



A Rockwell Automation Company

Foothills Pipe Lines Ltd Richmond Station (391)

The Client:

Foothills Pipe Lines Ltd. is a major Canadian natural gas transmission company which delivers approximately one third of all Canadian gas exports to the United States. The Foothills Pipe Line begins just south of Caroline, Alberta. The east leg continues southeast through Alberta and Saskatchewan to Monchy Saskatchewan where it ties to the Northern

Border Pipeline Company. The east leg contains 7 compressor stations, and the west leg begins just south of Caroline, Alberta, and continues southwest through Alberta and British Columbia to Kingsgate, British Columbia, where it ties to Pacific Gas Transmissions.

The Requirement:

The Original Compressor Station control Panels were installed in early 1980's. In an effort to increase the efficiency of operation of the pipeline and to minimize downtime, due to aging and obsolete equipment, it was decided to upgrade the existing Station and Unit Controls.

The primary goal of the Station and Unit Control Panel Upgrade was to:

- Provide an updated efficient control system
- Reduce the risk of equipment failure
- Reduce compressor station downtime
- Utilize industry standard hardware and software products that are readily available, modular, flexible and expandable

The Design Solution:

Hinz was contracted by Foothills Pipe Lines Ltd. to provide engineering and integration services for this project. The contract included assisting Foothills Pipe Lines engineering team in control panel design, control panel bid and evaluation, testing of control panels, PLC programming, operator interface programming, communications, field installation supervision, commissioning, and startup.

Station control panels use a GE Fanuc 90/70 781 Programmable Logic Controller (PLC) with Genius discrete, analog and RTD blocks. The operator interface used was Intellution FIX DMAC Operator Graphic Control System. The station control panel included other items such as communication interfaces to Nova Gas control and Foothills SCADA system, local annunciator and protection equipment such as fire and gas detection systems. The station control panel functions are to control station block valves, station control valves, ESD relief and isolation valve control, gas cooler control, fuel gas control, fire and gas protection, station ESD control, compressor station PID loop control functions, Auxiliary Power Unit (APU) interface, and other station auxiliaries.

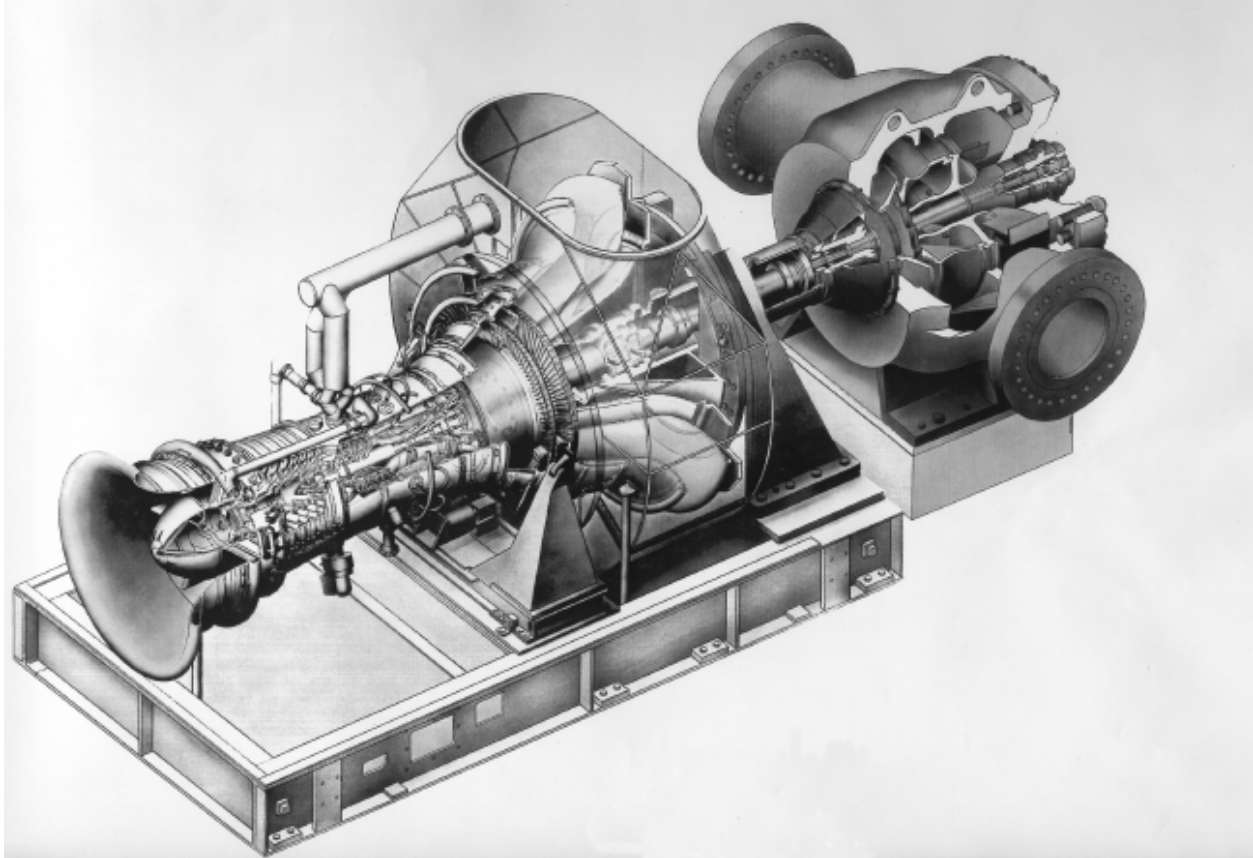
Unit control panel uses a GE Fanuc 90-70 781 PLC with Genius discrete, analog, RTD, thermocouple and high speed counter blocks. The operator interface used was a Intellution FIX DMACs Graphics Control System. The unit control panel included other items such as vibration monitoring, surge control equipment, fuel controller and local annunciator. The unit control panel functions are to control the unit valves, recycle valves, vent valves, control lube and seal oil systems, detect vibration, protect from and respond to compressor surge conditions, fuel control, speed control of the Cooper Rolls RB211 gas turbine and compressor and to detect temperature on both the gas turbine and compressor.

The removal of the existing station and unit control panels and the installation, connection commissioning and startup of the new panel was performed during a four week shutdown.



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System Specifications:

- GE FANUC Series 90 - 70 PLC
- Genius I/O
- Intellution FIX DMACS Operator Graphics
- SCADA System Communications
- Bentley Nevada Vibration Interface
- Compressor Controls Corp Surge Controller Interface
- Cooper Rolls RB211 Gas Turbine and Compressor

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

www.hinz.com