Measurement of Flow and Transfer of Custody

Types, Measurements, and Uses of Metres

Introduction

The term "Custody Transfer" refers to the transfer of ownership of the process product under measurement. Because money is exchanged and the accuracy requirements are higher than in most other applications, this transfer is special among flow-meter applications. Accurate flow measurements and computations must be the foundation for the custody transfer system's generation of comprehensive and uncontested cargo reports.

Participants in this intensive, highly practical training course on flow measurement and custody transfer will expand their knowledge of flow measurement and custody transfer systems, types, and principles, as well as learn how to evaluate how they affect the company's tactical and strategic goals.

The following will be covered in this Course N Carry Measurement of Flow and Transfer of Custody training course:

- The rules pertaining to gases and fluids
- Key flow-metering concepts, such as reproducibility and accuracy
- Principal flowmeter kinds and uses, with a focus on custody transfer
- Techniques for flowmeter calibration and verification
- Applications and Principles of Custody Transfer

Objectives

In this training session on Measurement of Flow and Transfer of Custody, participants will learn about various flow measurement systems and technologies that are utilised in custody transfer applications. They will also receive insight into how measurement systems can function correctly and precisely.

Upon completion of this training programme, the attendees will:

- Possess a solid grasp of pertinent gas and fluid Regulations required for the application of flow measurement devices
- Recognise the primary prerequisites for custody transfer systems.
- Recognise the fundamental needs for flow measurements, such as repeatability and accuracy.

- Know the latest types of flow metres, such as those that measure differential pressure (DP), turbines, positive displacement metres, Coriolis flow metres, magnetic and ultrasonic flow metres, and more.
- Acquire the capacity to choose suitable custody transfer metering systems, assess if a metering system is sufficient for the job, and spot possible issues.
- Discover the workings and uses of flow computers, multiple metres and metre runs, quality systems, calibration, metre runs, and proving and supporting automation.

Training Methodology

To enhance the advantages to the participants, this Measurement of Flow and Transfer of Custody training course combines organised, targeted presentations and discussions of the concepts covered with pertinent examples along with question and answer sessions. Videos and computer simulations that are pertinent will be used to highlight the key points.

All presentation materials as well as thorough hard and soft copies of the training course notes will be given to participants. These will be invaluable for in-depth research and future use.

Organizational impacts

- The business will be able to better and more efficiently manage its custody transfer and flow measurement processes.
- Process selection criteria that are optimised will boost productivity, improve financial performance, and save money on taxes. More reliable Custody Transfer activities and more precise measuring methods will result in this.
- Enhanced competences will lead to increased employee effectiveness and productivity.
- The company will be able to produce comprehensive and unquestionable cargo reports thanks to precise flow measurements and computations.

Personal Imapct

- Participants will expand their knowledge of Measurement of Flow and Transfer of Custody systems, concepts, and types as well as obtain a solid understanding of how to evaluate their influence on the company's tactical and strategic goals.
- Participants will be equipped with the knowledge and self-assurance needed to evaluate flow measurement systems and to report to management on the state of the custody transfer systems in use as well as potential areas for improvement.
- Participants will be able to avoid loss and maximise fiscal gains by choosing and using flow measuring systems connected to custody transfer correctly.

Who should attend?

Personnel who require a fundamental understanding of fluid flow measurement methodologies and applications, as well as Custody Transfer ideas and regulations, will find this training course to be highly useful.

A wide range of specialists can benefit from this Course N Carry Measurement of Flow and Transfer of Custody training course, but the following are particularly noteworthy:

- Technicians and engineers across all fields
- Personnel with Instrumentation
- Personnel for Procurement and Quality Control
- Examining and upkeep Engineers

Course Outline

Day 1

Introduction: Fundamental Laws of Fluids and Gases; Principles and Conditions of Custody Transfer

- Continuity Principle, Pressure, Viscosity, Flow Volume, and Energy Law (Bernoulli's)
- Flow Profiles, Laminar Flow, and Turbulent Flow Configurations
- Flow Losses (Friction Losses), Reynold's Number
- Perfect and Actual Gases Gas Rules, Charles's Law, Gay-Lussac's Law, and Boyle's Law

Day 2

Flow metres' general characteristics and performance

- Features of the System and Flow Range
- Performance, Sensitivity, Noise, Linearity, Repeatability, Accuracy, and Reliability
- Changes in Flow and Metre Runs
- Uses and Applications, Dimensions
- Measurements of Pressure and Temperature

Day 3

Flow Metre Types and Applications

- Flow metres with differential pressure (DP), orifices, venturis, nozzles, and pitot tubes
- Displacement Positive (PD) Flow metres, oval gear, rotor, and oscillating piston

- Turbine Flow Metres: Standard and Conventional Applications; Erosion, Corrosion, Cavitation, and Obstructions Issues.
- Installation Standards and Requirements

Day 4

Flow Metre Types and Applications (continued)

- Metres for Ultrasonic Flow
- Magnetic Measurements of Flow
- Applications and Uses of Coriolis Flow Metres, Installation Standards and Requirements
- Requirement for a Straight Run

Day 5

Systems for Measuring Flow and Custody Transfer Issues

- Procedures for Transferring Custody
- Factor of Metering
- Systems for Proving: Master Metre, Volume, Displacement, Direct, and Indirect
- Custody Transfer Skids Temperature and Pressure Measurements Flow Computers and Communication