2015 AGA Operations Conference Proceedings

Text and images copyright © 2015 American Gas Association. All rights reserved.

The enclosed presentations/papers were presented at the 2015 AGA Operations Conference. The presentations/papers were created by the individual presenters and presented in a public forum. The views, comments and recommendations expressed are the authors' and do not necessarily represent those of the American Gas Association.

The AGA disclaims liability for any personal injury, property or other damages of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on this document. All warranties, express or implied, are disclaimed, including without limitation, any and all warranties concerning the accuracy of the information, its fitness or appropriateness for a particular purpose or use, its merchantability and its non-infringement of any third party's intellectual property rights. AGA expressly disclaims any and all responsibilities for the accuracy of the information and makes no representations or warranties regarding the information's compliance with any applicable statute, rule or regulation.

In issuing and making this document available, the AGA is not undertaking to render professional or other services for or on behalf of any person or entity. Nor is the AGA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstances.

AGA Catalog Number: X51507
Published by: American Gas Association, 400 N. Capitol Street, NW, Suite 450, Washington, DC 20001

Printed in the e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Some format issues inherent in the e-media version may also appear in this print version.
# TABLE OF CONTENTS

## VOLUME 1

### CONSTRUCTION

- **Advanced Leak Detection Technology Implementation Planning** ........................................... 1  
  Tal Centers Jr., Mark Menzie
- **Advancements in Supplier Quality Assurance Programs** .................................................. 9  
  Jim Adamson
- **Building an Intelligent Natural Gas Sensor Network** ......................................................... 20  
  Brian Brooks
- **Emerging Trenchless Trends in the Gas Industry** ............................................................ 29  
  George Bogula
- **Engineering Our Future Leaders** ...................................................................................... 56  
  Gonzalo Juarez
- **Ethane Detection Using Infrared Absorption Spectroscopy** .............................................. 70  
  J. Scott Kleppe
- **Flood Planning for Natural Gas Utilities: Lessons Learned and Best Practices** .................. 79  
  Daniel Dessanti, Allen Peterson
- **Gas Transmission & Distribution Configuration Validation Effort** ...................................... 91  
  Elizabeth Reilly, Vincent Tanguay
- **Improved Protection and Safety for Aboveground Meter Sets** ........................................ 105  
  Dennis Jarnecke
- **IR-Drop Considerations for Direct Connected Mag Anodes** ............................................ 114  
  Jim Warner
- **Modeling Cross Bore Risk** ................................................................................................. 134  
  Ken Oliphant, P. Angelo
- **NiSource: Getting Close to the Trouble** ............................................................................. 139  
  Michael Smith
- **Pitched Meter Accuracy Study** ............................................................................................ 145  
  Ryan Bigelow
- **Risk Assessment Tool Preview** ............................................................................................ 153  
  Jeffrey Sedillos
- **Who Will Do the Work?** ....................................................................................................... 164  
  Mark Bridgers, Glyn Hazelden

### CORROSION

- **(IDC) Integrated Data Collection Technology** ................................................................. 184  
  Kevin Pastonik
- **Gas/Electric Arcing Interactions** ........................................................................................ 194  
  Michelle Gallardo, Alan Mulkey
- **Mitigation of Arcing Risks to Pipelines Due to Phase-to-Ground Faults at Adjacent Transmission Powerline Structures** ................................................................. 208  
  Daniel Silva
- **Operational Efficiency through AMI: Cathodic Protection Solutions** ............................... 230  
  Chris Atkins, Joe Turgeon, David Anglin
- **Understanding Internal Corrosion of NG Systems** ............................................................ 236  
  Ali Babakir, Jim L. Griffin

### DIMP

- **21st Century Compliance — Traceable, Verifiable, and Complete** .................................... 260  
  Craig Brownlee
- **Infrastructure Replacement Programs at Consumers Energy** .......................................... 273  
  Paul Wolven
DISTRIBUTION MEASUREMENT & REGULATION

**Eagle Research Corporation Update**
Tushar Shah ................................................................. 287

**How SGIP and the GTWG Relates to AMI for Gas**
Christopher Ziolkowski, Joseph Turgeon ......................... 298

**Life Expectancy of a Meter**
Frederick (Fred) Maly ..................................................... 306

**PECO Natural Gas: AMI Fixed Network Deployment Experiences**
Harry Sheneman, Joseph Turgeon .................................. 317

**GE Oil & Gas Jacksonville**
John Schnitzer .................................................................... 325

**What's New In Measurement and Regulation**
James Rutherford ............................................................. 330

**Innovative Developments of Underground Regulation and Metering for Domestic or Commercial Users**
Giorgio Maracchi ............................................................... 335

ENGINEERING

**Consumers Energy Engineering Entry Program**
Holly Bowers ...................................................................... 369

**Design and Standardization of Stations at AltaGas Utilities**
Vincent Chou ...................................................................... 375

**Integrity Program Evaluation Using Meaningful Performance Metrics**
Gary White .......................................................................... 392

**Managing Risk in Pipeline Installations**
Patrick Vibien, K. Oliphant, P. Angelo, W. Luff .............. 414

**Overpressure Protection and the Downstream User**
C. David Slavin ..................................................................... 422

**Site-Specific Quantitative Pipeline Risk Analysis using Monte Carlo Methods**
Bill Byrd .............................................................................. 436

ENVIRONMENTAL

**AGA PCB Management Guidelines and EPA Regulatory Update**
John Woodyard ...................................................................... 450

**Climate Change & Emission Reductions: Risks and Opportunities for Natural Gas**
Pamela Lacey ......................................................................... 459

**Environmental Planning for Linear Construction**
Peter Harley ........................................................................... 473

**Geo-Hazard Identification and Assessment for Gas Pipelines**
Otto Huisman, Arash Gharibi, Sebastian Ruik Beyhaut .... 479

**Naturally Occurring Radioactive Materials**
Mark Blundell ......................................................................... 490

**Radon and Natural Gas**
William V. Slade .................................................................. 503

**Waste Stream Management Program for Linear Construction**
Anne Davis, Bill Elmer .......................................................... 512

FIELD OPERATIONS

**A Model to Evaluate Thermal Stabilization During Hydrostatic Testing**
Bill Byrd .............................................................................. 518

**Damage Prevention - AGA Best Practices**
Scott Brown ............................................................................ 527

**Hot-Swap of Residential Gas Meters: An Integrated Mobile Solution**
Bill Earls .............................................................................. 538
Moving from Highlighters and Paper to Fully Automated Inspection and Survey: The Challenges and Opportunities .............................................................. Jay Cadman
Partnering in Damage Prevention ........................................................................ Pete Pedersen, Blaine Cadieu, Robert Botello
Re-Defining Leak Management at Pacific Gas & Electric ..................................... Dennis MacAleese
Restoration of Service Following Floods – An Appliance Impact Perspective ........ William Liss, Robert D. Wilson, Patricia Rowley

GAS CONTROL
Control Room Management Best Practices: Providing Adequate Information, Pipeline SCADA Displays .............................................................. Kelly Doran
Control Room Management: SCADA and Alarms ................................................... Ali Gibson
Lessons Learned from 200 + Control Room Management Projects and from What we See in Control Rooms .......................................................... Charles Alday
Making Your Records Bulletproof ...................................................................... Patricia Thomason
Quantifying and Improving Seal Efficiency – Double Block & Bleed Pipeline Isolation ............................................................ Frank Dum, Niyaz Garaev
SCADA Implementation ......................................................................................... Paul Kennedy

VOLUME 2

GAS QUALITY
Evaluating a Tunable Filter Spectrometer Online Gas Analyzer ............................ Juan Escobar
New Analyzers for New Businesses ...................................................................... Alice Vatin, Yann Courtois, Djimmy Vorin, Hanitriniony Rabetsimamanga

GAS UTILITY MANAGEMENT
Analysis of Risk Due to Trees Near Pipelines ....................................................... Bennie Barnes, Bronson Ingemansson
Rulemaking Process and Update on Current Rulemakings ..................................... John Gale

INTEGRITY MANAGEMENT
Advanced Sensing Technologies and Operational Enhancements for Inspection of Unpiggeable Pipelines .......................................................... George Vradis, Paul Laursen
Applying Non-Traditional ILI Technology to Challenging Pipeline Segments for Transmission Integrity Management ......................................................... Rob Liddicoat, Jeff Janvier, Rod Lee
Completing the Impossible: Assessing a Casing with a Pipeline Inspection Robot ....................................................................................................... Mary Bartholomew
Evaluating Non-Leak Threats: Focusing on the Likelihood of Failure .................... Andy Benedict
ILI for MAOP & Pipe Grade Validation ................................................................ Christopher De Leon
In-Line Inspection and Non-Destructive Evaluation for Pipe Properties .......................................................... 763
Lloyd Pirtle

PLASTIC MATERIALS

Bimodal PE's Contribution to the Life Expectancy Extension of Gas Distribution Pipelines .................................................. 780
Peter Angelo, K. Oliphant, P. Vibien, D. Chang, J. Brodil
Comparison of Procedures PPI TR-33 and ASTM F2620 .................................................................................... 787
Jim Johnston
Qualification Program for Electrofusion Fittings ....................................................................................................... 800
P. Angelo, K. Oliphant, P. Vibien
The Impact of Heavy Hydrocarbon Permeation on PE Pipe .................................................................................... 808
Ernest Lever, Karen Crippen
Tracking and Traceability for Pipes, Fittings, and Fusions .................................................................................... 824
Michael Faulkenberry, Jake Jacobs, Alicia Farag
What's New with Plastic Piping .................................................................................................................................... 833
Timothy Lauder

SAFETY

A Status Report on Gas Safety Progress at PG&E .......................................................................................................... 854
Sumeet Singh, Jim Howe
Defeat the Dirty Dozen: Causes of Errors and Accidents ......................................................................................... 860
Charles Alday, Ali Gibson, Michele Terranova
Green Beans & Ice Cream: The End of Lagging Indicator Incentives ........................................................................ 895
Bill Sims
Influential Communications ............................................................................................................................................ 900
Bruce Bolger
Inspection of Polyethylene Fusions and Electrofusions ............................................................................................... 908
Ken Oliphant, Peter Angelo, Patrick Vibien, Andy Burns, Michail Kalloudis
National Grid First Responder e-Learning: Transforming Pipeline Public Awareness Safety ........................................... 915
Kathleen McNamara
Safety Management Systems and Human Factors in Control Rooms ......................................................................... 927
Michele Terranova
XCEL Energy Journey to Zero: AGA Safety Achievement Award Presentation ............................................................ 942
Cheryl Campbell

STORAGE

Geologic Carbon Sequestration in the Illinois Basin: Current Activity and Future Possibilities ............................................. 954
Edward Mehnert
Hydrocarbon Spectroscopic Analysis .......................................................................................................................... 979
Paul Little
Methods for Addressing Common Issues in Simulating Gas Storage Reservoirs - Part II .............................. 992
Chuck Weinstein

SUPPLEMENTAL GAS

Advances in Physical Property Measurements of LNG .................................................................................................. 1024
Adam Kurland
Compressed Natural Gas Supply Vehicles .................................................................................................................. 1050
Daniel Johnson, Robin Yu
LNG Market Update for AGA Supplemental Gas Committee ..................................................................................... 1060
Kevin Markey
Portable Natural Gas - Supply for Pipeline Integrity Outages ..................................................................................... 1069
Dimitri Karastamatis
Process Safety Management - An Overview ................................................................................................................ 1079
Gary Blevins