Course Overview

Course number: OTS-0008-AT
Course length: 5 days (self-paced with 10 days to complete)

Need to acquire knowledge and develop Hydrotreating Unit operation skills?

This e-learning course provides participants the ability to build knowledge and enhance skills for the role of hydrotreating console operator:

- Develop fundamental operating knowledge and skills
- Develop knowledge of unit operations and management
- Operate process plant under normal conditions
- Anticipate and respond to abnormal conditions

The course is offered for self-paced exploration and learning using a generic hydrotreating process simulation model which includes:

- Recycle Gas Compressor
- Make-up Gas Compressor (1st Stage and 2nd Stage)
- Feed Surge Drum
- Reactor Products Separator
- Recycle Compressor Suction Drum
- Make-up Compressor Suction Drum
- Make-up Compressor Interstage Drum
- Stripper Reflux Drum
- Reactor Feed/Effluent Exchanger
- Reactor Effluent Cooler
- Make-up Gas Interstage Cooler
- Stripper Feed/Bottoms Exchanger
- Stripper Overhead Condenser
- Reactor Charge Heater
- Stripper Reboiler Heater
- Charge Pumps/Stripper Bottoms Pumps/Stripper Reflux Pumps
- Reactor
- Stripper

The student follows a structured lesson plan while interacting with the virtual process plant training simulator using an emulated console, schematics and faceplates. The course begins with an orientation presentation which provides an introduction to the process model along with an overview of the course objectives, tools and how to ask for help. This followed by four self-paced lessons.

- Lesson 1: Introduction to the process
- Lesson 2: Key process variables, Instrumentation and Control - Gain an understanding of the process response when a change is made to key operating variables.
- Lesson 3: Process Disturbances. Learn to adjust the operating strategy in order to compensate for equipment failure or out of specification stream conditions.
- Lesson 4: Start-up and Shutdown Operating Procedures - Practice startup and shutdown of the unit using detailed operating procedures.

Each lesson starts with statement of the lesson objective. The student then progresses through a learning session, application session and review session in sequence. The application session involves a practical exercise using a simulation of the plant and operator console. This type of interactive learning has been shown to be the most effective for knowledge transfer. The evaluation session provides the student with timely relevant feedback in the form of a quiz. Immediate feedback is another key success factor for effective knowledge transfer.

Course Benefits

Working at their own pace participants acquire a better understanding of process plant operations including start-up, shutdown, and normal operations. Trainees experience abnormal situations and practice responding to upsets and emergency situations.

- Use best in class UniSim Competency Suite products
- Conveniently accessible through the web
- Use the UniSim Operations Operator Training Simulator to improve knowledge transfers effectiveness

Course Delivery Options

- Asynchronous Training (AT)

IMPORTANT – Prior to registration for the e-learning courses (VILT, VT, and AT), you must perform the User Readiness Test. Go to Virtual Training Access Requirements to perform this test.
Who Should Take This Course?

Console Operators, Process Engineers, Operations managers and supervisors in the process industry. Participants benefit from the development of process related competencies and become more effective in their job roles.

Prerequisite/Skill Requirements

Prerequisite Course(s)

• None

Required Skills and/or Experience

• Basic process plant operations knowledge or experience ideally in a hydrotreating context
• Basic knowledge of process plant control and safety systems ideally in a hydrotreating context
• Basic knowledge of process plant control console features ideally in a hydrotreating context

Desirable Skills and/or Experience

• Experience of hydrotreating process operations
• Familiarity with hydrotreating plant procedures and DCS console functions

Course Topics

Familiarization with hydrotreating process equipment and controls.

Key hydrotreating process variables and control:

• Naphtha Feed Flow
• Reactor Inlet Temperature
• Combustion Air to Reactor Charge Heater
• Reactor Feed Inlet Temperature
• Stripper Bottoms Flow
• Stripper Reflux Drum Pressure
• Stripper Reboiler Outlet Temperature
• Reactor Products Separator Pressure
• Make-up Compressor Suction Drum Pressure
• Make-up Compressor Unloaders

Process disturbance and recovery:

• Decrease in Catalyst Activity
• Cooling Water Supply Temperature Increase
• Recycle Compressor Trip
• Make-up Compressor Trip

• Charge Pump Failure
• Stripper Bottoms Pump Failure
• Stripper Reflux Pump Failure
• Loss of Fuel Gas Pressure
• Reactor Feed/Effluent Exchanger E-101 Fouling

You will

• Learn about the fundamentals of hydrotreating process plant operation though practical application using simulation technology
• Identify key process variables and controls encountered in operation of hydrotreating units and gain an understanding of process interactions
• Learn about hydrotreating unit start-up and shutdown and practice the procedures in the safety of the simulated plant.
• Respond to the challenge of abnormal situations and learn how to recover from the impact of external influences.
• Receive immediate feedback using short quizzes
• Gain confidence to tackle day to day real world operations challenges

Additional Training

To increase your knowledge and skills, there are additional courses available from Automation College.

For more information and registration, visit www.honeywellprocess.com/en-US/training.