Schlumberger

Process IQ Acid Gas Membrane Performance

Maximize performance and reliability of spiral-wound and hollow-fiber acid gas membrane process systems

Where it is used
Onshore and offshore facilities that remove CO_2 from natural gas

How it improves operations
- Increases membrane system reliability and efficiency
- Identifies events that explain dynamic change in membrane behavior and reduce remaining useful life
- Simplifies analysis, collaboration, and operational troubleshooting with a crossfunctional dashboard
- Avoids unplanned process shutdowns and unnecessary inventorying by predicting remaining useful life (RUL) to enable proactive membrane replacement planning
- Maximizes delivery of on-specification product gas
- Visualizes system performance based on CO_2 recovery ratio, C_2+ loss ratio, hydrocarbon loss ratio, nonpermeate CO_2 concentration, and other defined key performance objectives (KPOs)

What it replaces
With Process IQ* process systems performance services, days and hours of manual data extraction, handling, calculation, and forecasting based on data from one snapshot in time can be updated in minutes and seconds, making the data evergreen and alleviating uncertainty in membrane performance.

How it works
Process IQ Acid Gas Membrane Performance improves equipment reliability and simplifies data analysis by integrating live process measurements (multipoint gas composition, flow rate, temperature, and pressure) with hollow-fiber and spiral-wound membrane domain intelligence and expertise in cloud-based process optimization software.
A secure, cloud-connected, ruggedized edge computing device collects and extracts meaning from these data streams, dramatically
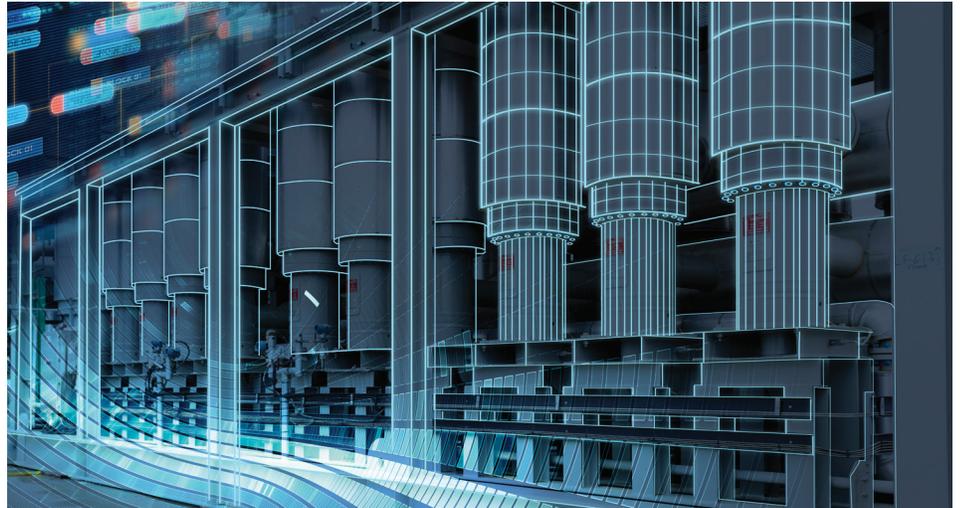
Process IQ Acid Gas Membrane Performance digitally enables dynamic forecasting of future performance of acid gas membrane systems.

reducing the time and interactions between detection, diagnosis, and resolution of events for the user to avoid unplanned shutdowns.

The service automatically detects and notifies the operator of events such as

- condensates in membrane vessels
- high feed gas temperature
- low differential pressure between permeate and feed gases
- high moisture content
- low CO_2 content in feed gas
- high CH_4 content in feed gas.

What else I should know
With Process IQ Acid Gas Membrane Performance, you can see—in real time—current and forecasted performance for any OEM spiral-wound or hollow-fiber membrane technology and compare performance with defined KPIs.

Process IQ Acid Gas Membrane Performance provides dynamic simulation and insights into membrane system performance. For example, the network capacity workflow provides insights into total membrane process system capacity, which is defined as the relationship between feed flow rate and gas composition plotted against the defined outlet KPI for CO_2. This enables operations teams to dynamically assess utilization of membrane system capacity.

Services are provided by a cloud-based application with secure remote access through the DELFI* cognitive E&P environment authentication process.

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