

REMOTE O&G MONITORING AND AUTOMATION NEEDS IN IRAQ

By Jim Fererro | November 2011, Vol. 238 No. 11

While its estimated petroleum reserves are on the rise, Iraq's output is not quite meeting national production targets. Looking to boost production and achieve accurate measurements, the country's leading officials have moved to upgrade oilfield installations damaged by conflict and lack of investment, as well as establish comprehensive guidelines for the accurate measurement and automation of hydrocarbon production.

Developing A National Code

Establishing an Iraqi Oil Law has been on the government's agenda since 2007. April 2008 marked the implementation of the Iraqi National Code for Measurement of Hydrocarbon Fluids – the national guidelines regarding how oil and gas production in Iraq is to be measured and the devices used for measurement are to be validated. Outlining the responsibilities of the Ministry of Oil as the regulator and auditor of all oil and gas operators, the Code gives specific authority to inspect, review and approve all metering equipment and reports. And since no Iraqi Oil Law has yet to be passed, the Code is essentially the last word in how the oil asset should be tracked and reported.

A field audit conducted in June 2010 by PricewaterhouseCoopers assessed the progress of the implementation of the Ministry's comprehensive oil metering plan. Reviewing metering practices throughout Iraq, the firm met with personnel at North Oil Company, North Refineries Company, North Gas Company, South Oil Company, South Refineries Company and more. The audit revealed a significant number of inoperative meters, meters that had not been calibrated since installation, a general lack of third-party inspections and audits mandated by the Code, and other shortcomings in following the letter and intent of the Code. In short, the report's findings indicated that increased attention must be focused on the country's personnel, equipment and installations in order to properly administer the measurement of hydrocarbon production in Iraq.

An overarching theme that emerged from the final report pointed to a general lack of knowledge of the Code among the Ministry's managers and engineers – which, in large part, can be attributed to the political and social conflict that hindered the country's technological development in recent years. The current Code requires the Ministry to audit independent oil companies, but its unfamiliarity with the companies' systems presented a critical problem: How effective is an audit report if the Ministry cannot conclude whether the meters were calibrated properly or how the data was gathered? In-depth training of Ministry personnel is critical to ensure licensing agreements are monitored properly.

Aiming to educate its personnel on hydrocarbon accounting basics, as well as the proper calibration, verification and inspection procedures dictated by the Code, the Ministry of Oil invited GlobaLogix, a Houston-based oilfield control and automation company, to conduct courses in Basra and Baghdad on critical topics that would help the Ministry effectively facilitate and enforce the Code.



Automation And Remote Monitoring Introduction

The control and automation company's courses, conducted for managers and engineers with measurement and inspection responsibilities, included: 1) a basic review of meter technology, 2) an introduction to calibration and 3) a discussion of how flow computers are used.

The program also: 1) reviewed which international standards are identified in the Code as governing measurement, 2) discussed custody transfer quality data handling and 3) introduced SCADA technology, explaining how it is applicable to measurement as a data monitoring and capture system capable of delivering metering results to a database.

The automation and remote monitoring technologies discussed in the courses proved vastly different from the much simpler methods long employed by Ministry of Oil personnel, many of whom still used pens and paper to input measurements in ledgers, rather than databases. Despite being degreed engineers, their knowledge of current tools and techniques fell below international industry standards, because they simply hadn't been exposed to the technology.

Building New Measurement Infrastructure

As the Committee for the Second Edition to The National Code for Measurement of Hydrocarbon Fluids looks to update and refine the initial law put in place three years ago, several key factors must be reevaluated to ensure Iraq's long-term viability as a major player in the worldwide oil and gas market:

1) SCADA System Development. While many Ministry of Oil engineers are familiar with the concept of SCADA technology, broadening their knowledge of its far-reaching applications and capabilities is vital to meeting industry standards practiced by oil companies around the world.

2) Training and Facilities Certification. The training of calibrators, inspectors and measurement specialists is critical to ensure accuracy and prevent “human errors” that might impact results captured by manual data entry. In fact, processes and procedures for ongoing professional training and education are required by the Code. The development of a national Iraqi certification process for calibrators could also help establish qualifications required for all personnel.

3) Hydrocarbon Accounting and Allocation System Development. Because all measurement reporting conducted by the Ministry of Oil is handled manually with antiquated accounting practices, reports are often haphazardly gathered, filed and maintained. The implementation of a streamlined hydrocarbon accounting software suite is necessary if Iraq aims to join the international oil and gas community, as the world’s oil companies have already embraced hydrocarbon accounting software-driven systems for their functionality and efficiency.

When developed and implemented properly, these initiatives would create a world-class system for hydrocarbon data measurement. With the Ministry serving as the authority on Iraq’s hydrocarbon production measurement and validation, the establishment of a systematic approach to qualify the country’s personnel and equipment, as well as mandate the supervisory control and data monitoring systems, is vital. Automated data and accounting systems could help turn raw data into a recognizable, actionable audit trail for monitoring and analysis – elements critical to accurate measurement.

Open For Business

While the conflicts that have plagued Iraq for decades are still present, the country’s business environment is improving. The potential for job growth in the oil and gas sector is surging like never before, and citizens are looking forward to future opportunities. Massive security details and private, secluded business meetings that used to be standard for foreign companies’ visits to Iraq are becoming far less prevalent. While dangers are still present, they are eclipsed by a sense of optimism for the opportunities the country’s oil reserves could provide.

Iraq has reopened its doors for business, but the key to the sustained profitability of its oil and gas industry lies in the effective enforcement of the National Code for Measurement of Hydrocarbon Fluids. While the scope of Iraq’s automation and control needs has yet to be determined, a robust, integrated system of controls, monitoring and communication tools would help the Ministry overcome its technological hurdles and lead the country on a path to continued viability.

Author

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