



GAS MACHINERY CONFERENCE: OCTOBER 2-5, 2022 IN FORT WORTH, TEXAS

**Sunday: October 2, 2022 Registration 2:00 PM - 6:00 PM
Fort Worth Convention Center - 13th Street Lobby**

5:30 PM - 7:30 PM	Century Soiree Opening Reception sponsored by Sloan Lubrication Systems	 100 YEARS SLOAN LUBRICATION SYSTEMS OMNI Hotel - Fort Worth Ballroom, 2nd Floor
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Monday: October 3, 2022

Time / Room Location	Company	Author/s	Paper Title	Track
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7 AM Breakfast - Fort Worth Convention Center - 2nd Floor Concourse

8 AM - 11 AM Short Courses



8-11am / 201A/B	Ariel Corporation	Mr. Greg Phillippi	Basic Thermodynamics of Reciprocating Compression	Reciprocating Compressors
8-11am / 202A/B	Solar Turbines	Dr. Rainer Kurz	Centrifugal Compressors: Principles, Design and Control	Centrifugal Compressors
8-11am / 202C/D	Wood - Vibration, Dynamics and Noise	Mr. Alasdair Robinson	Introduction to Pulsation & Vibration on Reciprocating Compressors	Reciprocating Compressors
8-11am / 204A/B	NFG, Southern Star, Williams, Cooper Machinery Services, Waukesha	Mr. Terry Kreuz, Dr. Nasr Alkadi, Mr. Hans Mathews, Mr. Jacob Saletsky, Mr. Jim Penepent	Discussions of Varying Hydrogen Blends on Integral, Low-Speed Natural Gas Engines	Reciprocating Engines, and Emissions

11:00 AM - 1:00 PM

**Conference Kick-off Keynote and Luncheon, Dr. Scott Tinker
Fort Worth Convention Center - 2nd Floor Ballroom**

1:15 PM - 2:15 PM Technical Papers

1:15-2:15pm / 201A/B	Kinder Morgan; Southwest Research Institute	Mr. Angel Rivera; Mr. Francisco "Frank" Fierro; Mrs. Sarah Simons; Mr. Adrian Alvarado	Estimating Compressor Station Blowdown Time, Forces, and Temperatures: How Close Can You Get?	Other
1:15-2:15pm / 202A/B	Southwest Research Institute	Mr. Chris D. Kulhanek; Mr. Caleb S. Cunningham; Mr. Justin R. Hollingsworth; Dr. Jeff Moore; Mr. Gregory J. Peri	Test rig development to measure internal shaft temperatures at a journal bearing during high-speed operation for Morton effect research	Research
1:15-2:15pm / 202C/D	Southwest Research Institute	Mr. Eugene ""Buddy"" Broerman, III; Mrs. Christine Scrivener; Mr. W. Norm Shade	A GMRC Technology: Improved Reciprocating Compressor Efficiency via Improved Pulsation Control	Research
1:15-2:15pm / 203A	Williams; Ariel Corporation; IDC Engineering	Mr. Ramiro Martin Leon; et al	Torsional Vibration Issues - What you don't know, may hurt you...!	Vibrations & Pulsations
1:15-2:15pm / 203B/C	Altronic LLC	Mr. Keith Brooks; Mr. David Lepley	Optimizing Hydrogen Fueled Spark Ignited Engine Output & Emissions Through Advanced Ignition & Passive Prechamber Design	Reciprocating Engines

2:30 PM - 3:30 PM Technical Papers				
2:30-3:30pm / 203B/C	Ariel Corporation	Ms. Kaley R. Coss	Hydrogen Blending in Natural Gas Pipelines with Reciprocating Compressors	Reciprocating Compressors
2:30-3:30pm / 201A/B	Southwest Research Institute; Enbridge	Mr. Brandon Lee Ridens; Mr. Richard Fink	GMRC Project: Improvements in Elemental Sulfur Test Methods for Natural Gas	Research
2:30-3:30pm / 202C/D	Wood PLC; Williams	Mr. Chris Bibby; Mr. Eric Malstrom; Mr. Chris Harper	Solving flow-induced pulsation problems in piping system , three case studies	Vibrations & Pulsations
2:30-3:30pm / 204 A/B	HOERBIGER	Mr. Matthias Richtig	Reciprocating compressor greenhouse gas emission footprint assessment and mitigation potential	Reciprocating Compressors
3:30 PM - 3:45 PM Refreshment Break				
3:45 PM - 4:45 PM Technical Papers				
3:45-4:45pm 201A/B	ACI Services Inc. & Berkshire Hathaway Energy GT&S	Mr. W. Norm Shade; Mr. Gary Jedrosko; Mr. Tyler Clark; Mrs. Kristen Edwards	Cumulative Lifetime Assembly-Induced Low Cycle Fatigue in Legacy Compressor Cylinders	Reciprocating Compressors
3:45-4:45pm 202A/B	Southwest Research Institute; Solar Turbines	Mr. Aaron Rimpel; Dr. Abhay Patil; Mr. Mark Anguiano; Dr. Rainer Kurz	Dry Gas Seal Reliability: A Study of the Effects of Liquid Contamination on Seal Performance, Phase 4	Research
3:45-4:45pm 202C/D	Wood	Mr. Wally Bratek; Mr. Sagar Kamat	Compressor Station Modifications , Analysis Guidance and Lessons Learned	Vibrations & Pulsations
3:45-4:45pm 203B/C	Sloan Lubrication Systems; Blackrock Resources	Mr. CJ Sloan; Mr. Keith Schafer; Mr. Matt McCarthy, Mr. Eric Sloan	The High Cost of Over Lubrication: Quantifying the Negative Impacts of Excessive Power and Compressor Cylinder Lubrication on Natural Gas Pipeline Operations	Reciprocating Compressors
3:45-4:45pm 203A	Shell Oil Products	Dr. Cesar Lizcano	Considerations for the use of high performance PAG based gas compressor oils	Other
5:30 PM - 7:30 PM	Reception Sponsored by Ariel	 Ashton Depot - 1501 Jones Street, Fort Worth, TX		
Tuesday: October 4, 2022				
6:30 AM - 8:00 AM	Breakfast Reception by Hoerbiger	 Fort Worth Convention Center - 2nd Floor Ballroom		
Time / Room Location	Company	Main Author	Paper Title	Track
8 AM - 11 AM Short Courses				
8-11am / 201A/B	Southwest Research Institute; Solar Turbines Incorporated; Kinder Morgan	Mr. Hector Alejandro Delgado; Dr. Rainer Kurz; Ms. Marybeth McBain; Mr. Avneet Singh	Field Performance and Instrumentation of Centrifugal Compressors	Centrifugal Compressors
8-11am / 203A	Southwest Research Institute	Mr. Nathan Poerner; Mr. Caleb "Seth" Cunningham	Have Sensors, Will Travel	Vibrations & Pulsations

Mini SC 8-9:30am / 202A/B	Elliott-Turbo; Williams; Southwest Research Institute	Mrs. MaryBeth McBain; Mr. Scott Schubring; Mrs. Sarah Simons	Operator Perspectives on Hydrogen Blending	Energy Transition
Mini SC 8-9:30am / 202C/D	Wood	Mr. Zachary Dobberthien , EIT	Shake, rattle and grow 2 , pipe support classification for vibratory and thermal growth applications	Vibrations & Pulsations
Mini SC 9:30-11am / 203B/C	Southwest Research Institute	Mr. Benjamin A. White; Ms. Sarah B. Simons	Analyses Not Addressed by API Standards: AIV/FIT/FIV/Small Bore Piping	Vibrations & Pulsations
Mini SC 9:30-11am / 204A/B	Siemens Energy; TC Energy	Mr. Kevin Davies; Mr. Seth Johnson	The Perfect Storm.... Who moved our Knowledge	Other

11:15 AM - Exhibit Hall Ribbon Cutting & Opening

**11:15 AM - 1:00 PM
Lunch with Exhibitors**

1:00 PM - 2:15 PM Tech Updates (8 Tech Updates)

8 min	INNIO Waukesha Gas Engines & Detection	Mr. Dylan Abel & Mrs. Sarah Whitney	The Future of Full Skid Monitoring Analysis & Control	Reciprocating Compressors
8 min	Ariel Corporation	Mr. Kevin Conway	Ariel Smart Compressor Update	Reciprocating Compressors
8 min	Continental Controls Corporation	Mr. Richard Fisher	Variable pressure control fuel valves and the introduction of the next generation product	Reciprocating Engines
8 min	Windrock, Inc.	Mrs. Mary Margaret Chapman	Tech Update: Windrock's Expanding Product Portfolio	Other
8 min	Solar Turbines	Mr. Anthony Perental	Gas Turbine Emissions and Regulatory Update	Emissions
8 min	STASSKOL GmbH	Dr. Marc Langela	CNGS / Piston Rod Packing Solutions for Reduced Emissions	Reciprocating Compressors
8 min	Elliott Group	Mr. Stephen Todd Omatick	Elliott Technology for Pipeline Industry	Centrifugal Compressors
8 min	Caterpillar Inc.	Mr. Hassan Khalid	Gas Compressor Driver Product Updates and Low Carbon Solutions	Emissions
8 min	Monico Monitoring Inc	Mr. Doyle Taylor	Update of Monico Products and Services	Data Analytics

2:15 PM Refreshment Break sponsored by ACI Services Inc.

2:30 PM - 3:30 PM Technical Papers

2:30-3:30pm / 201A/B	Southwest Research Institute; Hanwha Power Systems America; PwrCor; Williams	Dr. Timothy Allison, Dr. Karl Wygant, Dr. Jason Wilkes PHD, Dr. Jordan Nielson PHD, Dr. Natalie Smith, Mr. Rob Pelton, Mr. Thomas Telegades, Mr. Scott Schubring	Comparative Performance Analysis of Waste Heat Recovery Systems for Multiple Compressor Station Heat Sources	Auxiliary Systems
2:30-3:30pm / 202A/B	Wood PLC; Nova Chem; Energy Transfer	Mr. Mike Cyca; Dr. Kamal Botros; Mr. Austim Smith; Mr. Hasu Gajjar	Centrifugal Dynamic Surge Design - Balance of Competing Philosophies	Centrifugal Compressors
2:30-3:30pm / 202 C/D	Windrock, Inc.	Mrs. Mary M. Chapman; Mr. Ed Kelleher; Mr. Peter Flanagan	Learning more about reciprocating machinery health through increased data collection frequency	Data Analytics
2:30-3:30pm / 203B/C	Solar Turbines Inc.; Montrose Air Quality Services	Mr. Ivan Carlos; Mr. Luke Cowell; Mr. Priyank Saxena; Ms. Leslie Witherspoon; Mr. Blake Ericson; Mr. Phil Kauppi	Formaldehyde of Emissions Measurements from Dry Low Emissions Industrial Gas Turbines	Emissions

2:30-3:30pm / 204A/B	Southern California Gas Company	Mr. Joseandres Sanchez	California Regulatory Implications for Reciprocating Compressor Rod Packing	Reciprocating Compressors
3:45 PM- 4:45 PM Technical Papers				
3:45-4:45pm / 201A/B	Southwest Research Institute, and Elliott Turbo	Mrs. Marybeth McBain; Mr. Derrick Bauer; Mr. Stephen Ross; Dr. Klaus Brun; Mr. Tim Allison; Mr. Eugene "Buddy"Broerman	Technology Options for Hydrogen Compression	Energy Transition
3:45-4:45pm / 202A/B	Solar Turbines; Caterpillar	Mr. Michael Clay; Mr. Greg Gibson; Mr. James Barber; Dr. Rainer Kurz	Emissions Reductions and Efficiency Gains while Increasing Capacity on Legacy Turbomachinery Equipment	Centrifugal Compressors
3:45-4:45pm / 202C/D	Southwest Research Institute; Siemens Energy	Dr. Jordan Nielson; Dr. Swanand Bhagwat; Mr. Scott Delmote	Measuring Lube Oil Thickness of Reciprocating Compressors	Reciprocating Compressors
3:45-4:45pm / 203B/C	Baker Hughes	Mr. Sergio Cipriani; Ms. Federica Furcas; Mr. Bruno Roda	Hydrocarbons Emission Recovery in Turbo-Compressor Units	Emissions
3:45-4:45pm / 204A/B	ACI Services Inc.; Optimum Power	Mr. W. Norm Shade; Mr. Glen F. Chatfield; Mr. Dale K. Wells; Mr. John J. Bazaar	Compressor Pulsation Control & Capacity Maintenance With Variable (0 to >20%) Hydrogen Content	Reciprocating Compressors
4:45 PM- 6:00 PM	Exhibitor Hall and Reception Fort Worth Convention Center - Exhibit Hall			

Wednesday: October 5, 2022

Time / Room Location	Company		Paper Title	Track
6:30 AM - 8:00 AM Breakfast with Exhibitors				
8:00 AM - 9:00 AM Technical Papers				
8-9 am / 201A/B	Monico Monitoring	Mr. David Krenek	You're Ready to Analyze Your Machine Data , But Is Your Data Ready?	Data Analytics
8-9 am / 202A/B	Wood PLC; Enerflex	Mr. Jaehee Chae; Mr. Dan Hackett	Solutions to complex compressor skid & foundation vibration issues	Reciprocating Compressors
8-9 am / 202C/D	Colorado State University; AeriNOx, Inc; Kinder Morgan	Ms. Brenna King; Mr. Daniel B. Olsen; Mr. James McCarthy; Mr. Chris Nowak	Test Method Evaluation and VOC Exhaust Species for Natural Gas-Fired Reciprocating Engines	Emissions
8-9 am / 203A/B	TC Energy	Mr. Seth Johnson; Mr. Keith Schafer	Comparison of Control and Alarm Strategies of Auto-balance and Fuel Injection Systems for Reciprocating Engines	Reciprocating Engines
9:15 AM - 10:15 AM Technical Papers				
9:15-10:15am / 201A/B	Colorado State University/NIST	Dr. Bret Windom, Dr. Sam Miller	Novel Vapor Liquid Equilibrium Measurements using Nuclear Magnetic Resonance (NMR) Spectroscopy to Improve Equation of State Modeling and Dew Point Prediction of Natural Gas Mixtures	Research
9:15-10:15am / 202A/B	Radical Combustion Technologies	Mr. Michael J. Manfredi; Mr. Michael P. Whelan; Mr. James J. McCoy	The Next Generation of NOx Retrofit Technologies for Pipeline Compressor Engines	Reciprocating Engines
9:15-10:15am / 202C/D	Wood PLC	Mr. Wally Bratek; Mr. Steven Crocker	Station-Wide Vibration/Pulsation Analysis , Best Practices for Data Collection and Post-Processing	Vibrations & Pulsations
9:15-10:15am / 203B/C	Hoerbiger Corporation of America	Mr. Patrick Taylor	Case Study on Finger Unloader Pulldown Failures	Reciprocating Compressors
9:15-10:15am / 204A/B	Southwest Research Institute	Mr. Eugene ""Buddy"" Broerman; Mrs. Sarah Simons	A GMRC Research Project: Hydrogen Blending in Natural Gas Compression Facilities	Research

10:15 AM Refreshment Break sponsored by Howden/Compressor Products International				
10:30 AM - 11:45 AM Tech Updates (8 Tech Updates)				
8 min	Cooper Machinery Services	Mr. Patrick Gillespie	Cooper Machinery Services update	Reciprocating Engines
8 min	Siemens Energy	Mr. Steve Chaykosky	Case Study: Application of Automated Clearance Pocket Unloader in Boil-off Gas Service	Reciprocating Compressors
8 min	Southwest Research Institute	Dr. Jason Wilkes	R&D Facilities Supporting Gas Machinery Decarbonization	Research
8 min	Baker Hughes	Mr. Gianluca Bartolini	Gas turbine engine development for high hydrogen blends with wide fuel-flex combustion system	Other
8 min	Radical Combustion Technologies	Mr. Michael Manfredi	Methane Reduction from Pump-Scavenged Pipeline Compressor Engines	Emissions
8 min	Zahroof Valves Inc.	Mr. Larry Lapko	Zahroof Valves Inc. - Tech Update - New modular reed valve technology to improve performance of slow-speed reciprocating compressors in pipeline transmission applications	Reciprocating Compressors
8 min	Wood	Mrs. Starr Dalton	One clamp to rule them all , part V	Vibration/Pulsation
8 min	Kodiak Gas Services	Mr. Craig Collins	EcoView and gas compression, evolution to provide responsibly sourced natural gas and its steps to address the ever evolving regulatory environment	Emissions
8 min	Sloan Lubrication Systems	Mr. Matt McCarthy	Innovation at Sloan Lubrication Systems	Reciprocating Compressors
8 min	Altronic	Mr. Michael Young	Altronic NGI-5000 Air Fuel Ratio Control	Emissions
11:45 AM - 1:00 PM Exhibit Hall Lunch				
1:15 pm - 4:15 pm Short Courses				
1:15-4:15pm / 201A/B	IES	Mr. Jim McCarthy	Air Regulatory Update	Emissions
1:15-4:15pm / 202A/B	Southwest Research Institute	Mr. Benjamin A. White; Mr. Eugene L. Broerman, III; Ms. Sarah B. Simons	Advanced Topics in Acoustics and Vibrations	Vibrations & Pulsations
Mini SC 1:15-2:45pm / 203A	Southwest Research Institute	Mr. Adrian Alvarado	Compressor Station Transient Modeling	Centrifugal Compressors
Mini SC 1:15-2:45pm / 202C/D	ACI Services, Inc.	Mr. Dwayne A. Hickman	Reciprocating Compressor Performance -- Know What You Are Really Buying	Reciprocating Compressors
Mini SC 2:45-4:15pm / 203B/C	Hoerbiger Service	Mr. John Ladd; Mr. Ian Marders	Impact of Increased Hydrogen on Natural Gas Reciprocating Compressors	Reciprocating Compressors
Mini SC 2:45-4:15pm / 204A/B	Sloan Lubrication Systems	Mr. Bryan Boarts	Divider Block Lubrication Systems for Reciprocating Gas Compressors: Design, Operation, Maintenance & Troubleshooting	Other
GMRC Annual Membership Meeting - 4:15 PM - 5:00 PM OMNI Hotel - Fort Worth Ballroom, 2nd Floor				
5:30 PM - 6:30 PM	GMC Closing Reception sponsored by Shell	 Shell		OMNI Hotel - Fort Worth Ballroom, 2nd Floor