NGA PSMS Implementation Collaborative

The Journey of Sustaining Advances in Pipeline Safety & Strengthening Safety Culture...................

Ensuring Reliability and Resiliency as we Transition to a Zero Carbon Economy

Northeast GAS ASSOCIATION

The Blacksmith Group

Pipeline Safety Management System Execution Commitment
Membership Day-to-Day Focus on Operationalizing Pipeline Safety Strategy

Learning from Our Past to Build Our Future…………………………

What started as a pledge to improve our safety performance has become our way of working together. Through the Northeast Gas Association (NGA), we collaborate to share information and continuously learn in a group setting because we know it's our best pathway to meet the standard we have set for ourselves and the public we serve. In December of 2018, the NGA Board of Directors approved the creation of a Committee to specifically concentrate on embedding API RP 1173 Pipeline Safety Management Systems (PSMS) principles into day-to-day natural gas utility operations. The Committee's focus is on operationalizing a safety management system strategy by adopting a Plan-Do-Check-Act (PDCA) framework applicable to daily engineering, construction, operations, and maintenance activities. **Our leaders' line of sight on how this strategy drives down risk will be an ongoing, evergreen process.** NGA's members are committed to applying these (basic) principles of continuous improvement *with every decision and every action,* with the goal of zero incidents.

The Past, Present & Future of Pipeline Safety

We All Know the PSMS Elements,
But Can We See How Operators Integrate Them as a Continuum?

Follow our Journey !!

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	

Northeast Gas Association

NGA PSMS Implementation Collaborative

Over 2,000 Engagements with Employees

25 Engagements with Executives

15 Gap Analyses, Road Maps & Reports

Over 50 Identified Leading Practices

Over 25,000 Employees in the 2021 NGA Gas Distribution Pipeline Safety Culture Assessment – Largest LDC Assessment Ever !
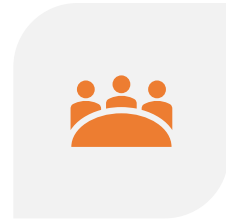
The Blacksmith Group

PSMS Committee Leadership: Chair – Megan Cyr, Eversource, Vice Chairs – Jay Jani, Con Ed & Pat Levesque, WG+E

NGA Collaborative Phase I PSMS Tasks
Understanding What, Why & How ?

Reactive

PRESENT

Predictive

PAST

Proactive

FUTURE
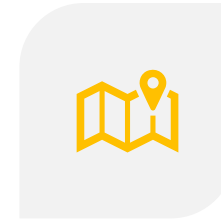
TASK 1 – INITIAL MEETINGS WITH MEMBERS

TASK 2 – RP 1173 GAP ANALYSIS / BUILD-ON

TASK 3 – RP 1173 ROAD MAP
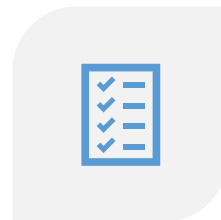
TASK 4 – TACTICAL GUIDE CONCEPT & PROTOTYPES
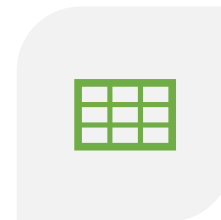
TASK 5 – METRICS / INFORMATION SHARING CONCEPT DEVELOPMENT

Task 1 - Initial Membership Meetings & Leadership Engagement

An invitation is extended to Organization Leadership to ensure engagement and discuss the "what, why, how" & "build-on" approach to PSMS

Establishing a bond in this way creates both engagement and ensures walk-the-talk commitment

A memorable connection is established that solidifies the PSMS value proposition and Leadership belief in the process

Task 1 – Initial Meetings With Members

Half-Day Meeting at Organization Headquarters Discussion with Top Management

- Review of work done to conform with RP 1173
- Blacksmith Perspectives on RP 1173
- Preparation for Gap Analysis
- Key First Steps
- Deliverable – Leading Practices and Key Shares

Pipeline Safety Management System

Stakeholder Engagement

Leadership and Management Commitment

Risk Management

Management Reviews & Continuous Improvement

Incident Investigation & Lessons Learned

Culture

Documentation And Record Keeping

Operational Controls

Emergency Preparedness & Response

Safety Assurance

Competence, Awareness & Training

Pipeline Safety Management System "Build-On's"

Stakeholder Engagement
› Corporate Communications
› Public Awareness
› Town Hall Meetings

Leadership and Management Commitment
› Mission
› Values
› Priorities

Risk Management
› Distribution Integrity Management
› Transmission Integrity Management
› Enterprise Risk Management
› Incorporating Lessons Learned Into Risk Assessment

Management Reviews & Continuous Improvement
› Safety Performance
› DIMP, TIMP & SIMP
› Corrective Action

Culture
Periodic Culture Surveys
Safety Councils
Safety Observations
Ethics Hotline

Incident Investigation & Lessons Learned
› Investigations – Root Cause Analysis
› Re-Visiting Internal Lessons Learned
› External Lessons Learned

Documentation And Record Keeping
› Documents
› Records
› Documentation & Records Process

Operational Controls
› Operations & Maintenance Procedures
› TIMP, DIMP, SIMP & LNG
› TIMP Management of Change
› Control Room Management of Change

Emergency Preparedness & Response
› Emergency Preparedness and Response Plan
› Emergency Response Field Drills
› Table-Top Exercises

Competence, Awareness & Training
› Initial Training
› Annual Refresher
› Qualification

Safety Assurance
› Quality Control
› Quality Assurance
› Internal Audit & Evaluations
› External Audit & Evaluations
› AGA Peer Reviews

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How Does A Pipeline Safety Management System Work?
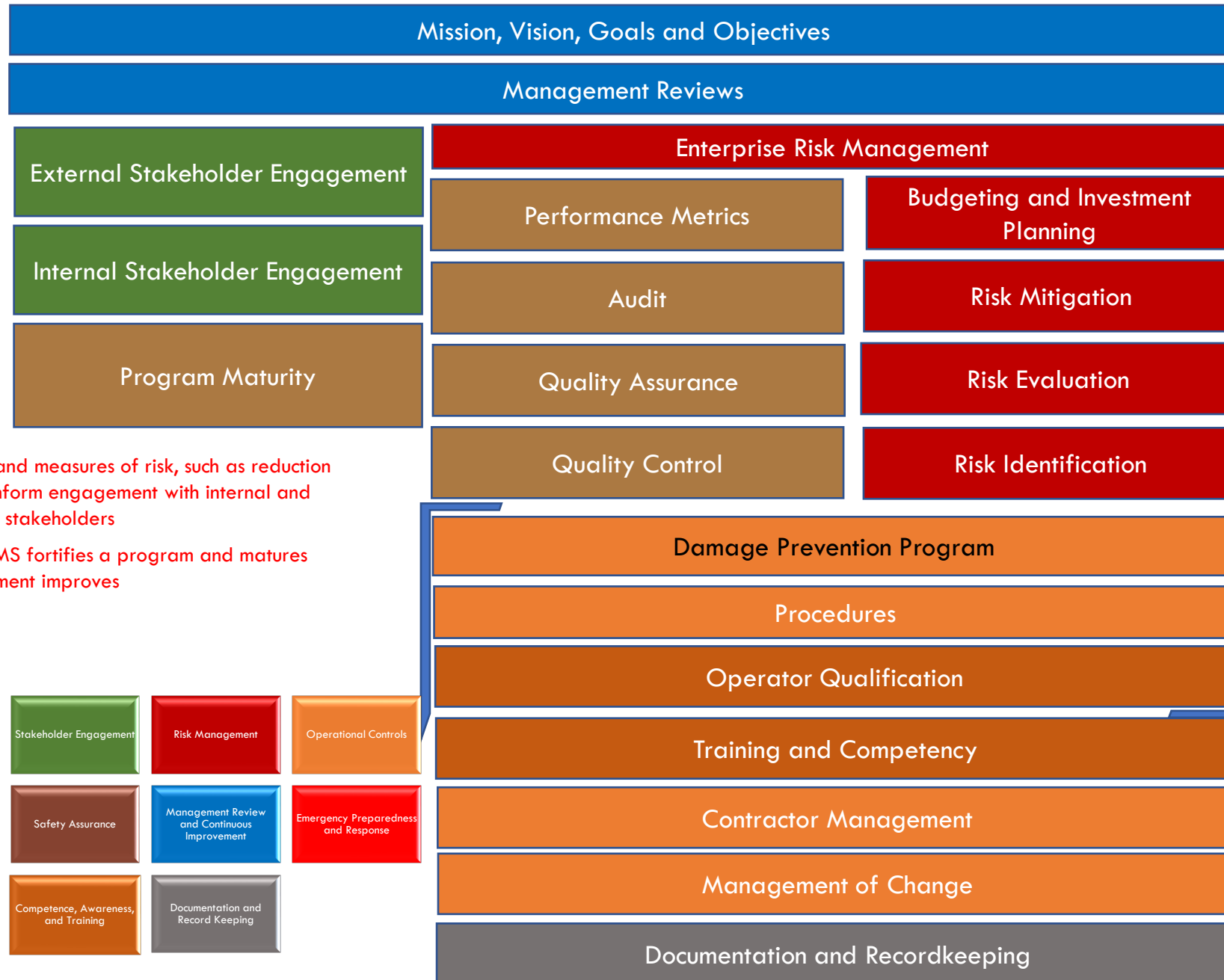
A PSMS strengthens and fortifies programs such as Damage Prevention.

The regulatory foundation of Damage Prevention is procedures, op quals and documentation; supported by ER to address incidents

Mission, Vision, Goals and Objectives

Management Reviews

A PSMS strengthens a program with a focus on training and competency; recognizing the critical role of contractors and MOC

A PSMS ensures that program goals and objectives are in sync with organization mission and objectives

Safety assurance is provided in a three-tiered Manner.

Safety assurance provides quality work and good data to support risk management.

External Stakeholder Engagement

Internal Stakeholder Engagement

Program Maturity

Enterprise Risk Management

Performance Metrics	Budgeting and Investment Planning
Audit	Risk Mitigation
Quality Assurance	Risk Evaluation
Quality Control	Risk Identification

Lessons Learned

Emergency Preparedness and Response

Incident Investigation

Metrics and measures of risk, such as reduction In risk inform engagement with internal and external stakeholders

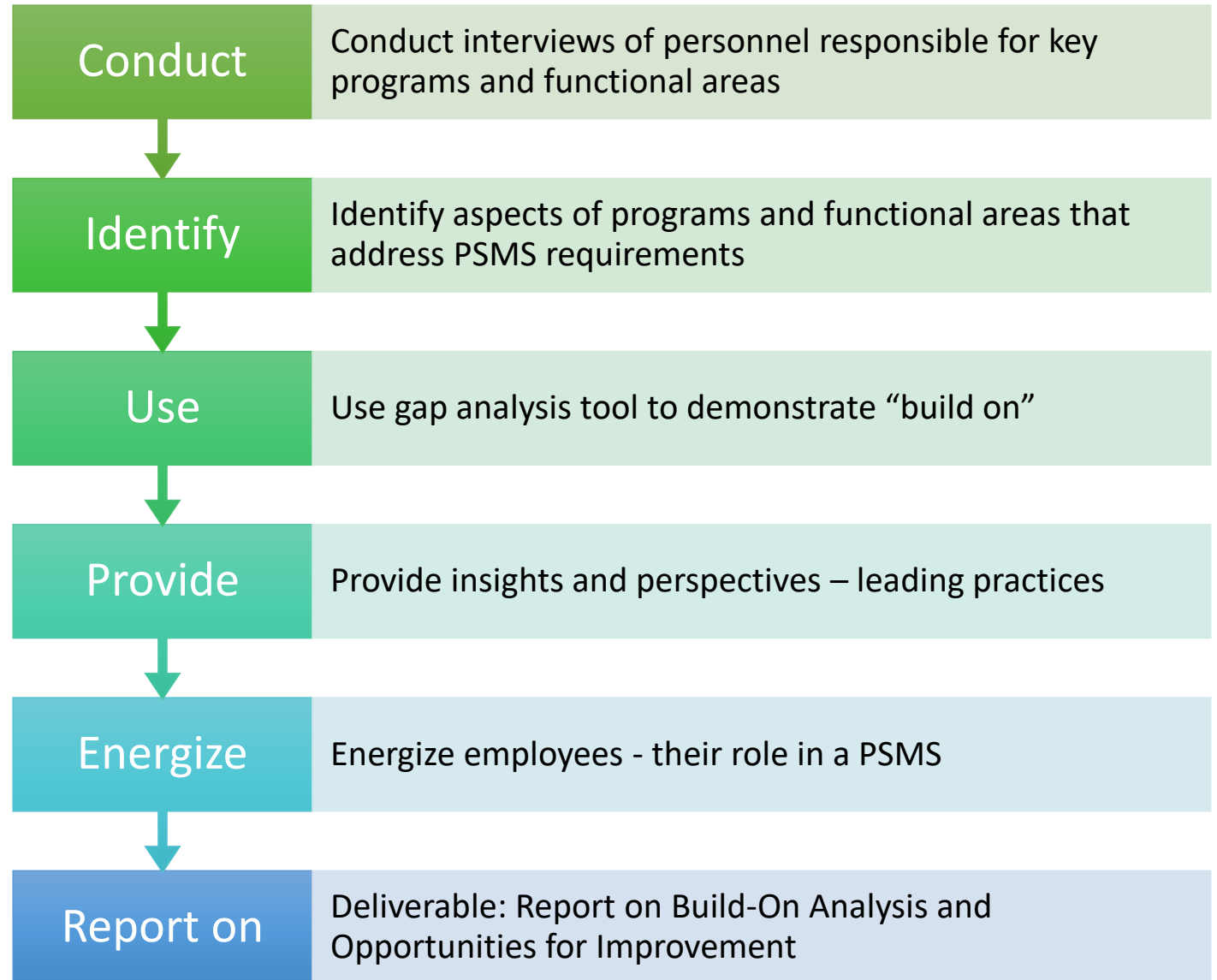As a PSMS fortifies a program and matures engagement improves

Damage Prevention Program

Procedures

Operator Qualification

Training and Competency

Contractor Management

Management of Change

Documentation and Recordkeeping

When incidents do occur, the EP is implemented. Incidents are formally investigated and lessons learned are documented and shared throughout the organization, including improvements to risk management

Risk management including use of risk registers inform budgeting and investment planning, and combined with metrics inform enterprise risk and management reviews

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		

Task 2 – Members Gap Analysis

Conduct	Conduct interviews of personnel responsible for key programs and functional areas
Identify	Identify aspects of programs and functional areas that address PSMS requirements
Use	Use gap analysis tool to demonstrate "build on"
Provide	Provide insights and perspectives – leading practices
Energize	Energize employees - their role in a PSMS
Report on	Deliverable: Report on Build-On Analysis and Opportunities for Improvement

NGA PSMS Task 2 Deliverable
Gap Analysis/ Build-On Workbook

A Tab for Each of the 10 Elements

Requirements of RP 1173

Observations: Organization's Basis for Meeting the Requirements

Opportunities to Conform

PSMS Implementation GANTT Chart (Example)

#	Build Upon / Opportunities	Sub-element API RP 11	Implementation Timeline
1	Develop PSMS project implementation plan consistent with VGS priorities and resources including metrics associated with implementation process.	LMC	Short term
3	- Set up a team to support PSMS implementation.	LMC	Short term
	- Develop a written SMS Commitment Statement	LMC	Short term
	- Establish clear expectations for personnel supporting SMS implementation	LMC	Short term
	- Develop/ communicate SMS implementation goals and objectives to the organization	LMC	Short term
	- Create SMS training and awareness within the organization for SMS implementation	LMC	Short term
2	Develop PSMS governance document/plan	LMC	Medium term
	- Define the relationship between API RP 1173 elements, programs and processes, and roles/responsibilities	LMC	Medium term
	- Development a SMS Program Description document	LMC	Medium term
	- Develop SMS roles and expectations for managers and supervisors	LMC	Medium term
	- Develop SMS roles and expectations for employees and contractors	LMC	Medium term
4	Ensure that all departments and employees share data across organization, particularly relating to risk, building on success in DIMP	LMC	Long term
6	Formalize process for how personnel bring forward risk and asset safety issues. Include tracking of issues and actions.	SE	Medium term
5	Document practices and methodologies used to engage key internal and external stakeholders in two-way communications about PSMS, operations and asset risk.	SE	Long term
	- Develop internal SMS communication and awareness process.	SE	Long term
	- Develop external SMS communication and awareness process.	SE	Long term
9	Develop a risk register/ stewardship process that considers likelihood and consequence of asset risk. Process can be used to quantify overal risk reduction, serve as as input into the ERM evaluation process, and communicate risks to the Board.	RM	Short term
8	Consider risk ranking cross bores	RM	Short term
10	Support consideration of Build on use of QA/QC of construction records, field notes, etc. to improve/ ensure data accuracy (assurance).	RM	Short term
7	Consider the addition of field folks into the input and data integration processes.	RM	Medium term
12	Formally document and communicate Stop Work policy	OC	Short term
14	Formalize risk assessment, operations, and control practices in place so they can be executed consistently with minimal deviation.	OC	Time frame dependent on level of risk
15	Complete MOC process documentation, communicate to organization and provide training for affected personnel.	OC	Medium term

NGA PSMS Task 3 Deliverable
Build-On and Road Map Report

Take Workbook and Generates
A Word Document – Report (~30 p.)

Will Categorize Opportunities Into
Short, Medium and Long Term

High-Level Road Map

Detailed GANT Chart

Northeast Gas Association (NGA)
Pipeline Safety Management System Assessment

Prepared for:

VGS
South Burlington, Vermont

Prepared by:

The Blacksmith Group
Process Performance Improvement Consultants, LLC
Houston, Texas

May 20, 2020

NGA PSMS Assessment   Privileged and Confidential

Operational Controls

The following actions demonstrate conformance with API RP 1173 requirements.

- Operating, maintenance and inspection procedures are maintained in electronic O&M Procedures Manual (O&M). Field personnel have access to the O&M on tough books.
  - O&M procedures structured around OQ type activities.
  - PSMS Manager also 'owns' the O&M (and the QA/QC Program Manual).
  - O&M is reviewed annually, not to exceed 15 months (regulatory requirement).
  - Review process includes the types of procedural changes to be considered (aka, regulatory changes, procedure effectiveness, incidents).
- O&M references that procedures are required to be followed.
- Informal stop work process is practiced and reinforced for both, includes asset and public safety impacts.
- Gas Control operating procedures are in place which includes communication requirements between field activities and Gas Control.
- Standards committee that addresses engineering, construction, and maintenance materials and standards.
- XXX has made increasing use of site-specific procedures for higher risk work, such as working on gas control equipment.
- A new MOC process was deployed in 2019 that addresses many of the API RP 1173 requirements (process is currently being piloted and is a work in progress).
- The QA/QC Program Manual provides comprehensive guidance, roles, responsibilities, and authorities for the effective management of contractor work.

The following actions demonstrate existing practices, procedures, or processes that VGS can build upon to aide in the implementation and improvement of PSMS.

- O&M contains a procedure for evaluating procedure effectiveness, which includes onsite verification, reviews of completed work, work documentation, after action review meetings, and/or training for specific procedures.

The following actions are recommended to achieve increased conformance with API RP 1173 requirements.

- Formalize (document and communicate) Stop Work policy - good practice to post in visible places.
- It is good practice to have personnel from operations who are going to operate or maintain equipment and facilities to have an opportunity to review the engineering design packages.
- The assessment noted that there are several innovative risk assessment, operations, and control practice in place. It is important to formalize them so they can be executed consistently with minimal deviation.

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Pipeline Safety Management System Roadmap

Year 4
Work To Mature

1. Benchmark Maturity Assessment Methods – CFATS, API Tools, Peer Operators
2. Continue Routine Management Reviews and Define Improvements

Year 3
Assess Implementation

1. Conduct Routine Management Reviews and Define Improvements
2. Undertake Coalition Building for Supervisors
3. Continue to Address Opportunities Within Programs and Elements
4. Benchmark Elements
5. Assess Implementation

Year 2
Project Close Out
Begin Implementation

1. Conduct Routine Management Reviews and Define Improvements
2. Continue to Address Opportunities Within Programs and Through Elements
3. Evaluate and Improve Stakeholder Engagement
4. Refine PSMS Metrics

Second Six Months
Project Phase

1. Define Opportunities to be Addressed Within Existing Programs
2. Define Element Owners to Address Short Term Opportunities
3. Undertake Coalition Building at Executive and Director Levels
4. Develop Routine Communication About PSMS
5. Formalize Management of Change
6. Participate in NGA Safety Culture Survey

First Six Months
Project Phase

1. Establish a PSMS Steering Committee
2. Define PSMS Governance Structure
3. Develop a PSMS Description Document
4. Deploy Initial Project Team
5. Combine Existing Selected Management Reviews Making PSMS Management Reviews Routine

Blacksmith Group 2020

Task 3 - NGA PSMS Compendium Report

Northeast Gas Association (NGA)
Pipeline Safety Management System Assessment
Compendium Report

Prepared for:

Northeast Gas Association
Needham, MA

Prepared by:

The Blacksmith Group
Process Performance Improvement Consultants, LLC
Houston, Texas

October 15, 2020

Operational Controls

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Task 4 Tactical Guides….
Bridging the Strategy Implementation Gap

- Pressure Regulation, Control & Odorization

- Mains & Services Construction

- Gas Control

- Distribution System Maintenance

- Damage Prevention

- Engineering Design & Integrity Management

- Pipeline Safety Stakeholder Engagement

- LNG Operations

- Emergency Preparedness & Response
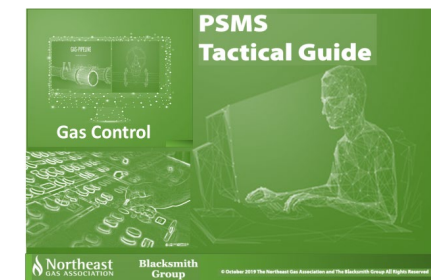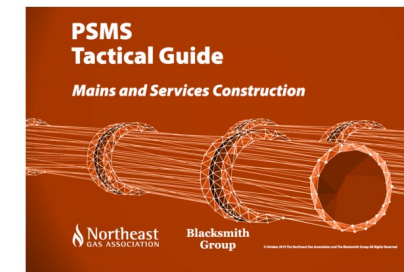
Plan, Do, Check, Act Model is at the Core of EDR and PSMS/API RP 1173

Inputs

Risk Management

PLAN

Operational Controls

Competence, Awareness and Training

Documentation and Record Keeping

Stakeholder Engagement

ACT

Leadership and Management Commitment

DO

Continuous Improvement

Management Review

CHECK

Incident Investigation, Evaluation and Lessons Learned

Safety Assurance

Outputs

- *Continuous Improvement is the Goal*

17
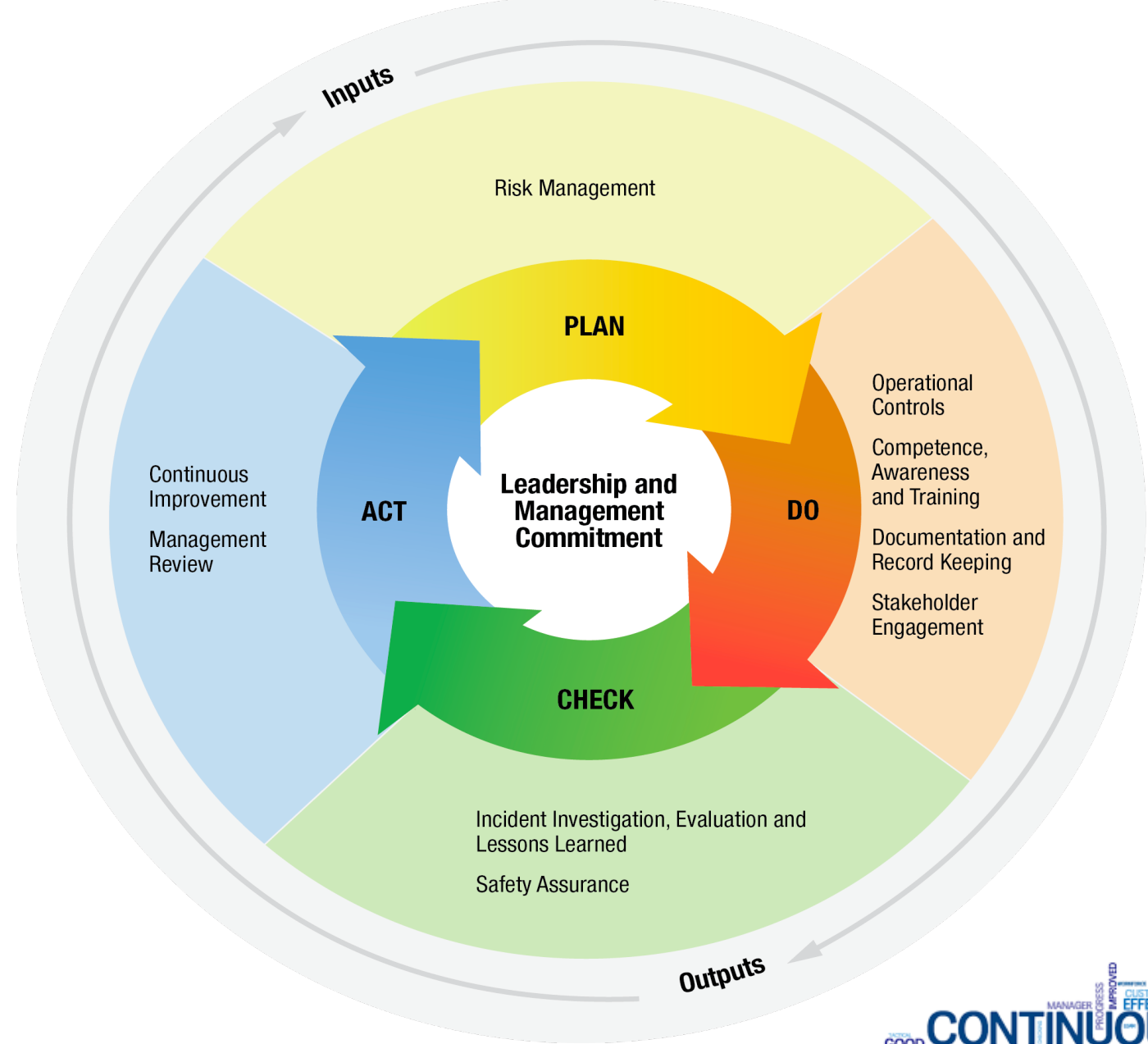
Plan, Do, Check, Act Model - *Operationalizing Strategy*

- ✓ **Continuous Improvement is the goal, Tactical Guides are the "Vehicle"……………………..**

- ✓ **The PDCA at its heart needs Leadership guiding the continuum of processes, seeking connectivity between programs/elements & day-to-day operations**

- ✓ **Framework of checks and balances to ensure facility construction, operation and maintenance are performed consistently and provide pipeline operating organizations with the fundamental rules to ensure sustainable positive safety outcomes.**

NGA PSMS Tactical Guides

Operationalization of PSMS
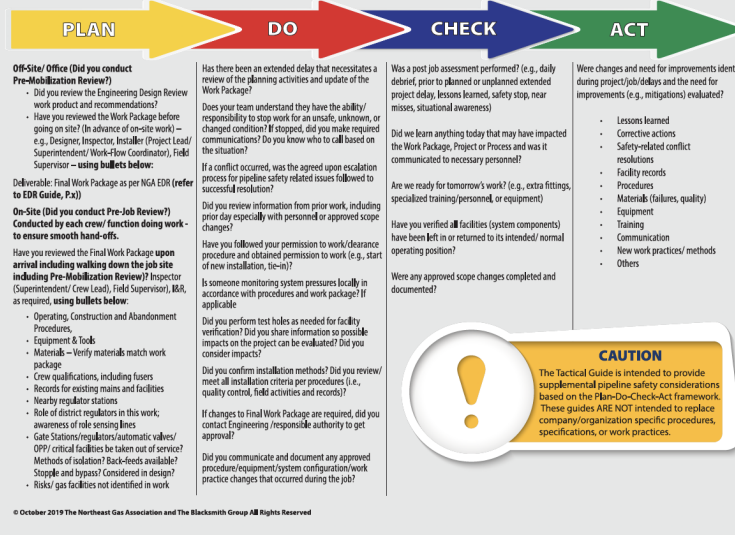
Three Proof of Concept Tactical Guides
- Mains and Services Construction
- Pressure Regulation, Control and Odorization
- Gas Control

Mains & Services Construction

PLAN → DO → CHECK → ACT

PLAN

Off-Site/ Office (Did you conduct Pre-Mobilization Review?)
- Did you review the Engineering Design Review work product and recommendations?
- Have you reviewed the Work Package before going on site? (In advance of on-site work) – e.g., Designer, Inspector, Installer (Project Lead/ Superintendent/ Work-Flow Coordinator), Field Supervisor – using bullets below:

Deliverable: Final Work Package as per NGA EDR (refer to EDR Guide, P.x))

On-Site (Did you conduct Pre-Job Review?) Conducted by each crew/ function doing work - to ensure smooth hand-offs.

Have you reviewed the Final Work Package upon arrival including walking down the job site including Pre-Mobilization Review)? Inspector (Superintendent/ Crew Lead), Field Supervisor), I&R, as required, using bullets below:
- Operating, Construction and Abandonment Procedures,
- Equipment & Tools
- Materials – Verify materials match work package
- Crew qualifications, including fusers
- Records for existing mains and facilities
- Nearby regulator stations
- Role of district regulators in this work; awareness of role sensing lines
- Gate Stations/regulators/automatic valves/ OPP/ critical facilities be taken out of service? Methods of isolation? Back-feeds available? Stopple and bypass? Considered in design?
- Risks/ gas facilities not identified in work

DO

Has there been an extended delay that necessitates a review of the planning activities and update of the Work Package?

Does your team understand they have the ability/ responsibility to stop work for an unsafe, unknown, or changed condition? If stopped, did you make required communications? Do you know who to call based on the situation?

If a conflict occurred, was the agreed upon escalation process for pipeline safety related issues followed to successful resolution?

Did you review information from prior work, including prior day especially with personnel or approved scope changes?

Have you followed your permission to work/clearance procedure and obtained permission to work (e.g., start of new installation, tie-in)?

Is someone monitoring system pressures locally in accordance with procedures and work package? If applicable

Did you perform test holes as needed for facility verification? Did you share information so possible impacts on the project can be evaluated? Did you consider impacts?

Did you confirm installation methods? Did you review/ meet all installation criteria per procedures (i.e., quality control, field activities and records)?

If changes to Final Work Package are required, did you contact Engineering /responsible authority to get approval?

Did you communicate and document any approved procedure/equipment/system configuration/work practice changes that occurred during the job?

CHECK

Was a post job assessment performed? (e.g., daily debrief, prior to planned or unplanned extended project delay, lessons learned, safety stop, near misses, situational awareness)

Did we learn anything today that may have impacted the Work Package, Project or Process and was it communicated to necessary personnel?

Are we ready for tomorrow's work? (e.g., extra fittings, specialized training/personnel, or equipment)

Have you verified all facilities (system components) have been left in or returned to its intended/ normal operating position?

Were any approved scope changes completed and documented?

ACT

Were changes and need for improvements identified during project/job/delays and the need for improvements (e.g., mitigations) evaluated?
- Lessons learned
- Corrective actions
- Safety-related conflict resolutions
- Facility records
- Procedures
- Materials (failures, quality)
- Equipment
- Training
- Communication
- New work practices/ methods
- Others

CAUTION
The Tactical Guide is intended to provide supplemental pipeline safety considerations based on the Plan-Do-Check-Act framework. These guides ARE NOT intended to replace company/organization specific procedures, specifications, or work practices.

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Pressure Regulation and Control

PSMS Management Review ← **Daily, Weekly, End of Job Improvements**

Plan – Do – Check – Act (EDR Guideline)

Job Planning
- Use of O&M Procedures
- Use of Site-Specific Procedure, including valve positions
- Work Package – Including Drawings

Pre-Mobilization Review
- Procedures   - Nearby regulators
- Materials   - Equipment and Tools
- Role of regulators - Nearby work
- Work history   - Emergency plan
- Location of sensing lines   - Work history
- Back feeds   - Required qualifications
- Calibration Records - Review of drawings

Pre-Job Brief
- Site walk down   - Possible AOCs
- Procedures   - Equipment and Tools
- Materials   - Nearby work
- One-call ticket   - Crew qualifications
- Emergency Plan   - Work history/ records

On-Site Review
- Work package reflects as found work site
- Assets to be out of service - Nearby work
- Role of regulators - Back feeds available
- Location of sensing lines

Work Preparation
- Authorization from gas control   - Required permits
- Review of prior days work.   - Confirm details in procedure
- Apply lubrication as needed
- Confirm Instrument Configuration Consistent With SCADA

Installation/ Abandonment
- Communicate procedure changes/ field adjustments
- Commence installation/ abandon
- Communicate status of work
- Monitor system pressures
- Pre-Start Up Safety Review
- Isolated and purged
- Facilities left as intended

Quality Control Quality Assurance
- Conduct quality control checks
- Check of as-built input
- Confirm quality control findings
- Check completed as-built drawings
- Check and verify adequacy of test pressures
- Check and verify facilities left as intended

Post Job Review
- Learnings from work impacting procedures
- Learnings impacting materials and equipment
- Near misses, work stoppages and good catches
- Learnings from AOCs

Continuous Improvement
- Input for Procedure Improvements
- Input for Specification Improvements
- Input for Design Improvements

Workmanship, Safety and Quality Ownership
- Foreman - Workmanship coaching
- Foreman and crew – Quality control
- Supervisor - Workmanship coaching and quality control
- Inspectors - Quality assurance
- QA teams - Quality assurance
- Internal audit - Audit/ Evaluation
- External audit - Audit/ Evaluation

Instrument Inspection, Calibration & Verification

PLAN → DO → CHECK → ACT

PLAN

Is there a site/instrument specific inspection, calibration and verification procedure? (PJB)

Have you reviewed appropriate O&M Procedures?

Does the procedure have sufficient detail & applicability to site specific equipment, including performance requirements and calibration ranges?

Do you have all the tools, equipment, parts, calibration standards needed?

Do you have proper training & qualifications to perform work?

Are authorizations to work/ permission to work specifically defined in the procedure?

Do you understand activity specific potential AOCs & required action?

Have you reviewed system drawings including P&IDs/ Control Schematics and included them in the work package?

Are instrument output anomalies identified, understood and documented such that they are not interpreted as real AOCs?

Have you considered EHS protocols during equipment maintenance procedure (release or exposure to pipeline containments)?

DO

Did you obtain permission to work?

Does your team understand they have the ability to stop work for an unsafe or unknown condition?

Is testing equipment calibrated?

Are you monitoring system parameters locally in accordance with procedures and clearance to work, if required?

Did you communicate & document any procedure/equipment/system configuration/work practice changes that occurred during the job?

Are you communicating status of work to Gas Control as required?

Has all operating equipment been returned to its normal operating position?

Are all instrument valves returned to their normal position?

Did you document all required inspection/calibration information?

Do you have permission to place equipment back in service?

Did you document any anomalies which may have been recorded during instrument testing?

Did you confirm model and serial number of equipment being calibrated?

Confirm that instrument configuration is consistent with SCADA screens?

Verification with Gas Control system operating normally with no attributable alarms?

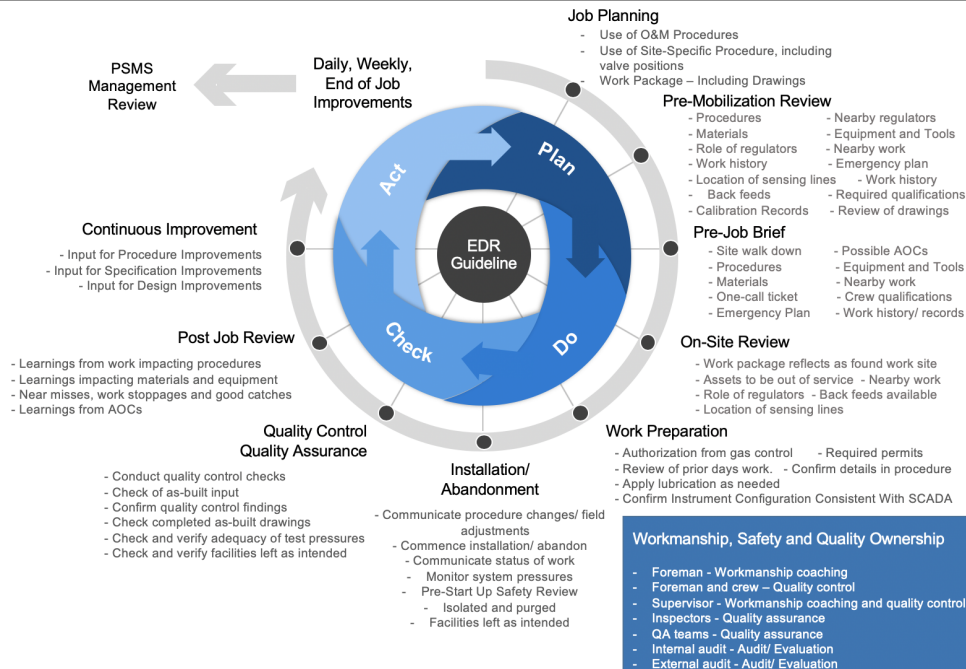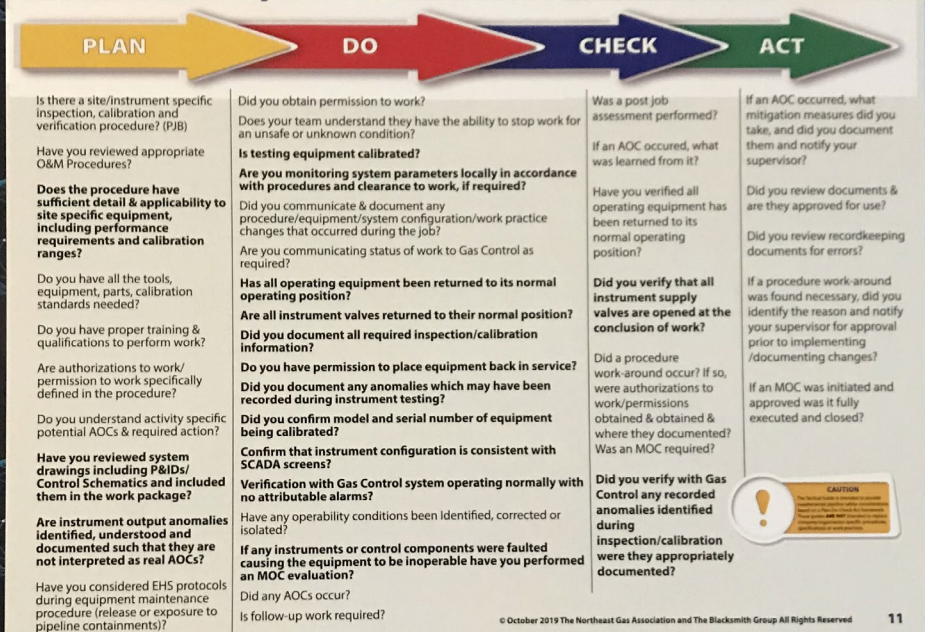Have any operability conditions been identified, corrected or isolated?

If any instruments or control components were faulted causing the equipment to be inoperable have you performed an MOC evaluation?

Did any AOCs occur?

Is follow-up work required?

CHECK

Was a post job assessment performed?

If an AOC occured, what was learned from it?

Have you verified all operating equipment has been returned to its normal operating position?

Did you verify that all instrument supply valves are opened at the conclusion of work?

Did a procedure work-around occur? If so, were authorizations to work/permissions obtained & obtained & where they documented? Was an MOC required?

Did you verify with Gas Control any recorded anomalies identified during inspection/calibration were they appropriately documented?

ACT

If an AOC occurred, what mitigation measures did you take, and did you document them and notify your supervisor?

Did you review documents & are they approved for use?

Did you review recordkeeping documents for errors?

If a procedure work-around was found necessary, did you identify the reason and notify your supervisor for approval prior to implementing /documenting changes?

If an MOC was initiated and approved was it fully executed and closed?

CAUTION

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Safety Management System Resource Center

Pipeline SMS Execution Commitment

What started as a pledge to improve our safety performance has become our way of working together. Through the Northeast Gas Association (NGA), we collaborate to share information and continuously learn in a group setting because we know it's our best pathway to meet the standard we have set for ourselves and the public we serve. In December of 2018, the NGA Board of Directors approved the creation of a Committee to specifically concentrate on embedding API RP 1173 Pipeline Safety Management Systems (PSMS) principles into day-to-day natural gas utility operations. The Committee's focus is on operationalizing a safety management system strategy by adopting a Plan-Do- Check-Act (PDCA) framework applicable to daily engineering, construction, operations, and maintenance activities. **Our leaders' line of sight on how this strategy drives down risk will be an ongoing, evergreen process.** NGA's members are committed to applying these (basic) principles of continuous improvement *with every decision and every action,* with the goal of zero incidents.

Commitment Statement

Information Resources

Access to API RP 1173 - Pipeline Safety Management System

API RP 1173 Factsheet

Pipeline SMS Planning Tools

Pipeline SMS Implementation Tools

Pipeline SMS Maturity Modeling

Chevron OEMS Overview

Enbridge Safety Management System

ExxonMobil OIMS Framework Brochure

Voluntary Information Sharing System Working Group Federal Advisory Committee - Final Report

Closing the Holes in the Swiss Cheese - Pipeline Safety Management Systems

Corrosion

Excavation Damage

Material Weld Failure

Hazards

Incorrect Operations

Equipment Failure

Leadership & Management Commitment

Operational Controls

Risk Management

Stakeholder Engagement

Incident Investigation & Lessons Learned

Safety Assurance

Management Review & Continuous Improvement

Emergency Preparedness & Response

Competence Awareness & Training

Documentation & Record Keeping

Incident

Accelerating Learning Through Information Sharing

NGA PSMS RESOURCE CENTER (RC) LESSONS LEARNED PROCESS FLOW
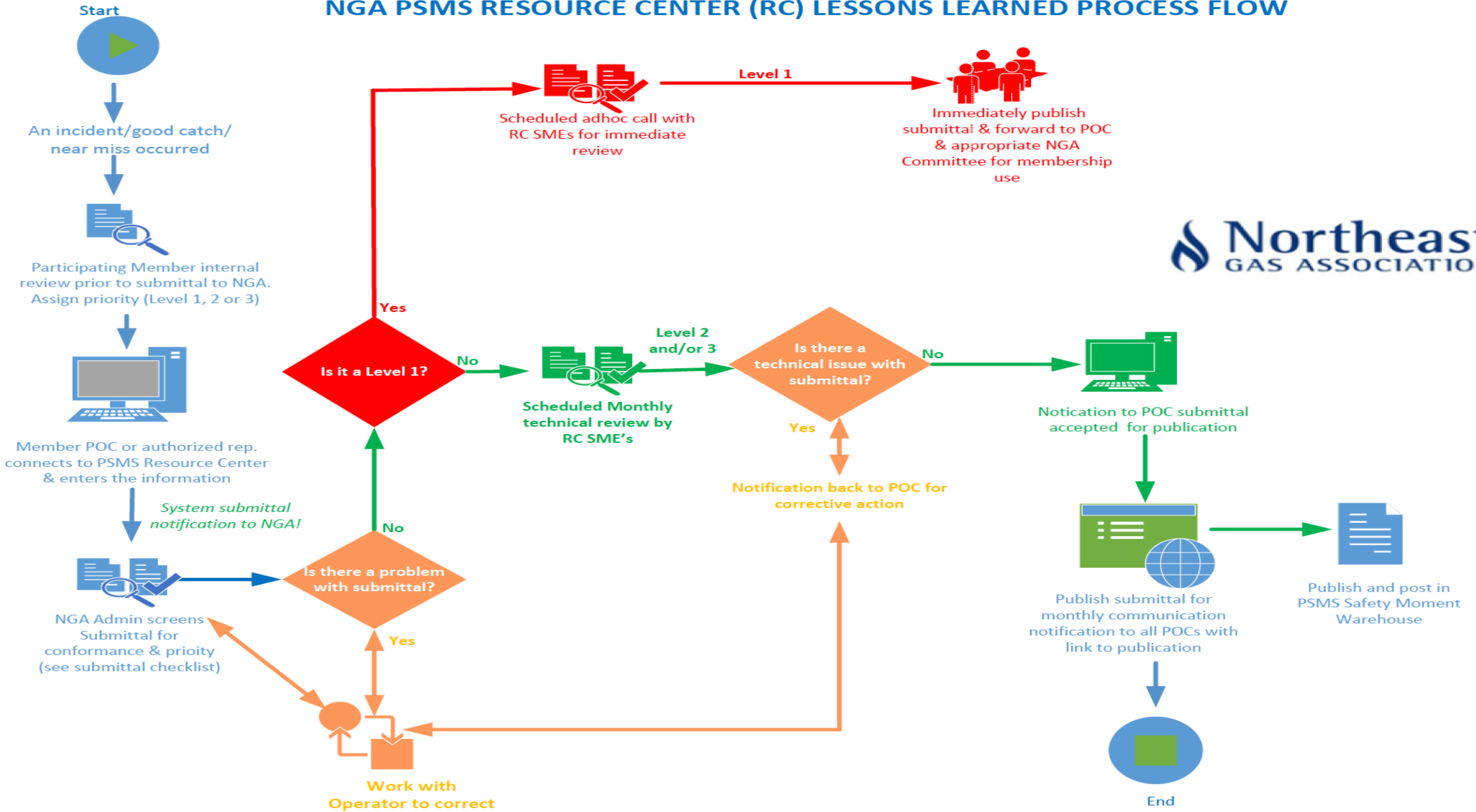
Construction Lessons Learned

Date Range

Jan 1, 2021 - Sep 2, 2021 ▾

	Source of Finding	Type of Construction	Main or Service	Finding Basis	Material Finding	Material	Count ▾
1.	Regulatory Audit	Maintenance	Main	Design	-	Steel	2
2.	Internal Audit	New	Service	Design Materials	Pipe Fittings	Cast/Wrought Iron	1
3.	Internal QC Finding	Replacement	Main	Design Materials	Valves	Copper	1
4.	Pipeline Quality Tailboard	Pressure Regulator Set Construction	-	Materials	Pipe Valves	Wood	1
5.	Near Miss / Good Catch	Meter Station Construction	-	Materials	Pipe problem	Plastic	1
6.	Near Miss / Good Catch	Maintenance	Main	Materials Workmanship	Valves	Steel	1
7.	Regulatory Audit	Maintenance	Main	Design Materials	Pipe	Steel	1
8.	Regulatory Audit	New	Service	Materials	Valves	Unknown	1
9.	Internal QC Finding	New	Main	Design Materials	Pipe	Reconditioned Cast Iron	1
1...	Pipeline Safety Tailboard	Maintenance	Service	Design	-	Ductile Iron	1

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(Ferrous Data)

Date of Finding ▲	Steel Type	Outside Diameter	Wall Thickness	Metal Joining Method
Jan 5, 2021	Single SAW	0.405	0.049	Tie-in Weld
Jan 8, 2021	-	-	-	Mechanical Joining

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(Plastic Data)

Date of Finding ▲	Plastic Type	Plastic Fusion	1 Material Joined	2 Material Joined
Jan 5, 2021	-	-	-	-
Jan 8, 2021	-	-	-	-
Feb 17, 2021	-	-	-	-

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(Qualitative Assessment)

Human Factors ▲	Competency & Qaul	Causal	Provide a brief text description of the finding in the box below

Excavation Damage - Gas Distribution Incident Data (2010 - Present)

Incident Count 53

Excavation Type

- EXCAVATION DAMAGE BY THIRD PARTY
- EXCAVATION DAMAGE BY OPERATOR'S CONTRACTOR (SECOND PAR...
- EXCAVATION DAMAGE BY OPERATOR (FIRST PARTY)

92.5%

ROW Type

- CITY STREET — 41.5%
- PRIVATE LANDOWNER — 17%
- STATE HIGHWAY — 15.1%
- COUNTY ROAD — 13.2%
- PRIVATE BUSINESS
- PRIVATE EASEMENT
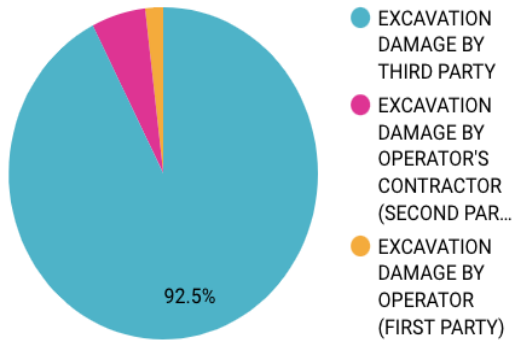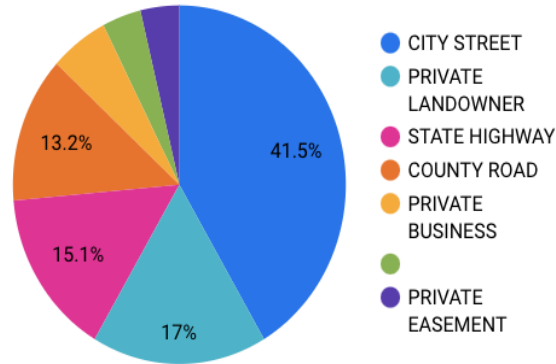
Notification Type

Operator	One Call	Excavator	Contractor	Landowner	# ▾
YES	YES	-	-	-	25
NO	NO	-	-	-	17
-	YES	-	-	-	4
NO	YES	-	-	-	3
YES	NO	-	YES	-	1
YES	NO	-	-	-	1
YES	YES	-	YES	-	1
YES	YES	YES	-	-	1

State (7)   Recor...

✓	CT	
✓	NH	
☐	AK	2
☐	AL	4
☐	AR	3
☐	AZ	5
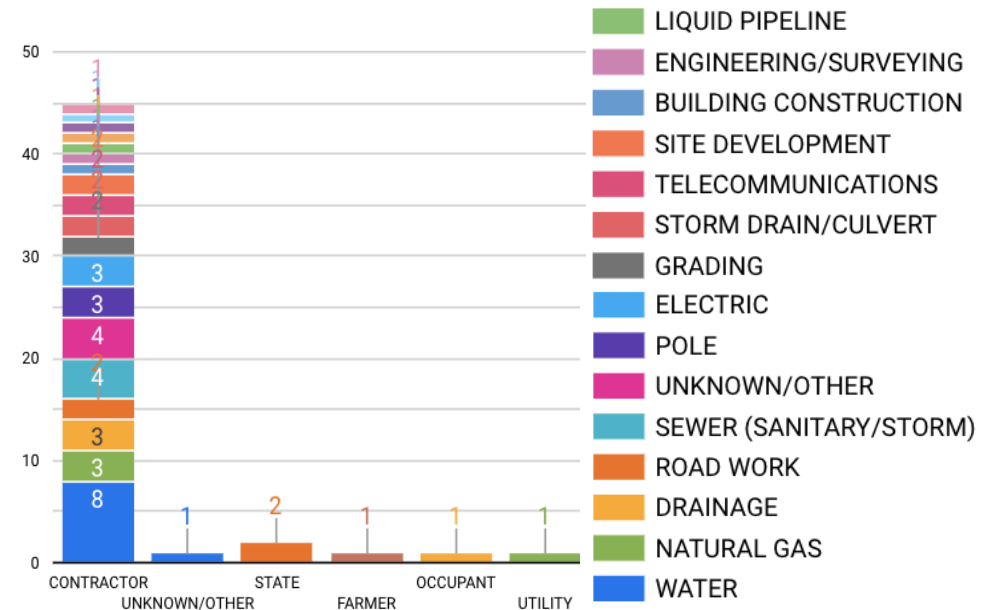
Excavation Type	Root Cause	Root Cause (Other)	Detail	# ▾
EXCAVATION DAMAGE BY THIRD PARTY	ONE-CALL NOTIFICATION PRACTICES NOT SUFFICIENT	-	NO NOTIFICATION MADE TO THE ONE-CALL CENTER	12
EXCAVATION DAMAGE BY THIRD PARTY	EXCAVATION PRACTICES NOT SUFFICIENT	-	FAILURE TO USE HAND TOOLS WHERE REQUIRED	7
EXCAVATION DAMAGE BY THIRD PARTY	EXCAVATION PRACTICES NOT SUFFICIENT	-	EXCAVATION PRACTICES NOT SUFFICIENT (OTHER)	6
EXCAVATION DAMAGE BY THIRD PARTY	LOCATING PRACTICES NOT SUFFICIENT	-	FACILITY MARKING OR LOCATION NOT SUFFICIENT	6
EXCAVATION DAMAGE BY THIRD PARTY	EXCAVATION PRACTICES NOT SUFFICIENT	-	FAILURE TO VERIFY LOCATION BY TEST-HOLD (POT-HOLING)	3
EXCAVATION DAMAGE BY THIRD PARTY	LOCATING PRACTICES NOT SUFFICIENT	-	INCORRECT FACILITY RECORDS/MAPS	3
EXCAVATION DAMAGE BY THIRD PARTY	EXCAVATION PRACTICES NOT SUFFICIENT	-	FAILURE TO MAINTAIN THE MARKS	2
EXCAVATION DAMAGE BY	EXCAVATION PRACTICES	WORKING OUTSIDE OF	EXCAVATION PRACTICES	1

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Excavator by Work Type

- LIQUID PIPELINE
- ENGINEERING/SURVEYING
- BUILDING CONSTRUCTION
- SITE DEVELOPMENT
- TELECOMMUNICATIONS
- STORM DRAIN/CULVERT
- GRADING
- ELECTRIC
- POLE
- UNKNOWN/OTHER
- SEWER (SANITARY/STORM)
- ROAD WORK
- DRAINAGE
- NATURAL GAS
- WATER

CONTRACTOR   STATE   OCCUPANT
UNKNOWN/OTHER   FARMER   UTILITY

NGA PSMS – Initial Metrics – 2021

Targeted Phase 1 and Selected Phase 2

Lagging Metrics Reported in Annual and Incident Reports
- Miles of main
- Numbers of services
- Leaks and leaks repaired by cause
- Incidents by cause

Leadership and Management Commitment
- % of leadership meetings completed [Planned versus Actual]
- % of action items identified and closed out

Risk Management
- Miles of main and numbers of services, planned and replaced
- # of emergent risks revealed
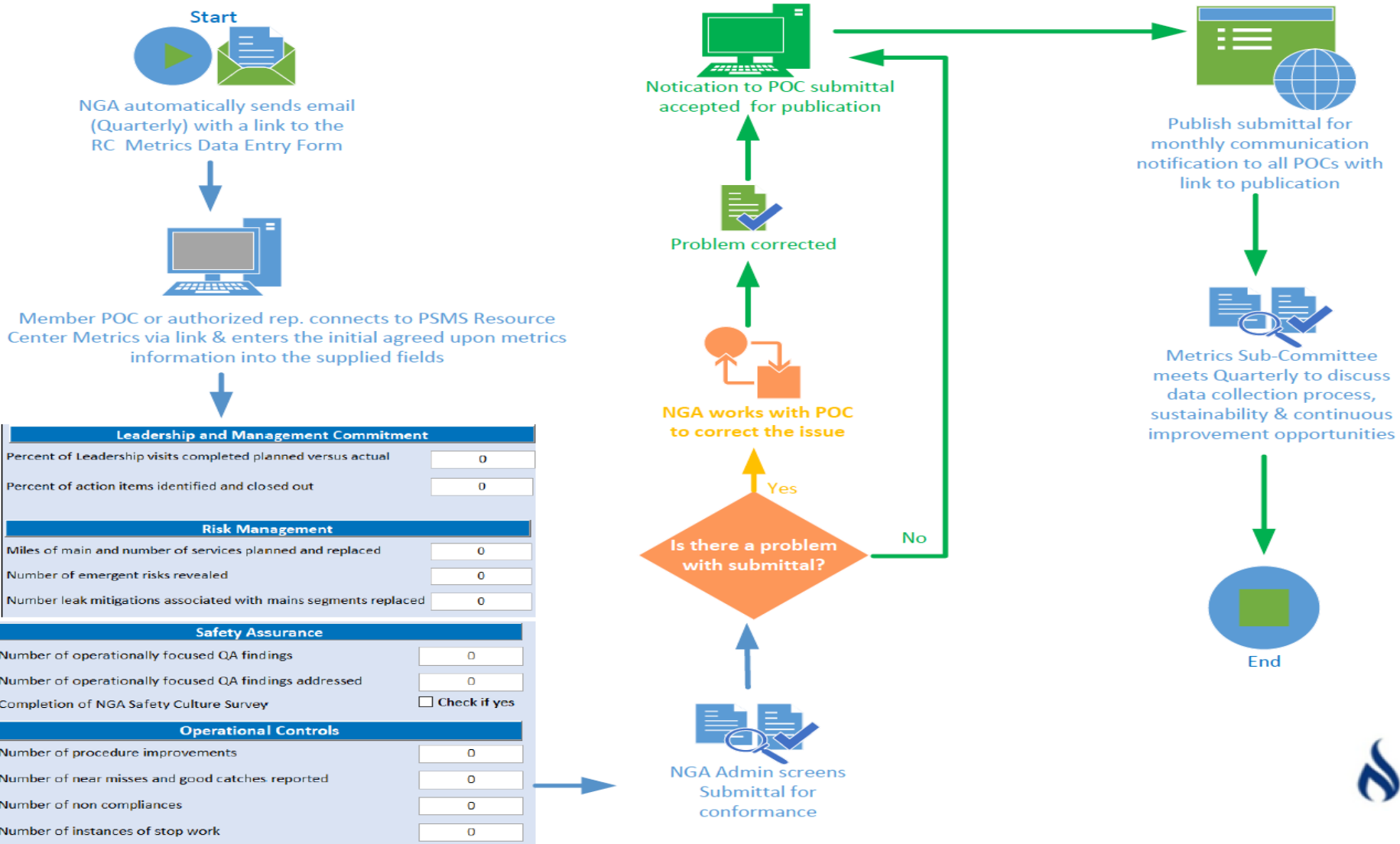- Leak mitigation associated with main segments replaced

Operational Controls
- # of procedure improvements
- # of near misses/ good catches reported
- # of non-compliances
- # of instances of stop work

Safety Assurance
- # of operationally focused QA Findings identified
- # of operationally focused QA Findings addressed
- Completion of NGA Safety Culture Assessment

NGA PSMS IMPLEMENTATION COLLABORATIVE RESOURCE CENTER (RC) CONTINUOUS IMPROVEMENT METRICS REPORTING PROCESS FLOW

Start

NGA automatically sends email (Quarterly) with a link to the RC Metrics Data Entry Form

Member POC or authorized rep. connects to PSMS Resource Center Metrics via link & enters the initial agreed upon metrics information into the supplied fields

Leadership and Management Commitment	
Percent of Leadership visits completed planned versus actual	0
Percent of action items identified and closed out	0

Risk Management	
Miles of main and number of services planned and replaced	0
Number of emergent risks revealed	0
Number leak mitigations associated with mains segments replaced	0

Safety Assurance	
Number of operationally focused QA findings	0
Number of operationally focused QA findings addressed	0
Completion of NGA Safety Culture Survey	☐ Check if yes

Operational Controls	
Number of procedure improvements	0
Number of near misses and good catches reported	0
Number of non compliances	0
Number of instances of stop work	0

Notication to POC submittal accepted for publication

Problem corrected

NGA works with POC to correct the issue

Yes

Is there a problem with submittal?

No

NGA Admin screens Submittal for conformance

Publish submittal for monthly communication notification to all POCs with link to publication

Metrics Sub-Committee meets Quarterly to discuss data collection process, sustainability & continuous improvement opportunities
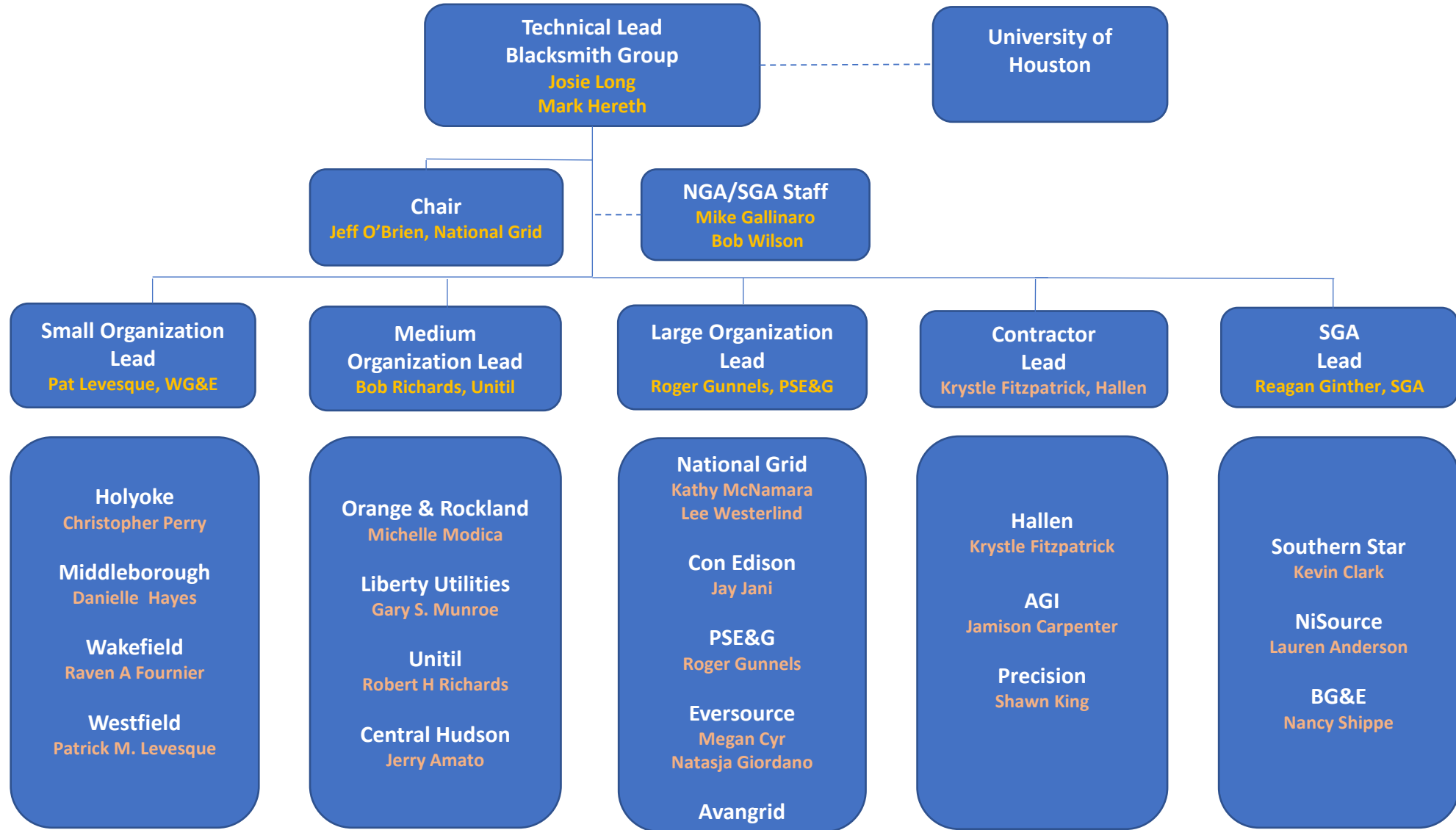
End

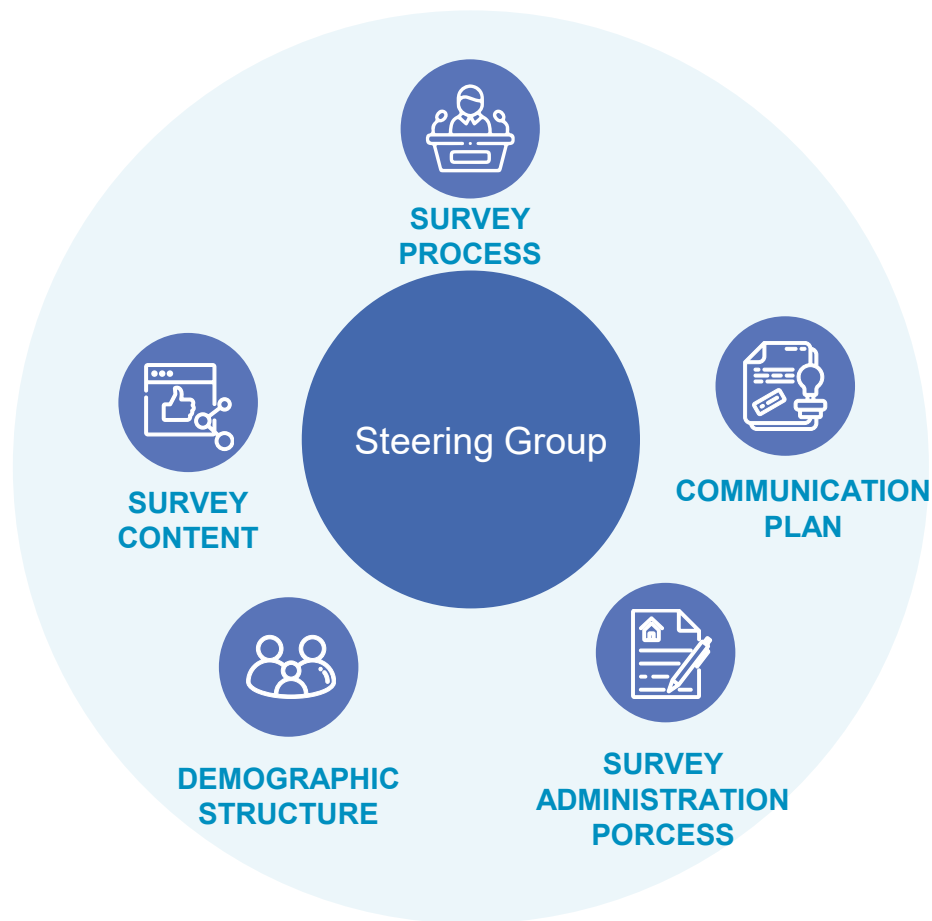**Northeast GAS ASSOCIATION**

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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."

- **Safety priority** – emphasis on workplace safety when productivity pressure is high

PSMS Culture Assessment Survey Steering Group

Technical Lead
Blacksmith Group
Josie Long
Mark Hereth

University of Houston

Chair
Jeff O'Brien, National Grid

NGA/SGA Staff
Mike Gallinaro
Bob Wilson

Small Organization Lead
Pat Levesque, WG&E

Medium Organization Lead
Bob Richards, Unitil

Large Organization Lead
Roger Gunnels, PSE&G

Contractor Lead
Krystle Fitzpatrick, Hallen

SGA Lead
Reagan Ginther, SGA

Small Organization	Medium Organization	Large Organization	Contractor	SGA
Holyoke Christopher Perry	**Orange & Rockland** Michelle Modica	**National Grid** Kathy McNamara Lee Westerlind	**Hallen** Krystle Fitzpatrick	**Southern Star** Kevin Clark
Middleborough Danielle Hayes	**Liberty Utilities** Gary S. Munroe	**Con Edison** Jay Jani	**AGI** Jamison Carpenter	**NiSource** Lauren Anderson
Wakefield Raven A Fournier	**Unitil** Robert H Richards	**PSE&G** Roger Gunnels	**Precision** Shawn King	**BG&E** Nancy Shippe
Westfield Patrick M. Levesque	**Central Hudson** Jerry Amato	**Eversource** Megan Cyr Natasja Giordano		
		Avangrid		

Northeast GAS ASSOCIATION

The Blacksmith Group

UNIVERSITY of HOUSTON

SGA LINKING PEOPLE, IDEAS, INFORMATION

Steering Group Deliverables

SURVEY
PROCESS

SURVEY
CONTENT

Steering Group

COMMUNICATION
PLAN

DEMOGRAPHIC
STRUCTURE

SURVEY
ADMINISTRATION
PORCESS

Safety Culture Assessment Steering Group Activities

☑ Establish safety culture survey timeline

☑ Develop/revise survey items

☑ Create introduction content and definitions

☑ Design a common demographic worksheet for HRIS files

☑ Define paper, and email survey distribution process

☑ Create internal communication plan for both paper and email

Measuring & Benchmarking Pipeline Safety Culture

Pipeline Safety Culture Assessment Background & Benefits

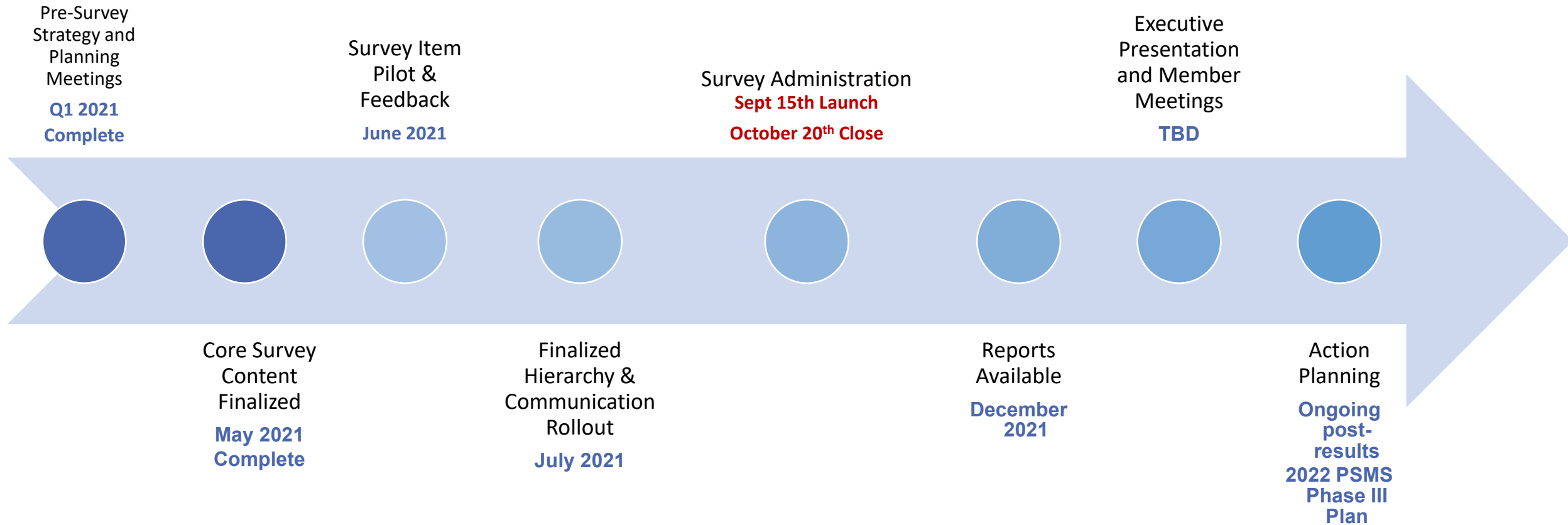- ☑ Based on an established survey approach conducted by pipeline trade associations since 2013.

- ☑ Tangible indicator of safety that allows companies to benchmark compared to industry norms.

- ☑ Allows organizations to implement improvements and measure progress over time.

- ☑ Incorporates contractor organizations and embedded contractor crews in the survey.

- ☑ Organizations analyze results by organizational and demographic attributes.

- ☑ Includes partnerships with leading safety culture industrial psychologists.

KEY PARTNERSHIP

- Northeast Gas Association (NGA)
- Southern Gas Association (SGA)
- Process Performance Improvement Consulting (P-PIC)
- University of Houston, Industrial Psychology Dept.

Safety Culture Assessment Milestones

Pre-Survey Strategy and Planning Meetings

Q1 2021 Complete

Core Survey Content Finalized

May 2021 Complete

Survey Item Pilot & Feedback

June 2021

Finalized Hierarchy & Communication Rollout

July 2021

Survey Administration

Sept 15th Launch

October 20th Close

Reports Available

December 2021

Executive Presentation and Member Meetings

TBD

Action Planning

Ongoing post-results 2022 PSMS Phase III Plan