



A Rockwell Automation Company

## Petro-Canada PLC-2 to PLC-5 Conversion

### The Client:

Petro-Canada is a major Canadian oil and gas company and a leader in the Canadian petroleum industry. Petro-Canada is active in both the development and the marketing sides of the industry.

They explore for, develop, produce and market crude oil, natural gas and natural gas liquids, including ethane, propane, butane and condensate. They also

refine, distribute and market petroleum products and related goods and services.

Petro-Canada has grown steadily since its formation in 1975, with shares in the Hibernia offshore production, tar sand production at Syncrude, and LNG production throughout Western Canada.

### The Requirement:

The existing Programmable Logic Controller (PLCs) at Petro-Canada's Pipeline Terminal in Saskatoon, Saskatchewan was based on an Allen-Bradley PLC-2 processor. The PLC-2 had been obsolete, and Petro-Canada assigned Hinz the task of upgrading it. Hinz recommended that Petro-Canada upgrade to an A-B PLC-5 processor. This would allow the re-use of all of

the existing station I/O. Hinz's task was to convert the PLC program from PLC-2 to PLC-5 and re-commission the storage tanks at the Saskatoon Pipeline Terminal.

### The Design Solution:

The existing PLC-2 ladder logic was translated to PLC 5/40 with three racks of local I/O and 1 remote rack

- DH+ bridging over three sites
- ControlView HMI at each of the three sites
- Dial-in programming or HMI access via DH+ KF2 modules
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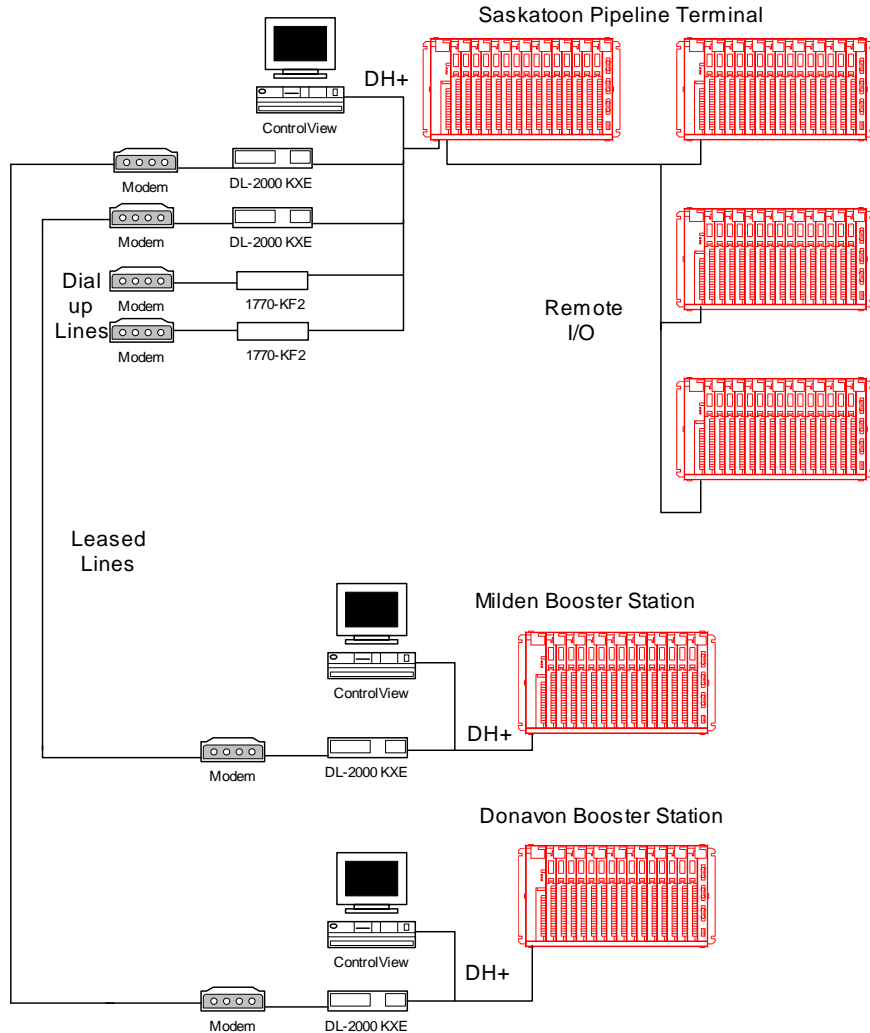
- ControlView HMI at each of the three sites  
Dial-in programming or HMI access via DH+ KF2 modules into PLC-5 ladder logic.

Portions of the flow totalizer code were re-written to take advantage of the more powerful PLC-5 instruction set. The existing PLC-2 rack was removed and replaced with a PLC-5 processor in its own rack. The communications was changed from AB KF and KH modules (used for DH on the PLC-2) to DL2000 KXE modules. These modules allowed the three different DH+ segments at Donavon, Milden, and Saskatoon to bridge data transparently between them using the leased-line modems that each site already had. The existing A-B ControlView operator interface stations at each location required only address changes. Dial-in access via laptop for remote trouble-shooting was maintained at two dial-in lines. The office ControlView terminal was connected to the DH+ as a local station.



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### System Specifications:

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

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