



# 28<sup>th</sup> International North Sea Flow Measurement Workshop

## 26<sup>th</sup> – 29<sup>th</sup> October 2010

### Technical Programme

#### Day 1 – Tuesday 26<sup>th</sup> October

|                  |   |
|------------------|---|
| 1200 – 1400      | REGISTRATION & LUNCH  |
| 1400 – 1415      | <b>Welcome Address</b><br>Michael Valente, Managing Director, TUV NEL – UK  |
| 1415 – 1430      | <b>Keynote Address: Influential Factors in Flow Measurement</b><br>Gordon Stobie, ConocoPhillips Company – UK   |
| <b>SESSION 1</b> | <b>WET GAS</b><br>Chairman: Richard Paton, TUV NEL – UK   |
| 1430 – 1500      | <b>Clamp-on Two Phase Measurement of Gas Condensate Wells Using Integrated Equation of State Compositional Models</b><br>Daniel L. Gysling, Minfu Lu and Ting Wen, Expro Meters, Inc. – USA                       |
| 1500 – 1530      | <b>Wet Gas Test Comparison Results of Orifice Metering Relative to Gas Ultrasonic Metering</b><br>John Lansing, SICK   MAIHAK, Inc. – USA<br>Toralf Dietz, SICK AG – Germany<br>Richard Steven, CEESI, Inc. – USA |
| 1530 – 1600      | COFFEE  |
| <b>SESSION 2</b> | <b>STRATEGY</b><br>Chairman: Jim Ryan, INEOS – UK   |
| 1600 – 1630      | <b>Equitability, Allocation and Game Theory</b><br>Phillip Stockton, Accord Energy Services Ltd – UK<br>Allan Wilson, Smith Rea Energy Ltd – UK   |
| 1630 – 1700      | <b>Developing Measurement Infrastructure in BP Azerbaijan</b><br>Bill Pearson, Faig Nasirov and Ilgar Gurbanov, BP Azerbaijan – Azerbaijan  |
| 1930             | DINNER  |



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#### Day 2 – Wednesday 27<sup>th</sup> October

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| <b>SESSION 3</b> | <b>FLARE METERING</b><br><b>Chairman: Eddie Spearman, CNR Interational (U.K. Limited) – UK</b>   |
| 0830 – 0900      | <b>Ultrasonic Flare Gas Flow Meter Techniques for Extremes of High and Low Velocity Measurement and Experience with High CO<sub>2</sub> Concentration</b><br>Jed Matson, Lei Sui and Toan H. Nguyen, GE Sensing & Inspection Technologies – USA                              |
| 0900 – 0930      | <b>Calculation of the Uncertainty in the CO<sub>2</sub> Emissions Factor in Flare Lines with Nitrogen Injection</b><br>Jeff Gibson and Richard Paton, TUV NEL – UK<br>Pål Jaghø, Talisman Energy Norge AS – Norway   |
| 0930 – 1000      | <b>A Cost-Effective Approach on CO<sub>2</sub> Emission Factor Estimation for Flare Ultrasonic Metering Systems</b><br>Kjell-Eivind Frøysa and Anders Hallanger, Christian Michelsen Research AS – Norway<br>Endre Jacobsen and Anders Løvoll Johansen, Statoil ASA – Norway |
| 1000 – 1030      | COFFEE   |
| 1030 – 1300      | <b>POSTER &amp; MANUFACTURER SESSION</b>   |
| 1300 – 1400      | LUNCH  |
| <b>SESSION 4</b> | <b>MULTIPHASE TECHNOLOGY</b><br><b>Chairman: Douglas Griffin, DECC – UK</b>  |
| 1400 – 1430      | <b>The Development of and Initial Data from a New Multiphase Wet Gas Meter</b><br>Alistair Collins, Jin-Lin Hu, Mark Tudge and Carol Wade, Solartron ISA – UK  |
| 1430 – 1500      | <b>In-Situ Measurement of Fluid Properties and Integrity Verification for Multiphase and Wet Gas Metering Applications</b><br>Arnstein Wee and Øystein Lund Bø, Multi Phase Meters AS – Norway   |
| 1500 – 1530      | <b>Well Testing – An Evaluation of Test Separators and Multiphase Flow Meters</b><br>Amy Ross, TUV NEL – UK<br>Gordon Stobie, ConocoPhillips Company – UK  |
| 1530 – 1600      | COFFEE   |

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| <b>SESSION 5</b> | <b>METER DIAGNOSTICS</b><br><b>Chairman: Jacek Krawczynski, Centrica Energy – UK</b>  |
| 1600 – 1630      | <b>When Should a Gas Ultrasonic Flow Meter Be Recalibrated?</b><br>Jim Hall, Klaus Zanker and Eric Kelner, Letton-Hall Group – USA  |
| 1630 – 1700      | <b>Developments in the Self-Diagnostic Capabilities of Orifice Plate Meters</b><br>Mark Skelton, BP Exploration Operating Company Ltd – UK<br>Simon Barrons, ConocoPhillips UK Ltd – UK<br>Jennifer Ayre, Swinton Technology Ltd – UK<br>Richard Steven, DP Diagnostics Llc – USA |
| 1930             | DINNER  |

### Day 3 – Thursday 28<sup>th</sup> October

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| <b>SESSION 6</b> | <b>LIQUID MEASUREMENT</b><br><b>Chairman: James Trail, Shell UK Exploration &amp; Production – UK</b>  |
| 0830 – 0900      | <b>Thermal Gradient Effects on Ultrasonic Flowmeters in the Laminar Flow Regime</b><br>Gregor J. Brown, Cameron – UK<br>Donald R. Augenstein, Herb Estrada, Chris Laird and Terry Cousins, Cameron – USA   |
| 0900 – 0930      | <b>Field Comparison of a Mechanical and Electronic Custody Measurement Loop for Hydrocarbon Liquids</b><br>Mohammed Salim, Ibrahim M. Al-Qahtani, Yousif A. Al-Jarallah, Waleed A. Al-Shaya and Ali A. Haddad, Saudi Arabian Oil Company (Aramco) – Saudi Arabia   |
| 0930 – 1000      | <b>Fiscal Oil Ultrasonic Meters: Introducing the Calibration Performance Monitoring (CPM)</b><br>Denis Laurent, Metering & Technology SAS – France   |
| 1000 – 1030      | COFFEE   |
| <b>SESSION 7</b> | <b>ADVANCES IN MULTIPHASE MEASUREMENT</b><br><b>Chairman: Bill Priddy, BP Exploration Operating Company Ltd – UK</b>   |
| 1030 – 1100      | <b>First Ever Complete Evaluation of a Multiphase Flow Meter in SAGD and Demonstration of the Performance Against Conventional Equipment</b><br>Bruno Pinguet, Schlumberger – France<br>Fernando Gaviria, Laurie Kemp, John Graham and Cal Coulter, SUNCOR Energy – Canada<br>Carlos Damas and Karima Ben Relem, Schlumberger – Canada |

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| 1100 – 1130      | <b>Multiphase Flow in Coriolis Mass Flow Meters – Error Sources and Best Practices</b><br><a href="#">Joel Weinstein, Emerson Process Management – Micro Motion, Inc. – USA</a>  |
| 1130 – 1200      | <b>Use of Dual-Modality Tomography for Complex Flow Visualisation</b><br><a href="#">Norman Glen and Amy Ross, TUV NEL – UK</a>  |
| 1200 – 1300      | LUNCH  |
| <b>SESSION 8</b> | <b>SUBSEA TECHNOLOGY</b><br><b>Chairman: Alan Downing, Solartron ISA – UK</b>  |
| 1300 – 1330      | <b>Subsea Deepwater Measurement – Technology Gaps and Solutions</b><br><a href="#">Chip Letton, Letton-Hall Group, USA</a><br><a href="#">Nick Paris, BHP – USA</a><br><a href="#">Bob Webb, BP – USA</a><br><a href="#">Frank Ting, Chevron – USA</a><br><a href="#">Angela Floyd, ConocoPhillips – USA</a><br><a href="#">Charlie Tyrrell, Shell – USA</a><br><a href="#">Eirik Aabro, Statoil – USA</a><br><a href="#">Moussa Kane, Total – USA</a> |
| 1330 – 1400      | <b>The Effects of Upstream Piping Configurations on Cone Meter and Venturi Meter Discharge Coefficients</b><br><a href="#">Gary Fish, Dion Creighton and Graeme Swainston, Solartron ISA – UK</a><br><a href="#">David Hodges and Michael Reader-Harris, TUV NEL – UK</a>  |
| 1400 – 1430      | <b>Diagnostic Fingerprint – A New Method for Fully Automated Accuracy Monitoring in Ultrasonic Meters</b><br><a href="#">Stephan Schäfer, Toralf Dietz, Thomas Horst and Volker Herrmann, SICK AG – Germany</a><br><a href="#">Konrad Peterka, OÖ. Ferngas Netz GmbH – Germany</a>   |
| 1430 – 1500      | COFFEE   |
| <b>SESSION 9</b> | <b>MEASUREMENT OVERVIEW</b><br><b>Chairman: Dag Flølo, Statoil – Norway</b>  |
| 1500 – 1530      | <b>Online Gas Chromatography: A Technical and Historical Overview – Design and Maintenance Advices to Achieve An Accurate End Result</b><br><a href="#">Steinar Fosse, Norwegian Petroleum Directorate – Norway</a><br><a href="#">Reidar Sakariassen, Metropartner – Norway</a><br><a href="#">Viktor Hauge, Fiskal Teknikk – Norway</a>  |

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| 1530 – 1600 | <b>Celebrating Quarter of a Century of Gas Custody Transfer Ultrasonic Metering</b><br><a href="#">Klaus J. Zanker, Letton-Hall Group – USA</a><br><a href="#">Tom Mooney, Emerson Process Management, Daniel Division – USA</a> |
| 1600 – 1630 | <b>Challenges in Multiphase and Wet Gas Flow Metering for Applications with Limited Accessibility</b><br><a href="#">Lex Scheers, Hint Engineering – The Netherlands</a>   |
| 1630        | <b>CLOSING SPEECH</b><br><a href="#">Dag Flølo, Statoil – Norway</a>   |
| 1930        | <b>PRE-DINNER NETWORKING</b>   |
| 2000        | <b>WORKSHOP GALA DINNER</b>  |

### Day 4 – Friday 29<sup>th</sup> October

|      |   |
|------|---|
| 0800 | <b>BREAKFAST</b>  |
| 0830 | <b>BUSES DEPART FAIRMONT HOTEL (Via Old Course Hotel For Aberdeen and Edinburgh Airports)</b> |
| 0850 | <b>BUSES DEPART OLD COURSE HOTEL (For Aberdeen and Edinburgh Airports)</b>                    |