



A Rockwell Automation Company

## El Paso Corporation - Colorado Interstate Gas Wamsutter Station Bi-Directional Piping

### 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:

Bi-directional pipeline valves were installed on the 5A-22" and 5B-24" pipelines at El Paso's Wamsutter compressor station located in South Western Wyoming. Hinz was asked to provide PLC program revisions along with Intellution Fix32 HMI revisions to

automate the 28 yard valves and associated plant instrumentation. Modifications were also needed to upgrade the functionality of the HMI control buttons that control the existing valves.

### The Design Solution:

Hinz was contracted to engineer the electrical and control systems for Wamsutter Station. The 28 station valves were controlled through the existing Station Intellution Fix32 HMI computer and the Uticor 6001 Station PLC. A new PLC remote I/O panel was located in close proximity to the new valves in the plant yard to minimize wiring. This panel was connected via fiber optic PLC data highway to the master PLC CPU located in the control room.

Uticor 6001 Station PLC program logic and the Intellution Fix32 HMI configuration, operator screens, and database were upgraded to include operator control buttons and status indication for the valves and instrumentation. Standard El Paso and Hinz valve control and alarming concepts were utilized for the PLC logic and the HMI. The CG-4 control logic was retained with no changes. Other new instrumentation devices added to the PLC logic and HMI control system included both pressure and temperature transmitters. Miscellaneous I/O and wiring connections to existing devices were relocated from the existing I/O Station Control Panel in the Auxiliary Building to the new PLC Remote I/O Control Panel.

HMI graphics and PLC controls were added for new After-Cooler AC-3. A new temperature control PID

loop was added to control the After-Cooler. Hinz provided PLC and HMI programming including the addition of a new temperature control PID loop in the PLC logic, and an HMI screen PID faceplate for the cooler. The After-Cooler machinery included one variable frequency drive (VFD) motor and one constant speed drive motor. PLC logic was designed to be "split-ranged." PID functionality included auto/manual control, set point entry, trending, and on-screen tuning of PID parameters.

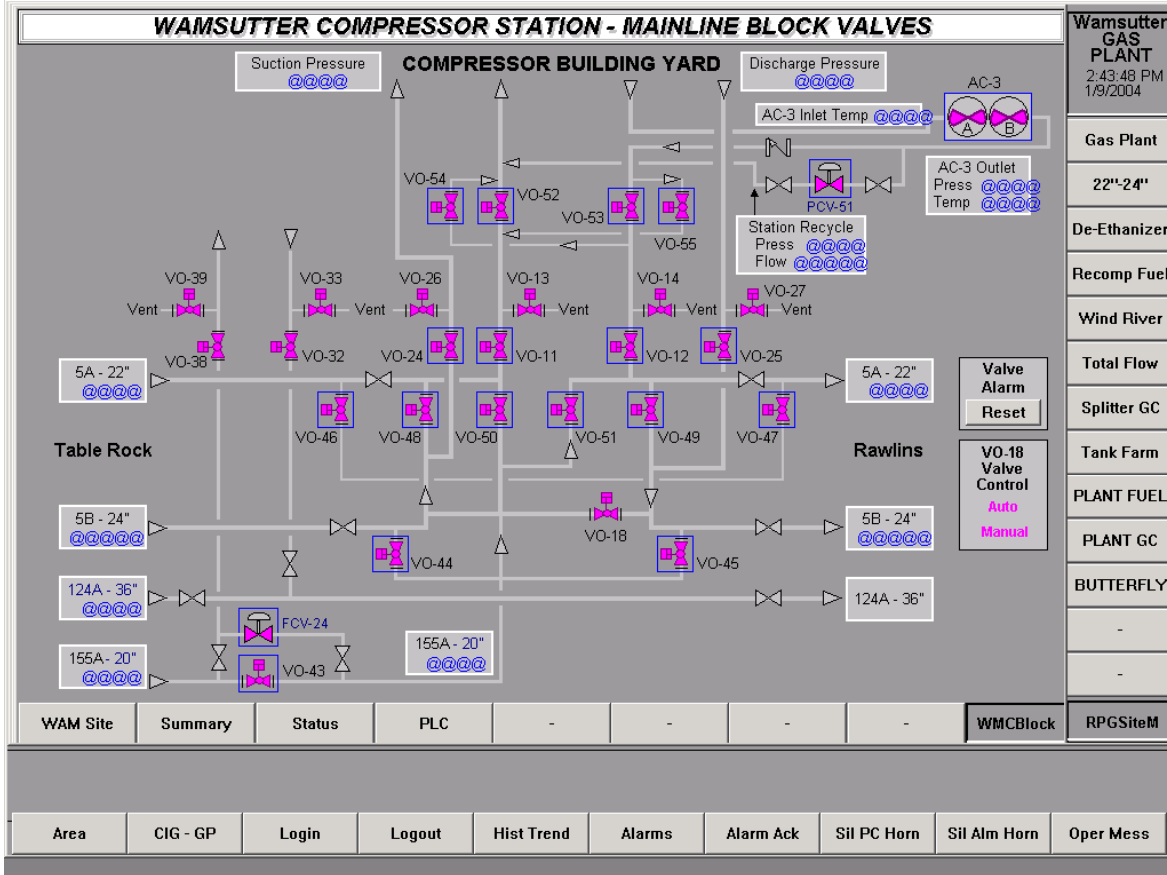
New pressure control valve PCV-51 was added at the outlet of After-Cooler AC-3. Hinz provided PLC and HMI programming including the addition of a new pressure control PID loop in the PLC logic, and an HMI screen PID faceplate for the valve. New downstream pressure transmitter PT-1008 was used to provide the process variable input to the PID.

For valve VO-18, Hinz provided PLC programming and a new Auto/Manual HMI selector button. When the operator selects the "Manual" position, he can Select the desired open or closed state. When the operator selects the "Auto" position for VO-18 PLC programming controls the valve position and the operator is not allowed to control the valve.



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### System Specifications:

- Intellution Fix32 HMI Development Software:
- (1) Allen-Bradley PowerFlex 700 Variable Frequency Drive
  - (1) Uticor (Struthers-Dunn) 6001 CPU with Development Software
  - (12) Uticor 6001 8-Point Discrete Input Modules

- (8) Uticor 6001 8-Point Discrete Output Modules
- (6) Uticor 6001 8-Point Analog Input Modules
- (2) Uticor 6001 2-Point Analog Output Modules
- (4) Uticor 6001 High-Speed Remote I/O Interface Modules

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

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