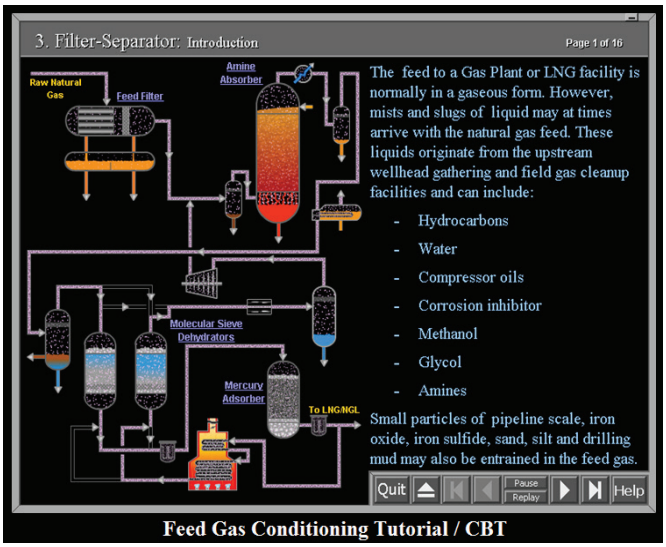
EnVision
e-Learning & Universal Simulation

Feed Gas Conditioning Unit

A self-paced MultiMedia based Tutorial/CBT and real-time dynamic simulation of a Feed Gas Conditioning Unit.

Tutorial/CBT:

This interactive tutorial provides an Overview, Fundamental Principles, and Control and Operating Principles for a Feed Gas Conditioning Unit using Voice, Video, Animation and Graphics.



Feed Gas Conditioning Tutorial / CBT

Overview

- Introduction
- Raw Natural Gas
- Contaminants
- Key conditioning equipment

Filter-Separator

- Introduction
- Demisting
- Separator Configuration

Glycol Dehydration Unit

- Introduction
- Liquid Desiccant
- Process Overview
- Inlet and Outlet Separators
- Glycol Contactor
- Glycol Flash Tank
- Glycol Filters
- Glycol Regenerator
- Heat Exchangers
- Glycol Circulation Pump
- Glycol Contactor Temperature and Pressure
- Glycol Circulation rate
- Glycol Concentration

Amine Unit

- Introduction
- Amine Solution
- Feed Gas Knock-Out Drum
- Amine Absorber
- Treated Gas Knock-Out Drum
- Rich Amine Flash Drum
- Rich/Lean Amine Heat Exchanger
- Amine Stripper
- Lean Amine Storage Tank
- Amine Filters & Lean Amine Cooler

Molecular Sieve Dehydration

- Introduction
- Process Overview
- Adsorption
- Regeneration
- Operating Problems and Troubleshooting

Mercury Removal

- Introduction
- Problems associated with mercury
- Mercury Removal Methods

- 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

EnVision

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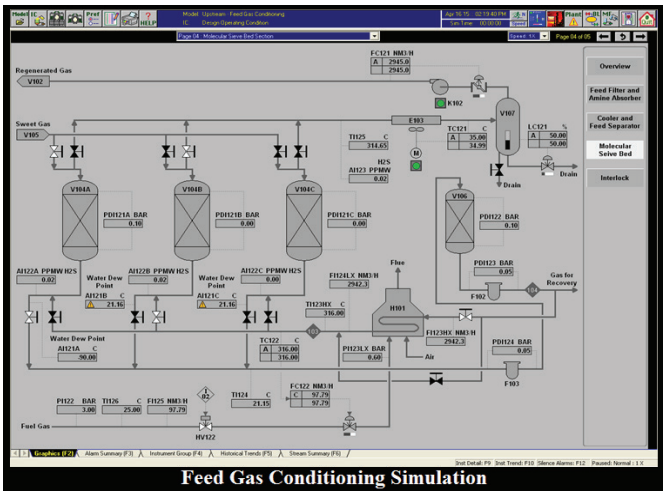
Simulation

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.

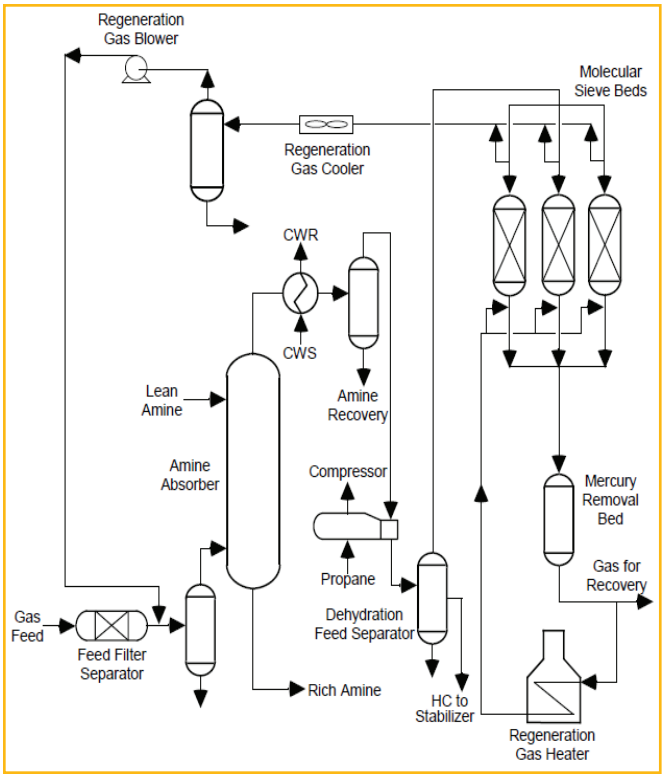

Feed Gas Conditioning Simulation

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:

- Feed Filter Separator
- Amine Absorber
- Sweet Gas Cooler
- Propane Dehydration Cooler
- Dehydration Feed Separator
- Molecular Sieve Beds
- Mercury Removal Bed
- Regeneration Gas Heater
- Regeneration Gas Cooler
- Regeneration Gas Blower



Key Operating Variables:

- Feed Gas
  - Flow Rate: 57.0 KNM3/H (2010 MSCFH)
  - Water Concentration: 85.0 PPM
- Amine Absorber
  - Lean Amine Flow: 155.0 M3/H (660 GPM)
  - Sour Gas H2S: 1.1 Wt%
  - Sour Gas CO2: 0.8 %
  - Treated Gas H2S: Traces
  - Treated Gas CO2: 35.0 PPMW
- Molecular Sieve Bed
  - Outlet Gas Dew Point: -90.0 C (-130 F)
- Regeneration Gas
  - Flow Rate: 2945.0 KNM3/H (104 MMSCFH)
  - Heater Outlet Temperature: 316.0 C (600 F)

- 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

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