HINZ
A Rockwell Automation Company

# Weyerhaeuser
# OSB Plant

## The Client:

Initiated as a Saskfor MacMillan joint venture, MacMillan Bloedel Ltd. purchased all Saskfor shares and assumed 100% control of the project. In 1999 Weyerhaeuser Company acquired ownership of MacMillan Bloedel Ltd. and all projects in progress.

Weyerhaeuser Company is an international forest products company celebrating its 100th anniversary. Their business is forest management with pulp & paper and wood products manufacturing facilities. Weyerhaeuser Company Ltd. is a subsidiary of Weyerhaeuser Company in Federal Way, WA. Weyerhaeuser's Canadian operations began in 1965 and has grown to become Canada's largest forest products company, spanning nine provinces and employing over 11,500 people.

## The Requirement:

Hinz was procured to provide electrical/controls engineering services for the construction and commissioning of a green field orientated strand board plant. The new plant is designed to produce 570 million square feet of 3/8" OSB per year. The process consists of six log ponds, three cambium ring debarking lines, three stranders, two green bins, two hot oil energy systems, two drum dryers, two rotary screens, four dry bins, one wax and resin system, four drum blenders, one OSB forming line, press & finishing line, and one plant wide pneumatic dust system.

Hinz' scope of work involved project management of all aspects of the electrical/controls, as well as hardware and software design. Included within the scope was coordination of equipment vendors who were supplying their own PLC program and HMI graphic interface. The hardware design included power distribution, electrical, lighting, and control systems for all areas of the plant. Software design included the control system configuration, PLC programming and HMI graphics for the green end/waste PLC, dryer and screening PLC, EFB, blending/wax and resin PLC, and coordination of vendor PLC programs.

## The Design Solution:

Hinz provided complete electrical and controls engineering services. The design phase included working with the client to select major electrical and controls hardware, power and electrical design, instrumentation design, specification and supervision of control systems provided by others, HMI configuration, programming of PLC systems, and complete documentation. The construction phase included construction and commissioning supervision.

Weyerhaeuser's OSB 2000 plant has over 830 motors with a connected load of 24,000HP. The main power supply at 72kV was transformed to 4.16kV with 10/13.3 MVA transformer. The 4.16kV was distributed to four 2.5 MVA 4.16kV / 600V transformers and one 1 MVA 4.16k / 480V transformer with two sections of switchgear 3000A and 2000A respectively. The switchgear also incorporated 6 RVAT starters and 16 FVNR starters for motors over 200 HP. Four 4000A 600V switchgear line-ups distributed power to the twenty-one 600V MCCs. The MCC layouts, which included 164 VFDs and 12 soft starts, were structured according to process areas to facilitate fast checkout and startup of all components as construction was completed. This approach allowed commissioning to proceed as construction of each area was completed. All motor control I/O was installed and pre-wired within the MCCs by the MCC manufacturer to minimize errors and expedite the installation process.

Plant control for each area was achieved using Allen-Bradley PLC ControlLogix processors. Allen-Bradley PLC 5/20C processors were used for applications requiring linear positioning modules. Communication between PLC and HMI was achieved using an Ethernet network. ControlNet networks were used for PLC to PLC, PLC to I/O racks and PanelView communication. Dedicated DeviceNet networks were used to interface VFD and soft start I/O to the PLC via MCC I/O racks. The Human Machine Interface (HMI) is based on Wonderware's InTouch software for Windows. Allen-Bradley PanelViews with touch screens are used in the field. Plant operations can be monitored and controlled from one central control room that is located facing the Siempelkamp press.

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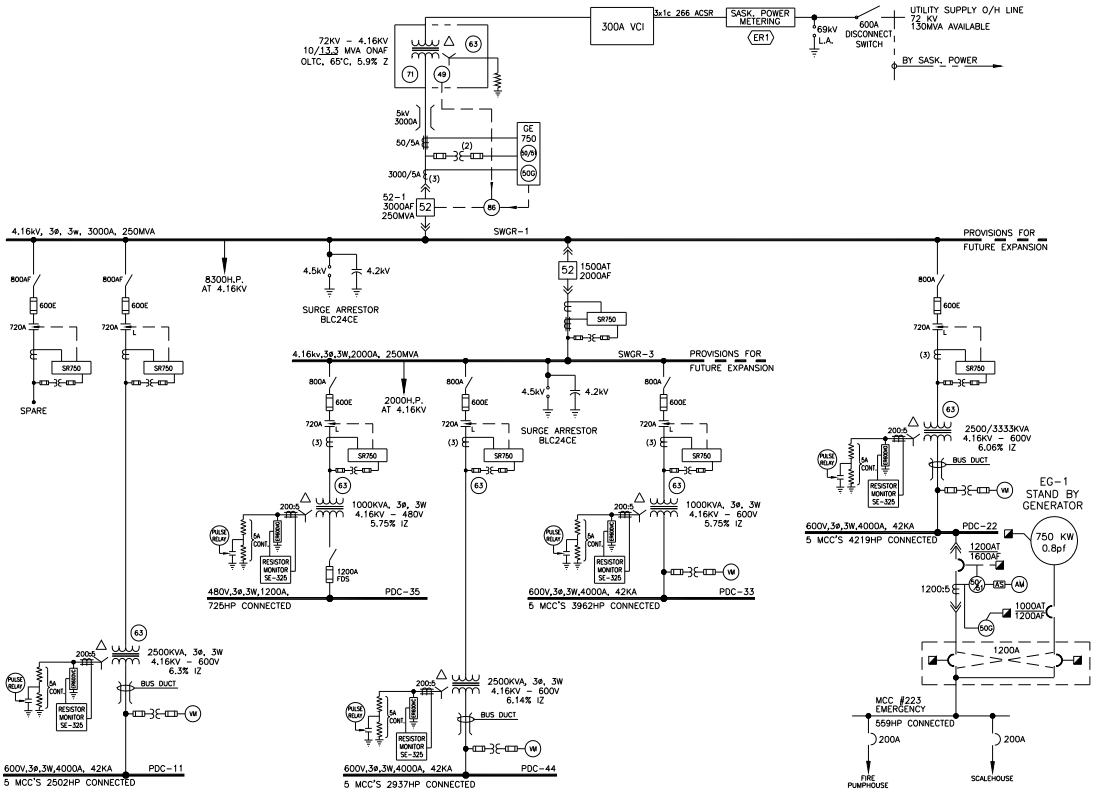


## System Specifications:

- 24,000 HP connected load
- 1 - 10 / 13.3 / 16.6 MVA 72kV delta / 4.16kV wye transformer
- 1 - 3000A 4.16kV Switchgear / MCC lineup including 6 RVAT starters
- 1 - 2000A 4.16kV Switchgear / MCC lineup
- 4 - 2.5 MVA 4.16kV delta / 600V wye transformers
- 4 - 4000A 600V Power Distribution Centers
- 1 - 1 MVA 4.16kV delta / 480V wye transformer
- 1 - 2000A 480V Power Distribution Center
- 21 - 600V MCC including 164 VFDs and 12 soft starts
- 750kW Emergency Generator and 1600A Transfer Switch
- 30kVA UPS to power all PLCs and PC's

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

**www.hinz.com**