

AGA Operations Conference & Biennial Exhibition 2017

Safety & Operational Excellence – Across the Globe

**Orlando, Florida, USA
2 - 5 May 2017**

ISBN: . , - "&"* &% ") , . (")



2017 AGA Operations Conference Proceedings

Text and images copyright © 2017 American Gas Association. All rights reserved.

The enclosed presentations/papers were presented at the 2017 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: X51707

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: 845-758-2633
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

CONSTRUCTION OPERATIONS

Service Abandonment without Excavation	232
<i>J. Maupin, J. Mainzer</i>	
The Advantages of Pressure-Testing Electrofusion Saddle Tees Prior to Tapping the Main	237
<i>R. Klopp, B. Davis</i>	

DISTRIBUTION MEASUREMENT

Leveraging Gas Smart Meter Technology to Improve Energy Choice	165
<i>M. McShane</i>	

ENGINEERING

Forecasting the Future - Cost Modeling Multi-Year Programs	186
<i>M. Lind, A. Palm</i>	
Five Financial Pitfalls of Cross Bore Programs & How to Avoid Them	191
<i>K. Ernst</i>	

GAS UTILITY MANAGEMENT

From Compliance to Value Creation: National Grid's Transformation of Public Awareness Outreach Initiative	204
<i>K. McNamara</i>	
Fuel Gas Warning Agents: A Historical Perspective	205
<i>R. Halchuk</i>	

INTEGRITY MANAGEMENT

Pipeline Risk Modeling – How Much Data Do I Need?	226
<i>W. Bryce, K. Oliphant</i>	

SUPPLEMENTAL GAS

Liquefaction Replacement Projects for LNG Peakshavers	217
<i>P. Suter, A. Szerszen</i>	

TRANSMISSION MEASUREMENT

Conversion of a Large Scale Orifice Measurement Station to an Ultrasonic Measurement Station with Double Capacity	1
<i>S. ... , F. Bjelland, G. Buss, R. Kramer</i>	
Fluid Phase Equilibria using the GERG-2008 Equation of State	46
<i>A. Laughton</i>	
Simple and Accurate Equation for the Calculation of LNG Density	61
<i>A. Laughton</i>	
Direct Velocity Profile Measurement in Pulsating Natural Gas Flow – With Implications for Ultrasonic Flow Metering	71
<i>C. Grant</i>	
Calibration Options for Natural Gas Applications with Coriolis Meters	87
<i>M. Buttler</i>	

History and Overview of Gas Odorization Technologies	98
<i>A. Louvat, J. Guillet, C. Tastard, E. Albertini, L. Gorintin</i>	
What a Gas Measurement Technician Needs to Know to be Successful	100
<i>J. Witte</i>	
Resolving Gas USM Installation Effects Caused by Tees	105
<i>R. Miller, J. Lansing</i>	
GATE (Gas Automatic Transfer Equipment) Design	119
<i>D. Rudroff</i>	
The Undiscovered Country: The Future of Industrial Automation	155
<i>P. McLaughlin, R. McAdam</i>	

UNDERGROUND STORAGE

Combining Two-Phase Flow and Geomechanical Models to Solve Problems in Underground Gas Storage	245
<i>R. Walsh, O. Nasir, N. Calder, J. Avis</i>	
The Impact of Anomalous Salt and Boundary Shear Zones on Salt Cavern Geometry, Cavern Operations, and Cavern Integrity	267
<i>K. Loeff</i>	
The Evolution of Natural Gas Storage Risk Assessment at Union Gas Limited	297
<i>G. Cowan, S. Pardy</i>	
Author Index	

Currently in preview, click buy full versi