An Intensive 5 Day Training Course

Flow Measurement and Custody Transfer

27 - 31 Aug 2017, Dubai

This course is Designed, Developed, and will be Delivered under ISO Quality Standards
Flow Measurement and Custody Transfer

WHY CHOOSE THIS TRAINING COURSE?

Custody Transfer defines the point at which ownership changes hands for the process product being measured. This transfer is unique among flow-meter applications since money changes hands and accuracy requirements are higher than they are for most other applications. The custody transfer system must generate detailed and indisputable cargo reports, based on accurate flow measurements and calculations.

In this intensive and highly practical PetroKnowledge training course, participants will gain sound and practical understanding and extend their knowledge of Custody Transfer and Flow Measurement systems, principles and types, and how to assess their impact on the strategic and tactical aspirations of the company.

This training course will highlight:

• The laws governing fluids and gases
• Important principles of flow-metering including accuracy and repeatability
• Main types and applications of Flowmeters with emphasis on custody transfer
• Flowmeter proving and calibration techniques
• Custody transfer principles and applications

WHAT ARE THE GOALS?

This training course introduces participants to a variety of flow measurement technologies and systems that are used custody transfer applications, and gain an understanding about how measurement systems can work properly and accurately.

At the end of the training course, the participants will:

• Have a sound understanding of relevant fluid and gas Laws that are needed for the use of flow measurement devices
• Understand the main requirements of custody transfer systems
• Appreciate the main requirements of flow measurements including accuracy and repeatability
• Be knowledgeable about up-to-date flow measurement meters including differential pressure (DP) measurement, turbine meters, positive displacement meters, Coriolis flow measurement, Magnetic and ultrasonic flow measurement.
• Gain the ability to determine if a metering system is adequate for the purpose, select appropriate custody transfer metering systems and identify potential problems
• Learn about the principles and applications of Multiple meters/meter runs, Flow computers, Quality systems, Calibration, Meter Runs, Proving and Supporting Automation

WHO IS THIS TRAINING COURSE FOR?

This PetroKnowledge course is highly relevant to personnel needing a basic understanding of Custody Transfer concepts and requirements and fluid flow measurement techniques and applications.

This training course is suitable to a wide range of professionals but will greatly benefit:

• Engineers and Technicians of all disciplines
• Instrumentation Personnel
• Procurement and quality control personnel
• Inspection and Maintenance engineers

HOW WILL THIS TRAINING COURSE BE PRESENTED?

The Flow Measurement and Custody Transfer training course combines structured and focused presentations and discussions of topics covered with relevant examples and question & answer sessions to maximise the benefits to the participants. Relevant computer simulations and videos will be used to emphasise the main topics.

Participants will be provided with comprehensive hard and soft copies of the course notes and soft copies of all presentation material. These will be very valuable for detailed study and future reference.
Day One: Introduction – Basic Fluid and Gas Laws

Competency Description: Participants need to gain a sound knowledge of fluid and gas laws that are essential for the understanding of Flowmeter principles and operation.

Key behaviours

- Comprehensive knowledge of governing principles of fluid mechanics
- Understanding of relevant elements of gas principles and laws
- Appreciation of the importance of flow profiles in relation to flow measurements

Topics to be covered

- Custody Transfer principles and requirements
- Pressure, Viscosity, Flow Volume, Continuity Principle, Energy Law (Bernoulli’s)
- Flow Configurations (Flow Profiles), Laminar Flow, Turbulent Flow
- Reynold’s Number, Flow Losses (Friction Losses)
- Ideal and Real Gases, Gas Laws, Boyle’s Law, Charles’s Law, Gay-Lussac’s Law

Day Two: General Characteristics and Performance of Flow Meters

Competency Description: Understanding of the fundamental concepts related to flow measurement including Accuracy, Precision and Rangeability, etc.

Key behaviours

- Gaining insight into key principles of flow measurements
- Understanding the essential requirements for related to successful flow measurements
- Consolidation of knowledge through definitions and worked examples of flowmeter parameters
- Gaining knowledge of additional and relevant measurements related to flowmeters

Topics to be covered

- System Characteristics and Flow range
- Performance, Accuracy, Stability and Repeatability, Sensitivity, Noise, Linearity, Reliability
- Flow modification and meter runs
- Applications and Usage, Sizing
- Temperature and Pressure Measurements
Day Three: Types and Applications of Flow Meters

Competency Description: The description and comprehensive understanding of the main types of flowmeters that are typically found in a variety of industries.

Key behaviours

- Understanding of key principles of specific types of flowmeters
- Further understanding of flowmeter parameters through practical examples
- Knowledge of the factors that influence these types of flowmeters
- Appreciation of relevant and specific applications, advantages and disadvantages of flowmeter types

Topics to be covered

- Differential Pressure (DP) Flow Meters, Orifice, Venturi, Nozzles, Pitot tubes
- Positive Displacement (PD) Flow Meters, Rotor, Oscillating Piston, Oval Gear
- Turbine Flow Meters, Conventional and Helical
- Problems with Erosion, corrosion, Cavitation and Obstructions
- Uses and Applications, Installation requirements and Standards

Day Four: Types and Applications of Flow Meters (Continued)

Competency Description: Continued from day 3. The description and comprehensive understanding of the main types of flowmeters that are typically found in a variety of industries.

Key behaviours

- Understanding of key principles of specific types of flowmeters
- Further understanding of flowmeter parameters through practical examples
- Knowledge of the factors that influence these types of flowmeters
- Appreciation of relevant and specific applications, advantages and disadvantages of flowmeter types

Topics to be covered

- Ultrasonic Flow Meters
- Magnetic Flow Meters
- Coriolis Flow Meters
- Uses and Applications, Installation requirements and Standards
- Straight run requirement

Day Five: Flow Measurement Systems and Custody Transfer Considerations

Competency Description: Consolidation of custody transfer concepts and a comprehensive understanding of the main methods of flowmeter proofing.

Key behaviours

- Knowledge of the key principles of custody transfer
- Understanding of the main methods of flowmeter proofing
- Knowledge of additional parameters required for proofing through practical examples

Topics to be covered

- Custody Transfer Requirements
- Meter Factor
- Proving Systems; Direct, Indirect, Master Meter, Volume, Displacement
- Custody Transfer Skids
- Flow Computers and Communication
- Temperature and Pressure Measurements
Flow Measurement and Custody Transfer

COURSE DATES, VENUES AND FEES

| 27 - 31 Aug 2017 | Dubai     | $4,500 |

This fee is inclusive of Documentation, Lunch and Refreshments.

Please use BLOCK CAPITALS to fill in this form. It is important that you read carefully through all information before starting to complete the form.

REGISTRATION DETAILS

Family Name: ____________________________________________ First Name (Mr./Ms.): _________________________________________
Position: ________________________________________________ Company: ____________________________________________________
Mailing Address: _______________________________________________________________________________________________________
Telephone:____________________ Mobile: _____________________ Fax: ________________________ email: ________________________

AUTHORISATION

Authorisation By: ______________________________________________________________________________________________________
Position: ________________________________________________ Company: ____________________________________________________
Mailing Address: _______________________________________________________________________________________________________
Telephone:____________________ Mobile: _____________________ Fax: ________________________ email: ________________________

IN-HOUSE TRAINING

Maximize your training budget and have several members of your staff, who require specific training, to attend with the advantage of not incurring additional travel costs when attending a ‘public’ training courses & seminars.

Would you like a PetroKnowledge training course delivered at a time or location to suit you? Would you like PetroKnowledge to tailor a course from our comprehensive library of programmes? Or would you like us to create an entirely new, bespoke course to suit the exact needs of your organisation?

Working in partnership with our clients, PetroKnowledge provides an enjoyable, creative learning experience that enables participants to develop their skills and knowledge. We can deliver not only generic, off-the-shelf courses from our extensive learning portfolio, but we can provide tailored as well as bespoke learning on any aspect of skill development or knowledge. Our in-house courses are conducted by the same expert trainers who conduct PetroKnowledge public courses so you can be assured they will fulfill the learning objective of any organisation.
BOOKING TERMS & CONDITIONS

Booking
• Bookings for courses can be made via our website (petroknowledge.com) or by contacting our Registration Desk on +971 2 5577389 or at reg@petroknowledge.com
• For on-line bookings, please select the course that you require and click on the “Register Now” button, following the instructions step by step
• Upon receipt of booking in order, enrollment on the respective training course will be confirmed by Registration Team with all necessary documentation

Invoicing and Payment
• Our fees include course presentation, relevant materials, physical & digital documentation, lunch and refreshments served during entire training. Accommodation charges are not included in the course fees
• Course fees are payable upon booking unless a valid, authorized Purchase Order is provided and accepted
• Invoices will be sent via email/courier to the ID/name and address provided
• We prefer to have the fees payment in our account before the start of training course. However, if your company has a different payment policy, the same should inform us in advance
• The currency of fees is in US Dollars (USD). Payments can be made in USD or UAE local currency AED (Arab Emirates Dirhams) either by Bank Transfer or by Credit Card. Our Bank Account details will be provided on the Invoice
• Please note that we do accept payment by cash, in USD or AED, only for the last minute bookings

Cancellation of Courses
• It may be necessary for PetroKnowledge to amend or cancel any course, course times, instructors, dates or published fees due to unforeseen circumstances and we reserve the right for such changes
• Any amendments will be advised before the course start date and any bookings already paid in full will not be subject to increased fees

Cancellation by Client
• Once you have completed your booking, received your confirmation of enrollment and a dated payment Invoice, you are deemed to have a contract with PetroKnowledge. You reserve the right to cancel this contract given the below terms
• All cancellations must be received in writing at reg@petroknowledge.com and info@petroknowledge.com at least 14 days prior to the training
• After the cancellation period has expired, consideration may be given, on a case to case basis, if a registered delegate nominates a substitute on the same course, shifts to next session of the course or moves to a new course
• For a cancellation request made on or before the statutory 14 day cancellation period, a refund may be given or a credit note issued which can be used against future course fees
• A 25% administration fee (of the total course fee at the time of booking) will be charged for any cancellations made outside of the statutory cancellation period

Attendance Certificate
• The daily course schedule should be accurately followed to ensure undeterred implementation of our training
• All delegates, who participated in their course throughout, will receive the Certificate of Completion on the last day
• Please report any foreseeable absences to a PetroKnowledge representative or to your sponsors directly
• An absence of three (3) or more sessions of the course will invalidate your eligibility for the Certificate of Completion