



A Rockwell Automation Company

## Grant Forest Products, Clarendon, SC Clarendon Greenfield OSB Plant Power System Design

### The Client:

Established in 1981, Grant Forest Products is an industry leader in the production of Oriented Strand Board (OSB) panels in varying lengths and thickness. They are also manufacture OSB specialty products such as webstock, rim board, and oversized panels. Grant Forest Products is a rapidly expanding corporation supported by corporate

headquarters located in Toronto, ON and administrative headquarters based in Earlton, ON. Sales and marketing teams are situated in Mississauga, ON, while manufacturing operations are located in Englehart, ON, Timmins, ON, High Level, Alberta, and now Allendale, South Carolina and Clarendon, South Carolina.

### The Requirement:

Grant Forest Products selected Hinz as their electrical and controls consulting partner. Hinz was responsible for providing the electrical and controls engineering services for the construction and commissioning of a green field Orientated Strand Board plant in Clarendon, SC. The new plant is designed to produce 900 million square feet of 3/8" OSB per year.

Hinz' scope of work involved the project management of all aspects of the electrical and controls system, and the hardware and software design. Included within the scope was the design and equipment specification for the power distribution system.

### 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 system provided by others, HMI configuration programming of PLC systems, and complete documentation set.

The plant has over 1220 motors with a connected load of 43,000HP. The incoming 160kV power supply was transformed to 13.8kV with a 20 MVA transformer. The 13.8kV was distributed to ten 2.5 MVA 13.8kV / 480V transformers, one 10 MVA 13.8KV / 4160V transformer and two 7.5 MVA 13.8kV/4160V transformers. Three Medium Voltage MCCs contained five 1800 HP RVAT starters, and 16 FVNR starters. There were 44 low voltage MCCs with a total of 600 vertical sections. All the

VFDs and motor starters with the MCCs were pre-wired and configured at the MCC factory. This task reduced wiring errors and expedited the installation process.

Hinz performed short-circuit, load flow, relay coordination, motor starting, voltage drop, and arc flash studies.

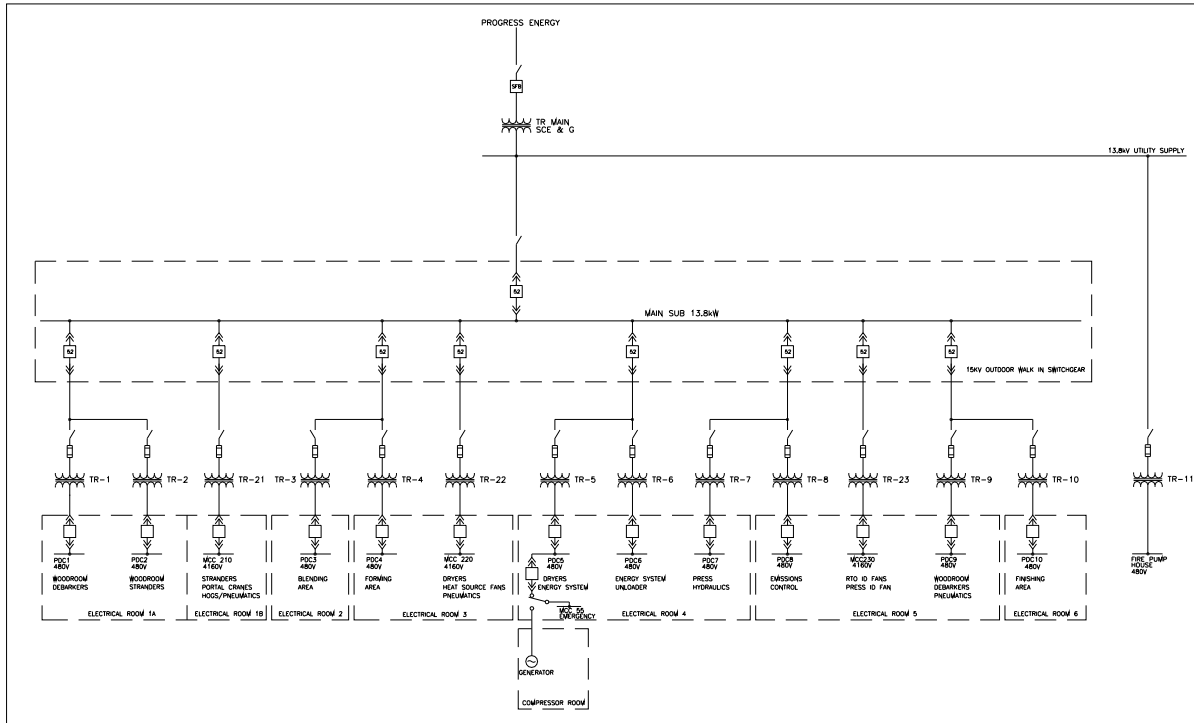
The plant was controlled and monitored from a central control room.

The construction phase included dedicated onsite construction supervision and commissioning services.



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## System Specifications:

- 43,000 HP Connected Load
- One 20 MVA 160 kV/ 13.8 kV Substations
- One 10 MVA 13.8 kV/4.16 kV, two 7.5 MVA 13.8kV/4.16 kV Substations
- Ten 2.5 MVA 13.8 kV/460 V Substations
- Three Medium Voltage MCC c/w three 1800 HP and three 1500 HP RVAT Starters and eleven FVNR starters
- Ten 480 V , 4000 Amp PDCs
- Forty Four 480 V MCCs c/w 428 VFDs and 792 FVRN starters
- One 1000 kW Generator
- Five – 15 kVA UPS and one 30 kVA UPS

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

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