



A Rockwell Automation Company

Slocan Forest Products Fort Nelson OSB Plant

The Client:

Slocan Forest Products is a publicly traded Canadian company headquartered in Vancouver, BC, that specializes in the sawmill industry. They made their debut into the

engineered wood business with their first OSB plant located in Fort Nelson, BC.

The Requirement:

The Fort Nelson plant has a design capacity of 466 million square feet annually. The process uses a 12 x 24 foot - 10 opening press and produces North American and Japanese panel sizes. Hinz was selected as the electrical/controls consultant based on our single discipline specialty nature and extensive OSB design experience.

Hinz' responsibility included the design or supervision of design of the electrical and control systems for all areas of

the plant. The design standards developed had to be flexible enough to accommodate multiple OEM vendors, but also stringent enough to achieve a reasonable level of consistency in drawing reference, numbering philosophies and overall control system design. Communication is an important criteria to project success since several of the large process equipment vendors were from Germany.

The Design Solution:

Hinz provided complete electrical/control engineering and project supervision/management for the electrical construction of the plant. Responsibilities included selection of major electrical and control hardware, electrical design, instrumentation design, control system design, supervision of control system design by others, documentation, installation supervision, training, and plant start-up.

The plant has over 680 motors with a total connected horsepower of 17,000. The plant power is supplied from a 25 - 4.16kV substation, owned by Slocan. The 4.16kV system feeds the 2500kVA substations and the motors larger than 200HP. The 2500kVA, 4.16kV-600V unit substations distribute power to the MCCs. The 600V MCCs distribute power to the 600V motors and other loads. The MCC layouts and motor I/Os are structured according to the process areas, allowing for fast start-up and check-out of all the components as each process area is completed. This approach provides increased flexibility and minimal impact on construction occurring in other areas of the plant. All motor control I/O were installed and pre-wired within the MCCs by the MCC manufacturer to minimize errors and expedite the installation and the commissioning process. Field I/O were enclosed in remote I/O cabinets and distributed throughout the plant as required. The plant also has a 750kW, 600V emergency generator that feeds an emergency MCC through the transfer switch. This generator is for providing power to critical equipment in case of a utility power failure. It feeds such equipment as emergency lighting, UPS, dryer drum drive, outfeed conveyors and fire dump conveyors, primary loop oil circulation pump, refractory cooling fans, grate water pumps, scale house, pump house, sanitary sewer pumps, fuel storage pumps, etc.

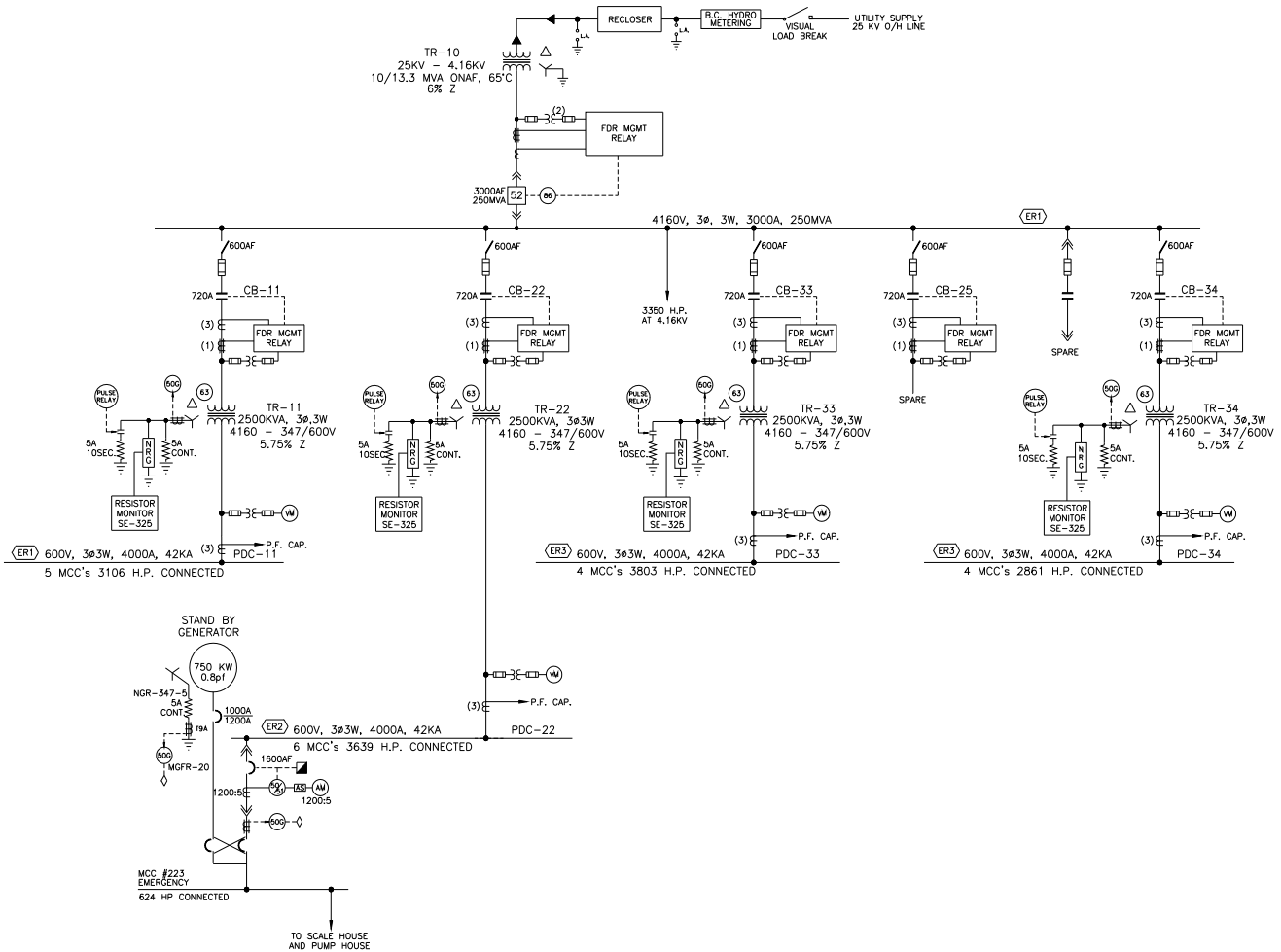
The control system configuration was structured on the philosophy of implementing individual PLCs in stand alone process areas. Plant control was distributed into seven individual process areas with each area having an Allen-Bradley PLC 5/40 or 5/60 to implement the process control. The design and supply of the control systems for these process areas was split between Hinz and the equipment vendors because of the concern over performance guarantees. Hinz was responsible for the Log Handling, Waste system, EFB system, Dust system, and supervision of the control system design supplied by the main process vendors. Communication between the PLCs and HMIs was achieved with three separate data highways. Two highways are dedicated to communications between the PLCs and HMIs. Highway #1 data exchange is comprised of Log Handling, Waferizing, Pollution Control, Dust Collection, Blending, Energy System, Finishing Line, and Drying Information. Highway #2 is used exclusively by Schenck/Dieffenbacher for Forming and Press PLC/HMI communications. The third highway is dedicated to inter PLC communications and PLC programming.

The HMI system implemented is InTouch (by Wonderware) for Windows. It is running on Texas Micro 486 industrial computers. A total of six stations are provided in the control room with the following distribution: two stations provide redundant control for the Forming and Pressing Systems provided by Schenck/Dieffenbacher; two stations provided redundant control for the Dryers provided by Babcock; one station is dedicated to the Energy System; and one station is used for Log Handling and Finishing.



A Rockwell Automation Company

Slocan Forest Products Fort Nelson OSB Plant



System Specifications:

- 17000 HP Connected
- 680 Motors
- 25kV Pole Mount Vacuum Breaker
- 10/13.3 MVA Main Transformer
- 1 - 3000A Main Circuit Breaker
- 1 - 3000A, 4.16kV Switchgear
- 5 - 720A Fused Vacuum Breakers
- 4 - 4.16kV Reduced Voltage Auto Transformer Motor Starters
- 3 - 4.16kV FVNR Vacuum Starters
- 4 - 2500kVA, 4160 347/600V Transformers
- 4 - 5A, 347V High Resistance Grounding Schemes c/w Startco SE-325 Relays
- 4 - 400A, 42kA, 600V PDC's
- 19 - 600V MCCs, 1200A Bus, 42kA Bracing
- 750kW Emergency Generator
- 5 - Westinghouse Digitrip MV & IQ Data Plus II Relays

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

www.hinz.com