Natural Gas Quality Web Workshop

Web Workshop Series

This web workshop series was conducted May-June 2010. Over 130 operators participated in this series and gave this series a satisfaction rating of 4.5 (out of 5). The series was interactive with case studies from peer companies, as well as facilitated Q&A and instant feedback through polling questions.

If your company is a member of the SGA Network, you can log on and view this program at your convenience. Not sure if your company is a member, or if you need assistance, contact Nadine Fred.

If your company is not a member of the SGA Network, you can purchase this series for $300 by contacting Nadine Fred.

FEATURES

- Presentations from Dr. Darin George, Southwest Research Institute
- Case studies from peer operating companies
- The ability to interact with presenters and fellow participants

SCHEDULE

- Session 1: May 18, 2010
- Session 2: May 25, 2010
- Session 3: June 1, 2010
- Session 4: June 8, 2010

All session: two hours in length

SPONSORED BY

- SGA Transmission Technical Training Committee
- SGA Transmission Measurement Committee
- SGA Gas Quality Interest Group Steering Committee
- Southwest Research Institute
SESSION 1: INTRODUCTION TO GAS QUALITY AND QUALITY MEASURES

A. Introduction to Gas Quality
   a. Definitions of gas quality
   b. Properties of transmission-grade gas versus production-grade gas, saturated gas and two-phase gas streams
   c. Brief overview of natural gas from production to pipeline
   d. Gas quality metrics
   e. Gas quality determination: past, present and future
   f. Changing natural gas supplies and their effect on gas quality and its determination

B. Natural Gas Mixtures, Properties and Quality Measures
   a. Density, compressibility and specific gravity
   b. Heating value and Wobbe number
   c. Hydrocarbon and water vapor dew points
   d. Other thermodynamic properties and transport properties

SESSION 2: CAUSES AND EFFECTS OF POOR GAS QUALITY

C. Causes of Gas Sample Distortion
   a. Adsorption and desorption
   b. Absorption
   c. Residual impurities
   d. Phase change phenomena
   e. Flowing gas dynamics
   f. Avoiding these causes

D. The Consequences of Poor Gas Quality
   a. Heating value and equipment performance
   b. Hydrocarbon dew points; effects of hydrocarbon condensation on heating value
   c. Water vapor dew points; adjusting energy flow rate for water vapor
   d. H₂O, hydrocarbon liquids, sulfur and other compounds affecting pipeline and equipment integrity

SESSION 3: SAMPLING FOR GAS QUALITY

E. Natural Gas Quality and Gas Sampling Standards
   a. AGA Gas Quality Technical Note
   b. AGA-4A
c. AGA-8
d. GPA 2172
e. GPA 2145
f. API MPMS Chapter 14.1
g. GPA 2166

F. Sampling methods and hardware
   a. Spot sampling methods
   b. Composite sampling methods and equipment
   c. Systems for on-line analyzers
   d. Sampling hardware guidance

SESSION 4: GAS QUALITY ANALYSIS TECHNOLOGY

G. Gas Chromatography
   a. Analysis process
   b. Calibration gas standards
   c. Quality checks and diagnostics

H. Other On-Line Technologies
   a. Water vapor content
   b. Hydrocarbon dew points
   c. Sulfur

ABOUT OUR INSTRUCTOR

Dr. Darin L. George is a mechanical and nuclear engineer with over fifteen years of experience in the measurement and control of liquid, gas and multiphase flows. Dr. George joined the Southwest Research Institute staff in 2000, with prior work experience at Sandia National Laboratories. Dr. George has been project manager of the gas quality and sampling research program since 2002. In this role, he has conducted studies of natural gas sampling methods, identified approaches for avoiding gas sample distortion, and identified best practices in the preparation of reference gas blends for gas chromatography. His research has been used as a basis for the 2006 edition of American Petroleum Institute MPMS Chapter 14.1, the U.S. standard for natural gas sampling practices. Dr. George is currently conducting research into the accurate prediction and measurement of hydrocarbon dew points, improved methods of determining natural gas quality, and issues regarding natural gas interchangeability. Dr. George has authored or co-authored over 30 publications on the topics of cavitation, multiphase flows and flow measurement methods, and is a registered Professional Engineer in South Carolina and Michigan.

OTHER PRESENTERS

In addition to Dr. George's presentations, we have invited peer operators to share experiences and lessons learned.
REGISTRATION

Member of SGAnetwork

This series is part of the SGAnetwork and is available to SGAnetwork subscribers at no additional fee. To find out if your company is a current SGAnetwork subscriber, contact Nadine Fred (972-620-4015). To find out more about how to become a subscriber to the SGAnetwork, contact Elaine Parrish.

Not a member of SGAnetwork (registration is for the series; not per session)

Single seat registration: $300 for 'Single' seat registration for SGA members, $750 for non-members.

- To be accessed by only one computer
- Multiple participants allowed at the single computer
- No "Net Meeting" or other re-distribution permitted

Enterprise registration: $1,500 for 'Enterprise' registration for SGA members, $2,250 for non-members.

- May be accessed by up to 10 computers within company
- Multiple participants allowed at each computer
- Unlimited "Net Meeting" or other intranet re-distribution permitted within company

Note: these sessions will be recorded. By purchasing the series, you can also access the recordings after the event.

Contact Info

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About SGA

Southern Gas Association has been a cornerstone of the natural gas industry for more than 100 years. Founded in 1908, SGA set out to concern itself with technical and sales issues, and to devise by common efforts, solutions to common problems within the natural gas industry.

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