

Zenith[®] gauge predicts electrical issues in ESP pumping systems

Wye-point voltage monitoring delivers early warning of system problems enabling operators to prolong pump runlife and minimise downtime.

Challenge

Harsh environments and complex well attributes place considerable demands on the artificial lift equipment needed to produce effectively from today's wells, leaving systems increasingly susceptible to damage, breakdown and failure.

Balancing these operational risks with the requirement to meet production targets – and pressures to reduce both CAPEX and OPEX in a cost-conscious industry – is a precarious process which, if neglected, can readily result in substantial negative impact on equipment runlife and operating costs.

In the specific case of wells produced by electric submersible pump (ESP), the vulnerabilities of their electrical systems – both downhole and at surface – introduce further risks...

- Damage/breakdown of cable insulation
- Cable splice issues
- Gas penetration
- Pot head connection failure
- Motor damage
- Motor controller issues
- Transformer issues
- Many more...

Any of these scenarios can quickly lead to unexpected shut down of operations and initiate costly, unplanned workover.



CHALLENGE

Damage and deterioration in ESP system equipment and power cables can quickly lead to unexpected shut down of production operations and initiate costly, unplanned workover operations.



SOLUTION

Direct, downhole measurement of AC voltage at the ESP motor wye point with the Zenith E-Series ESP gauge enables insight into electrical system issues, before they pose any immediate threat to operations.



BENEFITS

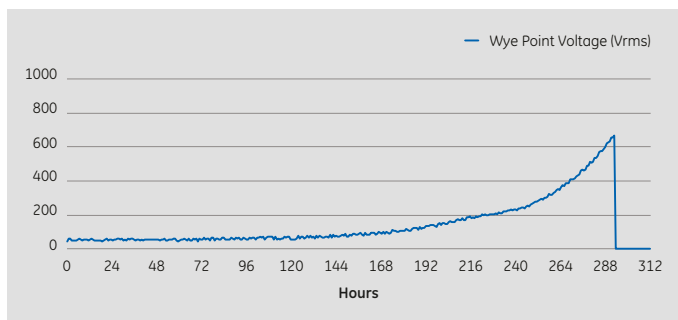
The ability to visualise equipment deterioration and predict potential failure allows timely, informed decisions to be taken in order to prolong runlife, plan for workover and minimise non-productive time.

Solution

Direct, downhole measurement of AC voltage at the ESP motor wye point with the Zenith E-Series ESP gauge enables insight into electrical system issues, before they pose any immediate threat to operations.

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A visible increase in AC voltage highlights issues in the ESP electrical system.

Benefits

Minimise losses through predictivity of downtime

Wye point voltage monitoring on Zenith E-Series monitoring systems delivers a clear indication of fault or imbalance in the ESP electrical system, represented as a detectable rise in the AC voltage trend on surface panel data charts.

This early-warning diagnostic measurement, with auto-alarm feature, affords the operator time to assess well and field priorities and action appropriate frequency adjustments to prolong runlife and initiate effective workover planning.

Successfully and confidently manage operations with reliable downhole measurements

Components used to enable wye point voltage monitoring in the E-Series downhole gauge are fully qualified and subject to the same rigorous reliability engineering, ongoing improvement and failure testing applied to all Zenith system components.

These processes ensure provision of a truly reliable, field-proven tool capable of delivering a continuous, accurate stream of data for the life of the well.

Proven gauges from industry-leading specialist provider

Through enabling customer reserves to be produced in the most efficient and profitable manner, the Zenith name has become synonymous with world-leading downhole monitoring systems.

Fully committed to delivering quality oilfield technologies, sales, service and operations support, our global team strive to ensure Zenith equipment is correctly installed, properly maintained and that customers have access to superior support of our products in their operations.

As part of the comprehensive GE downhole technology portfolio, and compatible with all ESP manufacturers' equipment, the Zenith line of downhole monitoring systems continues to deliver quality and reliability with around 10,000 E-Series systems installed worldwide.