The 66th Annual Laurance Reid Gas Conditioning Conference

February 21-24, 2016

National Center for Employee Development

Norman, Oklahoma
LRGCC Conference Sponsors

The 66th annual Laurence Reid Gas Conditioning Conference Committee would like to thank the 2016 conference sponsors. Their substantial donations help to make the LRGCC a recurrent success, and support the continual growth of the conference.

ExxonMobil

ExxonMobil Research and Engineering Company

As the sole platinum sponsor, ExxonMobil Research and Engineering Company generously hosts the annual Monday night LRGCC reception. The 2016 event will be held at the Sam Noble Museum of Natural History. The reception provides an opportunity for industry professionals to network, as well as the chance for the poster authors to have an additional venue to display their work.

Ortloff Engineers, LTD.

As a gold sponsor, Ortloff Engineers, LTD. generously provided chartered transportation for the Monday night reception held at the Sam Noble Museum of Natural History. Additionally, they provided both the morning and afternoon continuous break service on Monday.

BCCK Engineering, Inc.

As a silver sponsor, BCCK Engineering, Inc. generously provided the Monday breakout session catered luncheon. Their generosity provided for separate service, exclusive to conference participants, as well as upgraded menu offerings for 2016.

Sivalls, Inc.

As a silver sponsor, Sivalls, Inc. generously provided the Tuesday breakout session catered luncheon. Their generosity allows a new and first time opportunity for our poster presenters to capture a larger audience.
Optimized Gas Treating

As a bronze sponsor, Optimized GAS Treating generously provided the Tuesday morning continuous beverage service for all conference attendees.

Dehydration Experts

As a bronze sponsor, Dehydration Experts generously provided the Tuesday afternoon continuous beverage service for all conference attendees.

Bechtel Hydrocarbon Technology Solutions, Inc.

As a bronze sponsor, Bechtel Hydrocarbon Technology Solutions, Inc. generously provided the Wednesday morning continuous beverage service for all conference attendees.

Save The Date

2017 Laurance Reid Gas Conditioning Conference!

February 26-March 1, 2017
National Center for Employee Development
Norman, OK

Call for papers for the 2017 Laurance Reid Gas Conditioning Conference.
Plant supervisors, engineers and operation personnel associated with dehydration, tail gas cleanup, sulphur recovery, sweetening, unique treating requirements or NGL production related to gas conditioning.
Submit a 500-word abstract by June 10, 2016, including all contact information.
Consideration will begin June 13, with final selections to be made Sept. 12, 2016.
Send abstracts to: Tamara Powell, 405-325-3891 or tsutteer@ou.edu
lgccc.org
LRGCC Hospitality Suites

The 66th annual Laurence Reid Gas Conditioning Conference is proud to recognize the 2016 hospitality suite sponsors. Their participation helps to make the LRGCC a continual success, and aids to the growth and participation of the conference overall.

Salon O
Monday Night

Salon N
Monday and Tuesday Nights

Salon J
Monday and Tuesday Nights

Salon K
Monday and Tuesday Nights

Salon Q
Monday and Tuesday Nights

Salon P
Monday and Tuesday Nights

Billiard Room
Monday and Tuesday Nights

Salon L
Tuesday Night

Do you have a question you would like to submit for the Wednesday morning Roundtable discussion? The session is a free expression of technical opinion and shared learnings. Nothing will be recorded, and questions received by Tuesday night will be projected on the screens in the Main Ballroom for dialogue between 8am and 12:15pm on February 24, 2016. Please submit your thoughts to lrgcc@ou.edu.
LRGCC Program Schedule of Events

Sunday, 21 February 2016

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</thead>
<tbody>
<tr>
<td>12:00 p.m. – 2:00 p.m.</td>
<td>Registration</td>
<td>Business Center/Resource Room</td>
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<tr>
<td>2:00 p.m. – 2:30 p.m.</td>
<td>Conference Welcome</td>
<td>Main Ballroom</td>
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<tr>
<td>2:30 p.m. – 5:30 p.m.</td>
<td>Fundamentals of Glycol Dehydration</td>
<td>Main Ballroom</td>
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<td>For operations and design engineers and operators new to glycol dehydration facilities: processes, chemistry, equipment, controls and guidelines for proper care and feeding of a glycol unit.</td>
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<td>Pierre Crevier - Crevier Process Consulting, Joe Lundeen - Trimeric, Bill Chu - Dehydration Experts and Mike Sheilan - Amine and Dehydration Experts Inc.</td>
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<tr>
<td>5:30 p.m. – 7:00 p.m.</td>
<td>Manager's Reception</td>
<td>Meeting Area Lobby</td>
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Poster Sessions

The poster session remains an integral aspect of the Laurence Reid Gas Conditioning Conference. The full poster session papers are included in the LRGCC proceedings, while the display sessions showcase key text and supporting illustrations. Authors are present during the poster sessions to discuss their research and answer questions. Poster sessions are available on Monday and Tuesday during morning and afternoon breaks, as noted in the program agenda. New for 2016 is a Tuesday Break Out Session during lunch when authors can discuss their posters and the papers they represent.

Unload the SRU, Save CAPEX and OPEX and Remove Potential Plugging Problems
SWAATS, a newer but commercialized way of processing acid gas, does this in a more cost effective, safer, and more environmentally friendly way.
Richard Kolodziej - Wood Group Mustang and Mark Anderson - ThioSolv, LLC

WISE™, a Novel Technology for the Desalination of Mono-Ethylene Glycol
Innovative WISE™ (Waste-free Inhibitor Salt Extraction) technology, which is based on the principle of chromatography, provides clean, reusable MEG.
Avinash Malhotra - Frames Gas Treatment
**LNG Pre-Treatment - Lower Life Cycle Costs with UOP SeparSIV™ Process**

Lean levels of heavy hydrocarbons that freeze/plug heat exchangers in LNG applications are removed more economically using UOP’s SeparSIV™ adsorbent process than with cryogenic options.

*Shain Doong, Chris McIlroy and Raj Palla – Honeywell UOP*

**Solving the Problem of Variable Pipeline Gas Quality for Industrial End Users**

End users need to rely on a steady quality feed gas for their processes. By using absorbent and catalytic processes, end users can maintain consistent quality of their feed gas.

*Panayiotis Theophanous, Peter Carnell and Steven Autry - Johnson Matthey, Inc.*

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**Monday, 22 February 2016**

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<tr>
<th>Time</th>
<th>Activity</th>
<th>Location</th>
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<tr>
<td>7:00 a.m. – 8:00 a.m.</td>
<td><strong>Registration</strong></td>
<td>Business Center/Resource Room</td>
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</table>
| 8:00 a.m. – 8:30 a.m. | **Conference Welcome**
Dr. Shad Satterthwaite, Assistant Vice President for University Outreach, Continuing Education Academic Programs, The University of Oklahoma
Bill Echt – Merichem Company
LRGCC Program Chair

**LRGCC History**
John Morgan, PetroSkills|John M Campbell |
| 8:30 a.m. – 10:00 a.m. | **Moderator**
*Kelley LaRue, Ortloff Engineers, Ltd.*

**Plant Experience - Molecular Sieve Dehydration of Gas Containing Oxygen**

Plant experience overcoming operational issues with molecular sieve dehydration of gas containing oxygen, including a side by side comparison of 3A and 4A material.

*Ron Schendel – Chemical and Refining Services*

**The Power of a Tuned SRU Dynamic Simulator**

A ‘tuned’ SRU dynamic model takes your simulation study to the next level for both facility Engineering and Operations staff.

*Ryan McLennan, Inshan Mohammad and Dharmesh Patel, – Sulfur Recovery Engineering*
<p>| 10:00 a.m. – 10:30 a.m. | <strong>Morning Conference Break and Poster Session</strong> | Meeting Area Lobby |</p>
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| 10:30 a.m. – 12:15 p.m. | Adjusting Gas Treatment Strategies to Resolve Methanol Issues  
Increased methanol awareness in the industry is leading operators to adjust treatment strategies in order to keep products on specification. Which adjustments are best?  
| 12:15 p.m. – 1:30 p.m. | Break Out Session / Luncheon  
Startup War Stories  
Moderator: Nate Hatcher - Optimized Gas Treating | Main Ballroom   |
| 1:30 p.m. – 3:00 p.m. | Moderator  
Bob Veroba, Hunstman Corporation Canada, Inc.  
Successful Demonstration of Relieving CO2 Solid Forming Streams Through a Pressure Relief System  
ExxonMobil will present data from the successful field demonstration of relieving dehydrated, CO2-rich liquid and vapor streams forming up to 40 wt% solids in relief lines.  
David W. Maher, Jamie A. Valencia, Robert D. Denton and Thomas J. Bevilacqua - ExxonMobil  
Claus and Tail Gas Unit Catalyst Performance Evaluations and Operational Tricks to Prolong Healthy Life Cycles  
This paper uses real operating data from actual industry cases to demonstrate that by tracking reactor bed exotherms and utilizing a few operational tricks, Claus and TGU catalyst replacements can be planned and healthy life cycles can be prolonged for maximum efficiency and cost savings.  
Lorrel Hodgson – Axens North America, Eric Roisin - Axens | Main Ballroom   |
| 3:00 p.m. – 3:30 p.m. | Afternoon Conference Break and Poster Session | Meeting Area Lobby |
Tuesday, 23 February 2016

8:00 a.m. – 10:00 a.m. | 8:00 a.m. – 10:00 a.m. | Tabula Rasa

**Moderator**
Greg Hanlon, Treating and Sulfur Solutions, Inc.

**New Pre-Pit Sulfur Degassing Technology – 250 tpd Unit Validation Testing Results**
Field validation data will be presented from a 250-tpd SRU at a US refinery which delivers degassed sulfur (<10 ppm H2S) to the pit.
Al Keller – Phillips66 and Thomas Willingham - CSI

**Acid Gas Relief Challenges in the Natural Gas Treatment Industry**
Methodology for sizing relief valves in high pressure acid gas service and strategies for minimizing the number of relief valves in an acid gas system.
Brad Piggott, P.E., Teresa Kerr, Anne Ryan and Ray McKaske, P.E. – Trimeric Corporation
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<td><strong>Morning Conference Break and Poster Session</strong></td>
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| 10:30 a.m. – 12:15 p.m.   | **Hydraulic Turbochargers in the Acid Gas Removal Units at Natural Gas Processing Plants**  
This paper describes the performance and impact of a hydraulic turbocharger system in the AGRU of a gas processing plant in Texas.  
*Max Shirazi — Energy Recovery, Inc.*  
**Solvent Mitigation of Salt Fouling in Natural Gas Dehydrators**  
Chloride salt contamination can lead to costly outages in gas dehydration units. A solvent based strategy to managing chloride incursion will be presented.  
*Eric Klinker and Christophe Laroche — Dow Oil, Gas and Mining* | Main Ballroom |
| 12:15 p.m. – 1:30 p.m.   | **Break Out Session / Luncheon Conference Posters**               | Main Ballroom     |
| 1:30 p.m. – 3:00 p.m.    | **Moderator**  
*Al Keller, Phillips 66*  
**Improving Field Condensate Value**  
Condensate purification with activated carbon gives gas processors an option to blend field condensate into NGLs. Cabot presents trial data on removing heavier hydrocarbons and other color bodies to meet NGL pipeline specifications.  
*Kendra Parlock, Terry Collett, and Mei Xin - Cabot Corporation*  
**SRU Tail Gas Lines to Incinerators – Subtle Pitfalls Lead to Severe Corrosion and Fouling**  
Lessons learned to mitigate corrosion and fouling are presented in this paper, including certain combinations of tail gas streams, piping layout and incinerator inlet nozzle position and orientation.  
*Tina Tajalli, Cathleen Shargay, John Gehur and Vincent Wong – Fluor and Thomas C. Willingham – CSI* | Main Ballroom |
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<td>3:00 p.m. – 3:30 p.m.</td>
<td>Afternoon Session Break and Poster Session</td>
<td>Meeting Area Lobby</td>
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| 3:30 p.m. – 5:00 p.m.| **Simplification of the Modified Claus Process**  
This paper describes potential technology with reduced equipment requirement and increased thermal efficiency.  
Dr. Peter Clark, N.I. Dowling, and S.S. Bhella – Alberta Sulphur Research, Ltd.  
**Corrosion Incident Case Studies of Amine Plant Operation**  
Case studies of actual amine process corrosion / loss of production are discussed. Emphasis is placed on interdisciplinary concepts used to identify and solve each treating problem.  
James Daughtry and Eric Teletzke – INEOS GAS/SPEC Technology Group | Main Ballroom     |
| 5:30 p.m. - Midnight | **Hospitality Suites**                                                | NCED             |

**Wednesday, 24 February 2016**

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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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| 8:00 a.m. – 12:15 p.m.| **LRGCC Roundtable Discussion**  
This open forum for Q&A among everyone involved in gas conditioning is a hallmark of this conference. No comments are noted or published. Come with your questions and provide fellow industry members the benefit of your experience.  
**Moderator**  
Dick Wissbaum - Black & Veach  
Rupert Wagner – BASF SE  
Joe Lundeen – Trimeric Corporation | Main Ballroom     |
| 12:15 p.m.          | **The 66th Annual LRGCC adjourns**  
Please remember to complete the feedback survey and pick up your CEUs certificate! | NCED             |
2016 LRGCC Advisory Committee

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*Trimeric Corporation*

Pierre Crevier  
*Crevier Process Consulting*

Tamara Powell  
*The University of Oklahoma*

Jim Critchfield  
*Shell Projects and Technology*

Mike Quinlan  
*KBR*

**Bill Echt - Chairman**  
*Merichem Company*

Heather Reichert  
*The University of Oklahoma*

Greg Hanlon  
*Treating & Sulfur Solutions, Inc.*

Bob Veroba  
*Huntsman Corporation Canada, Inc.*

Alfred E. Keller  
*Phillips 66*

Bart Q. Welch  
*Chevron Products Company*

Kelley LaRue  
*Ortloff Engineers, Ltd.*

Dick Wissbaum, P.E.  
*Black & Veatch*

Dr. Lance Lobban  
*The University of Oklahoma*

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Jags Iyengar  

C. Richard Sivalls

Johnny Johnson  

Rupert Wagner

Charlie Wallace