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Qian Jiren
Technical Project Manager



Zhejiang Natural Gas Co. Installs Wonderware SCADA Solution Featuring Industrial Application Server to Reduce Engineering and Maintenance Costs

Zhejiang, China — Zhejiang Natural Gas Co. is engaged in substantial pipeline construction of its West Gas Eastwards Pipeline, which will include the installation of a new system featuring Wonderware's Industrial Application Server and groundbreaking ArchestrA technology. This new system will enable Zhejiang Natural Gas Co. to meet its customers' wide-ranging needs by enabling them to visualize its plant processes, analyze the resulting information and use that information to optimize the plant as a whole.

The Challenge: Centralized Monitoring and Control

Prior to installing the new Wonderware system, Zhejiang Natural Gas Co. faced many challenges. To meet them, the company decided to centralize the monitoring of station equipment, processes and pipelines. The new Wonderware SCADA system also offers Zhejiang's staff increased system access. For example, by having the ability to visualize production processes, plant staff can make real-time adjustments and then analyze the resulting data, using Wonderware's powerful IndustrialSQL Server real-time plant historian. The staff also benefits from independent PLC access. Easy maintenance and centralized control simplifies system growth and optimizes ongoing pipeline construction. In addition, the ArchestrA architecture is expected to generate significant savings on engineering and maintenance costs.

An Integrated Solution

System integrator HollySys assisted in the implementation of the Zhejiang control system, which includes the Wonderware Industrial Application Server, InTouch visualization software, the IndustrialSQL Server historian and ActiveFactory reporting and analysis clients. The Wonderware software monitors and controls the operation of the entire pipeline system and monitors the plant's equipment processes - which include pressure, temperature, flow transmitters, motor-driven valves, modulating valves and special equipment - via the Modbus protocol. The system also performs gas-flow and supply calculations. Zhejiang's plant personnel thus can decipher the plant's complex operations contracts and how they affect downstream and upstream costs. Furthermore, they can evaluate gas quality based on process and capacity calculations, and create statistical models based on the IndustrialSQL Server historian's database structure.



Control room at Zhejiang Natural Gas Co.

Simple and Secure Application Replication

The Wonderware Industrial Application Server, which is built on the ArchedrA industrial automation and information software architecture, was an intelligent choice for centralizing Zhejiang's pipeline system because the Industrial Application Server uses simple drag-and-drop methods to create application objects that model equipment - such as pumps or valves, connectivity devices - or an entire plant. Each object can be replicated multiple times and include operational attributes such as performance history, I/O characteristics and other requirements when replicated. Most importantly, the Industrial Application Server security model provides security at the data-element level, which is extremely valuable for protecting the system.

The Industrial Application Server's elegant approach to application propagation enables efficient system deployment across Zhejiang's control system, which stretches across a wide area, but utilizes identical equipment per control station. Zhejiang Natural Gas Co. also leverages Wonderware's SuiteVoyager portal software, which facilitates secure access to statistical reports, alarm information and data stored within the IndustrialSQL Server historian.

So far, Zhejiang's plant personnel appreciate the Industrial Application Server's plant model, which helps them organize each station in a consistent manner using application templates. Zhejiang's programmers use Microsoft .NET scripts to easily add more functionality to the system at a low cost. This is possible because the ArchedrA architecture is built on a .NET framework.

Summary

Zhejiang Natural Gas Co. has gained many new business opportunities with the expansion of its natural gas pipeline; it has virtually created a new market for them. To build on this success, plant staff can now visualize their plant processes, analyze the resulting real-time plant information and use it to optimize the plant as a whole. Even more importantly, the ArchedrA architecture is expected to save Zhejiang an astonishing amount of time and money by providing highly distributed applications for the entire pipeline.

"The Wonderware Industrial Application Server makes it easy to expand our SCADA system as the pipeline grows," said Qian Jiren, technical project manager. "I'm also impressed that Wonderware provides worldwide technical support and services." Support and services are available through Wonderware's extensive channel of distributors and systems integrators.

With its new Wonderware SCADA software, Zhejiang Natural Gas Co. should be able to continuously expand its system for the next decade.

Solution Overview

Industry: Oil & Gas

Software:

- Industrial Application Server
- InTouch View 8.0 graphics engine
- DA Servers
- SuiteVoyager 2.0 SP1 portal software
- IndustrialSQL Server 8.0 historian
- InTouch visualization software
- ActiveFactory 8.0 reporting and analysis clients

Hardware:

- Bootstrap
- Modbus TCP/IP I/O Server
- Visualization Node Bootstrap
- Web Server Bootstrap
- Engineering Station Bootstrap



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