Distillation (Depropanizer)

A self-paced MultiMedia based Tutorial/CBT and real-time dynamic simulation of a Multicomponent Distillation Column.

**Tutorial/CBT:**

This interactive tutorial provides an Overview, Fundamental Principles, and Control and Operating Principles for a Multicomponent Distillation Column using Depropanizer as an example, using Voice, Video, Animation and Graphics.

**Overview**
- Distillation Unit Components
- Tower
- Trays
- Reboiler/Condenser
- Reflux Drum

**Basic Principles**
- Ideal Gas Law
- Vapor Pressure
- Boiling Point
- Dalton’s and Raoult’s Law
- Separation Principle
- Relationship between Composition vs. Temperature

**Process Control**
- Feed and Product Control
- Reflux Control
- Pressure Control
- Composition Control

**Distillation Column Operations**
- Startup
- Normal Operations
- Load Changes
- Change in Product Composition
- Feed Composition Changes
- Shutdown Operations

**Troubleshooting**
- Reflux Pump Trip
- Drum Level Transmitter Failure
- Loss of Feed
- Loss of Condenser Coolant

- Tutorial has a built-in Quiz and comes with a Learning Management System (LMS) called TutAdmin. The LMS allows an instructor to register trainees and monitor their performance and Quiz scores
- Tutorial is available as a Standalone or Web based application
- Available in English, Chinese, Danish, Dutch, French, German, Spanish and Swedish

GSE Systems
www.gses.com/EnVision
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Simulation

GSE’s EnVision simulation is a real-time dynamic process simulation program used for Operator Training. It is based upon a rigorous and High-Fidelity mathematical process model to provide a realistic dynamic response of a process unit.

The Simulator allows a Trainee to Practice:
- Startup and Shutdown Operations
- Normal Operations
- Emergency Shutdown Operation
- Control Exercises
- Troubleshoot and practice recovery from Equipment, Instrument, and Control Valve Malfunctions

Major Equipment:
- Column with 40 trays
- Reboiler: Hot Oil Heated
- Total condenser: Water Cooled
- Reflux Drum
- Pumps

Key Operating Variables:
- Feed (deethanizer bottom): 26.1 T/H (57.5 MLB/HR)
- Top Product: 9.2 T/H (20.2 MLB/HR)
- Bottom Product: 16.9 T/H (37.3 MLB/HR)
- Reflux Flow: 33.8 T/H (74.4 MLB/HR)
- Tower Pressure: 11.9 BAR (172.0 PSIG)
- Top Temperature: 43.7 C (110.8 F)
- Bottom Temperature: 87.6 C (189.7 F)

Controls:
- Feed Flow Controller
- Reflux Flow Controller
- Bottom Temperature Controller
- Split Range Tower Pressure Controller
- Tower Bottom Level Controller
- Reflux Drum Level Controller

Simulation comes with a Learning Management System (LMS) called SimAdmin that allows an instructor to register trainees and monitor their performance.

Simulation is available as Standalone (Single or Dual Monitor) and Instructor-Trainee versions.