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## 10th South East Asia Hydrocarbon Flow Measurement Workshop

8 - 10 March 2011

Ultrasonic Metering Training Course  
7 March 2011

Intro to Commercial Measurement Uncertainty  
8 March 2011

Hotel Nikko Kuala Lumpur, Malaysia

Organised by  
TUV NEL Ltd, EAST KILBRIDE, GLASGOW, UK  
BOOKING HOTLINE: +44 (0) 1355 272858  
ONLINE BOOKING: [www.tuvnel.com](http://www.tuvnel.com)

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Committee Contributions from:

- Chevron ETC
- ExxonMobil Australia P/L
- KROHNE Oil & Gas (M) Sdn Bhd
- PETRONAS Carigali Sdn Bhd
- PMU PETRONAS
- Saudi Aramco
- Sarawak Shell Berhad
- Schlumberger
- TUV NEL

In Association With:

**National  
Measurement  
System**

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## Introduction

During these challenging times, it is important to stay ahead of developments in technology, regulation and practice. This is particularly true in the field of hydrocarbon flow measurement, where the measurements made have a high economic and environmental impact.

## Track Record

The South East Asia Hydrocarbon Flow Measurement Workshop was originally established almost 11 years ago. In that time it has brought together operators, regulators, equipment suppliers, engineering contractors, service companies and researchers to examine the flow measurement challenges that the oil & gas industry faces, and to share knowledge and experience.

Previous events have been highly successful, receiving positive feedback from participants across the globe. The 2010 Workshop attracted more than 100 industry experts, which included representation from the major operators within the region.

## 2011 Workshop

This Workshop is the only major forum dedicated to addressing the changes in flow measurement practice and technology which affect this region and the 2011 Workshop will continue this legacy.

## Workshop Fee

Three types of delegate attendance options are available to suit those with local commitments and those traveling from further afield:

**Selected Day Attendance Only** – This option allows delegates to choose which days they wish to attend. Each day attendance includes access to the technical sessions, electronic Workshop proceedings, lunch and refreshments. This delegate registration fee starts from £265.

**Three Day Attendance** – This option includes attendance at all technical sessions, electronic Workshop proceedings, lunch and refreshments. This delegate registration fee is £975.

**Inclusive Attendance** – This fully inclusive package includes attendance at all technical sessions, electronic Workshop proceedings, accommodation at the Hotel Nikko Kuala Lumpur on the nights of 8th, 9th & 10th March including complimentary broadband access within bedroom, all meals, refreshments and attendance at the 10th Anniversary Workshop Dinner on 10th March. This delegate registration fee is £1417.

We expect the Workshop and accommodation to be oversubscribed so places will be allocated on a first-come first-served basis.

## Why Should I Attend This Event?

- Technical presentations by industry experts will help improve your knowledge and understanding, making you better equipped to meet the challenges faced by the industry now and in the future.
- Discussion on the latest topics and issues in industry today means you can make informed decisions within your business quicker and more efficiently
- Strong support from local companies and operators in the oil & gas sector means you can develop your own business interests in the region by making new contacts through networking at this event.
- Manufacturers from around the world will be exhibiting the latest in cutting edge technology allowing you to make informed choices on equipment and service requirements, faster and more effectively.

### Who should attend:

- Metering and instrumentation engineers
- Production and reservoir engineers
- Project managers
- Product suppliers
- R&D managers
- Government regulators
- Quality managers
- Asset managers
- Flow assurance specialists



### Training Courses

The Workshop will be accompanied by an Ultrasonic Metering Training Course on 7th March and a complimentary two hour training session on Introduction to Commercial Metering Uncertainty (places limited within this session).

### Registration, Enquiries & Administration

Bookings can be made online at [www.tuvnel.com](http://www.tuvnel.com). Payment is required to be made by credit card only.

Alternatively if you have an enquiry regarding this event please contact the TUV NEL Events Team on +44 (0)1355 272858 or [events@tuvnel.com](mailto:events@tuvnel.com)

### Exhibition and Sponsorship Opportunities

Suppliers of equipment and services are invited to sponsor and exhibit at the workshop. This will give your company a profile in the final programme in addition to a stand at the exhibition. Please contact TUV NEL for further details using the details noted above.

### Prayer Times

The organisers apologise that it has not been possible to fully accommodate prayer times within the programme but hope that delegates will feel free to enter and leave the Workshop as appropriate.

### Members of the Technical Committee

The Committee have input to the content and direction of the Workshop. Papers selected by the Committee are based on their relevance to industry and the quality of content.

- Mr Alick MacGillivray (Chairman), TUV NEL, [amacgillivray@tuvnel.com](mailto:amacgillivray@tuvnel.com)
- Mr Arumugam Amawoty, Sarawak Shell Berhad
- Mr Steve Baldwin, Chevron ETC
- Mr Richard Britton, Saudi Aramco
- Mr Zainal Din, PMU PETRONAS, alternate Azhar Omar, PCSB
- Mr Ahmad Khairiri Abdul Ghani, PETRONAS Carigali Sdn Bhd
- Mr Adrian Korybutiak, ExxonMobil Australia P/L
- Dr Bruno Pinguet, Schlumberger
- Mr Jason Yew, KROHNE Oil & Gas (M) Sdn Bhd

### Workshop Venue

The Workshop has moved location and will be held at the Hotel Nikko Kuala Lumpur within Kuala Lumpur City Centre.

Hotel Nikko Kuala Lumpur\*\*  
165 Jalan Ampang  
50450 Kuala Lumpur  
Malaysia

Tel: 603 2161 1111  
Fax: 603 2161 1122  
Email: [reservations@hotelnikko.com.my](mailto:reservations@hotelnikko.com.my)  
Website: [www.hotelnikko.com.my](http://www.hotelnikko.com.my)

\*\* As of 1st February the Hotel Nikko Kuala Lumpur will become the InterContinental Kuala Lumpur

### TUV NEL

TUV NEL is a leading provider of pipeline fluid management services to the global petroleum industry. We have an impressive track record in the development, design and application of leading-edge technology. We provide consulting, training, R&D and laboratory testing services in the following areas:

- Consultancy in all key flow measurement areas
- Flow measurement (oil, gas, water and complex fluids)
- Thermal engineering & heat transfer
- Erosion assessment and validation
- Flow calibrations in the UK national test facility
- Environmental (produced water, oil-in-water, emissions and carbon capture & storage)

TUV NEL is part of the TÜV SÜD Group, the leading global international service organisation. Around 15,000 employees are represented at more than 600 locations throughout the world.

For further details on how TUV NEL can help your business, please visit our website: [www.tuvnel.com](http://www.tuvnel.com) or contact us directly.

TUV NEL  
East Kilbride, Glasgow, G75 0QF, UK  
Tel: +44 (0)1355 220222  
Fax: +44 (0)1355 272999  
Email: [events@tuvnel.com](mailto:events@tuvnel.com)  
Website: [www.tuvnel.com](http://www.tuvnel.com)



## Tuesday 8 March

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|---|---|
| <p>09:00 - 11:00 Free Training Session: Introduction to Measurement Uncertainty</p> <p>12:00 - 14:00 Workshop Registration Period</p> <p>12:00 - 14:00 LUNCH</p> <p>14:00 - 14:10 Workshop Chairman's Welcome Address<br/><a href="#">Alick MacGillivray, TUV NEL – UK</a></p> <p>14:10 - 14:30 Keynote Address</p> | <p>10:00 - 10:30 Testing of Small Differential Pressure Cone Meters on Wet Gas<br/><a href="#">Phil Lawrence and Thomas Madden, Cameron Measurement Systems – USA</a><br/><a href="#">Christopher Braid, Cameron Measurement Systems – Canada</a></p> <p>10:30 - 12:30 COFFEE &amp; OPEN EXHIBITION PERIOD<br/>Level 2 Foyer</p> <p>12:30 - 13:30 LUNCH</p> |
|---|---|

### Session 1 Future Technology

- 14:30 - 15:00 Developing Measurement Infrastructure in BP Azerbaijan  
[Bill Pearson, Faig Nasirov and Ilgar Gurbanov, BP Azerbaijan – Azerbaijan](#)
- 15:00 - 15:30 Microwave Based Salinity Measurement Sensor for Wet Gas Applications  
[Martin Risdal, Janne Pedersen, Ebbe Nyfors and Lyndall Jordaan, Roxar Flow Measurement AS – Norway](#)
- 15:30 - 16:00 COFFEE & EXHIBITION  
Level 2 Foyer

### Session 2 Heavy Oil

- 16:00 - 16:30 Worldwide Review Over 10 Years of the Multiphase Meter Performance Based on a Combined Nucleonic Fraction Meter and Venturi in Heavy Oil  
[Bruno Pinguet, Schlumberger – Venezuela](#)
- 16:30 - 17:00 Flow Measurement of Viscous Fluids with Entrained Gas  
[Chris Mills and Bob Belshaw, TUV NEL – UK](#)

## Wednesday 9 March

### Session 3 Wet Gas

- 09:00 - 09:30 Integration of Dilution-based Tracer Techniques and Clamp-on Sonar Meters to Provide Minimally Intrusive Three Phase Surveillance of Gas Condensate Wells  
[Daniel Gysling and Ting Wen, Expro Meters, Inc. – USA](#)
- 09:30 - 10:00 The Development of and Initial Data from a New Multiphase Wet Gas Meter  
[Alistair Collins, Jin-Lin Hu, Mark Tudge and Carol Wade, Solartron ISA – UK](#)

### Session 4 Multiphase Experience

- 13:30 - 14:00 First Ever Successful Complete Evaluation of a Multiphase Flow Meter in SAGD, and Demonstration of the Performance Against Conventional Equipment  
[Bruno Pinguet, Schlumberger – Venezuela](#)  
[Ayman Kamal and Karima Amel Benreim, Schlumberger Testing – Canada](#)  
[Carols Emilio Damas, Schlumberger Technology Center – Canada](#)  
[Fernando Gaviria, Laurie Kemp, Cal Coulter and John Graham – SUNCOR Energy – Canada](#)
- 14:00 - 14:30 Pyranees Subsea MPFM Field Performance Case Study  
[Mark Jackson, Ralf Napalowksi and Christophe Chung, BHP Billiton – Australia](#)
- 14:30 - 15:00 Maximising Platform Space Utilisation Through the Latest in Multiphase Metering – A North Sea Pilot  
[Finn Erik Mohn Berge, Roxar Flow Measurement AS – Norway](#)
- 15:00 - 15:30 COFFEE & EXHIBITION  
Level 2 Foyer

### Session 5 Ultrasonic Measurement

- 15:30 - 16:00 Small Volume Provers (SVP) to Verify Custody-Transfer Ultrasonic Flowmeters  
[Herman Hofstede and Peter van Brakel, KROHNE Oil & Gas – The Netherlands](#)
- 16:00 - 16:30 Challenges for Ultrasonic Flow Meters in Wet Gas Applications  
[Claus Weihermueller, Bernhard Funck and Peter Baldwin, FLEXIM Oil & Gas – Germany](#)



## Thursday 10 March

### Session 6 Ultrasonic Applications

- 09:00 - 09:30 Exploring New Paths for an Ultrasonic Gas Flowmeter  
 Martin Bragg, Arjan Stehouwer and Jeff Tilden, Elster-Instromet Gas International – The NetherlandsUK
- 09:30 - 10:00 Challenges of Applying Ultrasonic Flow Meters in Upstream Applications  
 Laurent Martin and Andrew Ross, Faure Herman – France
- 10:00 - 10:30 COFFEE & EXHIBITION  
 Level 2 Foyer

### Session 7 Testing & Sampling

- 10:30 - 11:00 Field Testing of a Multiphase Flow Meter Used on a Liquid Dominant System  
 Phil Lawrence, Cameron Measurement Systems – USA  
 Stuart Wright, Cameron JQS – UK
- 11:00 - 11:30 Application of In-situ Sampling Methods in 3-phase Multiphase and Wet Gas Metering  
 Richard Streeton and Arnstein Wee, Multi Phase Meters – Norway  
 Khalil Al-Hanashi, Petroleum Development Oman – Oman
- 11:30 - 12:00 The Design and Uncertainty of Crude Oil Automatic Sampling Systems  
 Daniel Khong, Jiskoot Quality Systems – Singapore
- 12:00 - 13:00 LUNCH

### Session 8 Metering Technology

- 13:00 - 13:30 Application of and Advancements in Differential Pressure Meter Diagnostics  
 Mohd Hafidz, Swinton Technology Asia Pacific – Malaysia  
 Deverapalli Vijay, Petronas Carigali – Malaysia  
 Jennifer Ayre, Swinton Technology Ltd – UK
- 13:30 - 14:00 Proving Coriolis Mass Flow Meters with Small Volume Provers  
 Colin Cheeseman, Frank Grunert and David Hopper, KROHNE Limited – UK
- 14:00 - 14:30 COFFEE & EXHIBITION  
 Level 2 Foyer

### Session 9 Ultrasonic Technology in Practice

- 14:30 - 15:00 Reducing Clamp-On Measurement Uncertainty After a Flow Disturbance  
 Craig Marshall, TUV NEL – UK
- 15:00 - 15:30 Practical Experience with Ultrasonic Meters for Allocation Measurement of LNG  
 Michael Scott, RasGas – Qatar  
 Gregor Brown and Alastair McLachlan, Cameron – UK
- 15:30 CLOSING SPEECH

# Optional Training Courses

## Ultrasonic Metering

Monday 7 March  
09:30 - 16:30

### Course Introduction

Ultrasonic metering technology has matured over the last few years to the point where it can be deployed on custody transfer applications. The benefits of using the technology are simple but successful selection and application of these meters can be challenging. This is a function of the range of manufacturers and models on the market, combined with practical issues such as the performance of the technology in challenging conditions.uncertainty.

### Interactive Session

This course will help users gain the cost-saving benefits of ultrasonic technology and avoid the pitfalls in meter selection and application. It will cover the fundamentals of the technology and the practical issues of application, guiding users on how to use the technology with confidence that the results obtained will be fit for purpose.

This will include an interactive session where delegates will be given practical hands-on experience of fitting and taking a measurement using a clamp-on ultrasonic meter.

There will be plenty of time allowed during the course for interaction between delegates and the course instructors, allowing discussion of specific issues and access to advice on real application problems.

Course Fee: £450

## Introduction to Commercial Measurement Uncertainty – How It Could Cost You!

Tuesday 8 March  
09:00 - 11:00

### Course Introduction

Since no measurement is ever exact, to fully express the result of a measurement, one must also express the margin of doubt. This degree of doubt is known as the uncertainty. Knowledge of the uncertainty in a measurement can potentially save companies substantial amounts of revenue.

### Objectives

This informal session will answer the following questions:

- What is measurement uncertainty?
- How can knowledge of the uncertainty in measurements help save companies money?
- What is best practice in the application of uncertainty analysis?

Examples and case studies will include:

- Basic uncertainty calculations
- Uncertainty analysis applied to oil and gas flow
- Calculation of financial exposures through uncertainty
- Uncertainty analysis applied to hydrocarbon accounting
- Uncertainty analysis applied to metering by difference

Measurement is a subject that is widely misunderstood across every industrial sector. This session will introduce the subject and explain its importance to the oil and gas sector. It will emphasise that skilful use of uncertainty analysis can potentially save operators substantial amounts of money.

Limited Spaces Available – booked on a first-come-first served basis

Course Fee: £0

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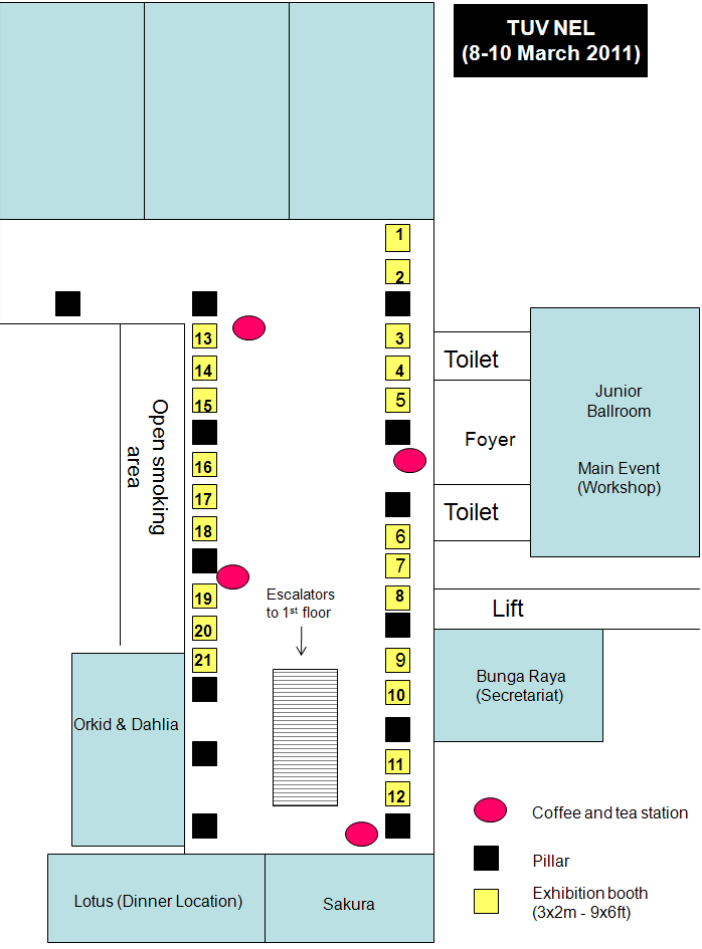












Please note that the **Ultrasonic Metering** training course fee includes participation in the course, lunch, refreshments, certificate of attendance and comprehensive course notes. These notes form useful reference material for delegates to utilise in the future. The fee does not include accommodation.

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## 10<sup>th</sup> South East Asia Hydrocarbon Flow Measurement Workshop 8<sup>th</sup> – 10<sup>th</sup> March 2011

### ATTENDING EXHIBITORS

NEL is proud to announce the following companies are exhibiting at the 10<sup>th</sup> South East Asia Hydrocarbon Flow Measurement Workshop. The exhibition is located throughout the foyer area of the 2<sup>nd</sup> Floor of the InterContinental Kuala Lumpur\*\*.

Stand No	Exhibiting Company	Exhibitor Layout
1	 www.safan.com	 <p style="text-align: right;"><b>TUV NEL</b> (8-10 March 2011)</p> <p>Junior Ballroom Main Event (Workshop)</p> <p>Escalators to 1<sup>st</sup> floor</p> <p>Legend:  <span style="color: red;">●</span> Coffee and tea station  <span style="background-color: black; color: black;">■</span> Pillar  <span style="background-color: yellow; border: 1px solid black;">□</span> Exhibition booth (3x2m - 9x6ft)</p>
2		
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8	Emerson Process Management Asia Pacific Private Limited	
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\*\* As of 1<sup>st</sup> February 2011 Hotel Nikko Kuala Lumpur will be changing to InterContinental Kuala Lumpur