



A Rockwell Automation Company

El Paso Corporation / Colorado Interstate Gas Kim Compressor Station

The Client:

El Paso's interstate transmission system spans the nation, border to border and coast to coast. The nationwide pipeline system is consolidated into three regional operations.

The Western Pipeline group consists of El Paso Natural Gas Company and Colorado Interstate Gas Company and is headquartered in Colorado Springs, Colorado.

Colorado Interstate Gas (CIG) is a major transporter of natural gas in the Rocky Mountain region. The Colorado Interstate Gas system is connected to nearly every major supply basin in the Rocky Mountains as well as production areas in the Texas Panhandle, western Oklahoma, western Kansas, and Wyoming.

The Requirement:

CIG was constructing a natural gas compression facility in southeastern Colorado near the town of Kim to increase capacity on the CIG Campo Lateral.

The station includes two packages of 4,400hp Caterpillar G3616TALE engines driving Ariel JGC4 compressors. In addition to the compressors, the station consists of a compressor building, warehouse building, cold storage building, MCC building, radio communication tower, water well and septic system, and

measurement facilities.

The control system at Kim Station will consist of a Station HMI SCADA node, Station PLC, two Unit PLCs to control each package, and two unit Local HMI panels to interface to each engine/compressor package.

The Design Solution:

Hinz was contracted to design and implement the control system. Initially, Hinz prepared a Functional Requirements Document which finalized the control system design configuration.

The contract consisted of 5 Colorado sites: Kim, Keyes, Ft. Lupton, Parachute, and Trinidad. Kim, Keyes, and Ft. Lupton are all reciprocating natural gas powered engines. Trinidad is a solar turbine.

El Paso's original configuration for all previous compressor sites consisted of an Intellution Fix32 HMI node and Uticor PLC system. El Paso decided to upgrade the PLC systems to Allen-Bradley ControlLogix PLC.

The reciprocating engines are manufactured by Caterpillar. Caterpillar will not allow any purchaser of their engines to control the parameters of a Caterpillar

engine. Thus, all functions of the Caterpillar engines will be controlled by the Caterpillar Engine Supervisory System (ESS) through their proprietary control panel.

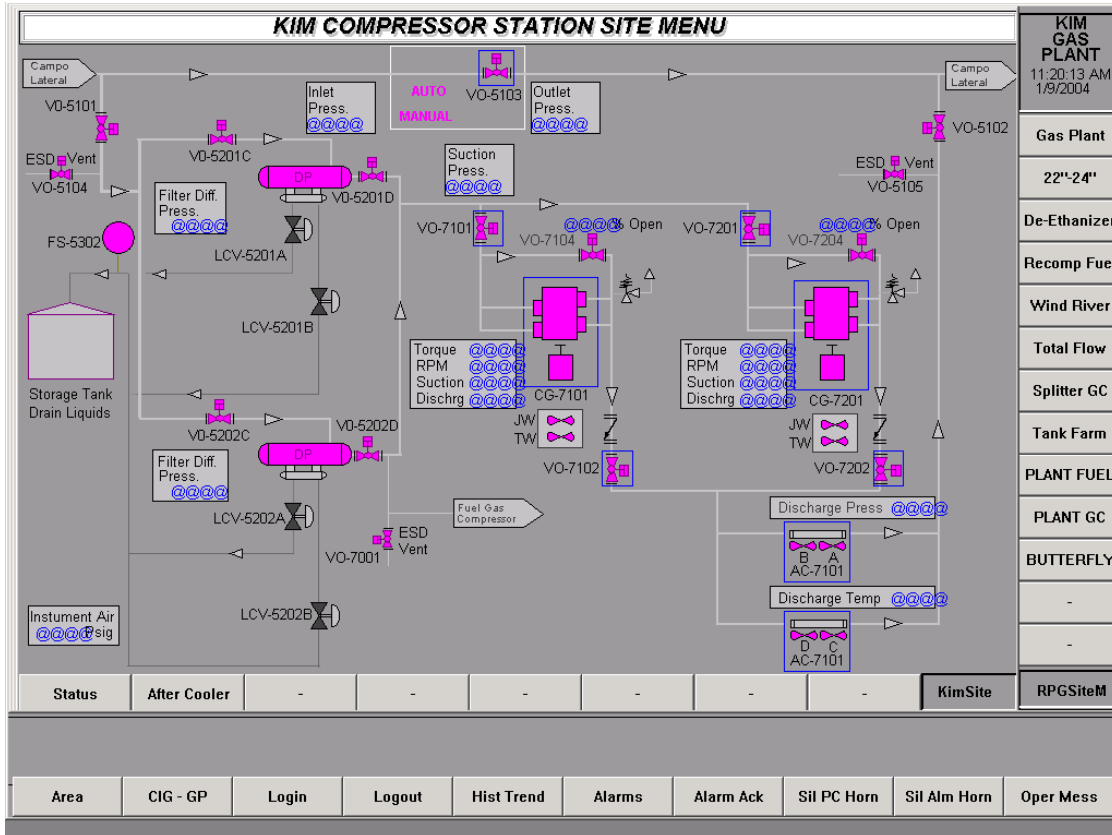
The Unit PLC was required to have local HMI control in addition to remote HMI control. Local control was accomplished by using Intellution IVisualize, and remote control used Intellution Fix32.

Each site was required to have station control, which typically consists of engine speed and bypass valve control. The station PLC is responsible for emergency shutdown of the engines during emergency situations like fire and hazardous gas level detection.



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System Specifications:

- (2) Caterpillar G3616TALE Engines driving Ariel JGC4 Compressors
- (3) ControlLogix 1756-L5550 PLC
- (3) ControlLogix 17-slot I/O Chassis with power supply
- (3) ControlLogix 1756-ENET Ethernet Module
- (3) ControlLogix 1756-CNBR ControlNet Module
- (6) 1756-IF6I 6-channel Analog Input Modules
- (6) 1756-OF6I 6-channel Analog Output Module
- (9) 1756-IB16 16-pt Discrete Input Modules
- (6) 1756-OB16E 16-pt Discrete Output Modules
- (9) 1756-IR6I 6-channel RTD Input Modules
- (8) 1756-IT6I 6-channel T/C Input Modules

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

www.hinz.com