

Case Study: Natural Gas Storage



Industry
NATURAL GAS STORAGE

CHALLENGE:

Natural gas storage is a process in which natural gas is injected into preexisting depleted reservoirs and pumped out when demand calls for it. Withdrawing the gas involves suctioning it from the pipeline, discharging it, treating it in dehydration columns, and finally sending it to delivery collectors.

This process calls for pressure switches to monitor it along every step of the way: the compressor's suction and discharge, the collector columns, the treatment columns, and the delivery collectors. For decades, the largest natural gas storage company in Europe relied on mechanical switches to monitor their facilities and they faced several instrumentation challenges:

- Mechanical switches have lower set point stability over wide-ranging temperatures
- Mechanical switches do not display the process or switch status, making it difficult for maintenance workers to monitor the process and verify the settings.

To ensure the safe storage and withdrawal of their approximate 16 billion cubic meters (565 billion cubic feet) of natural gas, the company decided to search for an upgrade from their mechanical switches.

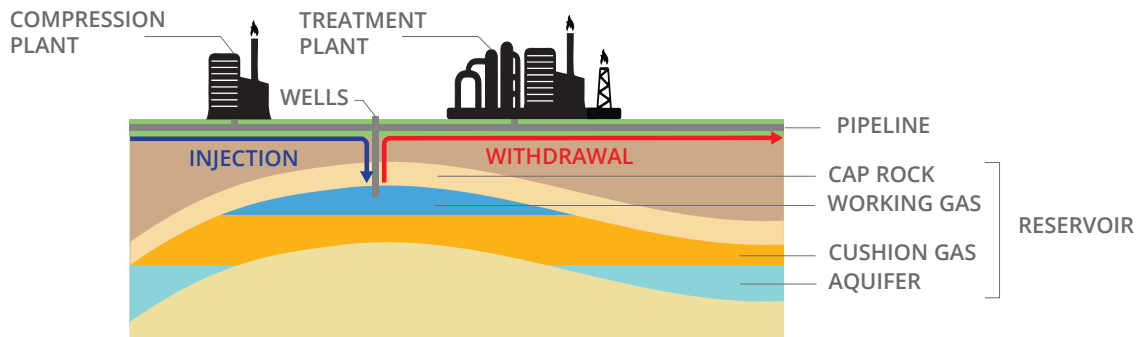


**ONE SERIES
1XSWLL**

SOLUTION:

For three years, the company evaluated UE's One Series smart electronic switch model 1XSWLL as an upgrade option. They arranged three switches in a 2 out of 3 (2oo3) voting logic scheme to serve as emergency shutdown switches for the compressor station's gas delivery collector. This scheme ensures safety and minimizes nuisance trips. As it turns out, the UE One Series smart electronic switch model 1XSWLL achieved excellent results for the company. Here are the benefits the customer was able to realize:

- Reduced false trips and increased operational uptime. UE's One Series smart electronic switch ensures set point stability over wide-ranging temperatures.
- Maintenance workers can easily verify process and switch status with the One Series' digital display.
- Users can use diagnostic information to quickly identify the root cause if a switch malfunctions the switch's malfunction, thereby improving maintenance efficiency. The One Series electronic switch has self-diagnostic capabilities and an adjustable deadband.
- Upgrade to a smart switch is simple and cost-effective because the One Series electronic switch operates on the same two wires and control scheme as mechanical switches.



Improved operational
uptime



Enhance operational
visibility



Better maintenance
efficiency