



A Rockwell Automation Company

## Albchem Manitoba New Hargrave Plant

### The Client:

Albchem is a major provider of sodium chlorate, which is used in production of high-grade pulp. Albchem

uses an electrolysis process and a variety of support processes throughout the plant.

### The Requirement:

Albchem contacted Hinz to provide electrical, instrumentation, control engineering and commissioning assistance for their new plant in Manitoba. Process design was lead by the parent company Krebs from their head office in Montigny-le-Bretonnex France. Walter Chambers and Associates of

Edmonton provided the plant mechanical/civil/structural engineering component.

Project communications and document transfers are routinely accomplished using the Internet.

### The Design Solution:

Engineering design included all aspects of electrical, instrumentation and control required to complete the Albchem's new plant. The design team consisted of a project manager, power system engineer, electrical designer, instrumentation designer and a systems engineer. The design team evaluated the existing operating plant electrical systems, in Bruderhiem, Alberta making recommendations and implementing the necessary changes for the new plant electrical, instrumentation and control systems.

The new 25kV power distribution includes the 20MVA power transformer and rectifier system supplied by Fuji, 25kV Switchgear, and substation to metering facilities, and an addition of a new harmonic filter bank . The DC bus system layout and capacity of 150,000 Amps was also designed, reviewed and verified for structural and electrical integrity.

Plant services also included over 1000kVA in low voltage motor loads including the installation of VFDs and cooling water pumps. The new electrical MCC room contains the new 600V motor control center, 600V VFDs, all 347V and 120 lighting and power distribution panels, and DCS control cabinet with a Rockwell Process Logic .

An emergency diesel stand-by generator set was specified. This generator is used to provide emergency power upon failure of the 25kV feed to the rectifier. Its main purpose is to provide power to a DC polarizer

rectifier used to protect the process equipment during utility power failures. It provides power to this polarizer via a second emergency MCC utilizing an automatic transfer switch located in the MCC.

A second UPS system was also installed to provide clean power instruments and the DCS. It is also connected to the emergency generator. Engineering design included all aspects of electrical, instrumentation and control required to complete the new Albchem plant.

The instrument detailed design included development support of instrument P&IDs, the generation of data sheets and loop drawings instrument layout, installation detail drawings, transposition of European style data sheets, including some translation of French, to ISA format.

With the large number of instruments, one major goal accomplished was the standardization of instrument loop drawings. Hinz's "Project Management Database System" (PMDS) was used to develop many drawings. This system is a tool which links multiply database to populate information on standard AutoCAD drawings. This system was used to create the instrument index and all data and loop sheets, cable schedules, I/O listings for the DCS, cable interconnection drawings etc.



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### System Specifications:

- Fuji Rectifier - 28MVA
- DC bus - 150,000A
- Rockwell Automation
  - ProcessLogix™ - Distributed Control systems
  - ControlLogix™ PLC Systems
  - Control-Net™ Redundant - Plant Network
- 25kV Distribution
- 2.5 MVA plant services transformer

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

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