

**LIWACOM** is a major global supplier of pipeline simulation and optimization software. SIMONE is the industry-leading and most advanced standard software application for simulating and optimizing natural gas flows in pipeline transportation and distribution systems. It covers system design, real-time operation, leak detection, and energy billing.

Beside of Support / Maintenance / Training for the Software SIMONE, LIWACOM offers the following engineering, consulting and study services:

## **LIWACOM Engineering**

### FEED, Basic- and Detail Design in Process, E / MSR-Techniques

General support for engineering services for gas projects.

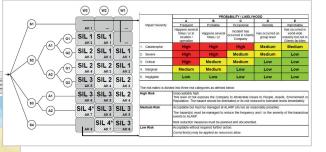
# Preparation, Examination and Documentation of HAZOP / SIL Studies

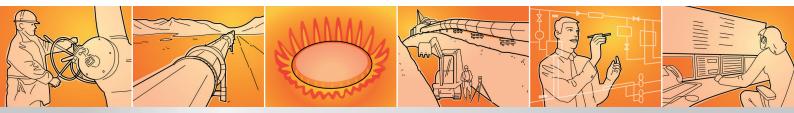
Preparation, examination and documentation of HAZID / HAZOP and SIL Studies.

### Hydraulic Studies for Gas Transport Systems

Preparation of hydraulic studies for the gas industry and creation of tailormade SIMONE models as support for SIMONE users.







#### **Fact Sheet**

## FEED, Basic- and Detail Design in Process, E / MSR-Techniques

Support for preparation of technical enquiries and specifications for gas transport and storage systems, especially

- Pipeline systems,
- Metering stations,
- Compressor stations,
- SCADA systems.

## Preparation and Examination of HAZOP / SIL Studies

- Preparation, examination, and documentation of HAZID / HAZOP and SIL studies for gas transport / storage systems.
- Follow up of the created action points.
- Close out report.

References

### Hydraulic Studies for Gas Transport Systems

- Capacity investigations.
- Support for specification of technical enquiries for compressors (e.g. required power, head and volume flow for several operation points).
- Transient pressurization / depressurization for commissioning / decommissioning scenarios.
- Pre-design of depressurization systems.
- Simulation of modifications in existing systems (capacity calculation, e.g. transient behavior of the network for several load profiles).
- Calculation for scenarios with changes in gas quality / calorific values (e.g. new biogas or H<sub>2</sub> injection).
- Training for SIMONE users with individual tailor-made key aspects.



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