



A Rockwell Automation Company

Town of Bonnyville Water Treatment Plant

The Client:

The Town of Bonnyville is a community of approximately 10,000 people located about two and a half hours North East of Edmonton, Alberta. Hinz, in part with A.D. Williams Engineering Inc., completed an upgrade of the Water Treatment Plant control

system and the telemetry system used to monitor the fresh and waste water treatment remote sites throughout the town.

The Requirement:

The existing programmable logic controller at the Water Treatment Plant was an Allen-Bradley PLC-2/30 which was outdated and becoming difficult to support. The existing telemetry system consisted of Bristol Babcock RTUs using leased lines from Telus. The telemetry system was experiencing numerous card failures. Replacement cards were difficult to obtain and repairs took long periods of time. The auto dialer

at the Water Treatment Plant was also outdated and no longer supported by the manufacturer. This device is important as it automatically phones and reads out current alarms. The requirement of this project was to update these components to improve the reliability and functionality of the control and monitoring system.

The Design Solution:

The Allen-Bradley PLC-2/30 at the Water Treatment Plant was upgraded to a PLC-5/30. This allowed the existing field I/O structure to be retained, which resulted in large savings on the installation time and costs. Minimizing the down time was an important consideration, as the Treatment Plant could not shut down for any length of time. The program was converted to the PLC-5 format relatively easily with only minor changes. A Taylor Process Window Human Machine Interface (HMI) package was installed on a Windows 95 based Pentium computer to provide monitoring of both the Water Treatment Plant and the remote sites.

Modicon PLCs were installed at the eight remote fresh and waste water treatment sites. Modicon PLCs were chosen for the Modbus protocol which allowed easier communication through the radio modems. Modicon Micro PLCs were used at the remote sites where monitoring of pump and high level status was required

for display at the Water Treatment Plant site. At the main South East Lift Station and Reservoir # 2, Modicon Compact 984s were selected to perform pump control as well as monitoring.

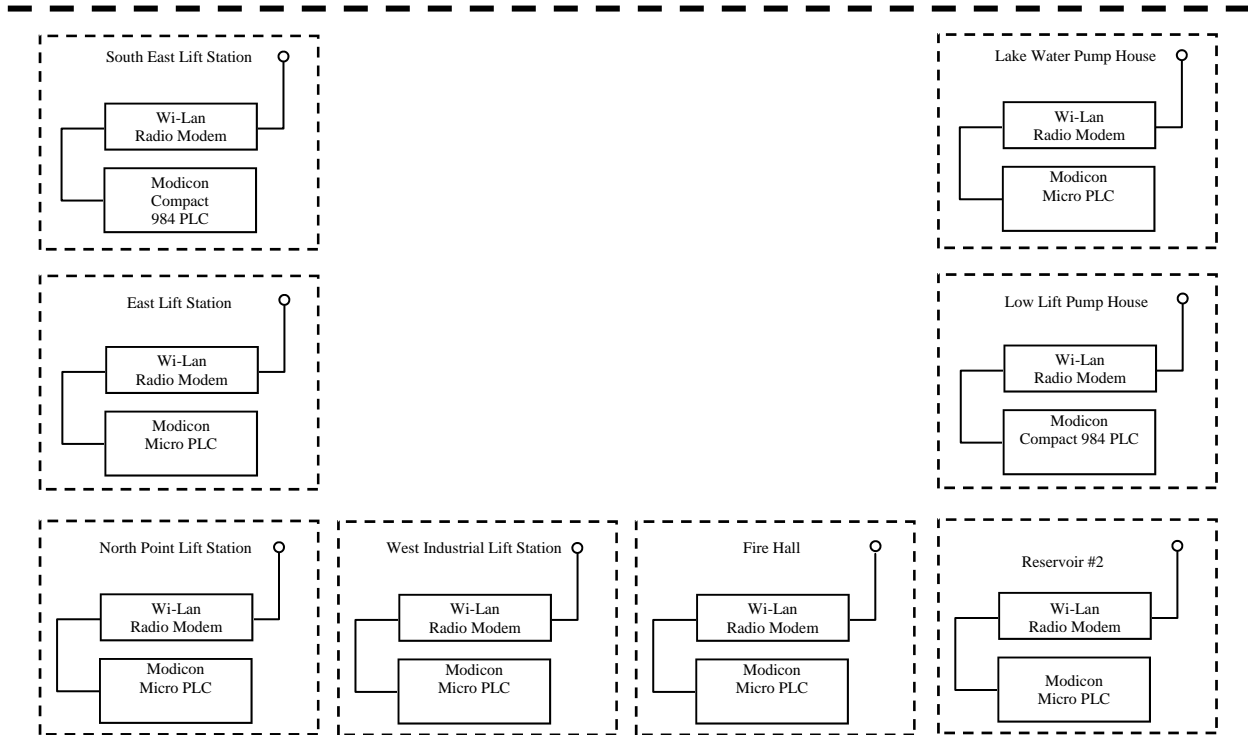
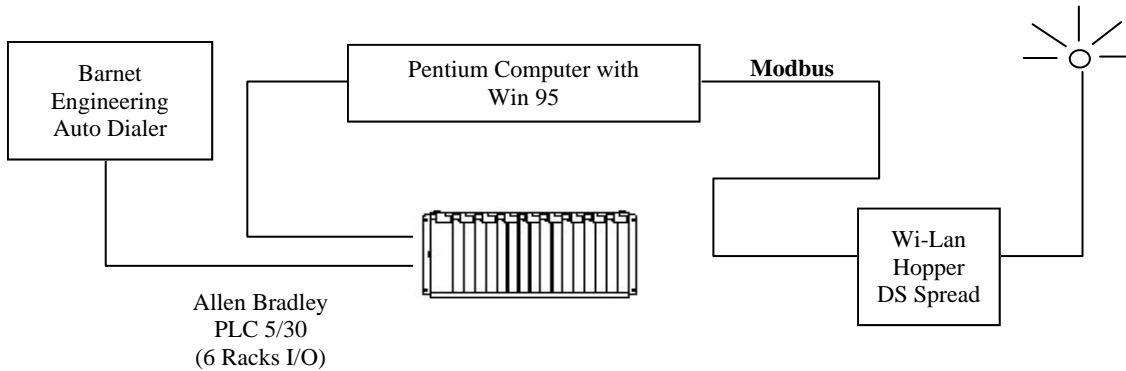
Wi-Lan Hopper DS radio modems were selected for the communications between the remote sites and the main Water Treatment Plant. These modems were selected because their spread spectrum technology requires no federal radio license. This resulted in savings for the Town of Bonnyville, as the lease lines from Telus were no longer required. Radio towers were installed at six of the remote sites to achieve the required line-of-site clearances.

A new auto-dialer was purchased from Barnett Engineering Ltd. in Calgary to replace the existing auto-dialer at the Water Treatment Plant



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System Specifications:

- 1 Allen Bradley 5/30 PLC
- 6 Remote I/O Racks
- 6 Modicon Micro PLCs
- 2 Modicon Compact PLC
- 9 Wi-Lan Hopper DS Radio Modems
- 1 Barnett Auto Dialer
- 1 Pentium Computer/Win 95
- 1 Taylor Process Window

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

www.hinz.com