GM LINK
Q3 2014

In This Issue
- GMRC 2014 Gas Machinery Conference
- GMRC Training
- 2014 Research Projects
- Board & Committee Updates
- Welcome New Members
- SGA Conferences & Workshops

GMRC Gas Machinery Conference

October 5 - 8, 2014
Omni Hotel & Music City Center
Nashville, Tennessee

The GMRC Gas Machinery Conference will include three days of technical training and presentations presented by the industry's leading subject matter experts. This year's program includes:

- 15 three hour short courses
- 32 technical paper presentations
- 17 new technology updates

Educational sessions are valuable for design engineers, facility engineers, technicians and others, with an emphasis on the operation, maintenance, and testing of gas compression machinery. Networking opportunities in the exhibit hall and social functions provide time to interact with your peers and share best practices with others in the gas compression industry.

The Conference includes a vendor exhibit with over 120 companies showcasing the latest equipment, technology and services.

Click here to register.

Sponsorships:
Companies looking for additional visibility at the Conference have a number of sponsorship opportunities to choose from. Sponsorships are a great way to reach your target market in a high profile, cost-effective way. For information, please contact Jane Butler (jbutler@southerngas.org).
Advertising:
Advertising opportunities are available for the 2014 GMC Today, the official publication of the Conference, with issues distributed to all attendees Monday, Tuesday and Wednesday. Contact Connie Kouba (connie@koubagraphics.com) for information and to reserve ad space today, or if your company is interested in submitting an article to be considered for publication.

Visit www.gmrc.org for updated information, or email admin@gmrc.org.

THANK YOU TO OUR GMC 2014 SPONSORS!

Ariel - Monday Night Reception
Dresser-Rand - Monday Night Football Party
Siemens - Welcome to Nashville Reception
Caterpillar - Opening Luncheon
GE - Flash Drives

Hoerbiger - Tuesday Breakfast
CPI - Conference Bags
AGES - Lanyards
Murphy - Hotel Key Cards
ACI - Smart Phone App

GMRC TRAINING

Engine Emissions Stack Testing and Analyzer Workshop
October 15 - 17, 2014 - Oklahoma City, OK

This workshop, co-sponsored by SGA and GMRC, provides an understanding and familiarity through live demonstrations, hands-on inspection of equipment, and lectures and group discussions of actual field testing experiences of the following: the processes and equipment for EPA stack testing methods and protocols; function and design of portable analyzer equipment; factors affecting accuracy and outcome of testing and other calculations and flow measurements required.

Regulatory review of state and federal emissions testing and reporting requirements and evaluation of emissions reduction technology for internal combustion and turbine engines will be reviewed in depth.

Other Upcoming Training:
The 2015 training calendar is currently being developed.

2014 RESEARCH PROJECTS

The GMRC Project Supervisory Committee, under the direction of Chairman Kary Saleeby, ExxonMobil, is conducting the following projects for 2014:

Performance Augmentation Networks (PAN)
PAN represents an advance in compression technology designed to improve the efficiency of reciprocating compressors, reducing energy consumption and increasing compressor capacity. The concept is one of effectively recovering energy and using it to improve performance. A full scale field test is currently underway at the Williams Zick Compressor Station in Pennsylvania. The project team, lead by Scott Schubring of Williams, provides monthly updates to the GMRC Board. A full article
Predicting the Power Cost of Reciprocating Compressor Manifolds
Reciprocating compressors generate pressure and flow pulsations in the suction and discharge systems. These have a negative effect on compressor performance. Currently, there exists no generally agreed upon method to accurately predict the power loss due to these pulsations. The objective of this project is develop a methodology to accurately predict the effect of pulsations on compressor performance and principally power loss. The analytical model for this two year project was presented at the 2013 GMC. In 2014, the project continued with a presentation at the 2014 GMC, and with a field test at TransCanada’s Gas Dynamic Test Facility in Alberta, Canada. Testing began July 2014, consisting of a pulsation generator, orifice plates, pulsation bottles, and flow controls. In late 2014/early 2015, there will be a field test at a compressor site. The deliverable will be a report used in developing a new GMRC Guideline to provide a recommended methodology for the calculation of the power loss of pulsation control on the suction and discharge of a reciprocating compressor.

Evaluation of Dampening Products and Support Designs
There are many cases where piping vibration is caused by resonance. Left unchecked, excessive vibration will cause fatigue failure of the pipe or vessel, and a gas release. This safety, environmental, and operational risk must be avoided. This project will include investigation and evaluation of damping products and materials, and also recommend design and analysis techniques. This project builds on the testing conducted in 2013 with Josh Shaver of Atmos Energy and Beta Machinery Analysis (BETA). The research team is working toward a recommended approach to model damping on compressor systems, including modal and forced response analysis.

Effect of Inlet Pulsation and Piping Acoustic Impedance on Centrifugal Compressor Performance
The proposed research will provide a better understanding of the interaction of reciprocating and centrifugal compressors. A validation of a mathematical tool and a set of experimental data for addressing several major problems of the centrifugal compressor transient interaction with their piping systems will be provided.

Piping Support Stiffness
Pipe supports are used to secure process piping and prevent it from vibrating. The stiffness of a support depends on the clamp stiffness and the stiffness of the structure underneath the clamp. Good engineering data on the stiffness of pipe clamp, and support structure beneath it, is difficult to obtain. This can lead to incorrect assumptions, which can result in high vibrations, unnecessary expansion loops, and high clamp and equipment loads. This GMRC project will give piping stress and piping vibration engineers tools to ensure they can design reliable piping systems.

Proposals for 2015 projects are being accepted and will be reviewed at the August meeting of the Project Supervisory Committee.

GMRC Design Guideline for High-Speed Reciprocating Compressor Packages for Natural Gas Transmission & Storage Applications
This new GMRC product is a comprehensive specification document intended to provide the end user and operator with more reliable procedures and references for selecting, specifying, procuring, applying and operating high-speed units with more predictable and reliable results. It provides packagers with a comprehensive and detailed guideline for designing and building high-speed compressor packages that
meet customer and equipment OEM expectations. The workbook consists of 17 chapters organized in a full color, comprehensive 3 ring binder. A CD containing interactive spreadsheets is included. Due to size and complexity of material, an electronic version of the Guideline is not available at this time.

GMRC members: $95 per workbook; Non-Members: $495 per workbook. To order by phone, call Linda Todd at (972) 620-4013, or email admin@gmrc.org

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BOARD & COMMITTEE UPDATES

Upcoming Meetings:

Project Supervisory Committee
August 19 - 20 - San Diego, CA
2015 research project proposals will be accepted at this meeting.

Board of Directors 2014
October 5 - Nashville, TN

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WELCOME NEW MEMBERS

We are pleased to welcome eleven new member companies to GMRC so far this year!

Access Compression, LLC
Anadarko Petroleum Corp.
Black & Veatch
Chart Cooler Service Company, Inc.
DCP Midstream
Dow Oil & Gas
Filmax, Inc.
Red Cedar Gathering Company
Sertco Industries, Inc.
SKF USA, Inc.
Zahroof Valves Inc.

Click here to view a complete list of GMRC members. For information on how your company can join, please contact admin@gmrc.org.

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SGA CONFERENCES & WORKSHOPS

SGA (Southern Gas Association), the parent organization of GMRC, conducts a wide range of conferences and workshops for the natural gas industry. Click on a link below for details on upcoming activities, or go to southerngas.org for more information.

Advanced Pipeline Design Workshop
August 26, 2014 - Nashville, TN
November 4, 2014 - Houston, TX

This 2.5-day workshop takes you through the advanced design process for specific topics as addressed in the list included here. Attendees will gain an in-depth understanding of all elements related to the design of these specific components and the process associated with planning and performing the actual tasks during construction.
SGA’s Engineer’s Week provides an excellent opportunity for engineers to receive valuable, industry specific training in only a few short days. Workshops are often combined during the week so that attendees can attend multiple classes to get the most benefit out of their travel and schedule.

**Workshops**

- Ethics for Engineers
- Pipeline Design
- Project Planning & Management
- Factors in Compressor Station Design
- DOT Compliance

For news and updates on GMRC, visit [www.gmrc.org](http://www.gmrc.org)