



A Rockwell Automation Company

Alliance Pipeline Limited SCADA System Integration

The Client:

Alliance pipeline is a partnership of companies offering a new natural gas transportation pipeline alternative from Western Canada to North American markets. Ownership of the pipeline system currently includes affiliates of Duke Energy Corporation, Enbridge Inc. (formerly IPL Energy), Fort Chicago

Energy Partners LP, Coastal Corporation, Williams Companies Inc., and Westcoast Energy Inc. The pipeline will deliver gas to the Aux Sable Liquids Extraction Facility outside Chicago, Illinois. The pipeline was scheduled for service October 1, 2000.

The Requirement:

Alliance Pipeline is an 1858 mile, 36 and 42 inch high-pressure pipeline extending from northeastern British Columbia and northwestern Alberta to the Chicago, Illinois, area market. The pipeline system consists of 14 main compressor stations totaling 550,000 hp, 8 lateral compressor stations, 30 metering stations, and approximately 90 block valves which are spaced at 20 mile intervals.

Alliance required an integrated SCADA system to remotely control and monitor the entire pipeline system. Considerations included:

- Operations from a central gas control facility on a 24-hrs-a-day, 365-days-a-year basis.
- Fully automated instrumentation and control

system to monitor all process conditions and detect fire or natural gas leaks,

- Redundant and back-up communication system for active operations, especially during emergency situations,
- Adherence to appropriate agency regulations for the protection of public safety and operating codes and standards (including all NEB and FERC requirements)
- Gas control parameters including all metering and analyzer data
- Provision of all status and alarm data from the entire pipeline system to Operations

The Design Solution:

Alliance Pipeline selected Hinz as system integrator for the pipeline SCADA system. Honeywell Plantscape SCADA was selected as the SCADA host system with Bristol RTUs as the field RTUs. The SCADA host which was located in the main control center consisted of redundant servers, redundant real time models (RTM), separate servers for electronic flow measurement (EFM), training simulators, SCADA simulators and data server to the corporate network. A separate backup control center houses an additional set of servers for SCADA, RTM and EFM.

Operator interface was via 2 Quad headed graphics units in the main center and 1 Quad unit at the backup center. Primary communication to all sites utilize

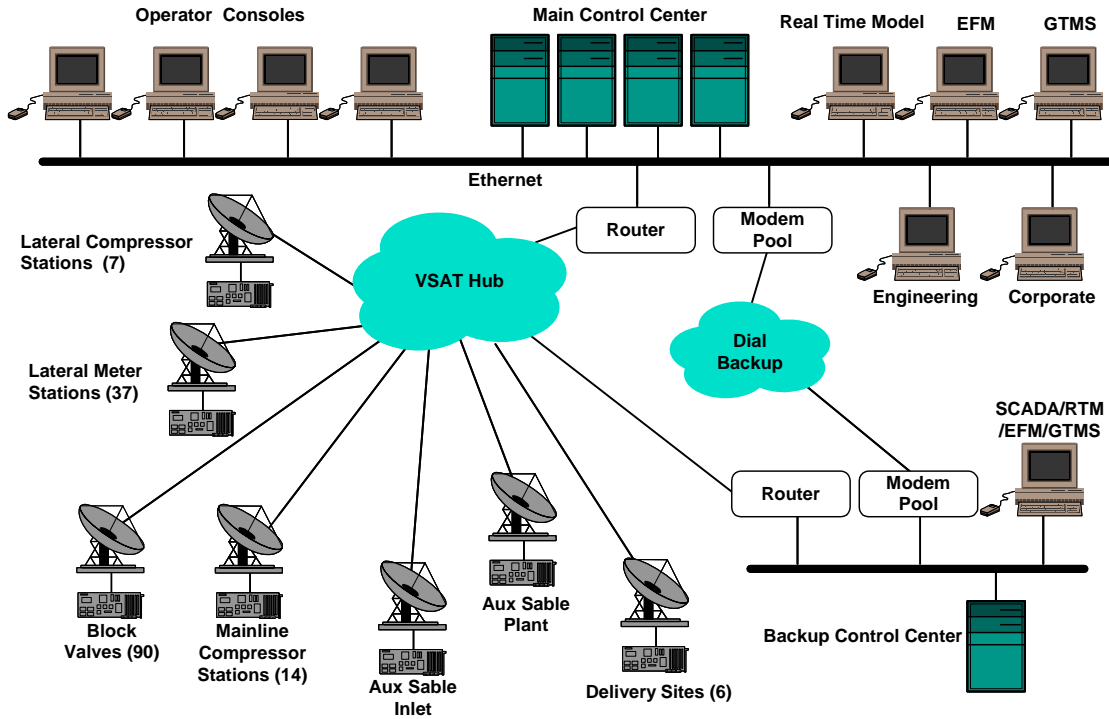
satellite-based Bristol BSAP protocol. A new satellite earth station communicates via frame relay lines to both the main and backup centers. Compressor and metering stations utilize the satellite based communications as BSAP/IP with terrestrial phone lines provided as backup. Block valves communicate via satellite with no backup communications.

A typical compressor or metering site utilizes a Bristol Babcock 3330 RTU as a data concentrator/protocol converter. The RTU interfaces to the unit and station GE Fanuc PLCs and HMIs, analyzers and gas chromatographs as required. An additional RTU also provides all gas flow computing requirements.



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System Specifications:

- Honeywell Plantscape SCADA System for 20 users
- Satellite Communications utilized as primary communications
- Telephone line communications as primary for Block valves and as back up for compressor and metering stations.
- 150 Bristol Babcock RTUs
- Gregg Leak Detection Transient Model Software
- Flow cal Electronic Flow Measurement Software
- 40 GE Fanuc Cimplicity HMI for Unit & Station HMI
- Daniel Ultrasonic Flow Meters
- BSAP I/P and Serial Protocol
- Daniels Gas Chromatographs
- SCADA Field I/O Tags 20,000
- Total Database Tags 40,000

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

www.hinz.com