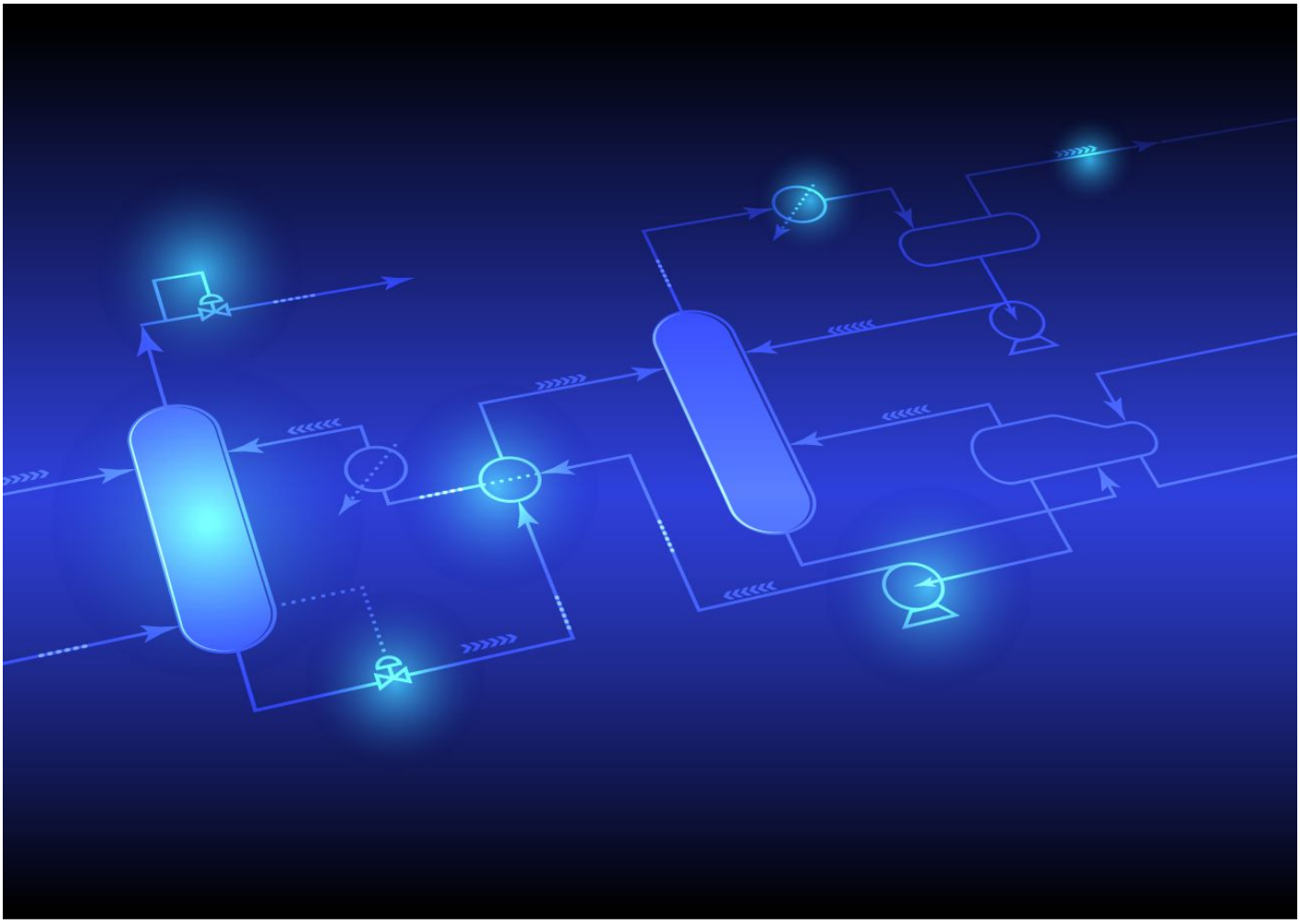
METHANE FROM FLARING
TOOLKIT



Calculation: Process Simulation (HYSYS etc)

Summary

Process simulation is used for the design, development, analysis, and optimisation of technical processes such as: chemical plants, chemical processes, power stations, oil and gas facilities, biological processes, and similar technical functions.

In the event, that the flowrate and composition of fluids in a flare system cannot be directly measured, and their subsequent emissions calculated, process simulation could be deployed to assist in determining certain data.

How it Works

Process simulation is a model-based representation of chemical, physical, biological, or other technical processes and unit operations in software.

Process simulations can estimate the composition of streams flowing within a process facility under both normal operating conditions and also during abnormal, upset conditions.

If some streams are directed to the flare or atmospheric vent under certain circumstances, then these situations can be modelled and the flowrate and composition of these flared and vented streams can be predicted.

These simulations can provide valuable information on potential emissions if other flare measurement and analysis equipment is not installed on a facility.

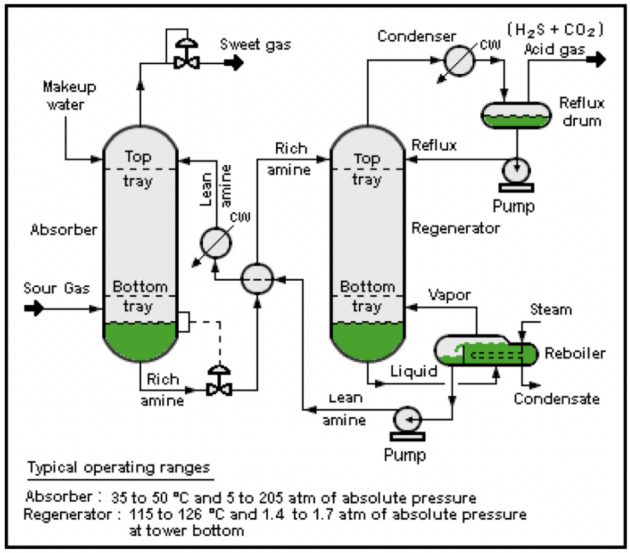


Figure 1: Example of a process simulation model

Implementing Process Simulation for flare systems is not widely used in the Oil and Gas Industry.

Advantages

- ☑ No installed equipment required
- ☑ Equipment costs.

Limitations

- ☒ High level of expertise required to build and use simulation models
- ☒ Periodic updates
- ☒ Low accuracy
- ☒ High uncertainty

Go Deeper

- Aspentech
- Model Based Emissions Management System

Case study

No case study available at this time.

How do I calculate flared gas?

Calculation: ICSS / DCS / SCADA

Calculation: Flow Meter

Calculation: Flow Computer