

PIPELINE SAFETY MANAGEMENT SYSTEMS

— | Pipeline SMS
2021 Annual Report



Pipeline SMS

www.PipelineSMS.org

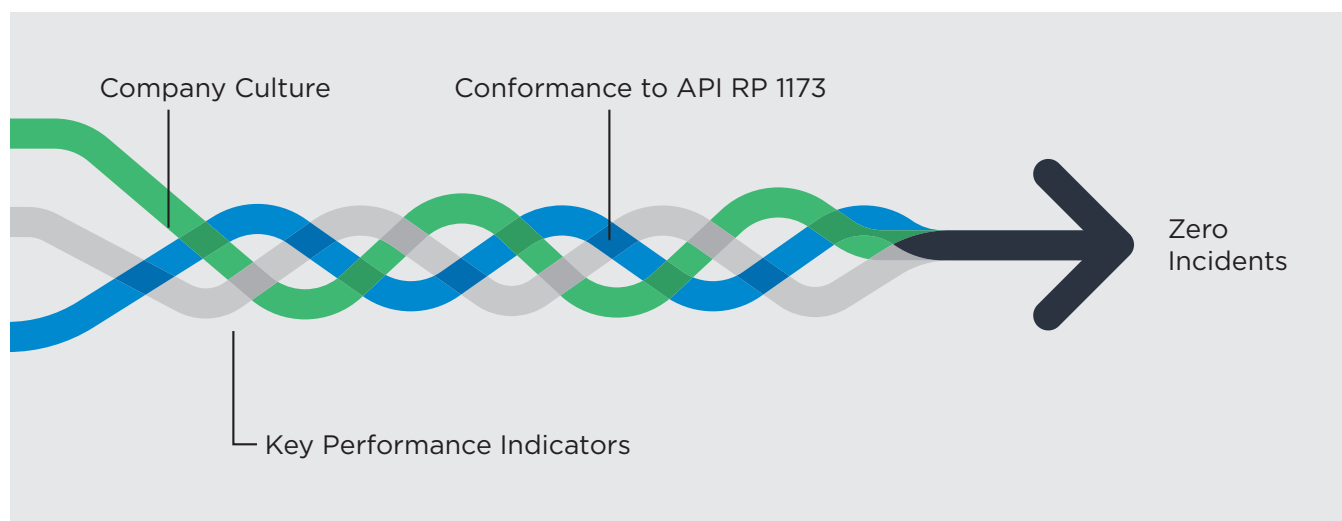
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PIPELINE SMS: ONE INDUSTRY, ONE GOAL

After the publication of API Recommended Practice (RP) 1173, *Pipeline Safety Management Systems (Pipeline SMS)*, in 2015, the pipeline industry began efforts to promote commitment and implementation of the RP. This work included developing key performance indicators to track progress, increasing conformance to the RP in implementation and improving company culture, all facilitating operator implementation journeys.

Since 2015, the Pipeline SMS Industry Team has supported expanded implementation beyond liquid operators to include gas distribution, transmission and gathering operators, as well as the contractor community, all in the shared goal of operating with zero incidents.





JOHN HILL

Vice President of Natural Gas System Safety,
Black Hills Energy

Outgoing Chair, Pipeline SMS Industry Team

LETTER FROM THE OUTGOING TEAM CHAIR

The days go by slowly, but the years go by fast! I have always been intrigued by this saying as time is both constant and consistent. But here we are again, another year has gone by so quickly!

A year ago, we were talking about how well the Pipeline SMS framework helped us manage during a pandemic and now we are looking beyond in our quest to continue our safety journey. I am so grateful for this past year to work alongside so many dedicated people, focused on protecting our coworkers, customers and communities. The Industry Team is passionate about this mission and works above and beyond their “normal” responsibilities to advance pipeline safety.

This past year, we continued to expand the dialogue with stakeholders and provided support for all operators on this journey. We see the convergence of personal and pipeline safety and an overall improvement in safety culture – the best predictor of safety outcomes.

A special thanks goes to Cindy Graham for her support as Vice-Chair this past year, and her leadership as Chair in 2022. It has truly been an honor to serve with this team and I look forward to the journey ahead.



CINDY GRAHAM

Director of Safety & Reliability Governance
Enbridge Inc.

Incoming Chair, Pipeline SMS Industry Team

LETTER FROM THE INCOMING TEAM CHAIR

I am proud and excited to be the incoming Pipeline SMS Industry Team Chair and fortunate to be able to leverage the leadership of those who have come before in improving pipeline safety through Pipeline SMS. I want to recognize John Hill for his vision, passion and commitment. I look forward to my opportunity to lead the SMS Industry Team.

Six years after the initial publication of the recommended practice, we continue to expand our scope and increase our effectiveness. The Team's 2022 theme is supporting implementation of Pipeline SMS among smaller operators. Through program element guidance, segment-specific key performance indicators and contractor integration frameworks, the Team will facilitate smaller operators' SMS implementation and advancement.

Over the past five years, the liquids pipeline industry has witnessed the impact of SMS implementation, driving reductions in both total incidents and incidents impacting people and the environment. At the same time, the industry has increased barrels delivered and pipeline mileage. Additionally, the entire pipeline industry has benefited from SMS implementation through positive impacts during the COVID pandemic and the value added through improved Risk Management, Leadership Commitment and Stakeholder Engagement, to highlight just a few areas.

But there is more work to be done. The Industry Team will help operators who have not yet implemented SMS, as well as those who want to advance their SMS maturity. Working together, we are focused on improving industry's pipeline safety performance through universal SMS implementation.

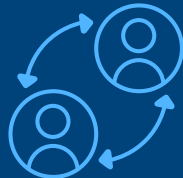
Many thanks to John Hill, as well as to former Industry Team Chairs Angie Kolar and Shawn Lyon, for their hard work and leadership. We remain committed and united in our path to improved pipeline safety and the shared goal of zero incidents.

2021 FOCUS AREAS

Much like 2020, 2021 was a year few could have expected! Despite the challenges, all segments of the pipeline industry demonstrated significant progress on their Pipeline SMS implementation journeys. The Industry Team focused on four key areas in 2021:



Increase Industry Participation



Provide Stakeholder Engagement



Support Operator and Contractor Journeys



Ensure Governance and Oversight

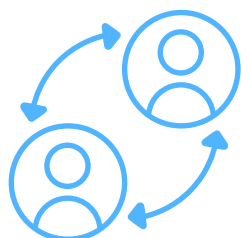


KEY EVENTS INCLUDED:



INCREASE INDUSTRY PARTICIPATION

- Conducted 2021 Annual Survey among distribution, transmission and gathering operators representing nearly 85 percent of total pipeline industry mileage*
- Identified barriers to entry and mitigation strategies for late implementers
- Outlined implementation tools, program elements and training materials for both operators and contractors for 2022



PROVIDE STAKEHOLDER ENGAGEMENT

- Published 2020 Annual Report detailing industry implementation progress
- Engaged PHMSA and NTSB, as well as state regulators and pipeline public safety advocates on industry progress
- Highlighted operator implementation journeys, challenges and best practices during API's virtual Pipeline Conference in April and May
- Held a roundtable with national, regional and like-minded organizations supporting industry implementation
- Presented on Pipeline SMS to Brazilian pipeline industry group, CONAENDI 2021, on operator implementation journeys



SUPPORT OPERATOR & CONTRACTOR JOURNEYS

- API hosted a day-long virtual workshop on October 19 with sessions averaging over 100 participants
- Conducted four API Pipeline SMS Third-Party Assessments
- Held webinars in February and May on implementation practices from the Third-Party Assessments
- Updated Evaluation Tool key performance indicators on www.PipelineSMS.org
- AGA conducted its Pipeline SMS Workshop Series on April 21 and May 4

* In 2021, the Industry Team sought alignment with PHMSA's reporting criteria for pipeline mileage. Mileage associated with distribution service lines has been calculated using the number of services and the average length of a service line.

- Recorded an episode of the Pipeliners' Podcast from Industry Team Chair John Hill in February
- Distributed lessons learned from 2020 safety culture survey with liquid operators and prepared for 2023 survey among gas and liquid transmission operators

ENSURE GOVERNANCE AND OVERSIGHT



- Established RP 1173 Standards Policy Group and identified a list of potential revisions to the first edition of the RP
- Met frequently as an Industry Team to maintain progress on priority issues and focus areas
- Conducted successful leadership transition to new rising Team Chair and Vice-Chair



TESTIMONIALS FROM OPERATORS AND STAKEHOLDERS

In 2021, the Industry Team conducted interviews with pipeline operators, Pipeline SMS experts and interested parties to share their experiences implementing or supporting a pipeline safety management system. Participants ranged from small local gas distribution systems to consultants to large transmission companies, all coming together with the united goal of sharing their journeys and learning from each other. The following are reflections of six interviews with participants on the Pipeline SMS implementation journey.

JOSIE LONG, P-PIC

What is your role and when did you first hear about SMS?

As a pipeline consultant, I work predominantly with trade associations on building out safety culture surveys and assessments. This work measures safety culture and perception of employees around safety in their work group, with their supervisor and management. I first heard about SMS soon after the RP came out and attended a workshop where I really saw how we can expand from just a pure compliance standpoint in ways that we had never really thought about before because it wasn't as prescriptive. That's where I really started to get excited about where the industry was heading.

Why is safety culture important?

According to the latest academic research, the number one indicator of safety outcomes, meaning incidents and accidents, is based on perceptions of safety in the organization. It's a predictor of safety and the reason it's really important to evaluate and improve safety culture in the pursuit of reducing incidents.

How does RP 1173 approach safety culture?

Section 15 is one of my favorite sections and one of the hardest because of the complex interaction between safety behaviors and safety perceptions. As we're driving improvements in safety, we really have to take into consideration both pieces, not only the employee's behavior but also how they perceive safety is valued in the organization.

Linking those two is where we really are headed in safety culture and SMS, in my opinion. Your SMS is going to improve as you strengthen safety culture, showing that the two are connected. We link each of the 84 survey questions to specific SMS elements to provide safety perceptions by program elements.

Have you seen improvements in safety culture over time?

Several years ago, we noticed conflicting messages that companies were giving between prioritizing safety while also encouraging productive schedules and maximizing efficiency. One of the takeaways was that we needed to push the safety messaging and communication first and foremost, and then talk about it coinciding with the work schedule. And we saw a dramatic shift in 2019 scores just around the area of safety priority.

What advice would you have for people thinking about improving their Pipeline SMS using safety culture?

Framing your Pipeline SMS and building on to what you currently have in processes and culture is very important, looking for ways to continuously improve what we currently have today and break down silos between departments. Additionally, one of the things we can improve is communicating internally to get employees engaged in SMS regardless of their position or role. There's not a one-size-fits-all kind of approach, but I think there are multiple ways to do it.

JEN WALLS, BUCKEYE

What is the focus of your operational excellence program?

As Senior Director of Operations Management Systems and Services, we support the organization's operational excellence program. A big area of focus for this year, in support of our SMS, is associated with building dashboards, business analytics and key performance indicators (KPIs) that we can use to help measure performance better, understand root causes and better understand how we're doing with corrective action closure. Another big focus is on communication, including making sure that those metrics and corrective actions are being made visible to the organization through regular meetings and communications with our operations leaders.

How would you describe your company's SMS path?

Our approach overall was to just be very methodical. We engaged a lot of leaders across Buckeye and in the development of the system we chose to write every word ourselves pretty much. I will tell you, there was a lot of discussion in those rooms. We got the team of us together and we would debate a should versus shall. And we would debate the details, but ultimately that landed us with the element documents that are then supported by our standards.

Was RP 1173's flexibility and scalability important to designing your SMS?

Absolutely. Because quite honestly, I don't know that it would've been well received or easy to implement without these concepts. I think

there would've been a lot more barriers to implementation if it was written in a language that didn't sound familiar or didn't speak to our management structure and our culture and our way of communicating with each other and our values. In terms of scalability, we were very thoughtful about what we were willing to commit the whole organization to versus what we were going to keep more general and being appropriately scalable.

How is your Pipeline SMS journey going?

Overall, it's going well, though there have been ups and downs. Following our development phase, we went through thorough implementation and planning phases where we said, well here's what we've written as our minimum requirements. Here's what we're currently doing in all parts of the organization or took a pretty big cross section. And here's where we have gaps. Here are the gaps that we think are most important. And we're not going to say that we're living up to these standards until we've closed those gaps. And then we put together roadmaps and implementation plans accordingly. So, I think we've been really thorough in our approach.

How has the organization benefited from Pipeline SMS?

Our lessons learned are being shared far more broadly and then the right corrective actions are being driven from those lessons learned. We aspire to be a learning organization and the more we share across locations and teams and regions, the better visibility we can get. Through the formalization of our Plan-Do-Check-Act (PDCA) cycle, we've got better KPIs look at operational incidents, better understanding of

the root causes and the identification of repeat incidents with a common cause. And that has driven a broad corporate-wide corrective action.

Will internal communication help set Pipeline SMS expectations?

I think that that's huge. We just need to help folks connect the dots a little bit better. And one of the things we're thinking about internally is safety management in action. So, when you see it in action, point out that it was our system. This is as a result of our safety management system. Perception is a very important part of safety culture and the way the employees perceive how much their organization cares about safety culture, improves the culture.

What advice would you have for others implementing SMS?

One of the things we've reflected on is making sure that you're doing the Plan-Do-Check-Act cycle within the implementation itself. Not just on the programs that you're implementing, but on the overall development and implementation process. For beginners or those early in their journey, just get started. Once you start, you quickly realize that it is scalable and flexible enough to fit any size organization and accommodate existing programs. For small operators, start at the highest level and map some of the things you already do so companies understand they're not as far off as they figure they might be.

CHRIS SHOROKEY, MONROE PIPELINE (MIPC)

How would you describe the approach your company has taken to implementing SMS?

Systematic. Similar to a project. We started by performing a gap analysis – we broke the RP into pieces and compared each piece to what the company is currently doing. We also created a roadmap – a timeline of sorts identifying what we wanted to accomplish for SMS (and when) over the next 1.5 years. With only four salaried personnel acting as our core SMS Team on top of their everyday priorities, we are used to wearing multiple hats. The safe, reliable operation of the pipeline is our number priority, and we have come to realize that SMS supports this objective.

How do you think your company's implementation of SMS is going?

Very well, with the resources available to us. Years later it is sometimes disappointing when we hear of how a large operator is progressing in a particular element of SMS that we thought we were leading the pack in. But rather than get discouraged, we listen closely and see how we can improve that element in our company, similar to what the large operator has already accomplished.

What changes have you seen at your company reflecting on Pipeline SMS implementation?

The changes are EVERYWHERE! We can hit upon every element, documentation, management of change, incidents and risk management. To sum it up, MIPC is a better, safer company because of its SMS

implementation. A great example of this is in our Emergency Preparedness and Response element, where we used the PDCA cycle to improve our performance and effectiveness. It wasn't until 2021 that we were in the 'run' stage after a couple years at 'crawl' and then a few more years at 'walk'.

What challenges has your company faced in its implementation journey?

People. We don't have the advantage of a full-time SMS position, so all employees working on SMS are doing so with their other position duties which has been a challenge at times. While we may have pauses or breaks in our implementation, the focus is a continuous movement forward realizing it is an unending journey of continuous improvement rather than a race to the finish line.

What advice do you have for others implementing SMS?

No matter your company size, instituting the program can be done. Program implementation is easier when breaking your implementation plan into manageable pieces – focus on one element at a time. Do what you can with who you have and when you can. Continual progress pays off with safer operations of your facilities.

SHIRLEY BIRD, WILSON ENERGY

How would you describe the approach your company has taken to implementing SMS?

There is a lot more emphasis on pipeline safety and the fact that every action is a result of the culture being cultivated, which is influenced by Pipeline SMS. Wilson conducts safety meetings each month, with many detailing Pipeline SMS topics to keep all employees aware of efforts.

How do you think your company's implementation of SMS is going?

I believe it is going well. The focus is on closing the gaps identified by the completed gap analysis. In 2022, there will be an effort to implement a computer program to track Pipeline SMS accomplishments across the various programs already in place, such as distribution integrity management program (DIMP), damage prevention, emergency response, etc. Wilson is using a third party to help with this work.

How has your company's SMS implementation impacted your job/activities?

With the implementation of Pipeline SMS, there is now a more receptive culture to share ideas on safety. Employees feel more engaged. For instance, they are more apt to share "near misses."

What challenges has your company faced in its SMS implementation journey?

Tracking accomplishments is a big challenge. Wilson has all the information, but it is not all in one place or in a similar format. We are also considering an outside assessment of Wilson's Pipeline SMS.

JEN SHERWOOD, MIDDLE TENNESSEE NATURAL GAS (MTNG)

What was your initial impression of SMS?

I am the Safety and Training Coordinator and previously worked in the automotive manufacturing industry. The automotive industry was pushed to implement from consumer demand. In the utility industry, there was a shift from just maintaining supply

to showing the utility is working hard to keep the public safe. Customer service in the utility sector is changing. Customers want to see continuous improvement.

When did your company start with implementing SMS?

MTNG was looking at Pipeline SMS before I came onboard. The engineering group was comfortable with Pipeline SMS, as they felt it was similar to DIMP and other programs. They believed a lot of aspects were already being completed. It just needed to be called Pipeline SMS. My learning curve has been knowing what is already done and verifying that it fits the Pipeline SMS framework.

What changes have you seen at your company reflecting SMS implementation?

Pipeline SMS verifies that MTNG is doing what they say they are doing. Operators benefit through implementation by having more employee engagement. I believe the culture at MTNG has gotten better at the employee level because of Pipeline SMS. There is now a system to communicate change and provide/receive feedback from employees. Pipeline SMS allows for voices to be heard, which provides employee "buy-in."

What advice do you have for others implementing SMS at their company?

Others should try and understand the culture of process quality improvement and why it is so valuable. Once that is known, cheerlead and advocate for Pipeline SMS. Finally, don't just do Pipeline SMS because it is a "have to." Recognize how you will benefit and focus on that.

GLEN BOATWRIGHT AND ADAM BOGUMIL YORK COUNTY NATURAL GAS AUTHORITY (YCNGA)

What was your initial reaction of SMS?

We believe there are similarities between implementing SMS for the aviation and pipeline industries. YCNGA realized a lot of work was already ongoing, especially with emergency management. We felt like they were well down the road on this aspect and just needed to “take credit.” Also, we both really like that Pipeline SMS impacts culture.

When did your company start with implementing SMS?

YCNGA has focused on it within the last year, including participating in APGA’s online sessions. We did complete the gap analysis tool in 2020. YCNGA wants to improve employee training on Pipeline SMS to make sure all employees understand and are “bought in.” Pipeline SMS has allowed for “near misses” to be used to improve safety. In the past, YCNGA has been more reactive, but now, with Pipeline SMS, we are more proactive.

What advice do you have for others implementing SMS at their company?

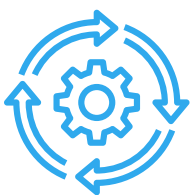
Public natural gas utilities should take advantage of APGA resources. APGA’s programs are valuable and help kickstart the process. The utility industry has the opportunity now to implement in a timeframe we can control. Others may want to review emergency management and start here. Priority should be making sure your organization is ready and

trained to respond. Also, we know the work is constant with continuous maintenance. Encourage others to just get started. Don’t worry about hitting the same milestones as others. Just do the things you can do now.



PIPELINE SMS OPERATOR IMPLEMENTATION JOURNEYS

Operators discussing their implementation journeys in their own words.



GENERAL

“When we decided to align our Pipeline SMS program with the elements of our Standard Operating Procedure (SOP) system, that was a big breakthrough for us. Our company was having trouble with the Pipeline SMS element structure because it seemed to be duplicative to the element structure of our SOP. So, we opted to convert the shall statements of the RP to the element structure of our SOP and that has made adoption of the RP much easier. Putting the RP criteria into the **language of how our company talks and sees the world** has made all the difference.”

— *Liquid Transmission Operator*



LEADERSHIP AND MANAGEMENT COMMITMENT

“We implemented a safety letter from our CEO as well as a **Stop Work Authority procedure and Safety Survey**; our company continued to communicate our safety hotline to employees and communicate lessons learned and near misses to employees via newsletters, emails and trainings.”

— *Gas Distribution Operator*

“Through our Management System we minimized disruption and aided the business in adjusting quickly to pandemic operations. **Emergency preparedness and response plans were in place** and ready for immediate implementation. Operational controls, competency of our workforce and continued stakeholder engagement were able to be leveraged as needed for temporary and emergency operation scenarios.”

— *Gas Transmission Operator*

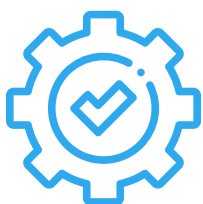
PIPELINE SMS IMPLEMENTATION JOURNEYS



STAKEHOLDER ENGAGEMENT

“ In 2020, our company implemented a community awareness program which has increased damage prevention and See Something/Say Something awareness with an easy-to-use application. This awareness was exemplified when our CEO/President saw something that didn’t look right in the field and took steps to resolve.”

— *Gas Distribution Operator*



OPERATIONAL CONTROLS

“ My company established **Monthly Safety Engagement Team Meetings** to develop operational improvement opportunities and express concerns directly to the Pipeline SMS Executive Board with the goal of achieving best practices to maintain, improve and implement safe and efficient operations.”

— *Liquid Transmission Operator*

“ We identified the need to capture qualitative contractor performance measures as an opportunity for improvement. Our Engineering group adapted the Construction Quality Management System to include capability for data-driven evaluation of contractor performance and results to inform future contracting decisions. This initiative contributed to the overall objective of ensuring that projects are completed safely and comply with applicable standards and specifications.”

— *Liquid Transmission Operator*



MANAGEMENT REVIEW & CONTINUOUS IMPROVEMENT

“ We are in the process of implementing a **new incident management system** to enhance the capabilities to evaluate trends and lessons learned in order to drive continuous improvement.”

— *Liquid Transmission Operator*

“ In order to implement improvements in Pipeline SMS maturity and effectiveness, my company has **conducted facilitated assessments** to identify strengths, improvement opportunities and necessary actions to drive operational improvements. We have also calculated initial scores for each element compared against baseline criteria and improved our assessment tools, dashboards and reporting capabilities.”

— *Liquid Transmission Operator*



INCIDENT INVESTIGATION, EVALUATION AND LESSONS LEARNED

“ We have implemented a safety data management system to track events, near misses/lessons learned and corrective actions. **Promoting and tracking increased “near miss” reporting.** We have also broadened the definition of safety, which was previously traditional “employee safety” focused to also include pipeline/process safety and public safety.”

— *Gas Distribution Operator*

“ Recently we had a **serious “near miss” incident.** This incident also sparked the need for a third-party audit to come in and do a granular review on our safety management system to identify any high risk gaps (Safety Assurance). This led to closure of key items and also incorporating findings into our new three year roadmap on API 1173 maturity (Management Review & Continuous Improvement). Each month we have a Pipeline Safety Management Committee meeting where these incidents are shared and discussed to upper leadership. This is also where all corrective actions, audit items and other key topics regarding Pipeline SMS are discussed (Leadership and Management Commitment).”

— *Gas Distribution Operator*



RISK MANAGEMENT

“ An example of our Pipeline SMS implementation progress is a new employee risk submission program that allows all employees to submit pipeline safety concerns, and a process that **follows those concerns from initiation to risk review to action completion**, while communicating with the employee throughout the process.”

— *Gas Distribution Operator*

“ As part of closing the gap for Risk Management element, the company implemented an electronic form for completing Hazard and Risk Assessments on company-issued smart devices in the field. The form, used for projects with higher risk, has formalized a **consistent method and record of project risk assessments.**”

— *Gas Distribution Operator*



API PIPELINE SMS THIRD-PARTY ASSESSMENT PROGRAM

API formally launched the Pipeline SMS Third-Party Assessment Program on January 1, 2020, as a tool to assist operators with measuring progress and the maturity of safety systems, and to facilitate identification of good practices and information sharing across the pipeline industry. The assessment program utilizes the industry tools created by the Pipeline SMS Industry Team, allowing for seamless integration of the assessment program with the rest of the industry efforts. Despite ongoing challenges related to COVID-19, API started facilitating these assessments in person in 2021, compared to the hybrid model used in 2020. The Pipeline SMS Third-Party Assessment Program conducted four assessments in 2021, bringing the total assessments completed to date to eight by the end of the year.

The assessments conducted in 2021 were completed with a diverse group of operators seeking to evaluate their maturity toward RP 1173, as well as to glean insights into good practices seen across the industry to aid in their implementation efforts. Operators who have participated in the API Pipeline SMS Third-Party Assessment Program to date represent large and small hazardous liquids operators, large and small gas distributors and a small steam piping utility operator. The wide range of operator types utilizing the program is indicative of the wide range of applicability of RP 1173 and the assessment program. We look forward to continuing to provide this service to pipeline operators of all sizes and materials, helping them satisfy the audit requirements in the Safety Assurance element of the RP.



BENCHMARKING:

As identified by the Pipeline SMS Industry Team, a key part of the assessment program is allowing operators to benchmark their business units against themselves and their peers. The assessment program successfully established a benchmarking system in 2020, with operators receiving blinded benchmarking data following their participation in an assessment. With eight assessments conducted in 2021 and ten total expected by mid-2022, API can generate more robust statistical analyses of the data and provide Assessment Program participants with a benchmarking report. The benchmarking report will be available to all who have participated to date, as well as to future participants. API will provide updated data annually for a period of six years, allowing participants to better understand how their ongoing implementation efforts compare to their peers.


In addition to providing benchmarking data to participants, API will use the data to pinpoint areas of common implementation challenges across industry, allowing API and its partners to target their efforts toward areas that need it most. Further, API will bring data from the assessment program to the RP 1173 revision team so that common themes can be discussed and incorporated into the next edition of the standard.

2022 AND BEYOND:

API anticipates at least seven Pipeline SMS Third-Party Assessments will be conducted in 2022, a marked increase from previous years. In addition to this increased interest, API continues to market the Pipeline SMS Third-Party Assessment Program at industry events both domestically and internationally. API and industry partners continue to conduct webinars to outline the program and RP 1173. As more operators participate in the program and the benchmarking database matures, the data may point to specific areas that industry should consider providing future resources to aid with implementation. API will bring these opportunities to the Pipeline SMS Industry Team for consideration to continue driving implementation of RP 1173.

The Pipeline SMS Third-Party Assessment Program continues to conduct program reviews, aligning with the PDCA cycle to ensure this industry tool continues to provide value by making necessary improvements as they are identified. If your company is interested in discussing the Pipeline SMS Third-Party Assessment Program and how it can help you overcome barriers in implementing Pipeline SMS, or if you would like to schedule an assessment, please reach out to PipelineSMS@api.org.

AMERICAN GAS ASSOCIATION ANNUAL PIPELINE SMS WORKSHOP



The American Gas Association (AGA) continues to support the implementation of Pipeline SMS within its membership. In 2021, AGA conducted its annual Pipeline SMS workshop to allow operators, the industry and regulators to share their efforts in embedding Pipeline SMS as a key pillar in the work they perform every day. In May 2021, AGA also revised its Commitment to Enhancing Safety which encourages the implementation of Pipeline SMS.

AGA also completed its pilot program for performing virtual assessments in July of 2021. AGA's pilot program focused on the implementation of Incident Investigation, Evaluation, and Lessons Learned and Competence, Awareness and Training. In October 2021, AGA's Board of Directors agreed that the virtual assessments were valuable and approved to integrate virtual assessments as part of AGA's Enhanced Peer Review Program. AGA's Enhanced Peer Review Program commenced in 2022.

AMERICAN GAS ASSOCIATION ANNUAL PIPELINE SMS WORKSHOP

The Enhanced Peer Review Program would provide AGA members more topics to choose from, more flexibility, the ability to focus on specific Pipeline SMS elements and the option for virtual assessments. AGA will be extending its virtual assessments to also include Operational Controls (specific to Management of Change) and the combined Safety Assurance and Management Review and Continuous Improvement. Additionally, as part of its peer reviews, AGA will also add Operational Controls and Documentation and Record Keeping.

In 2021, AGA also began reviewing PHMSA incident data as part of its Operational Risk Data Committee (ORDC). The ORDC looks holistically at data shared voluntarily by operators to help identify potential trends, and these initiatives are intended to help assist the industry in advancing Pipeline SMS. In 2021, AGA began reviewing incident data related to incorrect operations, material weld equipment failure and other outside force damage. In 2022, AGA plans on completing its review of PHMSA incident data and will begin Phase 2. Phase 2 will ask operators to voluntarily provide data for “near misses” or events that do not meet PHMSA’s reporting threshold.



APGA PRIORITIZES PIPELINE SMS IN MEMBERSHIP

Since 2014, the American Public Gas Association (APGA) has administered the APGA System Operational Achievement Recognition (SOAR) award program. The program honors public natural gas systems that are committed to operational excellence, striving to improve operational capabilities, overcoming challenges and adapting to their operating environments.

The SOAR program evaluates participating APGA member systems in four categories: System Integrity, System Improvement, Employee Safety and Workforce Development. In 2021, APGA revised the scoring criteria to place additional emphasis on the adoption of core elements found in RP 1173, *Pipeline Safety Management Systems*. In 2022, APGA further linked Pipeline SMS adoption and the APGA SOAR award by heavily weighing Pipeline SMS related questions.

The tie between Pipeline SMS and SOAR is just one way APGA is encouraging the voluntary adoption of Pipeline SMS principles.



API 2021 INDUSTRY TEAM WORKSHOP

On October 19, API hosted a virtual workshop conducted by the Pipeline SMS Industry Team as part of its efforts to share implementation of best practices with over 150 attendees. The workshop keynote was provided by Captain John Cox, President of Safety Operating Systems, an experienced airline pilot who discussed the robust connection between aviation, safety management systems and safety culture in improving performance.

Building off previous years' themes, the 2021 workshop focused on opportunities to increase the effectiveness of an operator's Pipeline SMS and support the breakthrough of implementation barriers for late adopters. Workshop sessions followed, including topics on safety culture in closing the zero incidents gap, identifying key performance indicators, lessons learned from the API Third-Party Assessment Program, stakeholder engagement, implementation among gas distribution operators and the RP 1173 revision process.

Despite the virtual format, attendees remained engaged throughout the day, asking numerous questions and taking multiple sessions offline for additional conversation. Presenters hailed from each segment of the pipeline industry as well as contractor representatives. Attendees remarked that the workshop met or exceeded their expectations in providing value and supporting implementation journeys. The Industry Team looks forward to conducting additional sharing and learning events to better support operators' progress implementing Pipeline SMS.



2021 ANNUAL SURVEY RESULTS

Pipeline operators representing nearly 85 percent of pipeline industry mileage responded to the 2021 Annual Survey.* The results highlighted significant implementation progress throughout 2021 compared with the 2020 survey results, including increases in the number of operators developing leadership commitments, conducting gap assessments and holding management reviews.

 **+8**

Operators Conducted
Gaps Assessments

 **+11**

Operators Maintaining
a Method to Evaluate
Maturity

 **+11**

Operators Conducted
Management Reviews

 **+18**

Operators Expressed
New Management
Commitment

 **+11**

Operators
Developed Closure
Plans to Address
Recommendations

 **+15**

Operators Conducted
Safety Culture Surveys

 **+18**

Operators Participated
in Sharing Events

 **+23**

Operators Including
Contractors in a
Company's Pipeline
SMS Implementation

* In 2021, the Industry Team sought alignment with PHMSA's reporting criteria for pipeline mileage. Mileage associated with distribution service lines has been calculated using the number of services and the average length of a service line.

SMS IMPLEMENTATION STRENGTHENS SAFETY CULTURE

While safety culture is not an explicit Pipeline SMS element, SMS implementation strengthens an operator's safety culture. Learn more about the importance of culture from operators below:

“ We have completed the company-wide Safety Culture Survey twice in the last two years, along with performing targeted Safety Culture assurance assessments in all of our field locations over the last two years. The results are shared with management and detailed action plans are developed.”

“ Company conducts an annual safety culture survey. Results are collected, compiled and analyzed through the Safety Assurance element owner. They are then brought to the SMS management review meeting for element owner review and discussion. The top three areas of strength and areas of opportunity are then selected. A plan to address the areas of opportunity are discussed through the SMS management review process. These responses are then formally shared with the organization, highlighting areas of strength and areas of opportunity to all Company employees.”

“ Our company participated in API's 2020 Safety Culture Survey. We also have an employee engagement survey that occurs every two years that also includes some safety culture questions. We've also completed a contractor safety survey and a third-party safety culture review that included a maturity scale.”

“ In 2020, we conducted a Contractor Safety Culture Survey. We invited over 16,000 of our contract workers and 2,000 of our employees to participate in a confidential safety culture survey. The survey results provided us insight into ways to better communicate our safety values to our contractors and employees and understand areas where we may be able to improve our safety culture.”

“ The company's safety culture is assessed annually by two methods. The first is conducted through the employee survey which is administered through a third-party service to ensure anonymous participation by employees. Survey results are jointly reviewed by the HR and Safety department to gauge employee perspectives and to find improvement opportunities. The second is also conducted annually by the company's Safety department. The results are researched to determine the effectiveness of the program and employees' perceptions of the company's level of commitment to safety.”

IN 2021, PIPELINES OPERATORS WERE MOST FOCUSED ON IMPLEMENTING:

1. Incident Investigation, Evaluation, and Lessons Learned
2. Operational Controls
3. Leadership and Management Commitment
4. Documentation and Record Keeping
5. Risk Management, Safety Assurance, Management Review and Continuous Improvement (*three-way tie*)

THE MOST CHALLENGING ELEMENTS TO IMPLEMENT IN 2021 WERE:

1. Operational Controls
2. Management Review and Continuous Improvement
3. Stakeholder Engagement
4. Documentation and Record Keeping
5. Risk Management



TIMELINE FOR RP 1173



- The first edition of RP 1173 was published
-
- All standards must be extended, revised or reaffirmed within five years of last action
 - API Committee on Pipeline Standards (COPS) granted two-year extension to July 2022
-
- The Standards Policy Group (SPG) identifies and collects proposed revisions to the first edition
 - The SPG reports to Industry Team SMS Steering Committee and COPS
-
- The Voting Group votes on proposed changes from Policy Group
 - It must be open and balanced and avoid dominance by any one interest group
-
- 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

2022 FOCUS AREAS

IN 2022...

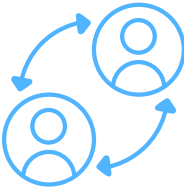
The Pipeline SMS Industry Team will maintain implementation progress through its four main focus areas: increase industry participation, ensure proactive stakeholder engagement, support operator and contractor journeys and provide governance and oversight.





INCREASE INDUSTRY PARTICIPATION

- Increase participation with trade outreach
- Update survey questions in Annual Survey for first-time respondents, long-time participants and contractors
- Conduct 2022 Annual Survey with pipeline operators
- Support Pipeline SMS events that other national, state and regional associations are hosting; host associations roundtable to exchange best practices
- Stay abreast of PHMSA's approach to filling PIPES Act mandate for gas distribution operators' implementation
- Support development of Annex for very small operators in RP 1173, second edition



ENSURE PROACTIVE STAKEHOLDER ENGAGEMENT

- Prepare and publish 2021 Annual Report
- Tie Pipeline SMS to ESG-complying with growing ESG requirements using Pipeline SMS implementation
- Regular annual engagement with PHMSA, NTSB, NARUC, NAPSR and public safety advocates on operator implementation progress
- Communicate materials and tools for pipeline contractor integration



SUPPORT OPERATOR AND CONTRACTOR JOURNEYS

- Compare existing contractor guidance to operator documents to identify gaps and update accordingly to create industry guidance; identify opportunities for training and education for contractor-specific events
- Support smaller operators through development of a specific framework and element-specific training, including field-level training on employee roles in SMS
- Develop training for difficult elements to implement for operators
- Complete seven (7) assessments using API's Third-Party Assessment Program
- Prepare for 2023 Combined Trades Safety Culture Survey



PROVIDE GOVERNANCE AND OVERSIGHT

- Increase transparency to Pipeline SMS efforts industry-wide
- Oversee RP 1173 standards action determination process
- Develop and track metrics for Industry Team
- Share industry survey participation by operator category (e.g., small operators)
- Update Briefing Package and Roster



Pipeline SMS



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