HINZ
A Rockwell Automation Company

Norbord Industries Inc.
Oriented Strand Board Plant

The Client:

Norbord Industries Inc. is a wholly owned subsidiary of Nexfor Inc., headquartered in Toronto, ON. Norbord is a leading international manufacturer, marketer and distributor of wood and wood composite panel products. With annual sales in excess of $1 billion, Norbord operates OSB, MDF and plywood mills in Canada, United States and Scotland. Kinards is Norbord's sixth OSB plant, with operations currently in production at Bemidji, Minnesota; Tupelo, Mississippi; Val-d'Or, Quebec; La Sarre, Quebec and Inverness, Scotland.

The Requirement:

The Kinards plant has a design capacity of 500 million square feet (3/8 inch basis) annually. It employs an 8 x 181 foot continuous press line and conveyor drying technology. Norbord commissioned a design team with extensive experience in the Oriented Strand Board Industry. Industec (a division of UMA Industrial) was selected as the process/mechanical consultant and, based on our single discipline specialty nature and our specific OSB industry experience, Hinz was selected as the electrical/controls consultant .

Hinz' responsibilities included the design, construction, supervision and commissioning of an electrical and control system. 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. Process equipment vendors were from Germany, Canada and the USA, requiring regular communication during the project design.

The Design Solution:

Hinz provided complete electrical and controls engineering services including selection of 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, documentation, on-site commissioning and installation supervision.

The control system configuration created a need for individual PLCs in stand-alone process areas based on process independence and vendor supply. Plant control for each area was achieved using an Allen-Bradley PLC 5/20C, 5/40C and 5/80C processor depending on 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 using an Ethernet network. A dedicated ControlNet network was used for PLC to PLC, PanelView and I/O communication. The Human Machine Interface (HMI) is based on Allen-Bradley's RSView software package operating on Texas Micro Industrial computers. One control room was dedicated for control of the energy and dryer systems with three RSView stations for control of this area. A second control room was used for control of the press, forming and blending areas of the plant. Four RSView stations were used for the press (by Siempelkamp) and one for the blending and dust systems. In addition to the HMI stations in the control rooms, Allen-Bradley PanelViews with touch screens are used in the field.

The Kinards plant has over 800 motors with a connected horsepower of 26,000. The main plant power is supplied from a 100kV - 4.16V utility substation. The 4.16kV system feeds the 2500kVA substations and motors above 200 HP. The 4.16V - 480V 2500kVA unit substations distribute power throughout the plant to the electrical equipment and the motors. 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 were installed and pre-wired within the MCCs by the MCC manufacturer to minimize errors and expedite the installation and commissioning process. Field I/O were enclosed in remote I/O cabinets and distributed throughout the plant as needed.

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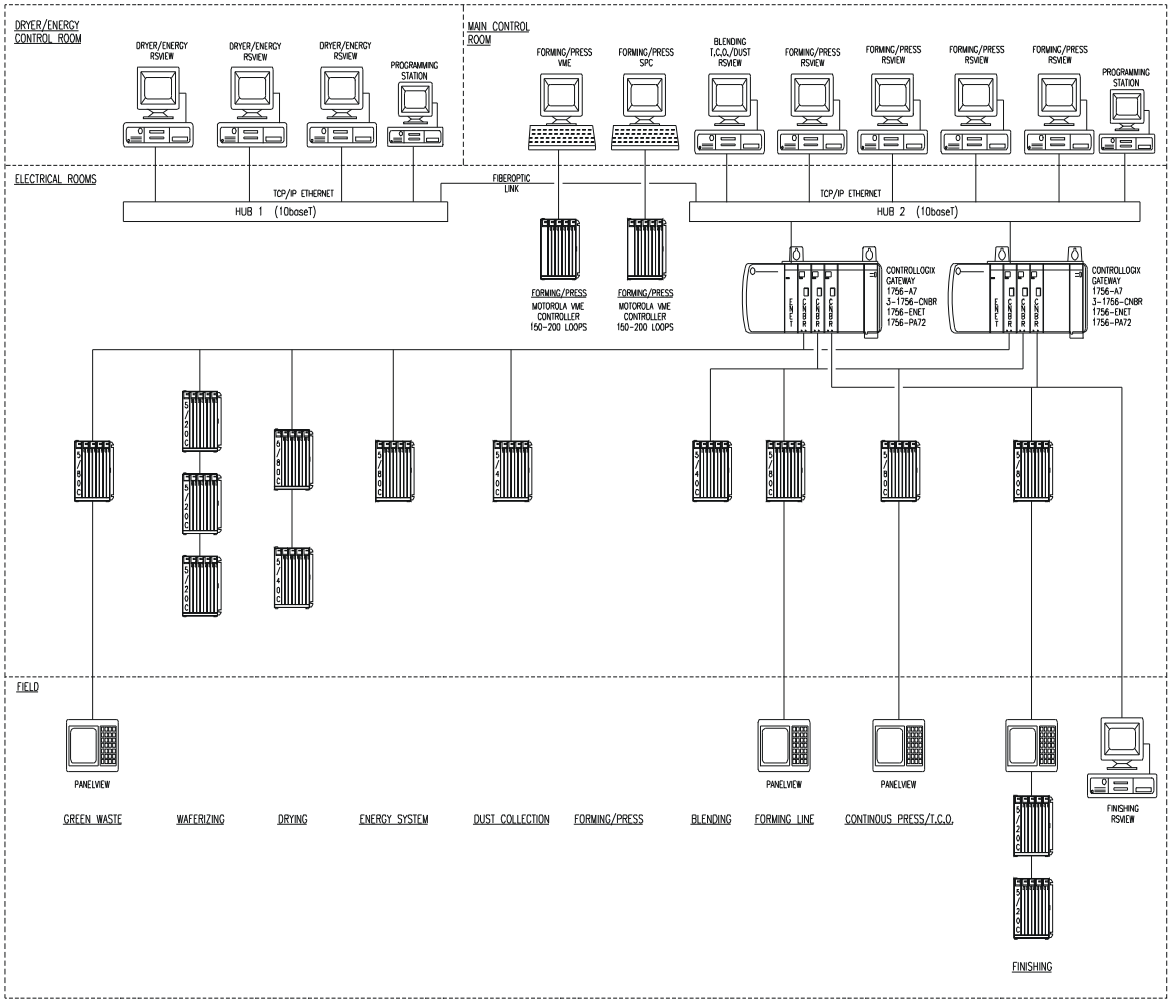

System Specifications:

- Over 800 Motors - 26,000 HP Connected
- 11 RSView Stations (some by vendors) 2 Programming Stations
- 14 Allen-Bradley PLC 5's (some by vendors)
- 14 Allen-Bradley PanelViews
- Ethernet LAN for HMI/PLC Interface
- ControlNet LAN for PLC to I/O & PanelView Interface
- ControlNet LAN for PLC to PLC Interface

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

www.hinz.com