DIGITAL SOLUTIONS

SYNERGI™ GAS

Unsteady-State Module

The benefit of transient analysis combined with the power and ease of the Synergi Gas interface

A comprehensive transient modelling package
Synergi Gas' Unsteady-State Module performs off-line unsteady flow condition analysis, also called transient analysis and surge analysis, in natural gas networks. The ease of use and seamless compatibility with Synergi Gas make it the off-line transient module of choice for gas transmission planners and designers as well as modellers of high-pressure distribution systems.

Unsteady-State Module can model gas compositions, heat content, and specific gravity as it varies and mixes over time and throughout the system. Unsteady-State Module models complex regulator and compressor stations with multiple series elements on several parallel runs as simply or in as much detail as you need. System loads can be modelled volumetrically or thermally. Thermal balancing options include both heat content tracing and component tracing capabilities. The module offers complete control of your simulation, allowing you to automatically or manually operate facilities during simulation. Each simulation can be paused and restarted as often as needed with the click of a mouse.

Enhanced control functionality:
- Logical Operating Scripts expose virtually all modelling features, variables and attributes for greater control and semi-automation.
- Two types of transient analysis methodologies allow the modeller to choose the mode most appropriate to the need. Fast transient analysis is ideal for line breaks, gas loss calculations, and compressor shut-downs due to pressure pulsations. Slow transient eliminates the momentum calculation making it ideal to model slow transient events quickly.

The Unsteady-State Module is used for:
- System planning and design
- Offline operations
- Gas loss and line break/rupture studies
- Line-pack management
- Blow-down planning
- Transmission and high pressure distribution systems
- System capacitance analysis
- System survival analysis
- Emergency planning
- Complementing steady-state analysis

The Unsteady-State Module offers flexible charting that allows control over line colors, width, types and more, to make analysis results and information easy to create and easy to understand.