United Energy Pakistan (UEP)

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South Asia Oil & Gas Company Trusts Sierra Wireless for Remote Monitoring and Management of Jet Pump Network

Focusing primarily on exploration and production, United Energy Pakistan (UEP) is one of Pakistan’s largest oil companies and operates a network of jet pumps scattered across its concession area, which includes an onshorefootprint of more than 10,000 square kilometers and the largest offshore acreage given to any single exploration and production company in Pakistan.These jet pumps operate continuously—24 hours a day, 7 days a week—as artifi cial lift mechanisms for producing oil in mature fields.

BUSINESS CHALLENGE

Most of UEP’s jet pumps are located at unmanned sites, with an average travel time of about an hour from base operations. Unfortunately, real-timestatus of the remote jet pumps was not accessible to UEP’s production team, which is centrally located at the company’s base. Operators wererequired to routinely travel to the many jet pump sites in order to check system health in person. Not only was the travel time-consuming andexpensive in terms of human resources, but it also delayed identifi cation and restoration of any failed jet pumps.

If a visiting operator noticed a problem with a jet pump, the operator alerted an initial response team to come to the remote site to troubleshoot theissue. Once a

cause for jet pump shutdown was determined, the appropriate maintenance team was then dispatched from base operations. This manualprocess could take hours, even days – time in which oil was not being produced and both revenue and productivity was lost.

SIERRA WIRELESS AIRLINK® SOLUTION

UEP realized that it needed to implement real-time monitoring and management of its jet pump network in order to more quickly and accuratelyidentify and remedy jet pump failure and eliminate downtime. The company turned to Mazik Global, a member of the Sierra Wireless Solution PartnerProgram, to develop a jet pump monitoring solution based on an instrument equipped with a solar panel, battery, intelligent charge controller, andIP66 enclosure interfacing with a fault annunciator. The solution features a Sierra Wireless AirLink® intelligent gateway, with a small footprint foreasy installation and a rugged design that enables it to withstand extreme temperature changes, humidity, shock, and vibration. Certifi ed for hazardousenvironments (Class I, Div 2), AirLink intelligent gateways are ideal for industrial deployments.

AirLink intelligent gateways are managed through AirVantage® Management Service, which allows users to remotely confi gure, deploy, and monitor thegateways over-the-air and makes managing a thousand devices as easy as managing ten. In addition, custom alerts can be setup for notifi cation whendevices go offl ine, resulting in faster issue identifi cation, less downtime, and fewer fi eld trips – exactly what UEP was looking for.

RESULTS

The new jet pump real-time monitoring and management solution covers parameters such as engine pressure, pump vibration, and much more.The instrument collects data and communicates with the AirLink gateway via RS232. The data is relayed to the main server at base operationsvia the always-on cellular connection provided by the AirLink gateway. The gateways’ over-the-air confi guration capabilities enable pre-defined authorization access for full data security.

The instrument’s solar panel is used to power the system, which has a self-monitoring feature to report the solar and battery voltage and thetemperature of the enclosure. Customized software provides the necessary information for

monitoring and analysis. Now UEP is able to check thestatus of its jet pumps every 10 minutes. In case of an event, the system immediately triggers an alert to relevant maintenance staff through SMS and email.

Bottom line -- UEP now has a clear picture of the status of its jet pumps on a near real-time basis, allowing it to decrease downtime and increase revenue. Mission accomplished.

APPLICATION

- Remote Monitoring

CUSTOMER CRITICAL CHALLENGE

- Large network of unmanned jet pump locations
- Requires near real-time access of jet pump operational data to ensure system uptime

SOLUTION

- AirLink® gateways to reliably connect and monitor the jet pumps using mobile networks to securely send the data

BENEFITS

- Uninterrupted, reliable wireless cellular connectivity for near realtime data access
- Easy confi guration and management of multiple devices

- Rugged design for industrial deployment
- Comprehensive remote management to ensure system uptime
- Strong support to enable quick time-to-market of customer solutions