



A Rockwell Automation Company

Louisiana Pacific Corp. Clarke County, Alabama, OSB Plant - Power Engineering

The Client:

Based in Nashville Tennessee, Louisiana Pacific Corporation is one of the largest building products manufacturers in North America with recent annual sales approaching 3 billion dollars. Key products of Louisiana Pacific are Oriented Strand Board (OSB), decking,

molding and other trimming materials, vinyl and wood siding, and other engineered wood products.

LP was founded in 1973 and now has manufacturing plants in the United States, Canada and Chile.

The Requirement:

LP selected Hinz as their electrical and control consulting partner for building LP's OSB plant in Clarke County, Alabama. Hinz was responsible for providing the electrical/controls engineering services for the design of a Greenfield Orientated Strand Board plant. The new plant was designed to produce 700 million square feet of 3/8" OSB per year. The process consists of two portal cranes, three drum debarker lines, three stranders, two green bins,

two energy systems, two drum dryers, two WESP & RTO systems, two drybins, one wax & resin system including three blenders and three powder resin feeders, one OSB forming line with a screen cleaning system, multi-opening press, bio-filter & finishing line, and one plant wide pneumatic dust system.

The Design Solution:

Hinz' scope of work involved project management of all aspects of the electrical/controls, as well as the hardware and software design. The design phase included working with the client to select major electrical and controls hardware. Hinz was responsible for the co-ordination of the equipment vendors who were supplying their own PLC programs and HMI graphics as well as the detailed control system design and programming of the Green End and the Wax & Resin Systems. The scope also included the design and configuration of the Industrial Ethernet communication system, the plant CCTV system, and a Factory Acceptance Test (FAT) of the PLC/HMI logic for all process areas. The control system configuration incorporated an individual PLC for each process area. Plant control for each area was achieved using Allen-Bradley PLC ControlLogix processors. At LP's request, communication between the PLC and HMI was accomplished by using two parallel Ethernet Networks with a one gigabit fiber-optic backbone in Ring topology. A dedicated Ethernet/IP network was used for PLC to field IO Panels and a separate Ethernet/IP network for MCC/Drive communications with the PLCs. The Human

Machine Interface (HMI) is based on Industrial Application Server (IAS) and Wonderware's InTouch 9.5 utilizing smart symbols, galaxy repository, application object servers (AOS) and Data Access Servers (DAS). Factory Acceptance Testing (FAT) was accomplished through I/O testing of the entire plant in the Hinz Lab.

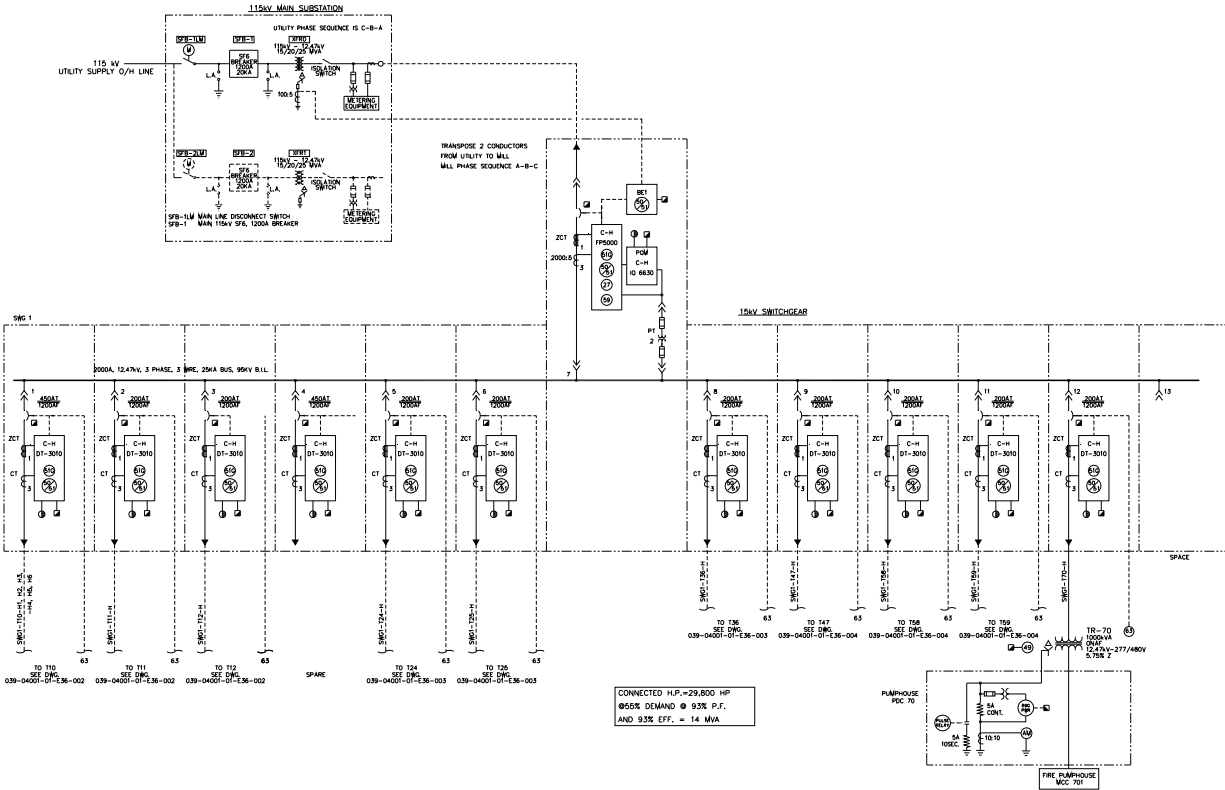
The plant is controlled and monitored from a central control room. The plant has over 750 motors with a connected load of 31,000 HP. The incoming 115 kV power is transformed to 12.47 kV with a 15/20/25 MVA transformer. The 12.47 kV is distributed to nine 2.5MVA 12.47kV/480V transformers and one 10/13.3 MVA 12.47kV/4160V transformer. The Medium Voltage MCCs contain five 1800 HP RVAT starters, two 1000 HP VFDs and three FCB & FVNR starters.

There are 38 low voltage MCCs. All the VFDs and motor starters within the MCCs are pre-wired and configured in the factory. This task has reduced the wiring errors and expedited the installation process.



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System Specifications:

- Over 31,000 HP Connected Load
- 1 – 15/20/25 MVA 115 kV/12.47 kV Substation
- 1 – 10/13.3 MVA 12.47 kV - 4.16 kV Transformer
- 8 – 2.5 MVA 12.47 kV - 480 V Transformers
- 1 - 1.0 MVA 12.47 kV - 480V Dedicated Transformer for the Fire Pump House
- 2 Medium Voltage MCCs c/w five 1800 HP RVAT, two 1000 HP VFDs and three FCBs & FVNR
- 2 Portal Crane Feeds at 4.16 kV
- 8 – 480 V, 4000 Amp PDCs
- 38 – 480 V, MCCs c/w 180 VFDs, and 670 starters
- 1 – 1000 kW Emergency Generator
- 1 - gigabit Ethernet system for the PLC to HMI communications
- Ethernet System for PLC to VFD communications

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

www.hinz.com