



A Rockwell Automation Company

## ConocoPhillips Niton Gas Plant DCS Project

### The Client:

ConocoPhillips, an international, integrated energy company, is the third largest integrated energy company in the United States (based on market capitalization, oil and gas proved reserves and production) and the second-largest refiner in the United States. Worldwide, of non-government controlled companies, ConocoPhillips has the fifth-largest total of proved reserves and, based on crude oil capacity, is the fourth-largest refiner.

The Niton Gas Plant is located east of Edson, Alberta, just off

Highway #16. (LSD 14-18-054-12W5). The Refrigeration / Fractionation plant produces mostly market ready natural gas, plus some liquids. This plant produces 1.654 million cubic meters of gas per day from 1.74 million cubic meters of raw inlet gas.

### The Requirement:

CPC required a new DCS to replace the existing pneumatic and relay based control systems. They were in need of the following features:

- enhanced plant control
- remote connectivity
- future data historian capability
- future SCADA and EFM connectivity
- improved plant up-time
- improved plant start-up ease and speed
- remote access capabilities for plant operation and maintenance

- facilitate the replacement of old existing end elements such as pneumatic loop controllers, transmitters, and flow measurement systems
- cutover plan that would minimize plant downtime.

Honeywell Automation is the client's preferred automation solution vendor.

A required addition of a produced water injection system (probably the most complicated component) was a later follow-on sub-project.

### The Design Solution:

Hinz procured and installed a Honeywell DCS with redundant PC based servers. To enhance up-time, the DCS was designed with redundant Ethernet server communication backbone and redundant controller communication network (ControlNet).

Hinz's DCS solution provided CPC with the following features and capabilities:

- complete plant control, with the exception of compressor unit control
- trend graphs
- alarm and event logging
- shutdown control
- data historian capability
- SCADA and EFM connectivity
- unit controller interface
- remote access for plant operation and maintenance personnel

The new DCS is estimated to have improved plant up-time by 15%, mainly by reducing the number of outages due to spurious trips. When the process has had to stop, the DCS made restarting much easier. In most cases the restarts were completely executed from the DCS consoles. (Much less leg work.)

The plant operators have been able to improve product quality and consistency through making good use of the DCS trending tools. The faster real-time updates, easier control of operating variables, more accurate instrumentation, and consolidation of variegated data at the DCS consoles has enabled the operation team to be more pro-active in their optimization of all operating parameters.

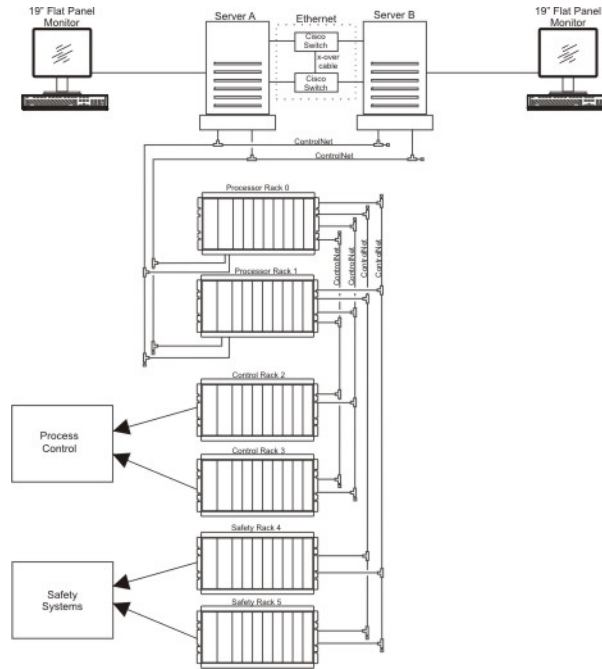
Niton plant operators feel that the plant is safer to operate overall for the following reasons:

- consolidation of fire and gas detection data and alarms
- addition of modern fire and gas detection points
- improved alarming, which led to better emergency response planning



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### System Specifications:

- redundant Dell servers running Experion R210
- fault-Tolerant Ethernet connection between the two servers utilizing Cisco switches
- redundant Honeywell C200 Controllers
- redundant ControlNet data network between the servers, controllers, and I/O racks
- wireless connectivity for operators via laptops with aircards
- over 30 custom graphics pages

The DCS used the following I/O:

Type	Used	Capacity	Notes
A.I.	133	160	(Primarily Fire and Gas Detection)
D.I.	122	160	
A.O.	41	48	
D.O.*	110	192	(*Hard Wired ESD Circuit Fail Safe)
D.O.**	33	62	(*Un-switched Annunciation i.e. beacons, horns, callout)
Total	439	622	

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

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