



nel

technology for life



Principles and Practice of Flow Measurement

3-Day Course

9 - 11 November 2010
East Kilbride, Glasgow

Organised by
TUV NEL Ltd, East Kilbride, Glasgow, UK
BOOKING HOTLINE: +44 (0) 1355 272858
ONLINE BOOKING: www.tuvnel.com/events.aspx

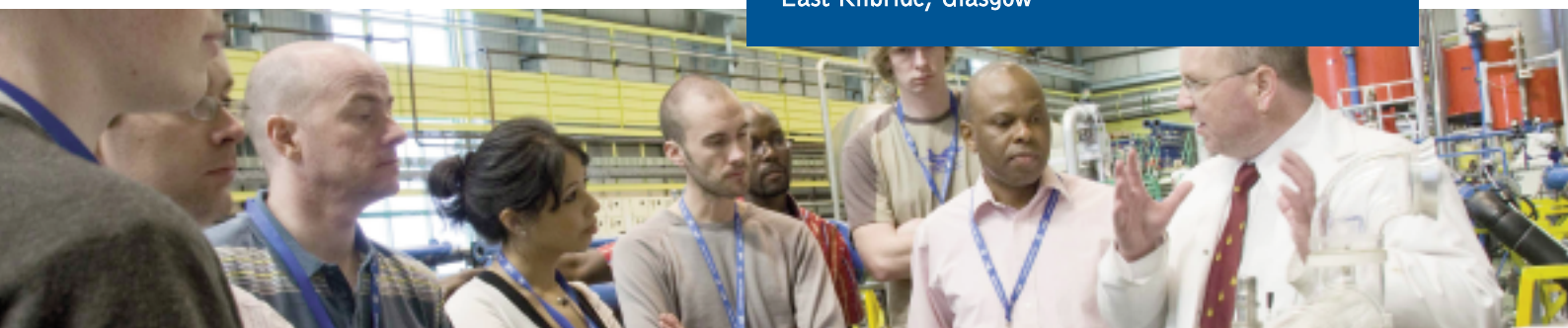
In Association With:

National
Measurement
System

Principles and Practice of Flow Measurement

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Background

Flow measurement is vital to many industrial sectors: water supply, oil extraction, gas distribution and much of the process and pharmaceutical industry depend on flow meters for quality control and custody transfer. To obtain the required level of accuracy at an appropriate price, it is crucial that the right meter is selected for the application and that it is appropriately used. However, the flow meter user is faced with a bewildering array of technologies and conflicting claims from manufacturers.

This highly successful flow measurement course offered by TUV NEL has been running for over 30 years and regularly attracts bookings from companies around the world and is included in graduate training programmes in a number of blue-chip companies.

The course enables delegates to understand the issues surrounding flow measurement. It also provides the delegate with an unbiased view of the various technologies available and the basic knowledge required to make informed choices.

Who Should Attend

It is expected that delegates will have an engineering or science background and training.

Course Programme and Documentation

This course will cover the key aspects of flow measurement and will consider all general meter types and their applications.

The course consists of a mixture of formal lectures given by TUV NEL staff and practical demonstrations using TUV NEL's flow measurement facilities. Also included are an introduction to the UK National Standards for flow measurement, and open discussion sessions where participants can raise work-place situations for dialogue and advice.

The course is intensive and, experience has shown, is one that makes the best use of delegates' time. Each attendee will receive a comprehensive set of training course lecture notes which can be used for future reference purposes.

Dinner will be attended by many of the course presenters along with all delegates. As well as being a further opportunity to learn about flow measurement from the experts, this is also an excellent opportunity for delegates to network.

Practical Sessions

In addition to the classroom sessions, delegates will have several opportunities to learn in the working environment of the flow measurement facility. Calibration demonstrations with worked examples of the data processing are included within the course, giving the delegates the opportunity to have hands-on experience thus helping their understanding of the theoretical principles involved.

During the practical sessions at TUV NEL's flow measurement facility, delegates will learn about the techniques and methodologies used within the UK National Standards for flow measurement.

A variety of different types of flow meters and visual display models will be seen in operation.

Presenters

The course will be presented by a cross-section of TUV NEL staff, all of whom are experts in their technical field. Many of them represent UK industry through their role as advisors on international standards committees and all are regularly involved in practical, industry-led work.

The mixture of individuals and styles ensures that the course is enjoyable and interesting as well as informative. Given their specialist knowledge, presenters are willing to continue discussions outside the formal session times.

TUV NEL

TUV NEL is one of Europe's leading technology services organisations. With a successful track record spanning five decades delivering innovative solutions to difficult problems, TUV NEL delivers a range of services, solutions and technology to clients across many industry sectors. TUV NEL also holds the UK National Standards for flow measurement.

TUV NEL is part of the TÜV SÜD group, the leading international service organisation. With over 15,000 employees, it is represented worldwide at more than 600 locations.

This course can also be presented in-house for companies who find it more economical to bring TUV NEL to their premises. For further details on how TUV NEL can help your business with training and other services, please visit our website: www.tuvnel.com or contact us directly.

Course Fees

The all-inclusive fee for this 3-day fully residential course is £1585 plus VAT. This includes participation on the course, lecture notes, dinner, bed and breakfast at the Macdonald Crutherland House Hotel on the nights of 9th and 10th November, and lunch and refreshments on each of the three days. Transport between TUV NEL and the hotel is provided throughout the course.

Further information will be contained within the joining instructions.

Venue Details

Macdonald Crutherland House Hotel
Strathaven Road
East Kilbride
Glasgow G75 0QZ
Tel: +44 (0) 1355 577077

3-Day Course

Technical Programme

Day 1 – Tuesday 9 November

09:00 – 09:30	REGISTRATION AND COFFEE	11:20 – 12:00	An Introduction to Compressible Flow
09:30 – 09:40	Introduction and Welcome Michael Valente, Managing Director, TUV NEL	12:00 – 12:40	Ultrasonic Flow Meters
09:40 – 10:20	The Elements of Pipe Flow and Basic Metering Concepts.	12:40 – 13:40	LUNCH
10:20 – 11:00	Electromagnetic Flow Meters	13:40 – 15:05	DEMO SESSION 1
11:00 – 11:20	COFFEE	15:05 – 15:25	COFFEE
		15:25 – 16:05	Vortex and Other Oscillatory Meters
		16:05 – 16:45	Differential Pressure Meters

Day 2 – Wednesday 10 November

09:00 – 09:40	Positive Displacement Meters & Turbine Meters	12:05 – 13:00	LUNCH
09:40 – 10:20	Mass Flow Measurement	13:00 – 14:30	DEMO SESSION 2
10:20 – 10:50	COFFEE	14:30 – 15:10	Insertion Meters and Velocity Measuring Probes
10:50 – 11:25	An Introduction to Multiphase Flow Measurement Techniques	15:10 – 15:40	COFFEE
11:25 – 12:05	Open-Channel Flow Measurement	15:40 – 16:20	Measurement Uncertainty
		16:20 – 17:00	Data Reconciliation in Flow Measurement

Day 3 – Thursday 11 November

09:00 – 09:50	The Calibration of Flow Meters (Site, Laboratory and Provers)	12:50 – 13:50	LUNCH
09:50 – 10:20	Secondary Instrumentation	13:50 – 14:30	Quality Assurance and Standards
10:20 – 10:50	COFFEE	14:30 – 15:10	Installation Errors
10:50 – 11:20	Data Transmission, Acquisition and Flow Computing	15:10 – 15:30	The Selection of and Best Practice for Flow Meters
11:20 – 12:50	DEMO SESSION 3	15:30 – 15:40	Presentation of Certificates and Close

Full Name (inc. title) _____

Preferred Name
for Badge _____

Job Title _____

Company _____

Address _____

Postcode _____ Country _____

Telephone _____

E-mail _____

We expect the event to be heavily subscribed. Places are strictly limited and are allocated on a first come, first served basis. Under UK excise regulations delegates from all countries are required to pay VAT at 17.5% on any conference/course taking place in the UK.

PAYMENT BY CREDIT CARD ONLY

Please complete your details above and return this form to the Events Team. Fax back on: + 44 (0) 1355 272999
You will be sent a Fax-back Card Payment Form to complete. Your place will be confirmed upon receipt of full payment.
If you do not receive your confirmation within five working days please contact TUV NEL.

Booking Hotline: +44 (0) 1355 272858 Email: events@tuvnel.com Online Booking: www.tuvnel.com
TUV NEL Ltd, East Kilbride, Glasgow, G75 0QF, UK

Where did you hear about this event? _____

Cancellation Policy

In order to receive a partial refund, notice of cancellation must be received in writing by TUV NEL Ltd not later than 14 days prior to the commencement date of the event. All such cancellations are subject to a fee of 25% of payments received by TUV NEL Ltd prior to cancellation. No refund shall be made under any circumstances for any notice of cancellation received after this 14 day period, however a substitute delegate may be named, provided that TUV NEL Ltd is notified in writing of such substitution prior to the commencement date of the event. TUV NEL Ltd reserves the right to cancel the event due to unforeseen circumstances. TUV NEL Ltd is not liable for any expenses incurred by the delegate. This programme may be subject to change due to circumstances beyond the control of the organisers.

Signed: _____ Date: _____

Venue Details

Macdonald Crutherland House Hotel, Strathaven Road, East Kilbride, Glasgow, G75 0QZ
Tel: + 44 (0) 1355 577077, Fax: + 44 (0) 1355 577047,
Email: events.crutherland@macdonald-hotels.co.uk Web: www.macdonaldhotels.co.uk/crutherland/

Forthcoming Events

Please tick if you would like more information on the following events:

- | | | |
|--------------------------|--|--------------------|
| <input type="checkbox"/> | 28th International North Sea Flow Measurement Workshop, St Andrews, UK | 26 - 29 Oct 2010 |
| <input type="checkbox"/> | Oilfield Water Management Workshop, Calgary, Canada | 1- 2 December 2010 |
| <input type="checkbox"/> | Carbon, Capture and Storage Seminar, Edinburgh, UK | Feb 2011 |