

# **Improving Pipeline Risk Assessments and Recordkeeping**



## **Event Summary Report**

**The Westin Arlington Gateway**

**Arlington, VA**

**July 21, 2011**

**Event Foreword:**

Recent pipeline incidents involving gaps in data and recordkeeping are driving a stronger focus on improving risk assessments. PHMSA and the National Association of Pipeline Safety Representatives (NAPSR) held this important event after a careful and thorough review of inspection reporting and incident findings. In addition, this event is another measure in PHMSA's efforts to address the Secretary of Transportation's "Call to Action to Address Pipeline Infrastructure Risks, Drive for More Aggressive Safety Efforts and to Be More Transparent when executing these Safety Measures."

This event provided an open forum for exchanging information on identifying threats, improving risk assessments and record keeping for onshore pipelines. Specifically the event facilitated panel discussions for the following objectives:

- Provide a U.S. and International Regulatory perspective on pipeline integrity risk assessments.
- Provide an operator overview of the challenging factors with conducting risk assessments, canvassing effective approaches, and case studies.
- Identify options to address interactive threats, vintage/legacy pipelines and approaches for dealing with recordkeeping gaps.

**Table of Contents**

Executive Summary.....4

Introduction.....6

Summary - Panel 1: Regulatory Perspective on Risk Assessments.....6

Summary - Panel 2: Pipeline Operator Perspective on Risk Assessments.....7

Summary - Panel 3: How Should Recordkeeping Gaps Influence Risk Assessments.....9

Summary - Panel 4: Identifying Interactive Threats and Understanding Options.....11

Appendix A – Speaker Biographies .....14

## **Executive Summary**

PHMSA and NAPSRS were very pleased with the event turnout. More than 560 representatives (230 in person + 330 via webcast) from U.S. and Canadian Federal pipeline safety regulatory agencies and State/Provincial agencies, standards developing organizations, technology vendors, service providers, pipeline operators and trade organizations, steel pipeline manufacturers, independent contractors and the general public attended and participated at this event. There were several stated objectives for this event but an overarching goal of documenting the challenges with pipeline risk assessments and recordkeeping and the constraints with improving these critical aspects of integrity management was achieved.

The agenda was comprised of four panels focused on the idea of setting an improved but common level of knowledge with risk assessments and recordkeeping challenges.

The regulatory panel discussed the critical need for accurate pipeline-specific risk assessment illustrating both that good data drives effective integrity programs and that recent pipeline incidents are raising concern over operator risk assessments. Panelists pointed out some of the major aspects of risk assessment that need improvement: addressing interactive threats, vintage/legacy pipe, recordkeeping, and data integration.

The pipeline operator panel conveyed their goal is to drive risks down as low as possible by better understanding and managing safety risks but noted there are significant, inherent differences between pipelines operated by local distribution companies and interstate pipelines. It was also noted that since the introduction of risk management, performance is continually improving and that the industry is committed to continuous improvement. The industry is cognizant of the current concerning public perception/opinion of pipeline safety and welcomes input from, and will work cooperatively with, pipeline safety stakeholders. Finally a review of the usage of risk assessments was mentioned to identify possible improvements moving forward, basing this action on the recent events where these challenges are relevant and in response to the PHMSA Advisory Notice [ADB-11-01](#).

During the third panel on gaps in data, an important point of emphasis was that lack of data doesn't mean there are no risks. When there are gaps in pipeline information, the risk assessment should carefully consider consequences to better inform operator response and select appropriate preventive and mitigative measures. The panel went on to identify actions that could be taken to improve data quality and to reach out to other industries that rigorously use risk assessment. We can possibly learn how other industries deal with gaps in data or poor quality data and how those challenges impact their decision making.

The fourth panel identified that better definitions and broader understanding of interactive threats are needed to address this most significant challenge. The panel was in general agreement that operators need to become more actively engaged in studying how known threats are changing

over time and in reviewing how human error, operational conditions, and interacting threats can activate threats initially found to be stable.

Finally this event clearly established that accurate risk assessments drive effective integrity programs. It also illustrated that poor and missing data provided added challenges in risk assessment and achieving industry's vision of zero incidents. These understandings were evident and challenging for both hazardous liquid and natural gas transmission pipelines as well as for the emerging natural gas distribution integrity management programs. It will take leadership, resources and the commitment of regulators, standards developing organizations and the pipeline industry to improve risk assessments and recordkeeping so that the use of these measures continually shows improvement over the next decades.

## **Introduction**

The event was well attended by a variety of stakeholders with a good balance of technical perspectives. Over 560 individuals (230 in person + 330 via webcast) attended the Improving Pipeline Risk Assessments and Recordkeeping event held on Thursday, July 21, 2011 at the Westin Arlington Gateway Hotel in Arlington, VA.

The agenda was designed to provide a balanced set of perspectives from regulators, standards developing organizations and the pipeline industry. The event achieved this goal. This report summarizes the challenges with risk assessments and recordkeeping and the constraints with managing and mitigating these challenges based on information presented at the event. Policy was not crafted at this event but it did identify issues for PHMSA and NAPSRS to consider.

Finally, all the presentation files are posted on the following website as a future reference for all interested stakeholders.

<http://primis.phmsa.dot.gov/meetings/MtgHome.mtg?mtg=70>

## **Panel 1: Regulatory Perspective on Risk Assessments**

This panel was comprised of representatives from PHMSA, NAPSRS and the National Energy Board of Canada and set the stage for most of the day. The understanding that much more work will be required to address gaps in risk assessments seemed to be evident with the audience but better fleshed out in the subsequent panels.

The goal of this panel was to begin identifying some of the regulatory experience in showing where challenges in risk assessment have been observed. Specifically the panelists were asked to include the following in their presentations:

1. How has conducting risk assessments impacted integrity management programs since the late 1990s?
2. What have been some challenges and successes in using risk assessments to plan and manage integrity management programs? Include any performance data or related reporting as necessary to make your points.
3. How have recent pipeline incidents questioned the effectiveness of risk assessments?
4. Based on inspection/enforcement history, how would you describe the adequacy of industry energy pipeline risk assessments in your country?
5. What considerations do you believe are crucial to the adequacy of these risk assessments, and how do you factor in issues relating to underlying records inadequacies?

## Summary of Speaker Presentations

Speaker 1: Alan Mayberry (PHMSA, Federal Regulator)

Integrity management risk assessments need to be ongoing and investigative. High profile incidents have eroded the public confidence in pipeline transport. Treatment of major uncertainties such as missing/erroneous records is important for an effective risk assessment. Risk analyses should lead to proactive preventive and mitigative measures to reduce risk.

Speaker 2: Jim Hotinger (Virginia State Regulator)

When intrastate operators began their gas transmission integrity management programs in Virginia, corrosion was the only perceived threat. Other threats such as dents and gouges were overlooked. The understanding of risk management principles has improved, however, quality assurance processes have not always been put in place to verify the accuracy and completeness of integrity management data. Incorrect or incomplete data is counterproductive and a waste of resources. With quality data, operators can use the lessons learned from IMP investigations to reduce the risk to the integrity of the system and ensure the current operations, maintenance, and construction activities mitigate the potential for issues to arise in the future.

Speaker 3: Iain Colquhoun (Canada Regulator)

There are no formal risk assessment requirements in Canadian pipeline safety code but it is often implicitly included in requirements for engineering analysis. Risk acceptance and decisions to implement or forego further risk mitigation is based on cost/benefit.

## Issues Identified During Q&A Forum

- One operator requested that PHMSA consider establishing prescriptive procedures for risk analysis. PHMSA responded that some more prescriptive detail might be beneficial but that the framework must remain performance based.
- One commenter asked if PHMSA could establish an acceptable risk target value. PHMSA responded that it would not be possible in the near term based on recent rulemaking history, but that congressional mandates currently being considered for reauthorization might open up discussion of such topics.
- One commenter suggested that US risk analysis approaches be benchmarked with European practices.

## **Panel 2: Pipeline Operator Perspective on Risk Assessments**

This panel was comprised of representatives from hazardous liquid and natural gas transmission pipeline operators. Presentations showed how advancements in computers and technologies have greatly increased the industry's ability to collect data and conduct accurate risk assessments

but also showed the challenges that human factors play into following operation/maintenance procedures and the impact of missed opportunities to collect data on integrity programs.

The goal of this panel was to hear the pipeline industry perspective about the challenges and successes with using risk assessments. Specifically the panelists were asked to include the following in their presentations:

1. Examples of effective threat identification and risk assessments.
2. How have these assessments improved since the start of integrity management regulations?
3. How have gaps in data impacted risk assessments? Note: Later panel to elaborate.
4. What actions could improve the rigor of these assessments?
5. Is more guidance needed from regulators or Standards Developing Organizations?

### Summary of Speaker Presentations

Speaker 1: Chris Foley (Conoco Phillips, Liquid Pipeline)

Continual improvement is needed, including a push for more and better data. There is a need for continual learning and improved technology to help assess risk.

Speaker 2: Pete Kirsch (INGAA, Gas Transmission)

INGAA is studying lessons learned with a goal of zero incidents. In order to continuously improve toward this goal, INGAA has initiated numerous teams, two of which are reviewing current risk management practices. These two teams will be suggesting enhancements to ASME B31.8S and operators' risk management practices, including a review of interactive threats.

Speaker 3: Von McAllister (Kern River, Gas Transmission)

Kern River is trying to fill in gaps/errors in historical data. Integrated integrity alignment sheets help to organize data and look at the bigger picture. It also allows the operator the ability to analyze and build algorithms to check for future problems and catch defects before pipeline integrity is breached. More basic research is needed to yield usable/helpful data.

Speaker 4: Marti Marek (AGA, Gas Transmission/Distribution)

Sixty-two percent (62%) of transmission lines operated by local distribution companies (LDCs) are un-piggable. Lines where transmission IMP and distribution IMP rules overlap create inefficiencies. Whenever new (or revisions to) regulations are considered, the effect on transmission lines "embedded" in distribution systems should be taken into account. AGA believes that IMP should focus on densely populated areas to ensure the most efficient use of resources.

### Issues Identified During Q&A Forum

- It was suggested that PHMSA develop guidance documents for conducting risk assessment that address its concerns with risk analyses, instead of new regulations.
- Incident reports should minimize categorizing failure cause as “other” since it is not useful for data analysis.
- Risk models should be able to perform “what if” type sensitivity studies.
- Risk analyses are one tool available to operators but not the only means by which integrity issues should be identified.
- More guidance is needed on how to handle or respond to missing data.
- In response to industry concerns of stretching limited resources too thin, industry should address the need to apply more resources to integrity management, and find ways to expand its resources.
- One commenter advocated more quantitative risk models, relying less on Subject Matter Expert (SME) opinions. Quantitative risk analyses help inform new employees that don’t have historical institutional knowledge.
- More guidance is needed on acceptable approaches to monitoring stable threats to discern when they might become unstable.
- Industry sought more engaging interface with PHMSA to address records gaps in B31.4 and B31.8 to assure that industry updates meet PHMSA expectations.

### **Panel 3: How Should Recordkeeping Gaps Influence Risk Assessments?**

This panel was comprised of representatives from standards developing organizations, hazardous liquid and natural gas transmission and natural gas distribution pipeline operators. Presentations showed how important data collection and quality is with conducting accurate risk assessments. Several thoughts were mentioned about how and what could be done when there are gaps in recordkeeping. Much of the discussion gravitated around a shift in focus from the probability component of the risk equation to the consequence of failure component. The panel and ensuing questions from the audience provided for the understanding that standards developing organizations and regulators may need to bring further clarity to what constitutes conservative measures and when addressing gaps in data and how that impacts risk assessments.

The goal of this panel was to hear about the challenges with collecting data and how gaps in this data or poor quality data impacts risk assessments. Specifically the panelists were asked to include the following in their presentations:

#### Transmission Operators

1. What are appropriate actions that can be taken when there are gaps in recordkeeping? (This goes for new pipelines and for legacy/vintage pipelines)
2. How great of a safety factor should be utilized that factors this uncertainty and ensures safe operations?

3. As an operator what have you done since the Safety Advisory Bulletin PHMSA–2010–0381/ ADB-11-01 to improve your record keeping?
4. Do you use or have you considered using the Pipeline Open Data Standard (PODS) Data Model? If so, what benefits or obstacles did you encounter?
5. How can you account for and handle unknown/missing data in your risk evaluation model?

### Distribution Operators

1. How do you identify additional information that is needed fill gaps in system knowledge due to missing, inaccurate, or incomplete records?
2. What information gaps due to missing, inaccurate, or incomplete records are you identifying?
3. How are you collecting the additional information needed to fill gaps due to missing, inaccurate, or incomplete records (e.g., Operation & Maintenance activities, field surveys, One-Call System, etc.)?
4. What data do you capture and retain when a new pipeline is installed?

### Summary of Speaker Presentations

Speaker 1: Oliver Moghissi (NACE, Std. Dev Org)

Need to assume the worst but at the same time toe the line of too little and too much. Operators shouldn't be moving resources entirely away from a known bad line to an unknown line, but can't ignore the unknown line either.

Speaker 2: Michael Rosenfeld (President, Kiefner & Assoc., Inc.)

A key reason for the failure of a risk assessment to lead to appropriate decisions is poor data quality. No risk assessment model can compensate for "bad" data (i.e. wrong data, missing data, or inappropriate defaults). Minimizing uncertainty of risk analysis results is important.

Speaker 3: Chad Zamarin (Vice President – Engineering, NiSource Gas Transmission & Storage)

INGAA has formed a workgroup to discuss improvements needed in guidelines to help ensure integrity of pipe installed prior to regulations. INGAA is developing guidelines for records to support design and operation of pipelines (including establishment of Maximum Allowable Operating Pressure (MAOP)) installed prior to regulations and characterization/mitigation of risks to pipeline systems installed prior to regulations.

Speaker 4: David M. Cioria (Manager, Systems Operations for Columbia Gas of Virginia, Pennsylvania, and Maryland)

Mr. Cioria described the process used by Columbia Gas to collect the additional information needed to fill gaps due to missing, inaccurate, or incomplete records.

## Issues Identified During Q&A Forum

- It was clarified that spatial accuracy (i.e., accurately recording the exact physical location at which data is taken) is part of the data/record accuracy issue.
- ILI vendors and other stakeholders will have opportunity to participate in the ASME standards development activities related to data gaps.
- Dealing with missing data requires a balance of dealing with the unknown vs. potentially diverting resources from a known risk to address an unknown risk. An unknown risk might not end up representing much risk, but should still be considered and evaluated appropriately.
- There is no industry standard on conducting pipeline risk analysis. A standard could provide a basis for more consistent application of risk analysis methods across the industry.
- INGAA is developing a process to standardize electronic data collection to make it more accessible.

## **Panel 4: Identifying Interactive Threats and Understanding Options**

This panel was comprised of representatives from standards developing organizations, hazardous liquid and natural gas transmission and natural gas distribution pipeline operators. Presentations showed that most of the panelists had a varying definition of what interactive threats are and what can be done about them. The presentations and audience questioning raised awareness that conducting risk assessments and integrity management in general should not be considered a static endeavor but an active and dynamic decision making process. Pipeline operators must truly know their system to be effective in integrity management. Changes in their system leading to incidents present a challenge for pipeline operators to continuously collect data and to gauge if known threats once dormant are now actively growing in their system.

The goal of this panel was to hear about the challenges with identifying interactive threats and understanding possible options in addressing them. Specifically the panelists were asked to include the following in their presentations:

### Transmission Operators

1. How have standards addressed interactive and unidentified/potential threats? (For “interactive” threats from different categories (e.g., manufacturing defects activated by pressure cycling, corrosion accelerated by third party or outside force damage) see ASME B31.8S-2004, Section 2.2.
2. How can targeted hydrotesting or other assessment methods assist in a continual threat assessment activity?
3. What can be done by standards developing organizations, operators and regulators to foster more risk assessment options and to improve upon current methods?

4. As an operator what have you done since the Safety Advisory Bulletin PHMSA–2010–0381/ ADB-11-01 to improve threat identification regarding interactive or potential threats?

### Distribution Operators

1. What information sources did you use to identify potential threats (where the operator has not yet experienced a failure but they have conditions conducive to the identified or unidentified threat)? Examples of potential threats operators considered during the Distribution Integrity Management Program (DIMP) Pilot Inspections included Hurricanes, flooding, Future utility/road improvement projects, Trenchless technology – operators may have unknowingly bored through sewer or water lines, Discovery of a material not previously known to be in the system, Customers overbuilt on pipelines.
2. Which potential threats were considered as part of your threat identification process?
3. How are potential threats addressed in your risk evaluation (weighting factors)?
4. What measures to address potential risk are you taking?
5. What can be done by standards developing organizations, operators, regulators, vendors, manufacturers, trade associations, or research organizations to foster better identification and communication of potential threats that have been identified?

### Summary of Speaker Presentations

Speaker 1: Oliver Moghissi (NACE, Std. Dev Org)

Known threats are generally well-managed but further improvement is possible through a focus on unlikely threats.

Speaker 2: Mohinder L. Nayyar (Independent Contractor)

ASME could develop a new or upgraded approach to integrity management by establishing a committee or task force consisting of industry experts, regulators, ASME staff, and volunteers to develop Quality Assurance (QA) requirements, a prescriptive imp standard, or an appendix to ASME B31.8S.

Speaker 3: Rich Dalasio, Manager (Line Inspection & Testing, Sunoco Logistics)

Mr. Dalasio described Sunoco's perspective on identifying interactive threats and evaluating complex risk interactions.

Speaker 4: Chris Bullock (Director, DOT Compliance, Midstream Pipeline Safety, CenterPoint Energy)

The lack of guidance in industry standards has led to ambiguity and inconsistent approaches to risk assessment of potential threat interactions. The Integrity Management Continuous Improvement (IMCI) Task Group has been formed to review Risk Management to achieve a

better understanding of threat interactions, review historical industry incident data and research literature, compile the findings and summarize the current state related to threat interactions, update ASME B31.8S to provide more specific guidance on potential threat interactions that should be considered, and improve risk assessment modeling techniques to better evaluate potential threat interactions.

Speaker 5: Hans G. Bell (Assistant Vice President Engineering, Nicor Gas Company)

Mr. Bell described Nicor's perspective on identifying interactive threats.

#### Issues Identified During Q&A Forum

- A better definition of interactive threats is needed, including guidelines and examples of how various integrity threats interact.
- Guidance is needed on how to incorporate features into a risk model to account for threat interaction.
- Industry could take on the challenge of developing guidance for addressing data elements and addressing data gaps.

## **APPENDIX A**

### **Speaker Biographies (if available)**

#### **Jeff Wiese**

Associate Administrator for Pipeline Safety, DOT/PHMSA

Jeff serves as the Associate Administrator for Pipeline Safety for the Pipeline and Hazardous Materials Safety Administration (PHMSA) in the U.S. Department of Transportation. In this capacity, Mr. Wiese leads PHMSA's overall efforts to improve the design, construction, operation and maintenance, and spill response planning for the Nation's pipeline transportation system.

Previously Mr. Wiese served as PHMSA's Director of Program Development for pipeline safety where he led several programs to enhance PHMSA's pipeline safety damage prevention and community involvement initiatives, public awareness, field implementation of the Integrity Management Program rules, research and development, and the National Pipeline Mapping System. Mr. Wiese also directed budget development, user fee assessment, and oil spill planning and preparedness for PHMSA's pipeline safety program.

Prior to arriving at PHMSA, Mr. Wiese worked for fifteen years in matters related to offshore oil and gas safety for the Minerals Management Service including stints as Director of Safety and Environmental Management and Outer Continental Shelf (OCS) Performance Measures Programs as well as its Chief of Staff for Offshore Operations and Safety Management.

#### **Alan Mayberry**

Deputy Associate Administrator for Pipeline Field Operations, DOT/PHMSA

Alan's professional career spans over 30 in the energy industry and PHMSA. He began working for Atlanta Gas Light Company in Atlanta, Georgia right out of college. Having whetted his appetite for the natural gas business, after four years Alan moved on to Virginia Natural Gas in Norfolk, Virginia, where he continued gaining widely varied experiences in the natural gas industry from transmission pipeline systems through to the burner tip.

Alan's responsibilities also increased, moving from engineering and technical roles to leadership roles in engineering and operations. After 14 years at Virginia Natural Gas, Alan moved to the DC area and Washington Gas, where he held leadership positions in operations and engineering, and most recently as Manager, Project Management and Technical Services. While at Washington Gas, Alan served on the American Gas Association's Operations Safety and

Regulatory Action and Plastic Materials Committees. He also served on the board of directors for the Northeast Gas Distribution Council.

In 2006, Alan joined PHMSA's Office of Pipeline Safety as a senior engineer in the headquarters Office of Engineering and Emergency Support. Alan was appointed Director of the group in 2008. In his role as PHMSA's technical lead, Alan was responsible for supporting program and regional offices on pipeline issues to ensure uniform policies. Additionally, Alan coordinated the agency's response to pipeline incidents. In early 2010, Alan was appointed as the Deputy Associate Administrator for Field Operations.

Alan is a graduate of the University of Tennessee, Knoxville, with a Bachelor of Science degree in Civil Engineering. He's also a registered professional engineer in Virginia.

### **James Hotinger, PE**

Assistant Director, Division of Utility and Railroad Safety,  
Virginia State Corporation Commission

James Hotinger began his pipeline safety career with the Virginia State Corporation Commission in 1983. In his current position, as Assistant Director of the Division of Utility and Railroad Safety, he is responsible for, among other things, the pipeline safety program for both natural gas and hazardous liquid pipelines. He also assists in the management of the Division including the Railroad Safety and Damage Prevention Programs. Mr. Hotinger holds a Bachelor of Science degree in Civil Engineering from the Virginia Military Institute and is a registered professional engineer in Virginia and West Virginia. He is currently a member of the Gas Piping Technology Committee and the Pipeline and Hazardous Material Safety Administration's Plastic Pipe Ad-Hoc Committee.

### **Iain Colquhoun**

Professional Leader Engineering, Canadian National Energy Board

Iain holds a Bachelor of Science degree in Mechanical engineering and a Doctor of Philosophy degree in Structural engineering – both from the University of Strathclyde in Scotland. Iain joined the National Energy Board (NEB) in September 2010 as Chief Engineer reporting to the Chief Operating Officer. In this role Iain provides technical advice to Members and the Chair of the NEB, mentors, guides, and provides professional leadership to technical staff, and provides technical support to NEB business unit leaders and staff. Iain also represents the NEB externally

through active participation in technical symposia, conferences, and industry codes and standards working groups.

Iain brings over forty years of experience in pipeline, mechanical, and structural engineer to the NEB - his most recent specialization being development of risk-based management programs and integrity management systems for pipeline operators worldwide. Iain is a member of the Association of Professional Engineers, Geologists, and Geophysicists of Alberta (APEGGA) and the American Society of Mechanical Engineers (ASME). Iain has published numerous papers on pipe stress analysis and pipeline integrity management – including recently co-authoring a book for ASME on pipeline integrity management.

### **Jeffery Gilliam**

Director of the Engineering and Research Division, DOT/PHMSA

Jeff has worked for PHMSA for eight years. Jeff manages the multiple responsibilities of the E&RD including technical projects, special permit review, congressional and management briefings on technical issues, LNG issues, and provides technical support to PHMSA regional offices. Jeff does participate as a member of the ASME B31.8 Operation and Maintenance Committee and his staff participates in API, ASME, ASTM, MSS, and NACE committees.

Jeff led both Liquid and Gas Integrity Management inspections throughout the United States including Alaska and Hawaii. During his career at PHMSA, Jeff has had increasing responsibilities as a project manager, team coordinator and has served in multiple roles for the Western Regional office of PHMSA. Prior to joining PHMSA, Jeff spent 13 years in the energy industry working directly for major gas transmission operators or working as a consultant in the Rocky Mountain region.

Jeff joined PHMSA in September of 2002 as a Sr. General Engineer/Project Manager focusing on the Integrity Management (IM) programs both Liquid and Gas. Jeff led both Liquid and Gas IM inspections throughout the United States including Alaska and Hawaii. During his career at PHMSA, Jeff has had increasing responsibilities as a project manager, team coordinator and has served in multiple roles for the Western Region.

Jeff graduated from the University of Kentucky with a Bachelor of Science in Civil Engineering.

### **Pete Kirsch**

Sr. VP Midstream Technical & Compliance Services, CenterPoint Energy

Pete is the Senior Vice President Midstream Technical & Compliance Services at CenterPoint Energy in Houston, Texas. He holds a Bachelor of Science degree in Mechanical Engineering from Virginia Tech. His primary areas of responsibility include Environmental & Safety, Pipeline Safety, Data Integrity, and Workforce Planning functions. Pete is an active member of INGAA's Operations, Safety, & Environmental Committee, INGAA's Integrity Management Continuous Improvement Steering Committee, and Pipeline Research Council International Board of Directors.

### **Von McAllister**

Manager Pipeline Safety, Engineers and Technical Specialists, Kern River Gas

Von McAllister, B.S. Mining Engineering, is Manager Pipeline Safety for Kern River Gas Transmission Company. He has over 30 years of energy industry experience including underground coal mining, gas well production and drilling, gathering system design and project management and nine years in gas transmission pipeline safety.

### **Marti Marek**

Director of Engineering & Project Support, Southwest Gas Corporation

Marti is the Director of Engineering & Project Support at Southwest Gas Corporation and the current Chair of the ANSI Z380.1 Gas Piping Technology Committee (GPTC). Marti has over 25 years of experience in the natural gas industry and has held positions in Sales, Measurement, Engineering, Training and Qualifications, Compliance, and Gas Operations. She's received national recognition for the construction of a state-of-the-art Emergency Response Training Facility in Arizona. As an active member of the American Gas Association, Marti has served on numerous transmission- and distribution-related task groups. As part of the PHMSA/NAPSR/Industry task group, Marti helped develop the GPTC Guidance for Distribution Integrity Management Programs.

### **Oliver Moghissi**

President, NACE International

Oliver is President of NACE International, an association with more than 27,000 members focused on corrosion technology. A significant emphasis of the association is pipeline corrosion management.

Dr. Moghissi is also Director of the Det Norske Veritas (DNV) Materials & Corrosion Technology Center in Columbus, Ohio. The Technology Center performs research, testing, and forensic investigations.

Dr. Moghissi's personal experience is focused on developing and applying technology to optimize corrosion management programs, especially for oil & gas production and transportation facilities. He received a Ph.D. in Chemical Engineering from The University of Florida.

### **Michael J. Rosenfeld**

President, Kiefner & Associates, Inc.

Michael Rosenfeld PE is President of Kiefner & Associates, Inc. (KAI), Worthington, Ohio. KAI is a consulting engineering company specializing in oil and gas pipeline integrity matters. Mr. Rosenfeld's experience includes pipeline failure investigation, pipeline stress analysis, pipeline fitness for service assessment, pipeline risk and hazard assessment, and pipeline codes and regulatory compliance. Mr. Rosenfeld is a member of the ASME B31.8 Gas Transmission and Distribution Piping System Committee, the B31 Standards Committee, and the Board of Pressure Technology Codes and Standards.

### **Mike Pearson**

Vice President of Technical Services Magellan Midstream Partners

Mike worked in various operational and technical leadership roles over the past 22 years for liquid pipeline operators. Has a bachelor's degree in Civil Engineering and is currently a member of the API Operation and Technical Group.

## **Chad Zamarin**

Vice President of Engineering for NiSource Gas Transmission & Storage

Chad's responsibilities include the overall maintenance, modernization and regulatory compliance of NiSource's interstate pipeline system and related facilities. Prior to his joining NGT&S, Zamarin held positions at Duke Energy Gas Transmission, Panhandle Eastern, General Electric and most recently Colonial Pipeline. In his role at NGT&S, Zamarin has provided direction and leadership for restructuring the company's Integrity Management and System Reliability Programs, building and strengthening relationships with key stakeholders, and implementing infrastructure enhancements to the pipeline system.

Zamarin has been an active leader in industry initiatives including the advancement of pipeline design, operating and maintenance standards, integrity management programs, federal regulations for pipeline safety, and industry best practices. He served as the Liquids Pipeline Industry Lead for Renewable Fuels, served on the Advisory Board of the National Renewable Energy Laboratory and has been an active member of numerous API, INGAA, AOPL, ASME and PRCI standards and initiatives committees. He is currently the Technical Lead for an INGAA Board Task Force Team focused on assuring the integrity of pipelines installed prior to current regulations.

Zamarin has a Bachelors degree in Metallurgical Engineering from Purdue University and a Masters in Business Administration from the University of Houston.

## **David M. Cicoria**

Manager, Systems Operations, NiSource

David has over 29 years with NiSource and is an energy distribution manager for NiSource, Inc., a Fortune 400 holding company engaged in virtually all phases of the natural gas business, as well as electric generation, transmission and distribution.

In his current position, David leads the systems operations group responsible for measurement & regulation, leakage, corrosion, gas distribution, pipeline integrity, DIMP, and 6 peak shaving facilities that include propane air, LNG, and gas storage/compression for operating companies located in Pennsylvania, Maryland, and Virginia.

While at NiSource, David has held leadership positions in both plant and service operations leading the day to day activities in Fredericksburg, Petersburg, and Chester operating areas.

David is an alumna of Colorado Technical University where he earned his bachelor's degree in business administrations. In terms of industry involvement, David has participated and led several SGA field operations roundtables.

## **Linda Daugherty**

Deputy Associate Administrator for Pipeline Policy & Programs, DOT/PHMSA

Linda is the Deputy Associate Administrator for Policy and Programs for the Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) Office of Pipeline Safety.

Linda joined PHMSA's Pipeline Safety Program in 1991 and has served in various operational and policy development functions.

As Director of the Southern Region from 2003 – 2010, Linda worked with the engineering, technical and administrative professionals in her office and the state pipeline safety offices to achieve agency goals through inspections, investigations, special permit and construction evaluation, enforcement and technical studies.

From 1994 - 2003, Linda managed the agency's Compliance and Enforcement program, served as the Department's pipeline security expert and coordinated the agency's response to pipeline accidents and national emergencies. Prior to joining PHMSA, Linda worked for a hazardous liquid pipeline company. She was responsible for oversight of the pipeline company's environmental compliance. Additionally, Linda served as the pipeline company's right-of-way agent and coordinated the company's damage prevention efforts throughout a seven state area.

Linda is a Chemical Engineer from the University of Missouri – Rolla (School of Mines).

## **Mohinder L. Nayyar**

American Society of Mechanical Engineers Fellow

Mr. Nayyar has more than 37 years of mechanical and plant design engineering experience on a variety of domestic and international fossil and nuclear projects. This experience includes system design, sizing of mechanical equipment, preparation of technical specifications, bid evaluation, contract administration, coordination with client, construction, vendors and other engineering disciplines, inservice inspection and testing of nuclear power plant components, and training of new and experienced engineers. As Vice Chair of the ASME Board on Pressure Technology Codes and Standards, member, chair and vice chair of several national and international level code committees, Mr. Nayyar has made and continues to make a difference by initiating and influencing changes to codes and standards resulting in new rules and considerable savings and other advantages for the users. He acts as consultant to the engineering and senior management and provides day to day guidance to all business lines in regard to interpretation and application of codes and standards, in addition to resolving technical issues in compliance with applicable codes. He has initiated and implemented numerous innovative ideas to improve working process

and quality; developed and conducted training programs for Bechtel, clients and others; published articles on valves, author article titled “Pipeline” for the 7th Edition of Science and Technology Encyclopedia, author and Editor-in-Chief of The Piping Handbook, Sixth and Seventh Editions, (1992 and 1999) published by McGraw-Hill Book Company and authored “Piping Databook”, First Edition, published by McGraw-Hill, 2002. Currently, he is a senior principal engineer on the Plant Design Staff providing technical guidance and training in the area of piping, valves, materials, inservice inspection, insulation, and codes and standards. Mr. Nayyar has been recipient of several awards and honors for his accomplishments

### **Richard M. Dalasio, PE**

Manager - Line Inspection & Testing, Sunoco Logistics

Richard is a graduate of Drexel University - Civil Engineering B.S. and Villanova University – MBA now working at Sunoco Logistics since 1988 in various capacities including Pipeline engineer, Field Construction Engineer, Operations Engineering, and as the Senior Pipeline Integrity Engineer. Currently responsible for executing the Company's annual pipeline inspection plan including in-line inspection and hydrostatic pressure testing.

### **Chris Bullock**

Director of DOT Compliance for CenterPoint Energy

Chris is the Director of DOT Compliance for CenterPoint Energy which owns and operates more than 8,200 miles of interstate natural gas transmission pipelines in 11 states. He holds a Bachelor of Science degree in Mechanical Engineering from Louisiana Tech University as well as two M.B.A.s also from Louisiana Tech University. Mr. Bullock has 15 years of experience in the natural gas pipeline industry including engineering, project management, marketing, management, and pipeline integrity. For the last 7 years, Mr. Bullock has been responsible for managing CenterPoint’s risk assessment and data integration programs in support of integrity management. Chris is actively involved in many industry groups including SGA, INGAA, and is a member of the ASME B31.8 Technical Committee. Prior to his employment at CenterPoint Energy, Mr. Bullock spent 5 years in engineering working for a manufacturing company providing ancillary equipment primarily to the natural gas and cogeneration industries.

## **Hans Bell**

Assistant Vice President of Engineering at Nicor Gas Company

Hans holds a bachelor's degree in Civil Engineering from the University of Illinois and a Master's Degree in Business Administration from Keller Graduate School of Management. He is a licensed professional engineer in the State of Illinois. His primary areas of responsibility include Distribution and Transmission Integrity, Engineering Design, Geographic Information Systems, System Planning, and Gas Measurement. Hans is an active member of the American Gas Association's Distribution and Transmission Engineering Committee.