

## 32<sup>nd</sup> International North Sea Flow Measurement Workshop 21-24 October 2014

### Technical Programme

#### Day 1 – Tuesday 21 October

1200 – 1400      REGISTRATION & LUNCH

1400 – 1430      **Workshop Welcome Address / H&S Briefing by Hotel**  
Brian Millington, Director, NEL

**SESSION 1      New Applications**  
Chairman: Craig Marshall, NEL

1430 - 1500      **Field Trials and Pragmatic Development of SONAR Meter Technology**  
Bill Pearson and Samir Ismayilov, BP AGT Region – Azerbaijan  
Edward Beeloo, Expro Meters – USA

1500 – 1530      **Performance Testing of a Novel Fibre Optic Based Vortex Flowmeter in High Pressure Wet Steam**  
Rob Jansen and Joachim Golliard, TNO – The Netherlands  
Chris Staveley, Smart Fibres Ltd – UK  
Wouter Schiferli, Shell – The Netherlands  
Andy Znotins, Shell Canada – Canada

1530 – 1600      COFFEE

**SESSION 2      Multiphase – 1**  
Chairman: Jacek Krawaczynski, Centrica Energy E&P

1600 – 1630      **Magnetic Resonance Multiphase Flow Meter: Gas Measurement Principle and Wide Range Testing Results**  
Jankees Hogendoorn, André Boer, Marco Zoetwewij, Olaf Bousché and Rutger Tromp, KROHNE – The Netherlands  
Rick de Leeuw – Shell Global Solutions International B.V. – The Netherlands  
Matthias Appel and Hilko de Jong – Shell International Exploration and Production Inc. – USA

1630 – 1700      **Campaign Well Testing of a Complex Reservoir Using an MPM Multiphase Meter**

Gordon Stobie, GS Flow Ltd – UK  
Richard Streeton, MPM – United Arab Emirates  
Bourbih Said, Sonatrach – Algeria  
Fred Siedl, ConocoPhillips Company – USA  
Mike Brunton, Halliburton – United Arab Emirates

1930              Dinner

## Day 2 – Wednesday 22 October

### **SESSION 3      Wet Gas**

Chairman: David Beecroft, Accord Energy Solutions

0830 – 0900      **Venturi Flow Meters Behaviour in High Pressure 3 Phase Wet Gas Conditions**

Pierre Gajan, ONERA – France  
Jean-Paul Couput and B Tanguy, TOTAL – France

0900 – 0930      **Performance of a Vertically Installed Venturi Tube in Wet-Gas Conditions**

Emmelyn Graham, Michael Reader-Harris, David Hodges, Richard Hone, Amanda Barrie and Neil Ramsay, NEL – UK

0930 – 1000      **Expanded Knowledge on Orifice Meter Response to Wet Gas Flows**

Richard Steven and Josh Kinney, Colorado Engineering Experiment Station Inc. – USA  
Babajide Adejuyigbe, BP Exploration Operating Company, Ltd – UK  
Kim Lewis, DP Diagnostics LLC – USA

1000 – 1030      COFFEE

1030 – 1300

## POSTER PRESENTATION SESSION

Located within the Edwin Muir Suite

1. **Assessment of Erosion in Flowmeters Using Performance and Diagnostic Data**  
Tariq Boussouara and John Peters, NEL – UK
2. **FORCE Technology Builds the World's Largest Calibration Loop for Calibration of Natural Gas Meters**  
Jesper Busk, FORCE Technology – Denmark
3. **Improving Multiphase Flow Metrology – European Research Project**  
Emmelyn Graham, NEL – UK
4. **Advanced DP Meter Diagnostics – Developing Dynamic Pressure Field Monitoring (& Other Developments)**  
Jennifer Rabone, Swinton Technology Ltd – UK  
George Kidd, ConocoPhillips – UK  
Bob Peebles, ConocoPhillips – USA  
Andrey Safonov, IMS Group – Russia  
Ilnur Khairullin, STP – Russia  
Josh Kinney, CEESI – USA
5. **Simplified Equations for Some Thermophysical Properties Used in High Pressure Metering of Natural Gas**  
Andrew Laughton and Sarah Kimpton, DNV GL (Oil & Gas) – UK

1030 – 1300

## MANUFACTURERS SESSION

Located Throughout the Conference Centre

### Manu Session Timings:

1045 – 1115 hrs

1130 – 1200 hrs

1215 – 1245 hrs

Company	Meeting Room
FMC Technologies	Duncan MacIntyre
Solartron ISA	James Graham A
Swinton Technology Ltd	Mary McLeod
GE Measurement & Control	Robert Aytoun
KPS	Robert Louis Stevenson B
FLEXIM GmbH	William Dunbar A
Roxar Flow Measurement	William Dunbar B
1300 – 1400	LUNCH
<b>SESSION 4</b>	<b>Uncertainty</b> <a href="#">Chairman: James Trail, Petrofac Metering</a>
1400 – 1430	<b>Is Linearisation Safe for Custody Transfer Meters?</b> <a href="#">Terry Cousins, CMSI – USA</a>
1430 – 1500	<b>Process Simulation Uncertainties</b> <a href="#">Phillip Stockton and Juan Martin, Accord Energy Solutions Limited – UK</a>
1500 – 1530	COFFEE
<b>SESSION 5</b>	<b>Multiphase – 2</b> <a href="#">Chairman: Per Lunde, University of Bergen</a>
1530 – 1600	<b>In-Line Multiphase Flow Measurement – Permian Basin, Texas Field Trial</b> <a href="#">Federico Lucchini, Enrico Feltresi and Mattia Genolini, Pietro Fiorentini – Italy</a> <a href="#">David Watkins, Pietro Fiorentini – USA</a> <a href="#">Peter Weaver, Chevron – USA</a>
1600 – 1630	<b>Insights into Multiphase Flow Through Ultrasound Doppler</b> <a href="#">Anusha Rammohan and Baskaran Genesan, GE Global Research – India</a> <a href="#">Ted Furlong, GE Measurement Solutions – USA</a> <a href="#">John Ward, GE Measurement Solutions – UK</a>
1930	Dinner

## Day 3 – Thursday 23 October

### SESSION 6

#### Oil

Chairman: Eddie Spearman, CNR International (U.K.) Ltd

0830 – 0900

**Coriolis Meter Testing Under Variable Water Cut, Oil Water Conditions**  
Terence Cousins, Richard Steven and Thomas Kegel, Colorado Engineering  
Experiment Station, Inc – USA

0900 – 0930

**Methods of Determining and Verifying Fiscal Sampling System Uncertainty  
by Analysing 25 Years of Real Field Proving Data and Laboratory Tests  
Compared with International Acceptance Criteria**  
Gary Potten, Jiskoot, Cameron Measurement Systems – UK  
Stuart Wright, Jiskoot, Cameron Measurement Systems and Imperial College –  
UK

0930 – 1000

**Practical Experience of Bi Directional Prover Calibration**  
Jim Gray, Sharon Marsh and Julian Cornick, Alderley – UK  
Steve Gwaspari, IKM – UK

1000 – 1030

COFFEE

1030 – 1100

**Operators Perspective of Chevron Alba Measurement System Upgrade and  
Port of Outturn Measurement Process**  
Alan Elphinstone, Chevron – UK  
Tony Connolly, Independent Consultant – UK

### SESSION 7

#### Gas – 1

Chairman: Alan Downing, Solartron ISA

1100 – 1130

**Experimental Research into the Measurement of Temperature in Natural Gas  
Transmission Metering Systems**  
Sarah Kimpton and Bob Ingram, DNV GL – UK

1130 – 1200

**Qualification Testing of an 8-Path Ultrasonic Gas Meter**  
Gregor Brown, Cameron – UK  
William R. Freund Jnr, Cameron – USA

1200 – 1300

LUNCH

## **SESSION 8 Allocation / Modelling**

Chairman: Douglas Griffin, DECC

1300 – 1330 **Experience from Implementing a Metering Solution for Subsea and Topside Multiphase Flow Metering**  
David E. Olaussen, FMC Technologies – Norway  
Kåre Kleppe, Statoil ASA – Norway

1330 – 1400 **Production Quantification Through Full Field Modelling – Case Study**  
Kjartan Berg, Lundin Norway AS – Norway  
Daniel Gilje Fonnes, FMC Technologies – Norway

1400 – 1430 COFFEE

## **SESSION 9 Gas – 2**

Chairman: Eivind Lyng Soldal, Statoil

1430 – 1500 **The Performance of Orifice Plate Meters Under Low Flows**  
Quentin Mabbutt, Tamsin Kashap, Richard Page and Carole Rees, National Grid – UK

1500 – 1530 **Orifice Plates with Drain Holes**  
Michael Reader-Harris and David Addison, NEL – UK

1530 – 1600 **Compressible Flow Effects in Coriolis Meters**  
Stephen Baldwin, Chevron Energy Technology Company – USA  
Thomas Kegel, Colorado Engineering Experiment Station, Inc – USA

1600 – 1610 **Closing Speech**  
Eivind Lyng Soldal, Statoil – Norway

1900 – 1930 Pre-Dinner Reception

1930 Workshop Dinner

## Day 4 – Friday 24 October

0600 – 1000	<b>Breakfast</b>
0830	<b>Buses Depart Fairmont Hotel</b> (Via Old Course Hotel for Aberdeen and Edinburgh Airports)
0850	<b>Buses Depart Old Course Hotel</b> (For Aberdeen and Edinburgh Airports)