial safety culture survey in 2023.



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# 2021 Strategic Priorities



- Provide Operator Support:
  - Host fall workshop series;
  - Develop contractor management tool;
  - Establish best practice repository to facilitate industry learnings.
- Increase Industry Participation:
  - Utilize 2020 Survey to drive educational opportunities;
  - Develop and execute strategy to increase survey participation;
  - Support regional and national trade efforts.
- Provide External Engagement:
  - Publish 2021 Annual Report and engage external stakeholders;
  - Encourage those beginning the journey.
- Provide Governance & Oversight:
  - Support API RP 1173 revision process through strategic input;
  - Develop and maintain effective metrics for measuring industry implementation support.



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# THANK YOU!

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