



A Rockwell Automation Company

## Foothills Pipe Lines Ltd. Jenner Compressor Station Unit #1

### 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 the pipeline's operation and to minimize downtime caused by 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 GE Fanuc 90/70 781 Programmable Logic Controller (PLC) with Genius discrete, analog and RTD blocks and local I/O. The operator interface is Intellution NT FIX32 Operator Graphic Control System. It communicates to the station PLC via an Ethernet LAN. The station control panel includes 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, fire and gas protection, station ESD control, compressor station PID loop control functions, auxiliary power unit (APU) interface, and other station auxiliaries. This station is a dual unit station with the provision to run both units

in series. As part of the same downtime, unit 1 control panel was also upgraded.

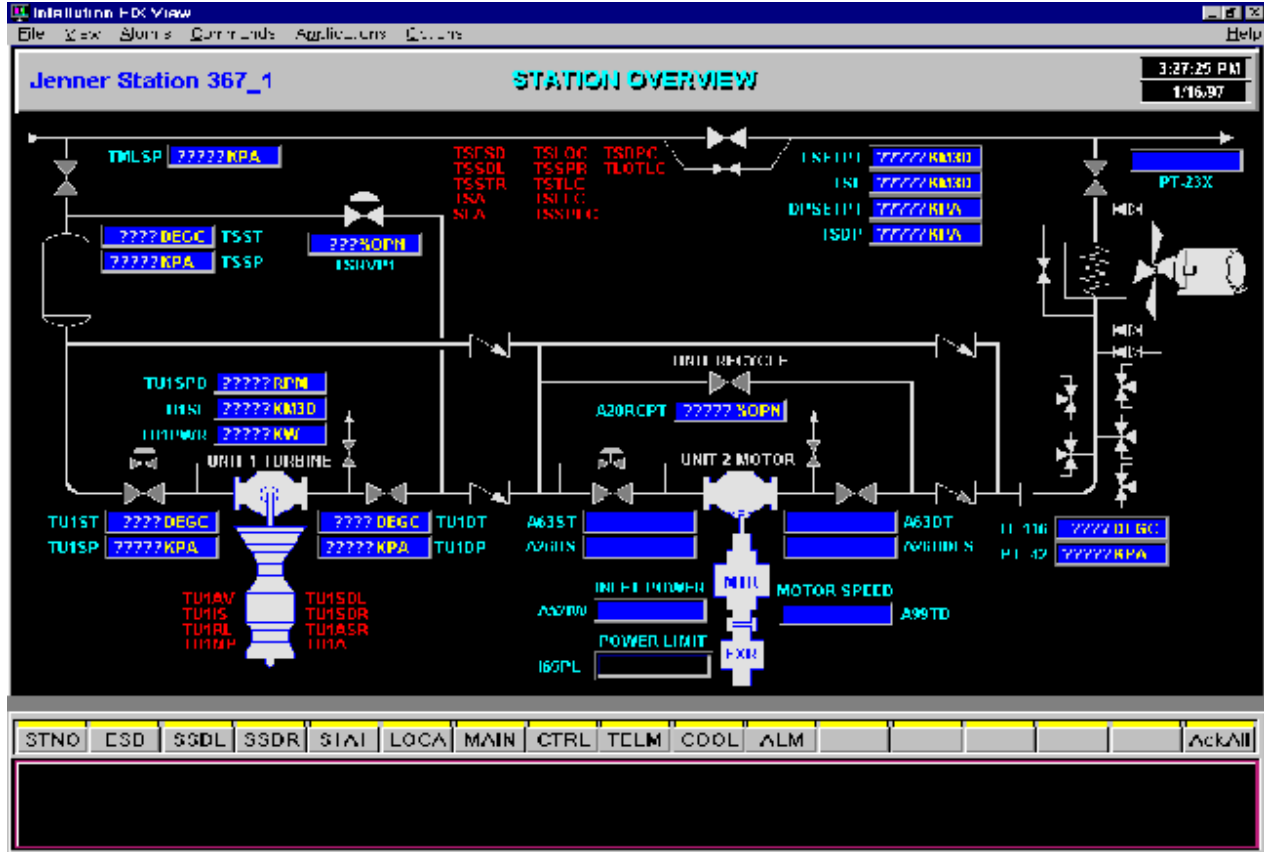
The unit 1 control panel uses a GE Fanuc 90-70 781 programmable logic controller with Genius discrete, analog, RTD, thermocouple and high speed counter blocks. The operator interface used is Intellution NT FIX32 Graphics Control System. The station, unit 1 and 2 operator interface stations are connected over Ethernet. The unit control panel includes 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 valve, vent valves, control lube and seal oil systems, detect vibration, protect from and respond to compressor surge conditions, control fuel and speed of the Cooper Rolls RB211 gas turbine and compressor and to detect excessive 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 NT Operator Graphics
- SCADA System Communications
- Ethernet PLC & MMI Communications
- Fire, Gas Protection
- Station Valve Control
- Gas Cooler Control
- Station ESD Control
- Compressor Speed Control

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

[www.hinz.com](http://www.hinz.com)