Gas Oil Separation Process (GOSP) Simulation and Tutorial


**Tutorial/CBT:**

This interactive tutorial provides an Overview, Fundamental Principles, and Control and Operating Principles for a Gas Oil Separation Process using Voice, Video, Animation and Graphics.

**Overview**
- Introduction
- Importance of Gas Oil Separation
- Process Overview

**Components**
- Wellheads and Manifold Gathering
- Separation
- Produced Water
- Oil Export
- Gas Compression
- Gas Sweetening
- Gas Dehydration

**Principles**
- Extent of Separation
- Compression
- Gas Sweetening
- Gas Dehydration

**Key Controlled and Operating Variables**
- Reservoir Composition
- Well Feed Rate
- Stage Temperature
- Separator Interface Level
- Separator Pressure
- Compressor Temperature and Pressure
- Amine Concentration
- Amine Solution Circulation Rate
- Glycol Contactor Temperature and Pressure
- Glycol Circulation rate
- Glycol Concentration

**Startup**
- Introduction
- Purging and Preparation
- Start Circulation in Gas Treating Systems
- Start Production Well
- Start Oil Processing and Produced Water Systems
- Start Gas Compression Systems
- Start Gas Sweetening and Gas Dehydration

**Shutdown**
- Introduction
- Stop Well and Export Flows
- Stop Compression and Gas Treating Systems
- De-inventory and Depressurize

**Troubleshooting**
- Hydrate Formation
- Foaming
- Corrosion
- Compressor Fouling
- Poor Amine Absorber Performance
- Glycol System Problems

**Safety Systems**
- Overview
- Shutdown Hierarchy
- Detectors and Voting System

- 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

GSE Systems
www.gses.com/EnVision
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:
- Wellheads and Manifolds
- Test, HP, MP and LP Separators
- Electrostatic Coalescer
- Gas Compression (Three Stages)
- Pipeline Compressor
- Amine Absorber
- Glycol Dehydrator
- Glycol Regenerator

Key Operating Variables:
- HP Separator Pressure: 70.0 BAR (1015.0 PSIG)
- MP Separator Pressure: 20.0 BAR (290.0 PSIG)
- LP Separator Pressure: 2.0 BAR (29.0 PSIG)
- Crude Oil Export Flow: 725.0 M3/H (110.0 MBPD)
- Crude Oil Water Content: 0.12 Wt%
- Crude Oil RVP: 2.70 BARA (39.6 PSIA)
- Amine Absorber Sour Gas Flow: 70.0 KNM3/H (2472.0 MSCFH)
- Amine Absorber Lean Amine Flow (DEA): 120.0 M3/H (530.0 GPM)
- Amine Absorber Outlet Gas H2S: 13.0 PPM
- Amine Absorber Outlet Gas CO2: 0.80 Mol %
- Glycol Dehydrator Gas Flow: 67.0 KNM3/H (2370.0 MSCFH)
- Glycol Dehydrator Lean Glycol Flow: 3.0 M3/H (13.5 GPM)

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.