



A Rockwell Automation Company

Norbord - Tupelo Oriented Strand Board Plant

The Client:

Norbord Industries Inc. is a wholly owned subsidiary of Noranda Forest Inc., headquartered in Toronto, Ontario. Norbord is a leading international manufacturer, marketer and distributor of wood and wood composite panel products. They employ 1,200 people worldwide and operate OSB, MDF and

plywood mills in Canada, United States and Scotland. Tupelo is Norbord's fifth OSB plant with operations currently in production at Bemidji, Minnesota; Vald'or, Quebec; La Sarre, Quebec and Inverness, Scotland.

The Requirement:

The Tupelo plant has a design capacity of 456 million square feet (3/8 inch basis) annually. It employs a 9 x 24 foot press line and is the first OSB mill in the world to implement conveyor drying technology. Norbord commissioned a design team with extensive experience in the Oriented Strand Board industry. PS&E Projects Ltd. was selected as the process/mechanical consultant and Hinz was selected as the electrical/controls consultant based on our single discipline specialty nature and our specific OSB industry

experience.

Hinz' responsibilities included the design of the electrical and control system configuration. This design had to be flexible enough to accommodate multiple vendors, but also needed to keep the number of vendors (and therefore spare parts inventory) to a minimum. Communication was extremely important to the project's success since several of the large process equipment vendors were from Germany.

The Design Solution:

Hinz provided complete electrical engineering and project management services including selection of major electrical and controls hardware, electrical design, instrumentation design, specification and supervision of control systems provided by others, HMI configuration, programming of a number of the PLC systems, documentation, on site-commissioning and installation supervision.

The control system configuration required individual PLCs in stand alone process areas based on process independence and vendor supply. Plant control was distributed between seven process areas with each area having a PLC 5/40 or 5/60 to implement the control requirements. Some of the PLCs were supplied by the process vendors because of the concern over performance guarantees. Communication between the PLCs and the HMIs was achieved with four separate data highways. Two highways are dedicated to HMI/PLC communications and two highways are used for PLC intercommunications. The Human Machine Interface (HMI) is based on Allen-Bradley's ControlView software package operating on PC-based computers. A total of five stations are provided in the control room with the following distribution: two sta-

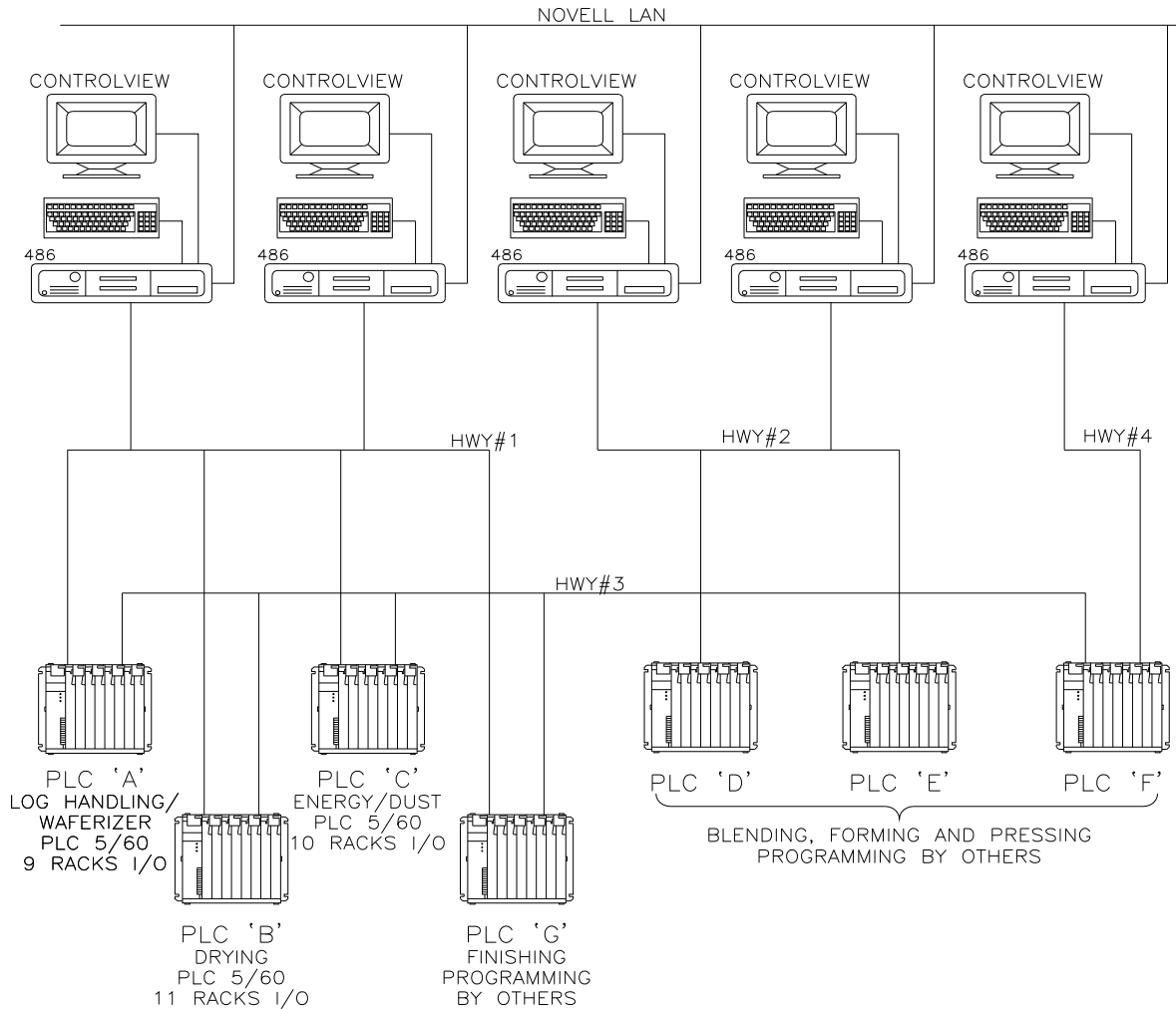
tions provide redundant control for the Blending, Forming and Pressing systems provided by Siempelkamp; one stand alone station provides loop control of the press (by Siempelkamp) and two stations provide redundant control of all other process areas. Each HMI station uses Touch Screens technology to access graphic screens, acknowledge alarms and perform control functions with a minimal number of steps.

The Tupelo plant has over 700 motors with a connected horsepower of 23,000. The main plant distribution is 13kV with 13kV/4160V and 13kV/480V unit substations distributed throughout the plant to provide feeders to motors as required. MCC Layouts were structured according to process areas allowing for fast start-up and check-out of all components as each process area was completed. This approach provided increased flexibility and minimal impact on construction occurring in other areas. All motor control I/O was installed and pre-wired within the MCCs by the MCC manufacturer to minimize errors and expedite the installation and commissioning process. Field I/O was enclosed in remote I/O cabinets and distributed throughout the plant as needed.



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System Specifications:

- 700 Motors, 23,000 HP Connected
- 5 ControlView Stations
- 2 Stations by Hinz with 3,000 Tags
- 7 Allen-Bradley PLC 5's
- 4 Allen-Bradley Data Highways
- Ethernet LAN for MIS Interface

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

www.hinz.com