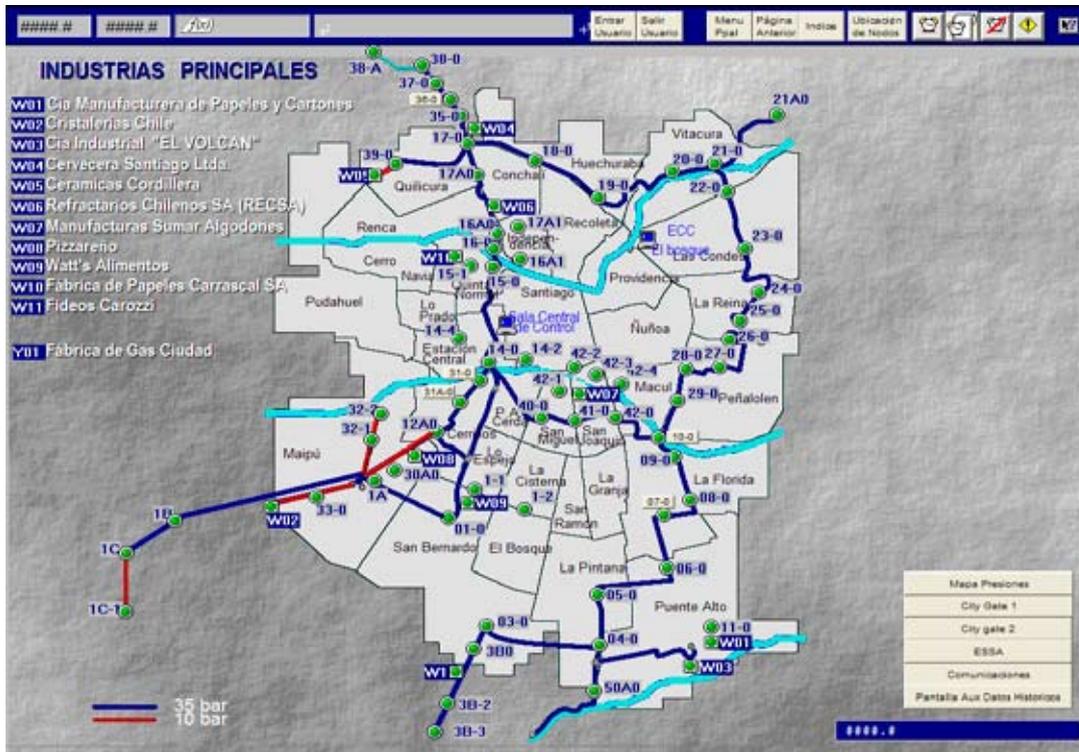


Chilean Natural Gas Pipelines

Electrogas and Metrogas opt for integrated flexible solution



Natural gas network in metropolitan Santiago, Chile

The Challenge

Almost all of Chile's natural gas is imported from Argentina via pipelines running through rugged terrain. The Gas Andes pipeline runs 460 kilometers from Argentina to central Chile. The 149 kilometers that run through Chile, cross the border from Argentina near the Maipo volcano at an altitude of 3,400 meters. Valves controlling flow, pressure and gas temperatures are located every 30 kilometers and are controlled remotely by a supervisory control and data acquisition (SCADA) system.

The pipelines have a 24-inch diameter and are buried three meters underground. There are 39 points where the pipeline must be buried as deep as 10 meters underground when it crosses water channels. In addition to the pipeline, a fiber optic line permits uninterrupted communication between La Mora station and the City Gates stations in Santiago.

In this rugged topography, a secure, reliable SCADA system monitoring the length of the pipeline at all times

is imperative. It is also imperative to have access to real-time data from each station along the pipeline to remotely monitor and assess field issues as they occur.

The Solution

Electrogas, Chile

Electrogas is responsible for monitoring and controlling the pipelines from Argentina to Santiago. Fluor Daniel Williams Brothers contracted PSI to provide engineering and system integration for the SCADA system on the Quillota-to-Santiago pipeline.

The project had severe time constraints, and CitectSCADA's exceptional flexibility meant that engineering time would be minimal. Its reliability was also key, with its built-in redundancy enabling the system to withstand any single point of failure – hardware or communications – without impacting operations.



The Challenge

To install a highly reliable SCADA system under a tight schedule, that would require little engineering time and be able to communicate with a variety of hardware platforms.

The Solution

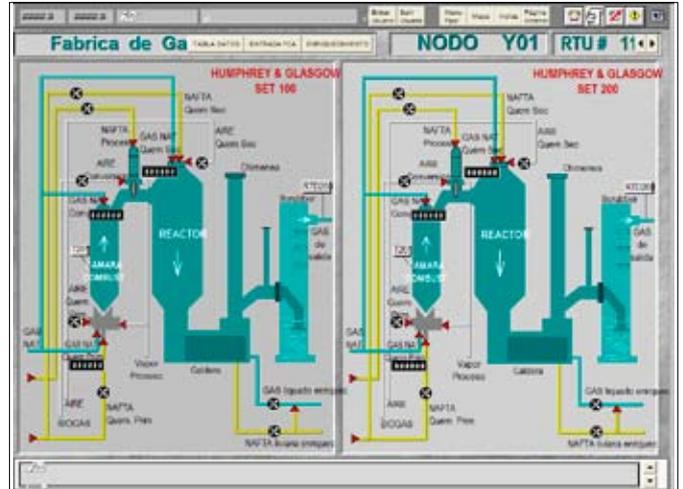
Both Electrogas and Metro gas selected CitectSCADA because it contains the largest number of built-in drivers to make interfacing with various hardware platforms easy. Its open architecture offers extreme flexibility, and its built-in redundancy provides exceptional reliability.

The Benefits

Using CitectSCADA, both Electrogas and Metrogas are able to monitor and control hundreds of kilometers of pipeline easily and reliably. CitectSCADA's redundancy prevents loss of data in the event of a failure and automatically backfills data to the host system. Its ability to support report by exception minimizes data traffic and maintains optimum network speeds.



Natural gas pipe lines



RTU screen shot

Another important factor in selecting CitectSCADA was its true hot standby architecture for the control and monitoring functions that are so vital to the safe operation of the pipeline. In the event of a failure in the host system, CitectSCADA's true hot standby architecture ensures that localized data collection continues as normal.

CitectSCADA's increased user-friendly interface and visibility also helps lower operating costs by allowing users to view information and take corrective actions from any location on the network, reducing the need to travel to individual sites.

Metrogas, Chile

The largest natural gas distributor in Chile, Metrogas, serves over 300,000 residents and businesses in the metropolitan region of Santiago with a network of more than 4,000 kilometers. Metrogas also chose CitectSCADA to monitor and control its network because it needed a high-performance SCADA system to reliably manage huge quantities of data.

Like Electrogas, Metrogas selected CitectSCADA for its ability to efficiently handle the large quantities of data required to monitor the pipeline. Its report by exception

capability advantage preserves bandwidth by only sending data that differs from the last data reported. When a disturbance or change occurs, the data is then sent to the operator or an alarm goes off at the control center.

Pipeline monitoring generates vast amounts of data far too quickly for a human to detect small changes in operations. CitectSCADA allows data to be collected and time-stamped in the milli-seconds so that operators can establish trends and react swiftly to avoid critical impacts to operations.

CitectSCADA's truly open architecture and large number of native drivers made it simple for Metrogas' old Modbus driver to interface with its new SCADA system with just the replacement of a mode of a behavior/feature to the Modbus driver.

This reliable and easily integrated control solution takes the stress out of operations for both Metrogas & Electrogas, ensuring vital production data is always available. Furthermore, as both organizations look to expand their operations, they are equipped with a robust and flexible system that is able to grow with their needs.

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