

92nd Annual Convention of the Gas Processors Association 2013

Gathering Knowledge. Sharing Practices. Driving Technology.

**San Antonio, Texas, USA
7-10 April 2013**

ISBN: 978-1-62993-070-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



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

Copyright© (2013) by the Gas Processors Association
All rights reserved.

Printed by Curran Associates, Inc. (2013)

For permission requests, please contact the Gas Processors Association
at the address below.

Gas Processors Association
625 East 60th Street
Tulsa, Oklahoma 74145

Phone: (918) 493-3872
Fax: (918) 493-3875

gpa@gpaglobal.org

Additional copies of this publication are available from:

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

TABLE OF CONTENTS

ADVANCES IN MIDSTREAM OPERATIONS FORUM

Reduction of Methane and VOC Emissions with SlipStream	1
<i>Veronica Nasser</i>	
Using Leading Indicators in Frontline Work Execution to Proactively Manage Operational Risk and Optimize Performance	15
<i>Mike Neill</i>	
Utilizing Equipment Data for Proactive Asset Management	43
<i>Mark Williams, Russell W. Burch, David Krenek</i>	

ADVANCES IN MIDSTREAM TECHNOLOGY FORUM

Fain Gas Plant's Fast-Track Ethane Recovery Improvement	74
<i>Guang Lee, Jie Yu, Sudhir V. Golikeri, Patrick Drew, Bonnie Dumas</i>	
Maximizing Plant Profitability through Multivariable Predictive Control (MPC)	85
<i>Hemant G. Pandit, Victor Rice</i>	
Is Your Radial Turbomachinery Operating at Optimum?	91
<i>Charles C. Solvason, Barry Burr</i>	

DRILL BIT TO BURNER TIP TRAINING

The Market Impact of the New Natural Gas Shale Plays and the Resultant Infrastructure	106
<i>Thomas Seng</i>	

EMERGENCY RESPONSE MANAGEMENT ROUNDTABLE

Emergency Response & Crisis Management Panel	125
<i>Bruce Gillick, Miranda Jones, Brian McGuire, Robert Whitley, Jeremy George</i>	

ENVIRONMENTAL INITIATIVES AND TECHNICAL FORUM

Summary of RICE NESHAP Amendments for Spark Ignition Engines	138
<i>John Admire</i>	
Clean Air Act (CAA) Section 114	148
<i>N/A</i>	
Flare Measurement - Proper Calibration is Essential to Obtain Good Results	151
<i>Eric Estrada, Steve Baldwin, Eric Harman</i>	
Design/Build of a NGL Facility Compliant with LDAR DTM—Methods for Reducing Initial and Long-Term Costs to Owner	169
<i>Curt Hemphill, Brittany Holt</i>	
DCP Midstream Emission Reductions in the North Region	178
<i>Stephen Ondak</i>	
NSPS Subpart OOOO and NESHAP Subpart HH	183
<i>Lynn T. Reed</i>	
Compliance Challenges in Meeting 1-Hour Nitrogen Dioxide (NO₂) and Sulfur Dioxide (SO₂) NAAQS	203
<i>Sube Vel, James VanAssche</i>	
THE SUBTLETIES OF SPCC	211
<i>Jason Voskuhl</i>	

GAS & PRODUCT TREATING FORUM

THIOPAQ O&G Bio-Desulphurisation: An Alternative Sulphur Recovery Technology	219
<i>K.C. Lee, Gary Bowerbank, Gijs van Heeringen</i>	
Hydrogen Sulfide Polisher Accelerates Start-Ups, Protects Downstream Equipment	229
<i>Michael Cooper, Kim Peterson, James Lingnau</i>	
Mercury Treatment Options in Natural Gas Plants	236
<i>Neil Eckersley, Satyam Mishra</i>	

Maximizing Hydrocarbon Liquids Recovery While Recovering High Purity CO₂: New Operation Mantra for Membrane Based CO₂ Removal Facilities Cameron Process Systems	252
<i>Ankur Jariwala, Jason Dietrich</i>	
Controlled Freeze Zone™ Commercial Demonstration Plant Advances Technology for the Commercialization of Sour Gas Resources	261
<i>Scott D. Kelman, Jaime A. Valencia, Robert D. Denton, Russ H. Oelfke</i>	

GPA OVERVIEW & ORIENTATION

Gathering Knowledge. Sharing Practices. Driving Technology	275
<i>Terry Spencer, Joel Moxley, Alan Dove, Gelareh Chafin, Jerry Bullin</i>	

INTERNATIONAL BREAKFAST

Gas Processing Challenges in Canada	303
<i>Tim Stauff</i>	

NGL BUSINESS FORUM

The New Geography of NGL Production: All Roads Lead to Mont Belvieu	312
<i>E. Russell Braziel</i>	
North America Petrochemical Investments	326
<i>Mark Eramo</i>	
Reshaping the NGL Value Chain: Challenges and Opportunities	338
<i>Peter Fasullo</i>	
NGL Markets in North America: Growing Supply Creates New Markets	349
<i>Daniel Lippe</i>	

NGL MARKET INFORMATION FORUM

DCP Midstream: Logistic Solutions for Today’s NGLs	361
<i>Clare E. Wilson</i>	

PIPELINE SAFETY

Regulatory and Compliance Landscape	370
<i>DeWitt Burdeaux</i>	

PROJECT ECONOMICS AND PROJECT FINANCE FORUM

Economic Alternative for Remote and Stranded Natural Gas and Ethane in the US	379
<i>Joel Cantrell, Jerry Bullin, Gavin McIntyre, Clark Butts, Bryon Cheatham</i>	
Forecasting Gas Processing Economics – The Challenges and Rewards	389
<i>Bill Fraser</i>	
Building a Better Mousetrap: North American Natural Gas Update	399
<i>Kathryn Miller</i>	

SAFETY & RELIABILITY FORUM

Laser Safe: The Use of LiDAR Technologies to Improve Safety and Documentation Compliance	412
<i>Scott Komarek, Tobin Roberts</i>	
Implementing a Safety Culture with an “Invisible” Workforce: Considerations and Lessons Learned	422
<i>Nick Sajatovic</i>	

TECHNICAL SECTION A FACILITIES DESIGN FORUM

Seven Deadly Sins of Filtration and Separation Systems in Gas Processing Operations	430
<i>David Engel, Michael H. Sheilan</i>	
Contaminant Removal for Improved NGL Quality	442
<i>Allan Hatami</i>	
Mercury Removal Bed Operational Problems Identification & Corrective Actions Taken a Great Success Story	453
<i>Govind Kasturi</i>	

Dealing with Condensate in a Rich Gathering System	461
<i>Jeff Stake, Mark Scott</i>	
UGDC Approach to Mitigate the Undesired Drawbacks of Lean Gases on the NGL Extraction Process	474
<i>Nady Mabrouk, Elhag Thabet</i>	

TECHNICAL SECTION F TECHNICAL DATA DEVELOPMENT FORUM

Heating Value and Orifice Standards Integration Methods	492
<i>Kenneth E. Starling, Don Sextro</i>	
Accurate Measurement of Hydrocarbon Dewpoint in Natural Gas Streams	503
<i>Sohrab Zarrabian, Mahmood Moshfeghian</i>	
State of the Art Review and Recent Developments in Glycol Dehydration Facility Modelling and Optimization	513
<i>J.L. Holoboff, A. Alva-Argaez</i>	
A Formulation for the Flow Rate of a Fluid Passing Through an Orifice Plate Using Only the First Law of Thermodynamics	532
<i>Martin A. Gomez-Osorio, Diego O. Ortiz-Vega, Ivan D. Mantilla, Hugo Y. Acosta, James C. Holste, Kenneth R. Hall, Gustavo A. Iglesias-Silva</i>	

TECHNICAL SECTION M OPERATIONS & MAINTENANCE FORUM

Standard Plant Evolution: Modular Integrated Packaged Plants	543
<i>John Harness</i>	
DCS vs PLC for Gas Process Control Which Option is Right for Your Business?	555
<i>Jim McTasney</i>	
Applying the Energy Institute and PRCI/GMRC Guidelines for the Avoidance Or Reduction of Vibration Problems in Small Diameter Piping Branch Connections	567
<i>Sarah B. Simons, Francisco Fierro, Benjamin A. White</i>	

UNCONVENTIONAL GAS LNG AND ALTERNATIVE ENERGY FORUM

Small Scale LNG Liquefaction and NGL Recovery is Supercool	596
<i>Trey Brown, Bill Minton</i>	
Opportunities and Challenges to Develop Unconventional Gas in South America and How This Will Play Into the Atlantic Basin LNG Market	609
<i>Jeanne Liendo, Marco Gonzalez</i>	
Boil Off Gas Optimization in LNG Liquefaction Plants	621
<i>Pradeep Pillai, David Messersmith, Jame Yao, Mustapha Chaker, Cyrus Meher-Homji</i>	
Author Index	