

Emerson Provides Needed Control for Complex Colombian Natural Gas Pipeline System

RESULTS

- Fully integrated pipeline monitoring, measurement and control
- Provided single solution including OpenEnterprise™ system host
- Designed high integrity field communications network despite diverse terrain
- Successfully linked more than 50 industrial users and municipalities



APPLICATION

Control of a natural gas pipeline system connecting multiple regions of Colombia

CUSTOMER

Transportadora de Gas Internacional - Gasducto Centro Oriente

CHALLENGE

The Centro Oriente 12-22 inch diameter natural gas pipeline traverses 484 miles (779 km) of diverse terrain ranging from hot plains, wet tropical forests and rugged Andes Mountain foothills. Six operational centers where the system interconnects with other gas pipelines are required to communicate with field SCADA RTUs which interface with local field devices. The centers provide a communications hub and a link to a master operational control system located in the northeast Colombian city of Bucaramanga.

The pipeline is complex, with more than 50 city gates and custody transfer metering stations providing gas to 44 municipalities for residential and commercial use, large industrial users and power plants. The field communications network relies on a complex radio and satellite system to transfer tremendous amounts of data and voice information. Logistic challenges are significant to ensure high integrity information gathering and transmission under rugged conditions.

“OpenEnterprise provided all the data acquisition and control capabilities to operate the entire pipeline system. It also provided the necessary advanced applications to continuously monitor the pipeline operation and provide for operations training and marketing.”

SOLUTION

Remote Automation Solutions provided a fully-integrated system for this pipeline network, including OpenEnterprise SCADA package at the master control center, the RTUs located at the six field operational centers communicating via satellite to the master center, and the field locations at each point of the communications network. Despite the rugged terrain and difficult physical logistics, the network provided high integrity data and control.

The OpenEnterprise software package provided all the data acquisition and control capabilities to operate the entire pipeline system, with capabilities for future expansion as needed. It also provided the necessary advanced applications to continuously monitor the pipeline operation and provide for operations training and marketing. The planning of contract requirements by the system allows the Centro de Transporte de Gas (CTG) to continually track daily operations at each supply and delivery point, reporting field-measured hourly flow totals and comparing them to a forecasted plan. Data can then be accurately processed for billing by the CTG.

Emerson continues to support the client, providing technical assistance, maintenance support and sales assistance for system expansion.

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