Automation of Refinery Offsite Operations

General Objectives

To provide a thorough understanding of the principles of operating and managing refinery offsite operations.

Specific Objectives

At the end of training the trainees will be able to:

- Understand the distinction onsite/offsite operations in a complex;
- Learn about issues of custody transfer and terminal operations;
- Assess all elements of tank farm management storage needs, control, instruments, safety, environment, oil movement, scheduling;
- Grasp the refinery´s crude oils and products blending operations;
- Analyze offsite automation projects planning, economics and strategic implementation.

Audience

Managers, technical and operating staff in the oil and gas industry interested or involved in offsite operations.

Prerequisites

The necessary prerequisites to attend this course are:

- Have access to a computer or tablet with an Internet connection and a browser (program to browse the web), such as Chrome, Safari, Firefox or Internet Explorer.
- You can access the course from any computer (for example, at home and at the office), tablet or smartphone.

Workload

40 Hours

Program Content

Module 0 – Presentation of Platform and Method of Use

Module I – Overview of offsite operations

- Overview of refining processes;
- Distinction and economics of offsite operations;
- Custody transfer problems and challenges;
- Terminal operations (marine, pipeline and trucks).

Module II – Tank farm management

- Tank farm fundamentals;
- Automatic Tank Gauging (ATG) system;
- Tank inventory information management;
- Tank quality analysis and prediction;
- Fugitive tank emission measurement and control;
- Oil movement and control;
- Planning and scheduling.

Module III – Blending systems and operations

- Blending operations;
- Crude blending;
- Product (gasoline, diesel, fuel, lube) blending;
- Blending modes and configurations;
- Field equipment and instrumentation;
- Analyzers and sampling systems;
- Regulatory blend control;
- Blend trim control.

Module IV – Advanced blend control and optimization systems

- Advanced blend control strategy;
- Blend models;
- Blend optimization;
- Refinery wide planning;
- Offline blend optimizer;
- Online blend control and optimization;
- Data reconciliation and feedback;
- Interfaces with other systems;
- System architecture;
- Over-all integration.

Module V – Planning, justifying, implementing and realization

- Project identification;
- Data gathering and analysis;
- Economical justification;
- Where and how to start?;
- Required enterprise changes;
- Project implementation phases and strategy;
- How to realize and sustain benefits?;
- Putting it all together – Myths and facts.

Module VI – Simulated demonstration of optimizations and automation systems

- Introduction and examples of linear programming;
- Crude blending simulation and LP;
- Offline blend optimization of fuel products;
- Online tanks quality tracking system;
- Online blend control and optimization.

Methodology

Methodology This course is always with the trainer, who will even give the face-to-face training through the platform.

The trainee can intervene together with the trainer or with the other trainees as he does in the classroom.

The presentations and exercises will always be made available by the trainer at the end of each training session.

At the end of the course, you will receive a Professional Training Certificate if you attend at least 90% of the classes, carry out the proposed work and tests, participate in the online discussions and have a positive final evaluation.

This training is certified and recognized. was going