MySep

MySep offers process engineering software for the design and simulation of process phase separators and scrubbers. The company was incorporated in 2013 and has been recognised as providing the emerging standard software for separators. MySep products have been adopted by many leading Operators, Engineering Contractors and Separation Equipment Suppliers across the globe.

The products handle horizontal and vertical separators for two-phase and three-phase applications. A wide range of internals can be selected covering the vast majority of field configurations. Our separation modelling is founded on proprietary research, which has yielded unique modelling and performance correlations, augmented by comprehensive industry experience.

Company Details

Website: www.mysep.com
Email: info@mysep.com
Tel: +65 6570 9290

Address:
MySep Pte Ltd
28 Sin Ming Lane
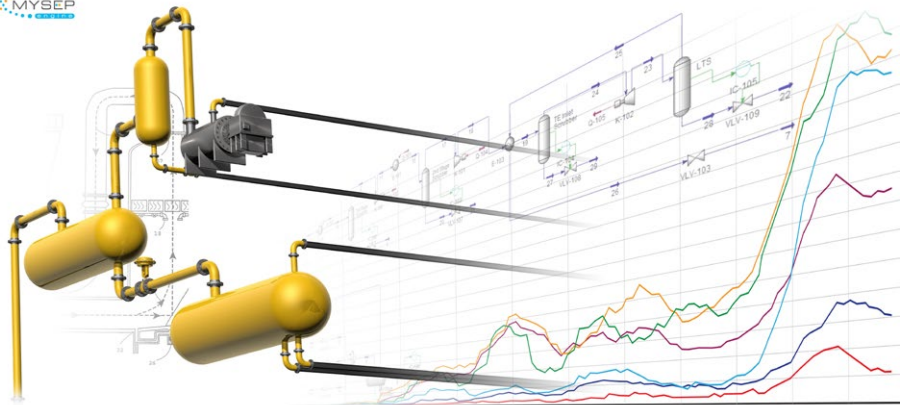#04-145 Midview City
Singapore 573972

Technology

Development stage: Early Adoption (for MySep Engine)
Launch date: May 2018

INNOVATION & TECHNOLOGY IN ENERGY REVIEW 2021

PROCESS DIGITAL TWINS
Deploy rigorous separation modelling

Increasingly, leading Oil & Gas operators recognise the power of simulation-based digital twins, to drive greater production and avoid unplanned shutdowns. Data from DCS and process historians are combined with simulations of pipelines, risers, and key process equipment. This generates performance indicators which are not measurable, providing insights to guide optimisation of the operation. "What-if" scenarios and case studies further enrich understanding.

A missing link in the modelling armoury, has been the ability to reliably predict the performance of process separators within simulations.

MySep software is widely used by operators and engineering consultants to conduct detailed analysis of two- and three-phase separator performance. **MySep Studio** is increasingly recognised as the standard software for separator simulation and design. **MySep Engine** brings rigorous gas-liquid separation, embedded in the industry's preferred process simulators. This greatly enhances the fidelity of both steady state, and dynamic digital twins.

Asset Tie-Back Evaluation

Subsea tie-backs can offer economic development for smaller oil and gas reserves. A key consideration is the capacity of receiving facility equipment. A process digital twin with adequate representation of the process system, is essential for engineering evaluation. On https://www.mysep.com/videos we see **Aspen HYSYS®** process models, with MySep

Engine representing various separators and scrubbers. Separator models are built in MySep Studio with full geometry and internals configuration. These are then mapped onto the simulation unit operations.

MySep Engine provides detailed incremental modelling of gas liquid separation as the digital twin executes. Analysis starts with evaluation of mist fraction and droplet size distribution entering each separator. Calculations detail incrementally each separation stage, tracking carry-over and the development of droplet size from inlet to outlet.

Dynamic Digital Twins

Digital twins utilising dynamic simulation mimic fully transient system behaviour. These are vital in design and optimisation of process control systems and are a pre-requisite for facility Operator Training Systems.

Here we show a dynamic process model in **UniSim®Design**. In this case operations have to accommodate slugging. Flow and mist carry-over transients propagate through the process system including turbo expansion and low temperature separation. This influences the ability to meet hydrocarbon dewpoint specification for export gas.
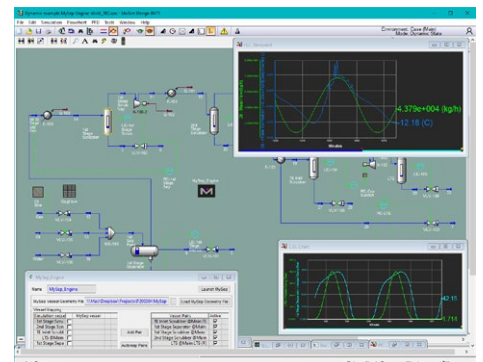
Control settings require careful tuning to accommodate the process system hydro-dynamics. Heat and material balances are dependent on liquid carry-over in the separator unit operations. MySep Engine in the digital twin, ensures the system can be designed and operated to optimum profitability, without compromising reliability.