| Time | Speaker | Topic |
|---|---|---|
| 1:00 – 1:15 p.m. | Alan Mayberry, Associate Administrator | *Welcome – Opening Remarks* |
| 1:15 – 2:45 p.m. | Lee Travis, Senior Safety Advisor, TC Energy<br>Chris Williams, Vice President, Pipeline Operations, Cheniere<br>Josie Long, Consultant, P-PIC Consultants | *"Integrating Pipeline Organizational Culture and Management Systems"* |
| 2:45 – 3:15 p.m. | Erin Kurilla, Vice President, American Pipeline Gas Association | *"APGA Members – On the Journey"* |
| 3:15 – 3:30 p.m. | *(Break)* | |
| 3:30 – 4:00 p.m. | Meredith Wilson, Director, Buckeye Partners | *"Implementation of RP 1173"* |
| 4:00 – 4:30 p.m. | Jim Francis, Vice President, Safety and Training, CenterPoint Energy | *"The Effects of Integration on SMS and its Effect on Safety Culture"* |
| 4:30 – 5:00 p.m. | Alan Mayberry, Associate Administrator | *Closing Remarks* |

# Pipeline Safety Management Systems
## 5 Years of API RP 1173

PHMSA PSMS/Safety Culture Workshop
February 26, 2020

**Alan K. Mayberry, P.E.**
Associate Administrator
Office of Pipeline Safety
Pipeline and Hazardous Materials Safety Administration

U.S. Department of Transportation

**Pipeline and Hazardous Materials Safety Administration**

"To protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives."

# PHMSA's Mission

To protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives.

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Pipeline and Hazardous Materials Safety Administration

"To protect people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives."

# Secretary Chao's Goals

1. Safety

2. Infrastructure

3. Innovation

4. Accountability

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Safety Administration

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# "Safety Must Always Be #1."

- Secretary Chao

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and other hazardous materials that are essential to our daily lives."

# PHMSA's Role

- Establish national minimum safety regulations
- Provide oversight of compliance through risk-based inspections
- Educate stakeholders regarding pipeline safety
- Encourage research into and implementation of new technologies

# Inspection and Compliance

## Regulations represent the
# BARE MINIMUM.

*It is the responsibility of the industry to understand and manage pipeline safety risks*

# Compliance-based Approach to Safety

- Reactive
- Driven by rules
- We do what we have to do
- Focused on conditions, not behavior

# The Scope of Our Mission

The scope and complexity of our mission continues to grow.
Therefore, we must regularly assess the ways in which we work to keep pipelines operating safely,
AND
reach ZERO incidents.

# PSMS Current Expectations

- **NTSB:** Expectation of adoption by the industry

- **PHMSA:** Expectation of adoption by the industry; no plans to incorporate in regulation

- **Congress/Public Stakeholders:** Looking for follow-through in absence of regulation

# And…



Merrimack, Valley, MA

# Will PSMS become adopted into code?

- No, PHMSA does not intend to incorporate API RP 1173 by reference into the federal regulations

- Why? SMS centers around safety culture, behavior change and the way we make decisions that have safety impacts. Efforts to force behavior change usually fail and may have unintended consequences

- However, we have said, we are one bad accident away from Congress mandating SMS

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# PSMS Related NTSB Recommendations to the Operator

- Management of Change (RP 1173 Section 8.3.1)

  - "Apply MOC process to all changes to adequately identify system threats that could result in a common mode failure"

- Pipeline System Records (RP 1173 Section 14.1)

  - "Review and ensure all records and documentation of...gas systems are traceable, reliable, and complete"

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# Safety Gaps

PSMS is the key to closing the safety gaps that cause these infrequent yet catastrophic accidents

# PSMS

- Conduct Gap Analysis

- Design plans to address gaps based on risk

- Conduct safety culture baseline assessments

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# Reasons for PSMS Implementation

1. It makes good business sense

2. Laws require companies to provide safe and reliable service at a reasonable cost

3. Companies are obligated to provide safe service

# Positive Safety Culture Is Necessary to Ensure PSMS Works in Practice

## PSMS = Competence

## Safety Culture = Commitment

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and other hazardous materials that are essential to our daily lives."

# Culture influences what people see, hear, feel, say, and do

**Most importantly, culture influences behavior which impacts decisions and actions in an organization**

**Ultimately, it is this behavior that drives safety performance**

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# Positive Culture

Positive safety culture starts at the top and permeates the entire organization

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# Safety Culture

Safety culture must not be restricted to the operational aspects of pipeline safety, but must span all organizational areas

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# Roadmap to a Strong Safety Culture

- Demonstrate commitment and accountability to safety
- Promote questioning attitudes
- Promote open communication and reporting
- Promote a culture of justice and trust
- Avoid normalization of deviance
- Eliminate production pressures
- Reduce workplace complacency
- View safety as an investment, not a cost
- Empower employees to find and fix problems
- Make bold changes when necessary
- Make safety the highest priority

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# Culture-based Approach to Safety

- Driven by individual values/accountability
- Do what is right, no matter what
- Positive and engaging
- Proactive
- Driven by safety for all (employees, assets, public, environment)

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and other hazardous materials that are essential to our daily lives."

# Measuring Safety…

We all must change the way we measure safety
from
Injuries, deaths, and violations
to
the presence of safety in our culture.

"To protect people and the environment by advancing the safe transportation of energy
and other hazardous materials that are essential to our daily lives."

# Where Will SMS Take Us?



**01 REACTIVE**
Develops strategies that respond to past incidents and accidents

**02 PROACTIVE**
Actively collects data to identify and address current hazardous conditions

**03 PREDICTIVE**
Systematically analyzes safety risk data and performs forward-looking data analytics to identify potential/future problems

PAST — PRESENT — FUTURE

**Reactive → Proactive → Predictive**

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# Perfection is not attainable...

# ...but if we chase perfection, we can catch excellence!

- Vince Lombardy

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and other hazardous materials that are essential to our daily lives."

# Pipeline Safety Leadership

As leaders, our job is to use our influence to ensure this does not happen on our watch.

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# Upcoming SMS/SC Events

- February 26, 2020 – PHMSA Workshop - Sugar Land, TX

- March 9, 2020 – NTSB Roundtable - Washington, DC

- March 10-12, 2020 – AGA Workshop – Crystal City, VA

# Thank You!

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and other hazardous materials that are essential to our daily lives."

# Integrating Pipeline Organizational Culture and Management Systems

February 26, 2020

Josie Long, P-PIC
Lee Travis, TC Energy
Chris Williams, Cheniere

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# What is Safety Culture

- Shared views within a company of how important and valued safety is in daily organizational execution of jobs and routines

- Many definitions of safety culture

- Evolving construct

- Industry has developed a common model to identify safety culture indicators that align with PSMS

# The INGAA Journey

**TIMELINE**

| 2011 Safety Culture White Paper | 2013 1st Safety Culture Survey | 2016 2nd Safety Culture Survey | 2019 3rd Safety Culture Survey | 2022 4th Safety Culture Survey |
|---|---|---|---|---|

**KEY PARTNERSHIPS**

- INGAA EH&S Subcommittee

- Dr. Christiane Spitzmueller PhD, University of Houston Industrial Psychology Dept.

- Dr. Dov Zohar PhD, Australia (developed 1st safety climate survey in 1980)

- Dr. Ben Schneider PhD, Fellow, Society for Industrial and Organizational Psychology

# Safety Culture Working Framework

| Industry Safety Culture |
|---|
| The links or interactive relationships between organizational and group psychological aspects, behavioral aspects and organizational system aspects |

| Psychological | Behavioral | Situational |
|---|---|---|
| Safety culture perceptions | Safety-related actions and behaviors | Changes in an organization |

© 2020 P-PIC
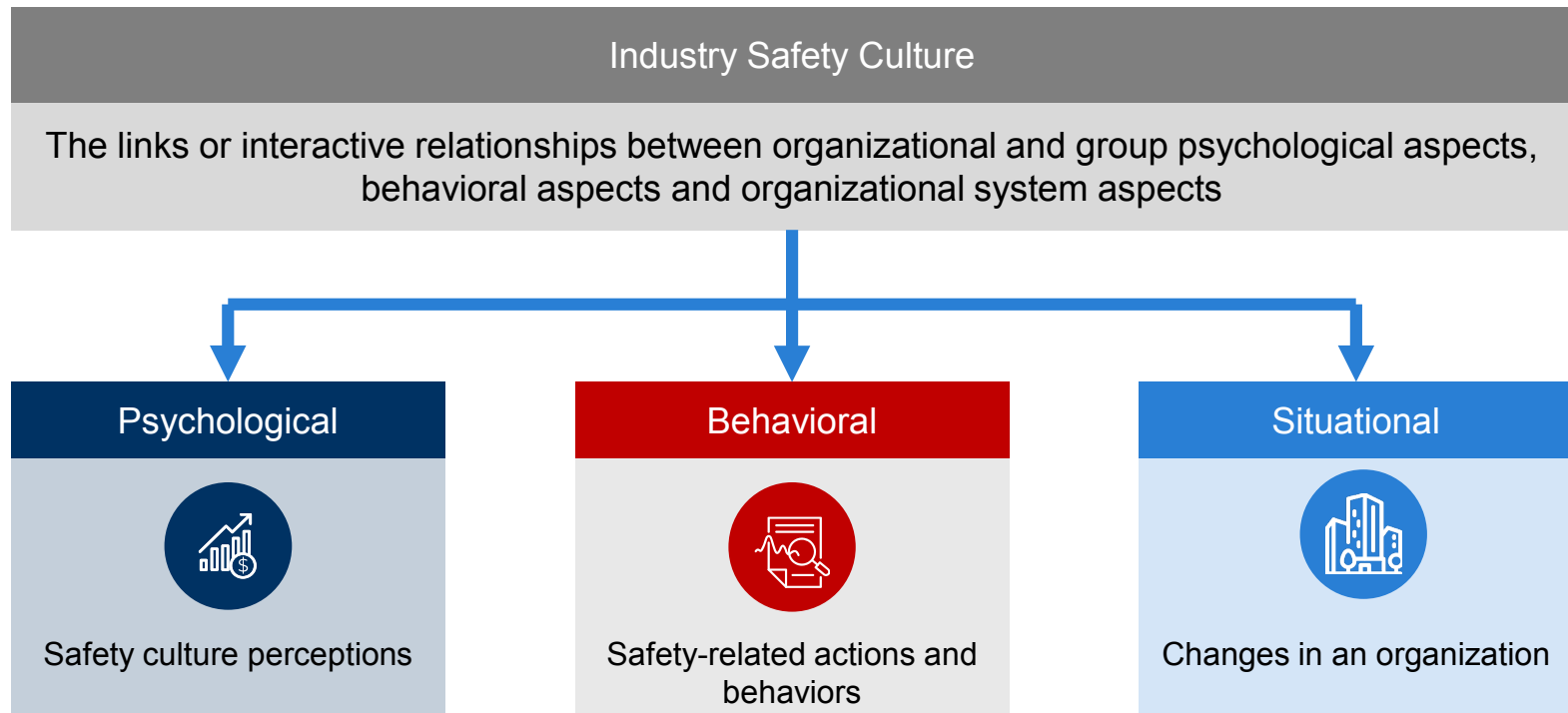
# Safety Culture Perception Surveys

84 survey items that measure employee's safety perceptions along dimensions that reinforce PSMS. Scores aggregated at a workgroup, supervisor, organizational and trade level.

## Outputs

Industry Metadata

Scores by element

Scores by org/levels

## The value of industry measurement

Provides statistical power for finding safety culture drivers and outcomes

Allows for the comparison of an organization vs. industry norms

Validates the accuracy and quality of safety culture data across organizations

Provides insights into the relationships between PSMS elements and outcome measures

# Safety Behavior Measurement

Safety observations and self-reporting that are monitored in an organization or could be consistently aggregated at an industry level

## The value of industry measurement

Safety Observations

Identifies unsafe behaviors and guards against them.

Data can be aggregated and trended.

## Outputs

# of observations
# of near misses

## The value of industry measurement

Self-reporting

Near miss, root cause analyses can improve safety systems, hazard control, risk reduction and lessons learned

Creates an open, non-punitive culture

# Situational Changes

Changes in an organization may impact safety culture.  This could be process changes, PSMS implementation and maturity changes, restructuring changes, etc.

## The 'reciprocal' relationship and linkage

The survey identifies indications of strength of the culture at the group, organization and trade level.

Changes in the system may have a downstream effect on safety culture. The impact may be positive, negative or non-existent. Opportunities to anticipate potential side-effects.

# Sample Survey Item and SMS Connection

| Survey Item | SMS Category |
|---|---|
| My direct supervisor emphasizes safety procedures when we are working under pressure. | Operational Controls |
| My direct supervisor values safety as much or more than schedule and cost | Leadership Commitment, Risk Management |
| Top management reacts quickly to solve problems when told about safety hazards | Leadership Commitment, Risk Management |
| Top management ensures that processes/procedures are routinely assessed for accuracy, completeness and effectiveness | Operational Controls, Safety Assurance |
| In my workgroup, we freely discuss any errors/mistakes/near accidents so we can learn from each other | Investigations and Learnings |
| In my workgroup, people feel comfortable to voice concerns to our supervisor around any safety issues | Safety Assurance, Internal Engagement |

# Building Cultural Defenses

**Linkages between perception surveys, safety behaviors and safety systems lead to better processes and safeguards that defend against:**

- **Production pressure (safety priority)**

- **Complacency (invulnerable)**

- **Normalization of deviance**

- **Tolerance of inadequate systems**
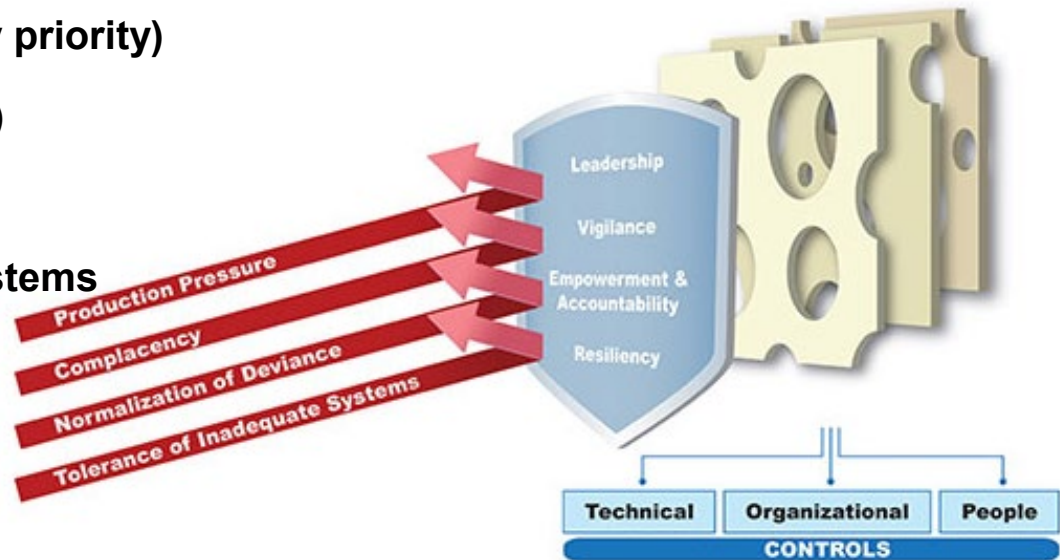
# 2019 INGAA Safety Culture Survey

- 13 INGAA members 7 participating CEPA members = 20 Total Companies, with over 31,000 participants (76% response rate).

- 84 total questions (survey items), broken into different SMS categories. Avg ~15-20 minutes to complete

- Survey Launch: May 1-June 9th 2019

# Safety Culture Survey Process
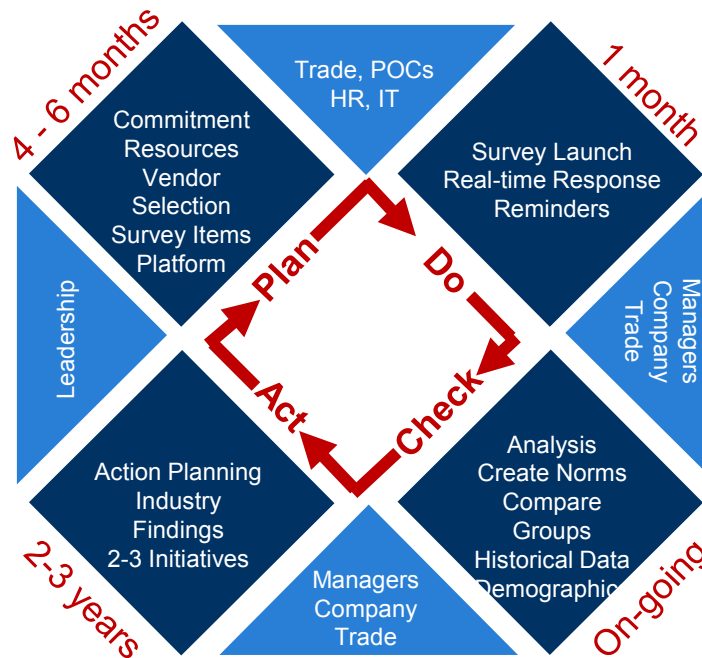
# Three Survey Takeaways

**The focus on safety at the Workgroup level is very positive**

The attention paid to safety at the field and technical levels was very positive and can be leveraged to improve safety behaviors at all levels of member companies.

**Increasing the attention and recognition paid to those who speak-up about safety and attend to safety on their jobs**

The results for recognizing people who pay special attention to safety issues and those who achieve their safety targets are both low, at 72%. This may be part of the reason the results for the willingness of people to speak up about safety concerns and whether leaders listen to safety improvement ideas are both below 80%.

**Having closer connections and communicating with the public about safety**

Perception scores were relatively high for public safety considerations during planning for construction projects. However the perceptions were lower for engaging and working with the public.

# Lessons Learned

**After 3 iterations of the survey we have learned:**

- Response rate is key.  Communicating the importance of the survey helps response rate

- Communicating anonymity is highly important so that employees can give their open and honest feedback

- Partnerships with academia ensures that survey items are clear, concise and valid

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# Upcoming 2020 Industry Initiatives

# Cumulative # of Employee Participation

Potential to add 80+ new companies.  Firm commitments from 36 operators and contractors to date.  In the process of confirming LDC operators and contractors



Legend: ■ INGAA, CEPA   ■ INGAA, CEPA Foundations   ■ API, AOPL   ■ NGA
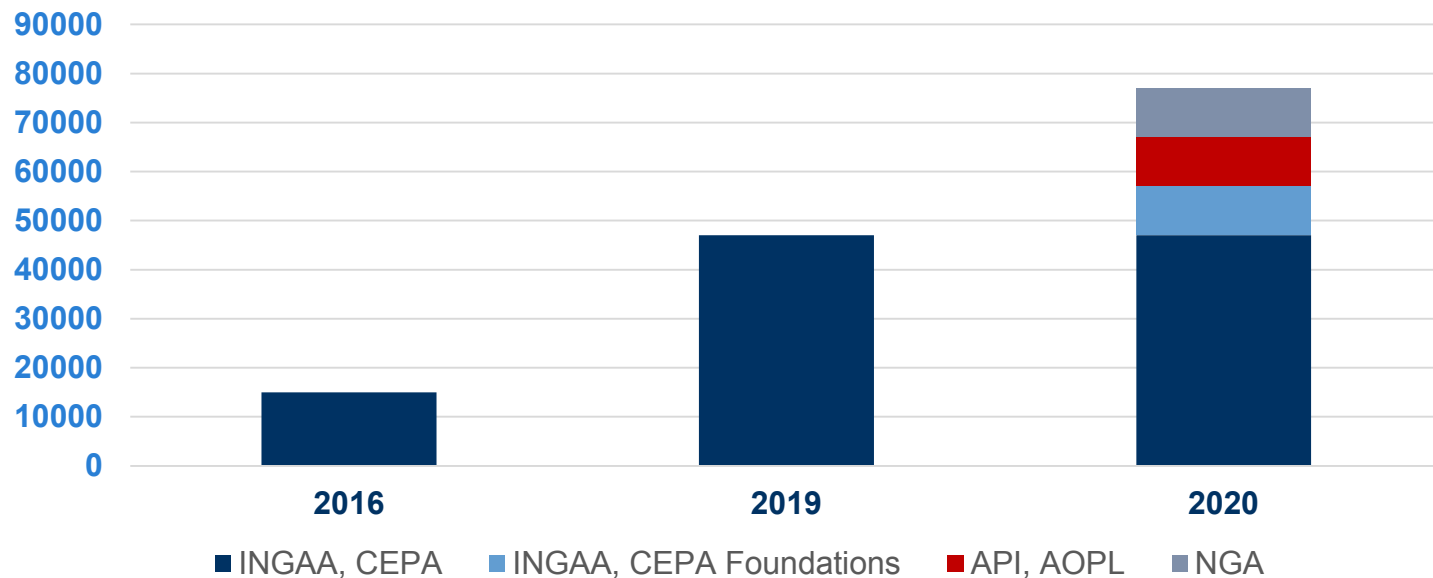
**Safety Culture Survey**

TC Energy

# Safety Maturity Rating

| BURDEN | NECESSITY | PRIORITY | GOAL | VALUE | WORLD-CLASS |
|---|---|---|---|---|---|
| Safety is viewed as a hindrance to running the business. Accidents are viewed as "inevitable" by leaders. | Safety is viewed as an externally enforced requirement that must be managed. | Safety is viewed as important and leaders focus on improvement however the organization is still predominantly reactive. | Safety improvement is an explicit goal and is part of executive leadership oversight responsibilities. | Worker wellbeing and health are recognized as having intrinsic worth. Decisions and activities are oriented to pursing safety for its own sake. | Safety is internalized and part of the identity of the organization. The organization is highly sensitive to subtle changes in exposure. |

Overall
**3.5**

| | BURDEN | NECESSITY | PRIORITY | GOAL | VALUE | WORLD - CLASS |
|---|---|---|---|---|---|---|

**LEADERSHIP AND GOVERNANCE** — 5.5

**CULTURE** — 5.0

**WORKING INTERFACE** — 4.0

**EXPOSURE CONTROL SYSTEMS** — 3.5

**PERFORMANCE MANAGEMENT** — 3.0

**SAFETY NETWORK** — 2.5

**DATA MANAGEMENT AND REPORTING** — 1.5

** Sample Data

1    2    3    4    5    6

# Action Plans

| 2019 Safety Culture Action | Status | Update |
|---|---|---|
| **Safety Culture Maturity**<br>• Implement INGAA / CEPA safety culture survey and update Safety Culture Maturity rating | ✓ In Progress | • Survey completed on June 7 with a corporate wide participation rate of 82%. Survey results will be available in Q3 with updated Safety Culture Maturity rating in Q4. |
| **Leadership & Governance**<br>• Continue leadership training and develop supplemental resources to enhance Safety Leadership Model Best Practices and Transformational Styles | ✓ In Progress | • Ongoing Leading With Safety sustainment sessions are scheduled throughout 2019 in Calgary and Houston for new leaders. Currently at 75% of leaders trained. Safety Leader's Toolkit with H&S resources distributed monthly. |
| **Culture**<br>• Implement Living Safety at TransCanada training for employees | ✓ In Progress<br>✓ Complete | • Sessions scheduled throughout 2019 in Calgary, Charleston and Houston with 14% of employees trained to date. BU roll out has begun in some regions and continue through 2019 and into 2020. |

# Key to a Successful Survey

**Pre-Survey**

- **Start planning early**

- **Who is going to do the work**

- **Collaboration**
    - INGAA, CEPA PM's
    - Leadership, IS, Communications
    - HR, Privacy officer, Interpreters

- **Establish a communications plan**

- **How to increase participation**

- **Development of a post-survey plan**

**Post-Survey**

- **Communicating the results**

- **The numbers are the numbers**

- **Look for opportunities to help people understand the results and next steps**

- **Leverage and recognize early adopters**

- **Action plan development**

- **Provide consistent and reoccurring reminders and feedback**

# Q&A

**American Public Gas Association**

# Pipeline Safety Management Systems
## On the Journey

*Erin Kurilla, APGA*
February 26, 2020

# American Public Gas Association
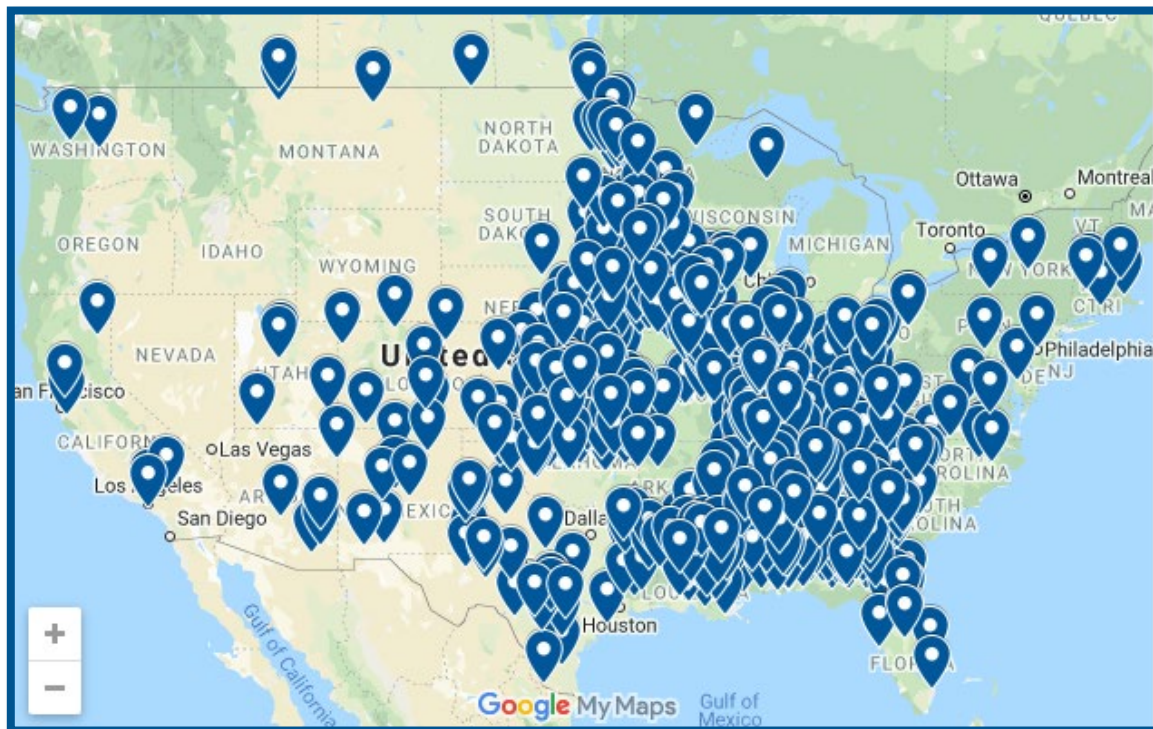


**Customers**
Smallest: 19
Average: 5,617
Largest: 478,267

**Employees**
Smallest: 1
Average: 27
Largest: 1,650

not sure what pipeline sms means

Lack of knowledge on how to go about it.

Never heard of it.

We are just getting acquainted with PSMS; therefore, it is a lack of knowledge that is keeping us from full implementation
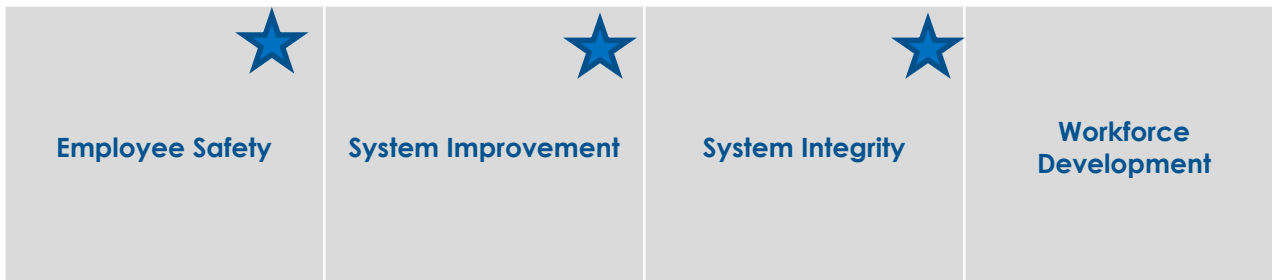
Knowledge is power.
Knowledge shared is
power multiplied.

Robert Boyce

quotefancy

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# Increasing Awareness

## Webinar Series

| | |
|---|---|
| Pipeline Safety Management Systems | December 13, 2019 |
| Management of Change | February 7, 2020 |
| Safety Culture | April 2020 |
| Operational Controls | June 2020 |
| Incident Investigation | August 2020 |

## Workshop

| | |
|---|---|
| Pipeline Safety Management Systems | October 28, 2020 |

## Member Visits
## Publication Articles
## Virtual Roundtables
## Tools & Resources

not sure what pipeline sms means

Lack of knowledge on how to go about it.

No barriers, but other regulatory requirements have placed a lower priority on completing this

We are simply understaffed and have had to prioritize elsewhere right now. I think a gap analysis and PSMS would be a good thing for us, but I haven't figured out how/who to make that happen.

Not enough man power and time

Never heard of it.

We are just getting acquainted with PSMS; therefore, it is a lack of knowledge that is keeping us from full implementation

Action expresses priorities.

Mahatma Gandhi

quotefancy

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**SOAR**

# System Operational Achievement Recognition

| Employee Safety | System Improvement | System Integrity | Workforce Development |
|---|---|---|---|

# Raising the Bar

Has your system **demonstrated commitment** to pipeline safety continuous improvement by using the framework provided in API RP 1173: Pipeline Safety Management Systems?

Has your system **compared** its existing practices against those recommended in API RP 1173: Pipeline Safety Management Systems (For example: the APGA Small Operator Gap Assessment or an equivalent)

Does your system encourage employees to **"stop the job"** when they observe an unsafe practice or work environment?

Does your system have a **process** in place **to ensure changes** that could impact the safe operations of your system have been **reviewed by necessary employees**?

Does your system have a **process** in place **to ensure changes** that impact the safe operations of your system have been **communicated to** necessary employees?

Another complicated, resource intensive program on top of DIMP, Drug & Alcohol, Damage Prevention, Public Awareness, Emergency Management, Operator Qualification, daily business activities, personnel management......

Reasons for implementing a PSMS appear to only be for appearance's sake, and provide no actual tangible safety benefit.

not sure what pipeline sms means

Lack of knowledge on how to go about it.

No barriers, but other regulatory requirements have placed a lower priority on completing this

We are simply understaffed and have had to prioritize elsewhere right now. I think a gap analysis and PSMS would be a good thing for us, but I haven't figured out how/who to make that happen.

To my knowledge we are doing everything that would be included in a Safety Management System but need another written plan in a 3 ring binder to maintain annually like a hole in the head. I believe all is covered by: O & M, Drug and Alcohol, Employee handbook, Emergency Manual, OQ, Public Awareness, and DIMP.
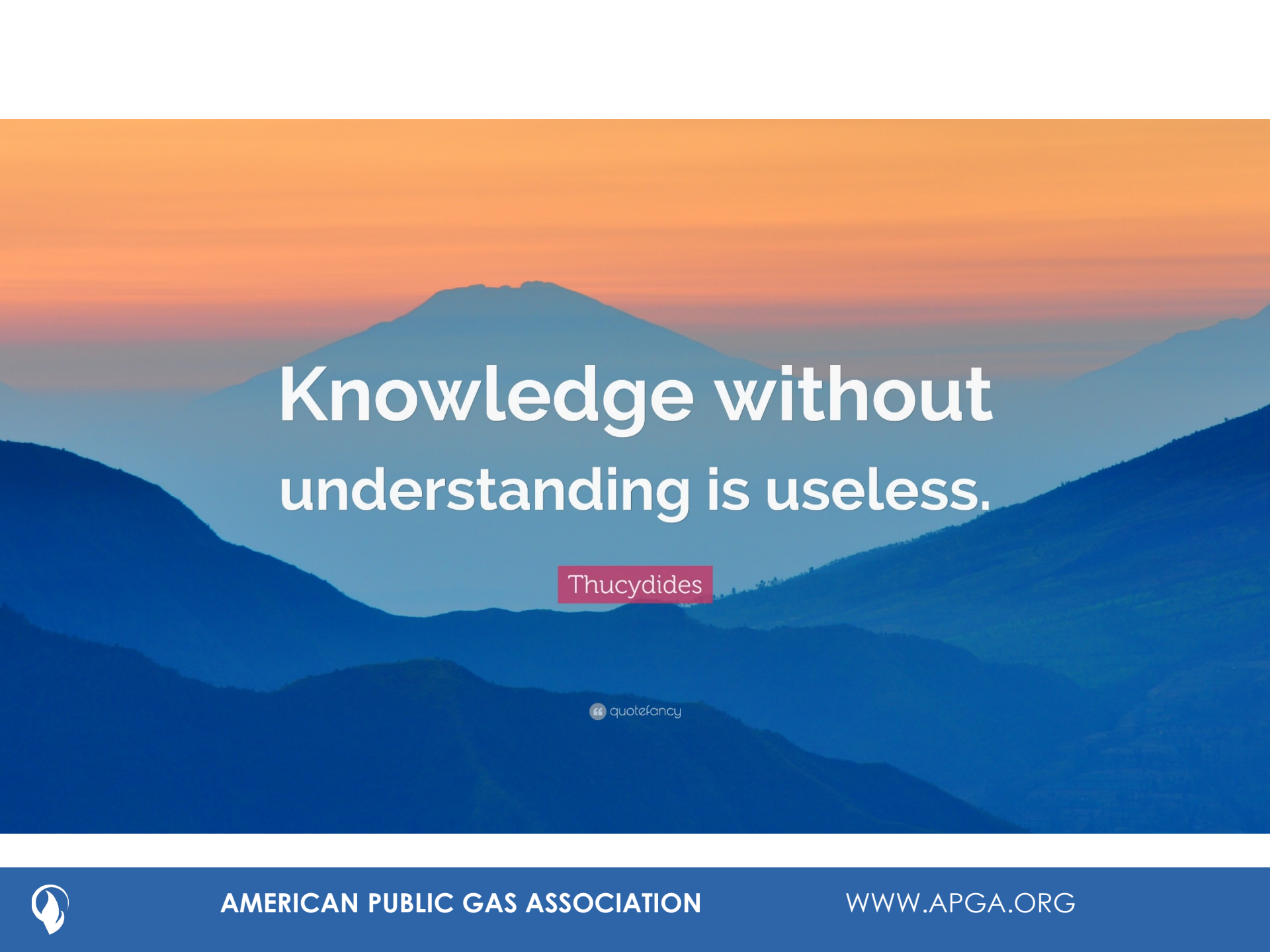
We are always working on safety, whether it is implementing something new, comparing to things outside of the company, or just fine tuning what we have

Not enough man power and time

Never heard of it.

We are just getting acquainted with PSMS; therefore, it is a lack of knowledge that is keeping us from full implementation

**Knowledge without understanding is useless.**

Thucydides

quotefancy

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The early stages of SMS implementation have already displayed clear benefits to ensuring the safety of our community and the integrity of our system.

From the collaboration involved with planning to the MOC process, our organization has witnessed healthy discussion across all areas of operations aimed at mitigating risks associated with all projects.

It is evident that as this system grows so will our positive safety culture.

# THANK YOU

🌐 **WWW.APGA.ORG**
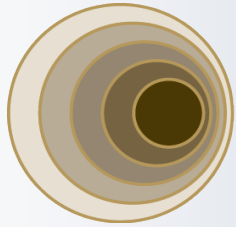
**FACEBOOK.COM/**
**PUBLICGAS**

**TWITTER.COM/APGA**

## Erin Kurilla
Vice President, Operations & Safety
*ekurilla@apga.org*
202-905-2904

**BUCKEYE PARTNERS, L.P.**

**Safety & Operations Management System**
**API RP 1173 Implementation Journey**

**February 26, 2020**

# Who We Are

**Buckeye Partners, L.P., the oldest independent liquid petroleum pipeline operator in the United States, operates a diversified network of integrated assets providing midstream logistic solutions.**

6,000 miles of pipeline connected to 100+ delivery locations

110 domestic terminals with 56 million barrels of storage capacity

2,000+ jobs worldwide

7 Global Marine Terminals in Caribbean, NY Harbor & Gulf Coast with 62 million barrels of storage capacity

Buckeye Merchant Services markets refined petroleum & fuel oil

# Buckeye's Safety Culture

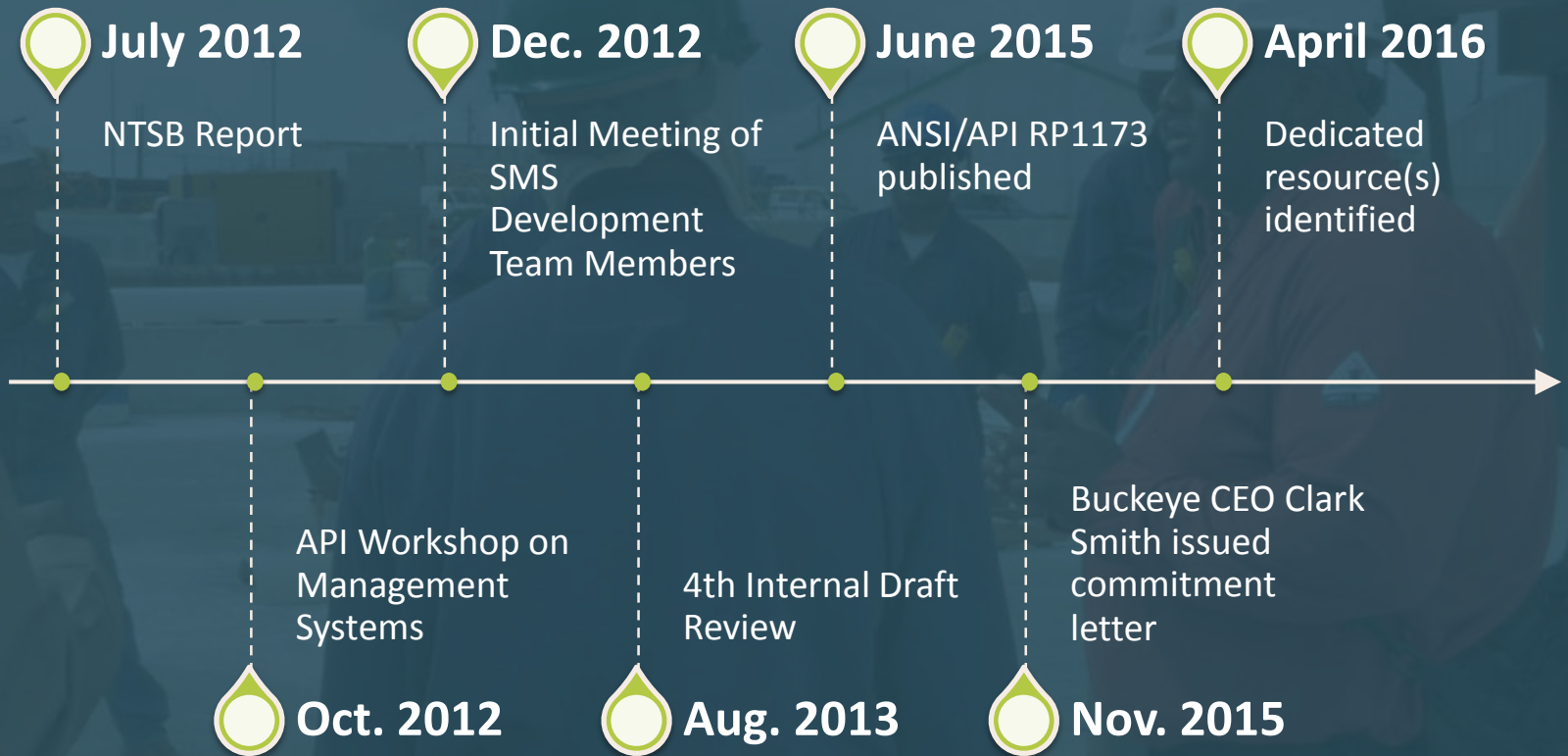At Buckeye, **Think Safe, Work Safe, Leave Safe** isn't just a slogan or tagline – it's what influences our decisions.

Our work everyday is underscored by a commitment to safety, environmental stewardship, operational excellence and best-in-class customer service. This work is reflected by our company's mission, guiding principles, and best-in-class programs, risk controls, and management systems.

# Early Participation & Commitment to RP 1173

**July 2012**

NTSB Report

**Dec. 2012**

Initial Meeting of SMS Development Team Members

**June 2015**

ANSI/API RP1173 published

**April 2016**

Dedicated resource(s) identified

API Workshop on Management Systems

**Oct. 2012**

4th Internal Draft Review

**Aug. 2013**

Buckeye CEO Clark Smith issued commitment letter

**Nov. 2015**

**BUCKEYE PARTNERS, L.P.**

# SOMS: Buckeye's Way to Operational Excellence

## Safety & Operations Management System - SOMS



- Reinforce the culture of continuous improvement with increased focus on *check* and *act*

- Enhance risk management, regulatory compliance and operational excellence

- Provide demonstrable efficiencies and consistency

- Be growth oriented, allowing the safe and reliable integration of new assets and platforms

## Categories of SOMS Standards

- Leadership & Management Commitment
- Risk Management
- Stakeholder Engagement
- Operational Controls
- Competence, Awareness & Training

- Documentation & Recordkeeping
- Emergency Preparedness & Response
- Incident Reporting & Investigation
- Performance Assurance
- Leadership Review & Continuous Improvement

# Ongoing Implementation Across Operations

## SOMS Planning Phase

- ✓ 10 elements and 25 standards developed 2017-18
- ✓ More than 90 employees across the company formed cross-functional/multi-disciplined teams for development
- ✓ Aimed at setting expectations & identifying efficiencies

## SOMS Gap Assessment Phase

- ✓ January 2019 – present
- ✓ Tiered launch of standards for assessment
- ✓ Increased engagement to 200+ employees
- ✓ Assessments led by standard owners, 6 months per standard



**BUCKEYE PARTNERS, L.P.**
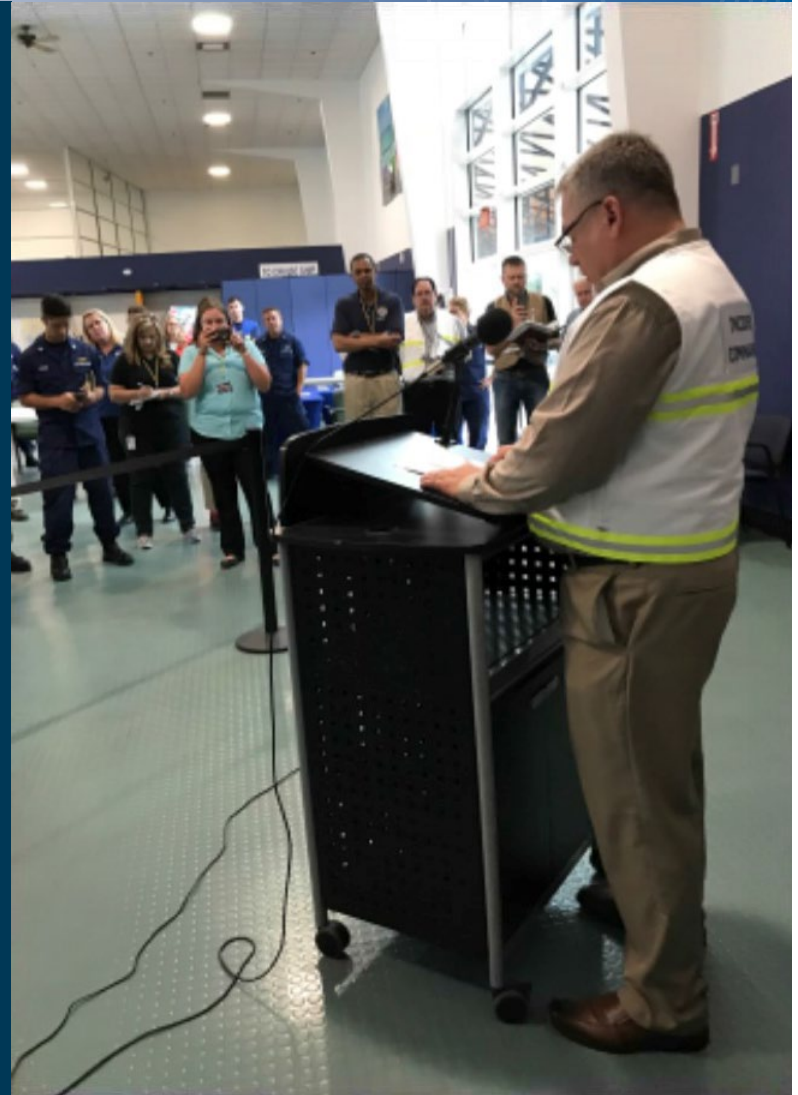
# Keys to Success: Integrated Approach

**OSHA Process Safety Management**
*24 Buckeye facilities since 2004*

**Environmental Management Standards**
*St. Lucia and Buckeye Bahamas Hub*

**API RP 1173**
*300 DOT jurisdictional facilities/assets; 6,000 miles of pipeline*

# Keys to Ongoing Success

- ✓ **Buckeye's strong safety culture**

- ✓ **Early involvement in planning and commitment to RPI 1173**

- ✓ **Implementation of SOMS across operations**

- ✓ **Seamless integration with existing safety management programs**

- ✓ **Employee engagement through development teams & outreach**

# THE EFFECTS OF INTEGRATION ON A SAFETY MANAGEMENT SYSTEM AND ITS EFFECT ON SAFETY CULTURE

**JIM FRANCIS – VICE PRESIDENT, SAFETY & TRAINING**

FEBRUARY, 2020

# CENTERPOINT ENERGY
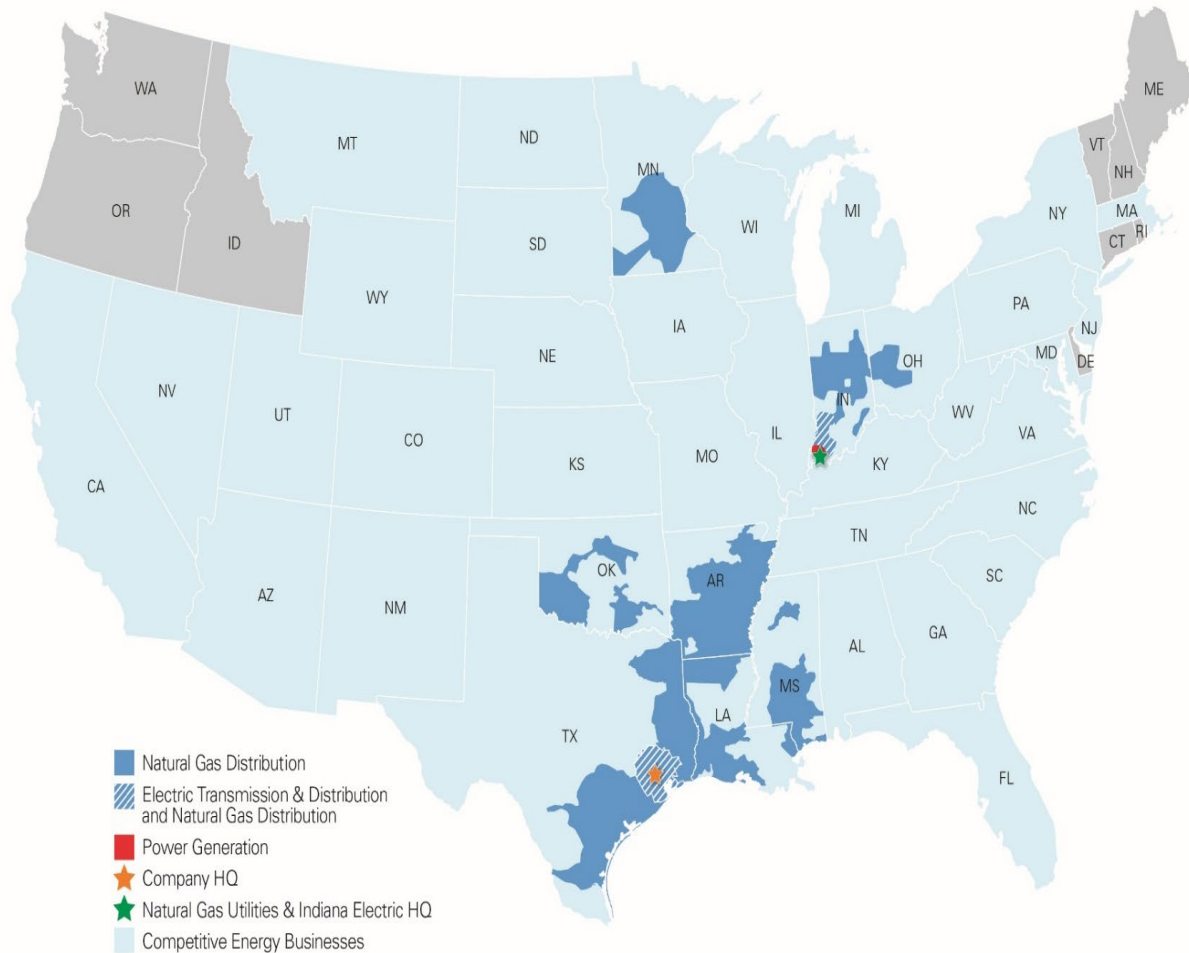


Electric Transmission & Distribution and Power Generation — more than 2.5 million customers, 2 states

Natural Gas Distribution — 4.5 million customers, 8 states

Competitive Energy Businesses — nearly 40 states

**Legend:**
- Natural Gas Distribution
- Electric Transmission & Distribution and Natural Gas Distribution
- Power Generation
- Company HQ
- Natural Gas Utilities & Indiana Electric HQ
- Competitive Energy Businesses

February, 2019
Completed Acquisition
Vectren Corporation

# OUR SMS JOURNEY

**2015**

**Assessment**

Baseline Assessment
Gap Analysis
Organizational Structure
Role Definition – QA/QC/Audit
Implementation Plan

**2016**

Communication
Process Development
Governance Structure
Risk Management
Employee Engagement

**Socialization**

Gap Analysis
Implementation Plan

**2017**

Organizational Structure
Competency Assessment
MOC Program Development

**Implementation**

Progress Assessment
Contractor Engagement
Risk Mitigation
Continuous Improvement Process
Implementation Auditing

**2018**

Progress Assessment
Control Testing
Competency, Awareness & Training
Expansion to Electric

**Maturation**

MOC Implementation
Socialization
Competency Development

**2019**

**CNP - Vectren Merger**

**Growth**

Socialization
Role Definition
Organizational Structure
Implementation Plan
Program Merger

Red – CNP,  Black - Vectren

# OUR CHALLENGE

- Organizational Size & Structure
  - Many more Stakeholders – Employees, Contractors, Public, Regulators, Etc
  - Benefits – Business, Process & Culture
- Cultural Norms & Differences
  - Best of Both
- Awareness & Socialization
  - Leveraging the Connected, Mavens & Sales People
- Engagement
  - Risk Identification and Assessment
  - Risk Mitigation

- Procedural Control & Execution
- Interdependencies & Departmental Relationships
  - Process Ownership & Handoffs
- Continuous Improvement Process
  - Empowerment of Employees
  - Structure Problem Solving
  - Leadership Support
- Recognition & Reward
  - Personalized vs Corporate
- Resources
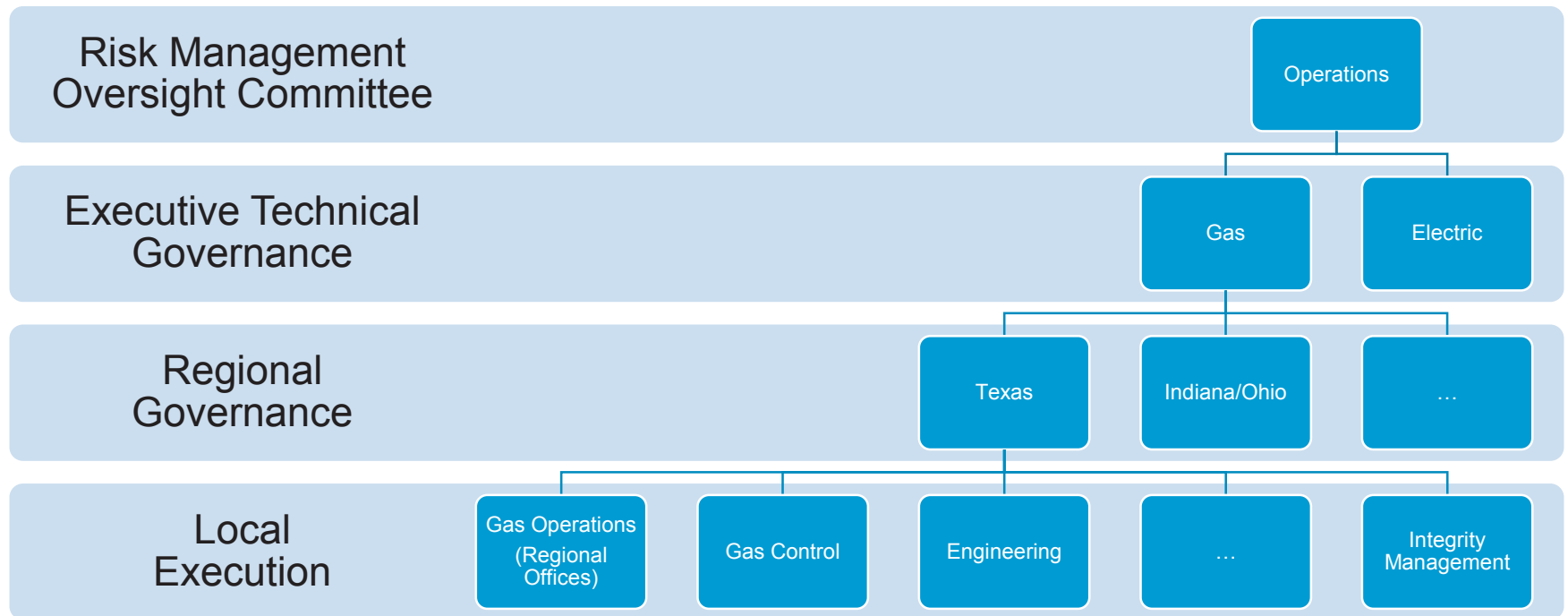  - Quality Assurance & Quality Control

# INTEGRATED SAFETY MANAGEMENT SYSTEM



Policies & Procedures

Records

Information Systems

Asset Management

Tools & Equipment

Communications

Materials

Operation Systems

Training

Job Requirements

Skills

Risk

Performance Management

Goals & Objectives

Governance

Reports

Metrics

Quality Assurance

Risk Assessment

Control Testing

Auditing

Inspections

Qualification of Personnel

# INTENTIONALITY, ENGAGEMENT & GOVERNANCE

- Intentional and re-occurring localized risk management processes
- Supported by a tiered governance process

| | |
|---|---|
| **Risk Management Oversight Committee** | Operations |
| **Executive Technical Governance** | Gas · Electric |
| **Regional Governance** | Texas · Indiana/Ohio · ... |
| **Local Execution** | Gas Operations (Regional Offices) · Gas Control · Engineering · ... · Integrity Management |

- Drives greater visibility into risk mitigation activities and better identifies safety goals and objectives.
- Provides a model of what is possible at an industry level.

# EFFECT ON SAFETY CULTURE

## BEFORE SMS

- Operator Qualification
- Compliance Focused
- Localized Root Cause Analysis
- Isolated Solutions
- Hero
- Authoritative
- Reactive

## AFTER SMS

- Performance Evaluations
- Quality Focused
- Root Cause Analysis & Lessons Learned
- Culture of Collaboration & Accountability
- Champions of Safety
- Engagement and Accountability
- Preventive

## Continuous Improvement Enabled

# QUESTIONS & CONTACT INFORMATION

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