

# SGA Board of Directors Meeting



Gas Machinery Research Council

Board Report

Robert Bahnick, Chairman of the Board

November 7, 2010

# Overview

- GMRC Mission and Vision
- 2010 GMRC Results
  - Research
  - Training
  - Membership
  - Financial
- Proposed 2011 GMRC Budget and Goals
  - Training Budget
  - Research Projects
  - Financial Budget
- 2010 Membership Meeting
  - By Law Changes
  - Board Members and Officers

# GMRC Mission & Vision

- GMRC Purpose
  - Provide solutions to industry problems
- GMRC Vision
  - An industry advanced through collaborative research, training and technology
- GMRC Mission
  - Identify industry problems and provide solutions that improve reliability, efficiency and cost effectiveness

# GMRC Mission & Vision

- Compelling Business Challenge

– Our success depends on our ability to continually improve and enhance what we do. Our challenge then is to innovate our way of business, constantly looking to bring future practices to our members today. To do this effectively we must meet the challenge to:

# GMRC Mission & Vision

- Compelling Business Challenge
  - To do this effectively we must meet the challenge to:
    - Effectively identify the problems and to respond adequately to the rapid pace of technological change in solving future problems
    - Effectively get GMRC technology to the industry
    - Stable research funding
    - Clarify GMRC relationships with other organizations

# 2010 GMRC Results

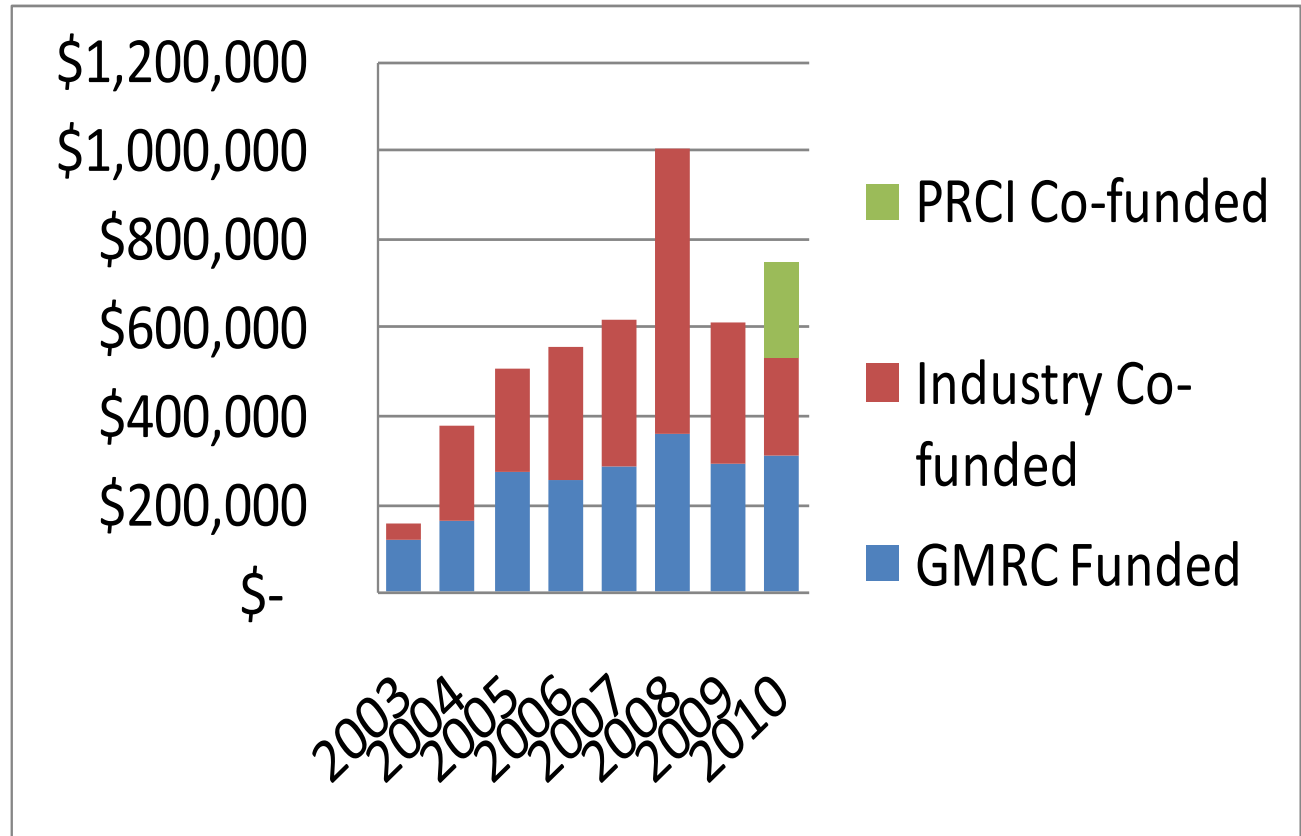
Research Program

# 2010 GMRC Research Program Budget

Project	Co-Funding	GMRC	Industry	Total
Compression Station Waste Heat Recovery Study	<b>PRCI (\$50K)</b> Siemens - Solar Turbines Voith Turbo - Camfil Farr	\$0K	\$70K	\$70K
Improvements to Greenhouse Gas Emission Factors at Transmission & Storage Sources	<b>PRCI (\$100K)</b>	\$77K	\$100K	\$177K
Pulsation Research	Ariel - ACI Services Hoerbiger - Voith Turbo Dresser Rand - Cameron Compression GE	\$109K	\$91K	\$200K
Noise Control at Centrifugal & Reciprocating Compressor Stations – Phase II	Dresser Rand -- Atmos Energy Siemens Williams Northwest Pipeline	\$25K	\$35K	\$60K
Test Standards Gas Turbine & Engine Inlet Air Filters for Salty Environments	Camfil-Farr Donaldson - Siemens Solar Turbines	\$26K	\$34K	\$60K
Design Guidelines for Branch Connections in High Vibration Environments	<b>PRCI (\$30K)</b> Dresser-Rand Compressor Systems	\$35K	\$45K	\$80K
Bolted Joint Technology	<b>PRCI (\$30K)</b> BP Compressor Systems Southern Star Central Gas Pipeline	\$0K	\$60K	\$60K
Administration		\$35K		\$35K
<b>Total Program</b>		<b>\$307K</b>	<b>\$435K</b>	<b>\$742K</b>

# GMRC Research Spending

- \$133,900 (22%) Increase in Research in 2010 from 2009
- Enhanced our relationship with the PRCI in 2010
  - \$210K Co-Funding



# 2010 GMRC Results

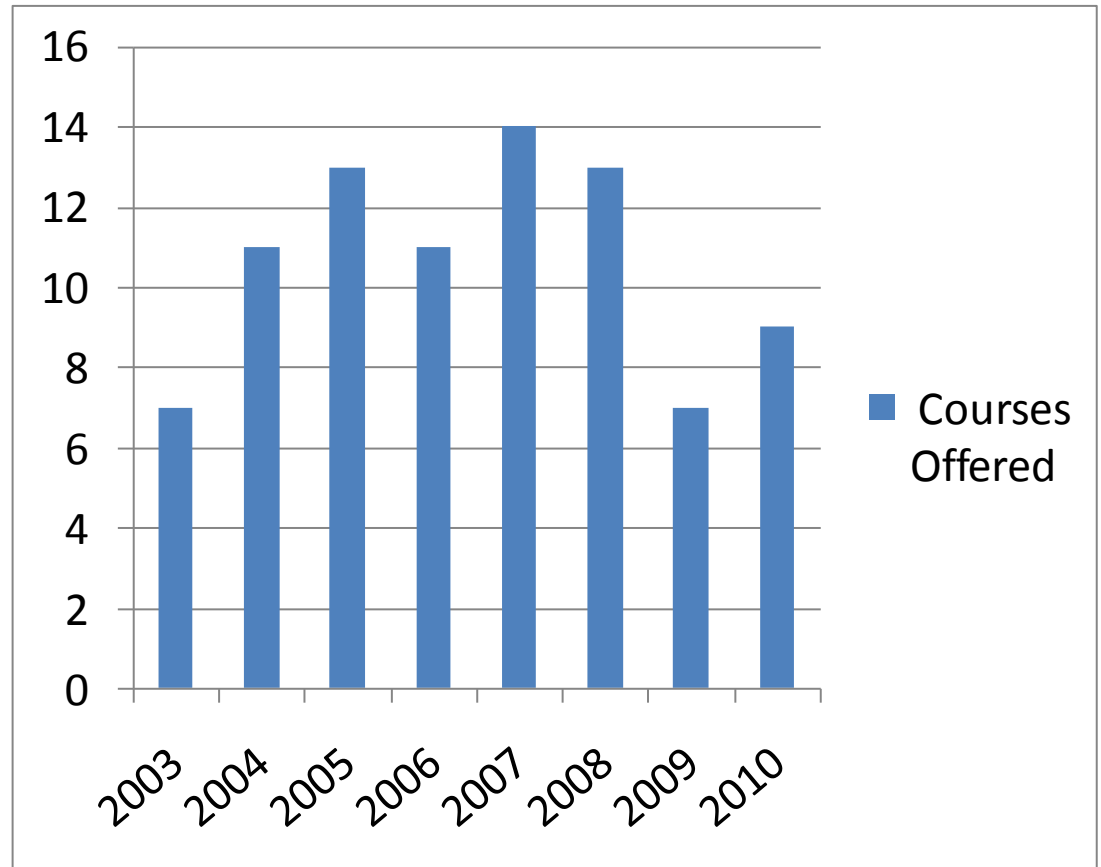
Training Update

# 2010 GMRC Training Update

Title	Location	Attendance	
Controlling Pulsations in Compressor & Piping Systems	San Antonio, TX	16	
Applied Principles of Engines & Compressors	Rock Springs, WY	24	
Foundation Design & Repair/The Bolted Joint	San Antonio, TX	11	
Applied Principles of High-Speed Engines & Compressors	Dallas, TX	17	
Factors in Compressor Station Design	Colorado Springs, CO	27	
Engine Analyzer & Reliability Workshop	Nashville, TN	46	
Introduction to Gas Turbines	Pittsburgh, PA	11	
Combustion Characteristics	Colorado Springs, CO	9	
Gas Machinery Conference	Phoenix, AZ	883	
Engine Emissions Stack Testing & Analyzer Workshop	Oklahoma City, OK	55	

# GMRC Courses

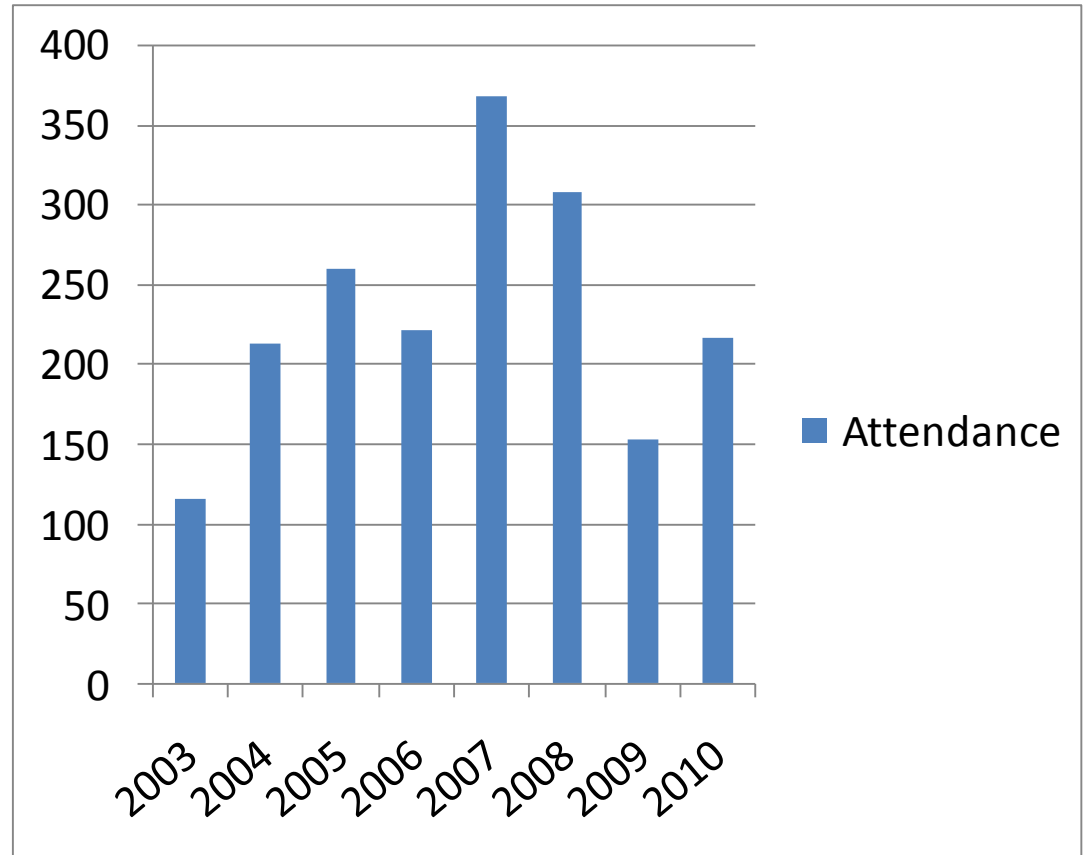
•Return to more traditional training courses in 2010 following 2009 when six classes were cancelled as a result of poor student registrations



# GMRC Training Attendance

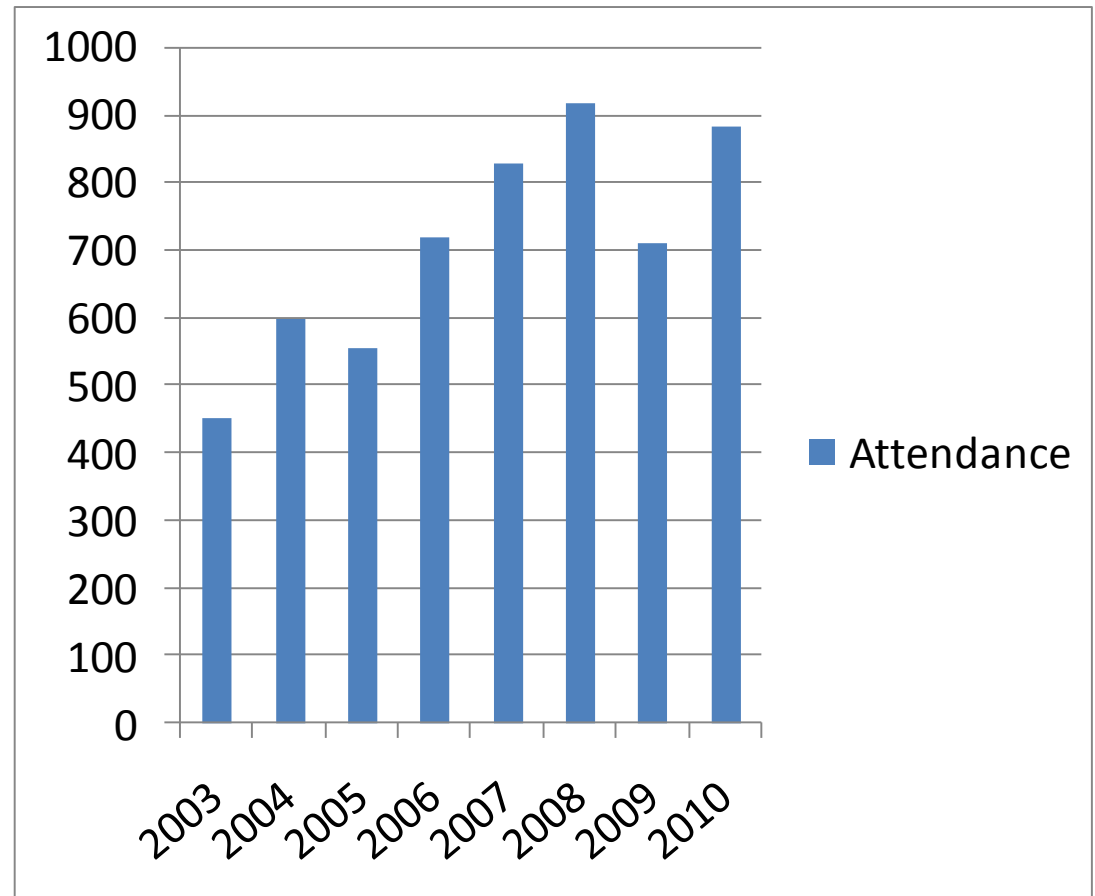
• Training Class interest and attendance improved in 2010 following the 2009 low

- 216 persons attended GMRC Training in 2010
- 42% increase in attendance from 2009



# GMC Attendance

- The GMC continues to be the premier machinery conference in North America
- Attendance to the GMC increased 24% to near 2008 levels.



# 2010 GMRC Results

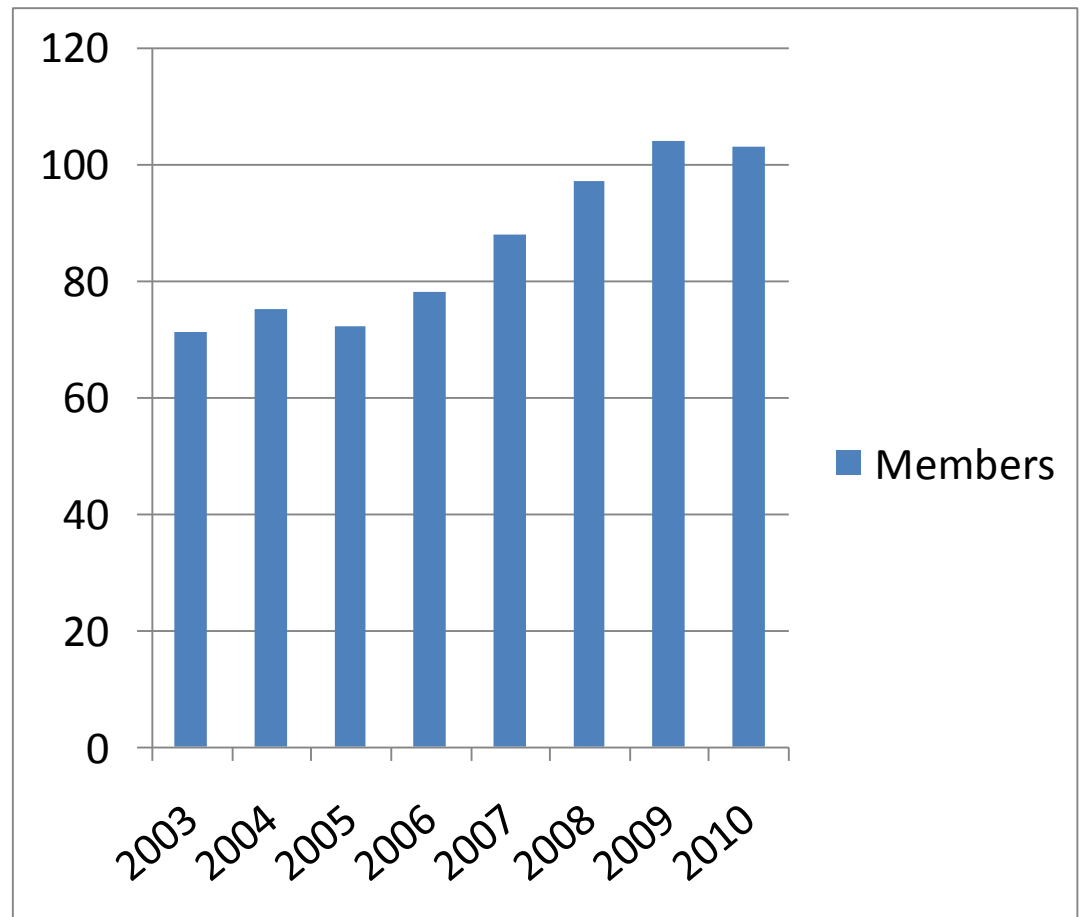
Membership Update

# 2010 GMRC Membership Update

- **1 New Full Members**
  - Converteam, Inc.
- **1 New Associate Member**
  - SPEC Services, Inc.
- **2 Inactive Members**
  - Shell Exploration & Production
  - Hardy Instruments

# GMRC Membership

- Membership support continues to be stable over the past three years
- Membership has had a net additional 28 members added since 2004



# 2010 GMRC Results

## Financial Results

# 2010 GMRC Financial Update

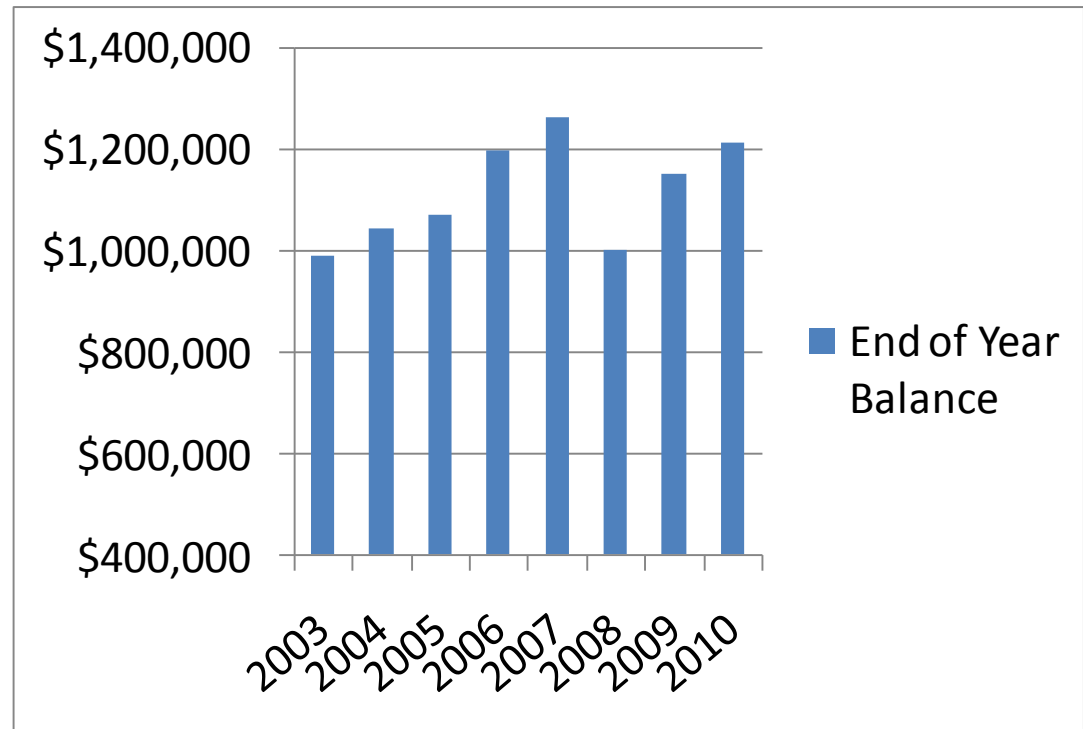
	<u>Annual YEE</u>	<u>Annual Budget</u>
<b><u>Operations</u></b>		
<b>Receipts:</b>		
Net Analog/Engineering Royalty	\$ 200,000	\$ 200,000
Membership Dues	15,000	15,000
Associate Member Dues	100,000	100,000
Training & Dev/Meeting (Net)	140,000	130,000
Co-Funding	435,152	460,152
Administrative Income-SGA	10,000	10,000
Other Receipts	7,500	7,500
<b>Total Receipts</b>	<b>\$ 907,652</b>	<b>\$ 922,652</b>
<b>Disbursements:</b>		
Salaries/Benefits	145,000	145,000
Committee & Special Mtgs	15,000	15,000
Member Communications	15,000	15,000
Legal/Audit & Patents	25,000	25,000
Research Expenditures/SWRI	565,000	742,000
Research Expenditures/GMRC&PRCI	177,000	0
<b>Total Disbursements:</b>	<b>\$ 942,000</b>	<b>\$ 942,000</b>
<b>Excess (Deficiency) of Receipts Over Disbursements - Operations</b>	<b>\$ (34,348)</b>	<b>\$ (19,348)</b>

# 2010 GMRC Financial Update

- GMRC Research Reserve Investment Performance
  - Account Value @ 1/1/10 = \$1,151,586
  - Deposits 0
  - Withdrawals 0
  - Account Value @ 9/30/10 = \$1,212,223
  - Investment Gain YTD for 2010 = \$ 60,637
  - YTD Return for 2010 = 5.27%
  - Annualized Return for 2009 = 16.58%

# GMRC Research Reserve Balance

- Research Reserve Levels recovered from 2008 decline
- Target Asset Allocation
  - 55% Equities
  - 45% Fixed Income
- Current Asset Allocation
  - 48% Equities
  - 52% Fixed Income
- Re-balance in December or January



# 2011 GMRC Budget & Goals

## Training Goals

# 2011 GMRC Training Plan

Date	Title	Location	
TBD	Controlling Pulsations in Compressor & Piping Systems	San Antonio, TX	
April 18-22	Applied Principles of Engines & Compressors	TBA	
May 17-20	Applied Principles of High-Speed Engines & Compressors	TBA	
May 18-20	Foundation Design & Repair/The Bolted Joint	TBA	
June 21-24	Combustion Characteristics	TBA	
June 22-24	Factors in Compressor Station Design	Colorado Springs, CO	
July 19-21	Engine Analyzer & Reliability Workshop	Nashville, TN	
August 9-11	Introduction to Gas Turbines	TBA	
October 2-5	Gas Machinery Conference	Nashville, TN	
November 1-3	Engine Emissions Stack Testing & Analyzer Workshop	Oklahoma City, OK	

# 2011 GMRC Budget & Goals

Research Program

# Proposed GMRC 2011 Research Project

<b>#</b>	<b>Title</b>	<b>GMRC Budget</b>
1.	Requirements for High-speed Package Design Guideline	\$ 97k
2.	Waste Heat Recovery - Phase 2 (joint PRCI)	\$ 45k
3.	Solutions to Mechanical Vibrations	\$130k
4.	Compressor Station Noise Control - Phase 3	\$ 85k
5.	Pulsation Control Research (High-efficiency Bottles)	\$150k
6.	Testing of Fundamental Gas Properties	\$105k
7.	Reciprocating Compressor Piping Design Options	\$ 65k

Proposed program total amount: \$677K

# GMRC 2011 Proposed Research

- A 2011 Proposed Research Project was submitted by an alternative researcher different from SWRI that received significant support from the Project Supervisory Committee.
- We currently have an annual contract with SWRI for research.
- SWRI wants to be the exclusive researcher for GMRC
- SWRI has made statements that GMRC pulsation royalties may be in question since GMRC intellectual property is not being used.
- GMRC Board has taken this issue very seriously and has created two committees
  - Committee to inventory & review legal patent rights for GMRC technology
  - Committee to negotiate a new contract with GMRC and any other researcher
- Due to this uncertainty, the 2011 budget does not include royalties and has significantly less research projects

# 2011 GMRC Budget & Goals

## Financial Budget

# 2011 GMRC Financial Budget

<b>Gas Machinery Research Council</b>		
Excess of Receipts over Disbursements Worksheets		
<b>Operations</b>		
<b>Receipts</b>		<b>2011 Budget</b>
	Net Analog / Engineering Royalty	\$ 0
	Membership Dues	\$ 12,000
	Associate Member Dues	\$ 90,000
	Training & Dev Meeting (Net)	\$ 130,000
	Cofunding	\$ 0
	Administrative Income	\$ 0
	Other Receipts	\$ 3,000
<b>Total Receipts</b>		<b>\$ 235,000</b>
<b>Disbursements</b>		
	Salaries / Benefits	\$ 152,250
	Committee & Special Mtgs	\$ 15,000
	Member Communications	\$ 28,333
	Legal/Audit & Patents	\$ 25,000
	Research Expenditures	\$ 45,000
<b>Total Disbursements</b>		<b>\$ 265,583</b>
<b>Excess (Deficiency) of Receipts over</b>		
<b>Disbursements - Operations</b>		<b>\$ (30,583)</b>
<b>Target Drawdown Value(Spending Rule)</b>		<b>\$ (60,000)</b>
<b>Excess of Deficiencies over Target Value</b>		<b>\$ 29,417</b>

# 2010 Membership Meeting

# GMRC By-Law Changes

- Increase number of Board members from 11 to a minimum of 9 to a maximum of 14
- Creation of an Application Contractors Committee
- Minor language clean-up in Membership Section, with Member Communications and Officer Duties

# Membership Approval of 2011 GMRC Directors – 2 Yr Terms

**Doug Bird - Dresser**

**Martin Habel - Solar**

**Craig Linn- Williams**

**Kriss McDonald- Ariel**

**Bharat Trivedi - Atmos**

# 2011 GMRC Officers

**Robert Bahnick - Chairman**

**Roland Trevino – Vice Chairman**

**Open - Secretary**

**Franz Ottitsch – Treasurer**



Questions?