



CUSTODY MEASUREMENT, FISCAL FLOW METERING, METER CALIBRATION, UNCERTAINTY CALCULATIONS AND LOSS CONTROL



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INTRODUCTION

The program explains the concept of Custody Transfer for liquid petroleum products. The program is divided into 5 modules.

OBJECTIVES

Upon the successful completion of this program, participants will be able to:

- Know the basic concepts of custody measurement & loss control for liquid petroleum products
- Learn the terminologies and classification of fluid mechanics and be aware of the accuracy requirements and specifications for custody measurement and loss control
- Discuss the different types, selection & installation of flow measurement and level measurement
- Aware of the basic overview of OIML Recommendation R117 including its requirements and operation
- Identify the various types of flow calibration and meter provers and discuss its application
- Explain in detail the different types, methods, and techniques used in custody transfer and list of the equipment used in its operation
- Understand pipeline meter considerations employed for liquid petroleum products
- Employ leak detection for liquid petroleum products.
- Learn about loss control system and illustrate proper monitoring and controlling production losses
- Have knowledge on the API Standards as applied to basic custody measurement
- Identify the proper selection and cost consideration of flow meters

TRAINING METHODOLOGY

This training course is made up of a combination of:

- Lectures
- Video Presentations
- Interactive Training Sessions/Practical Exercises
- Group Discussion



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WHO SHOULD ATTEND?

- Measurement Engineers
- Loss Control Coordinators
- Plants Foremen at Refineries, Marine Terminals and Bulk Plants (Marketing Terminals)
- Shift Supervisors at Refineries, Marine Terminals and Bulk Plants (Marketing Terminals)
- Operation Engineers at Refineries, Marine Terminals and Bulk Plants (Marketing Terminals)
- Maintenance Engineers at Refineries, Marine Terminals and Bulk Plants (Marketing Terminals)
- Technicians involved in meter proving and calibration of measurement equipment

COURSE OUTLINE

DAY ONE:

i. PRE-TEST

ii. Fluid Dynamics, Accuracy and Process Measurements

- Fluid Dynamics covers basic definitions, such as viscosity, repeatability, cavitation etc.
- Flow profiles and the effects on measurement
- Volumetric and mass flow rate
- Accuracy is important in terms of the uncertainty of measurement, calibration, technical specifications, and process requirements
- Flow Measurement including orifice plate and DP transmitter, multi-beam ultrasonic flowmeter, Coriolis mass meter, turbine meters amongst others

- Level Measurement, traditional methods such as capacitance and hydrostatic techniques are covered together with more modern technologies such as ultrasonic and radar measurements

DAY TWO:

Custody Transfer

- Examines the requirements of OIML R117
- The subject of Custody Transfer in detail terms, flow calibration, dynamic and static
- Types of calibration rigs and calibration systems plus prover systems

DAY THREE:

Terminal & Pipeline Systems

- Included are the terminal tank gauging



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- Lease Automatic Custody Transfer (LACT)
- Sediment and water considerations
- Operational issues and associated equipment
- Pipeline considerations including paraffin content
- Pipeline pressure and process characteristics
- Truck custody transfer, marine and aviation, on-loading and off-loading etc.

DAY FOUR:

Monitoring and Controlling Losses

- Loss control systems – an applied approach – model-based system
- Leak detection/leak testing
- Case studies of marine applications
- Measurement surveys and measurement reports
- Multi-phase flow metering and applications

DAY FIVE:

API Standards and Flowmeter Selection

- API measurement standards and volume correction tables
- Temperature compensation
- SG versus API gravity
- Net volume calculation exercise
- Guidelines for flowmeter selection
- Course Conclusion
- POST-TEST and EVALUATION



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CONNECT WITH US:

Hotel Accommodation

Hotel Accommodation is not included in the Registration Fee. A reduced corporate rate and a limited number of rooms are available for attendees wishing to stay at the hotel venue. Please make your request for accommodation at least one week prior to the commencement of the course.

Event Disclaimer

We reserve the right to cancel or postpone a course or related event, change venue, substitution of the Instructor and alter the course content at our sole discretion. If this occurs, our responsibility is limited to a refund of any registration fee(s) already paid.

We are not responsible for airline tickets, hotels costs, other tickets or payments, or any similar fee penalties or related or unrelated losses, costs and/ or expenses registrant may incur or have incurred as a result of any trip cancellations or changes.

Cancellation & Substitution

You must notify the Registrar of cancellations at least one week before a scheduled course in order to be eligible for a credit. If you cannot attend, you may send a replacement from your organisation at no charge. There is a \$250 handling charge for all cancellations or rescheduling. We reserve the right to cancel a course due to low enrollment.

All registrants will be notified in advance and a full refund will be provided upon request.

4 Ways to Register

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