HINZ
A Rockwell Automation Company

Terasen Gas
PLC & HMI Upgrade

The Client:

A subsidiary of Kinder Morgan Inc., Terasen Gas delivers natural gas and piped propane to homes and businesses throughout British Columbia. With approximately 900,000 customers in 125 communities, Terasen Gas provides service to 95 percent of British Columbia's natural gas customers and is the third largest utility in Canada.

The Requirement:

The Huntingdon Control Valve station is the single source of gas supply to the Vancouver area. Replacement of the aging control systems and related equipment at this facility improved the reliability and the security of supply.

The new control system design provided improved redundancy for ensuring continuous operation in the event of equipment failure. The existing Control System and related power supply equipment were purchased and installed in 1992. The new control system provided the opportunity to design for a higher fault tolerance, and with less overall equipment (less complicated than existing), reducing maintenance costs, using currently available and up to date technology.

Hinz requirements can be broken down into six major areas of responsibility:

1. Project Management
2. Design and Drafting the construction staging packages for the transfer of the old control system to the new ControlLogix PLC control system.
3. Conversion of the existing PLC 5 and 500 programs to ControlLogix programs.
4. Upgrading the RSView32 applications to communicate to the Tag Based ControlLogix data structure.
5. Site commissioning.
6. Training Terasen Gas technical support staff on the new ControlLogix based system.

The Design Solution:

Hinz coordinated with the client personnel to provide the detailed engineering, drafting, specifications (for procurement), PLC and HMI programming,

commissioning/start-up assistance for the project. The project replaced all existing station I, station 2, odorant injection, and import/export isolation valve control systems and telemetry systems. This also included the collection, calculation, and transmission of the flow data from the Duke Energy Measurement Station and the Williams (Northwest) Pipelines SIPI Measurement Station. The detailed design included all electrical, controls and control panels including all modifications to communications, security and electrical power supply.

The ControlLogix hardware included the standard discrete and analog modules. Communications to the Control Room HMI used ControlNet as a primary communications path with EthernetIP as a backup. The process control requirement included a Prosoft MVI56-Hart module for HART communications to the Rosemount 3095 Probar meter for Station Gas Flow. Communications to Terasen Main Control Center SCADA was implemented using a Prosoft MVI56-MCM Communications module for Modbus Master/Slave RTU communications. A backup solution for the Rosemount Probar meter used a combination of Rockwell 1756-CFM module and Prosoft MVI56-AFC Gas Flow Computer Module for both AGA 3 and AGA 7 measurements.

The Human Machine Interface (HMI) is a Rockwell's RSView32 application. The primary control is designed for remote control via the SCADA system with local control using the RSView32 station. A second RSView32 Station was installed as a backup.

Construction support included commissioning services.

Training was provided using commissioned programs.

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System Specifications:

- 4 Rockwell ControlLogix Processors
- 2 Rockwell RSView32 HMI Stations
- ControlNet system for the HMI to PLC and PLC to PLC communications.
- Ethernet for the HMI to PLC communications
- Serial Modbus for the SCADA/RTU to PLC communications.
- HART for the PLC to Rosemount Probar communications.
- Prosoft MVI56-AFC for AGA & AGA7 data

For further information or to contact a Hinz office near you, please check our website at:

www.hinz.com