



A Rockwell Automation Company

Amoco Canada Fort Saskatchewan Superior Refrigeration

The Client:

Amoco Canada is a leading marketer of Natural Gas Liquid. Amoco's Fort Saskatchewan Natural Gas

Liquids (NGL) facility is located four miles northeast of Fort Saskatchewan, Alberta

The Requirement:

Amoco ships NGL from Fort Saskatchewan to Sarnia via Enbridge pipeline. Part of the batches are stored in spheres at Superior Wisconsin where a fractionation plant removes propane for local sales. When IPL increased shipping rates the product temperatures rose

enough to make the vapor pressure too high for storage in the spheres.

The Design Solution:

A refrigeration system was installed to cool the NGL before it entered the spheres. Two York Turbomaster compressors driven by 3500 HP Siemens induction motors with reduced Voltage starters were installed. The refrigerant used was propane, so the compressor building became a hazardous area.

The system is controlled by an Allen-Bradley PLC-5/40 located in the MCC building. DeviceNet I/O is used to control the MCC cells including the 22 Variable Frequency Drives that run the condenser cooling fans.

The PLC handles all the refrigeration process control loops and compressor anti surge system valves. There are nine PID loops for each compressor plus nine Process related loops giving the PLC a total of 27 control loops. To ensure only NGL product gets to the evaporator heat exchanger a UGC densitometer is located up stream. The PLC runs a pressure and temperature correction calculation before using the values.

All gas and fire detectors are also connected to the PLC which takes care of alarms and shutdowns. Global Data words are used to transfer critical data to other site PLCs. Global data words are transmitted with the Data Highway token so the highway performance is not degraded by frequent messages.

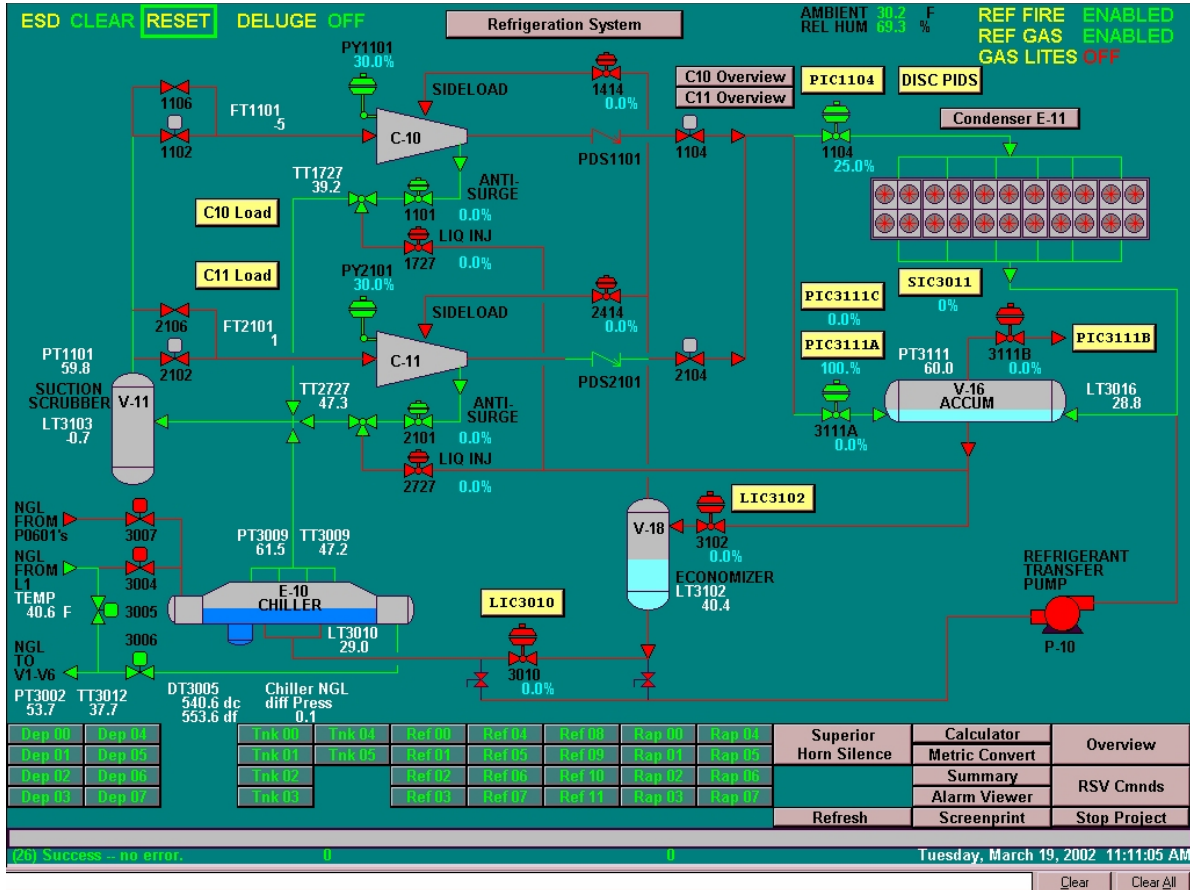
The local Data Highway is connected to Fort Saskatchewan by leased phone lines. This allows the Fort Saskatchewan control center to run the plant when it is unmanned over night and weekends.

This project increased the ControlView tag count for the site beyond the ControlView limit so the HMI was changed out to RSVIEW, as a part of the project.



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System Specifications:

Rockwell - Allen-Bradley PLC-5/40

DeviceNet

Rockwell - RSView

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

www.hinz.com