# Hinz Automation Inc.
# Norbord - Kinards

## The Client:

Norbord Industries Inc. is a wholly owned subsidiary of Nexfor Inc., headquartered in Toronto, Ontario. Norbord is a leading international manufacturer, marketer and distributor of wood and wood composite panel products. They employ over 1,300 people worldwide and operate 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 a 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 Hinz Automation was selected as the electrical/controls consultant based on our single discipline specially nature coupled with specific OSB industry experience.

Hinz Automation's 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. Process equipment vendors were from Germany, Canada and the USA, requiring regular communication during the project design.

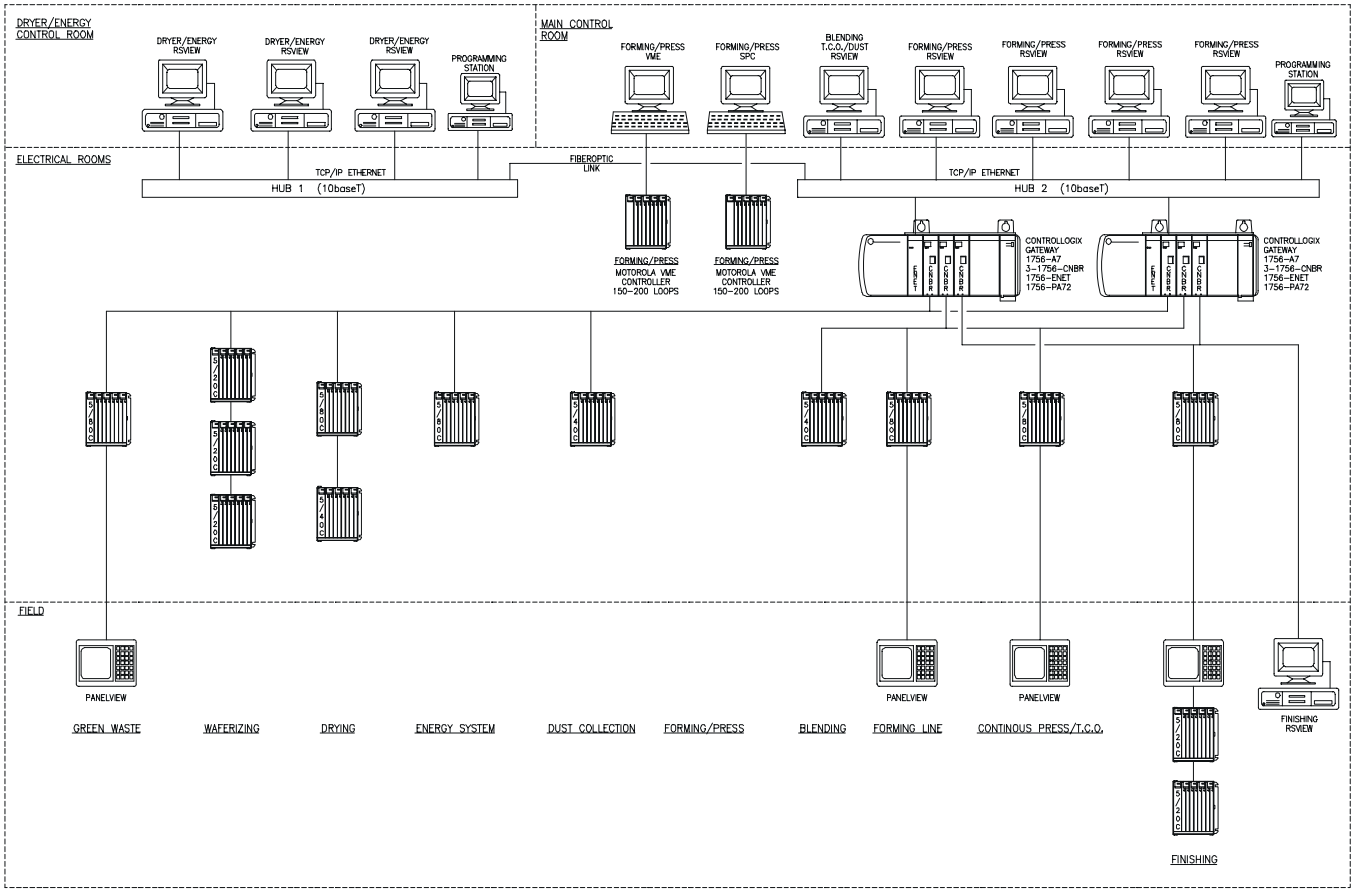
## The Design Solution:

Hinz Automation 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 necessitated the need for individual PLC's 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 or 5/80C processor depending on the control requirements. Some of the PLC's were supplied by the process vendors because of the concern over performance guarantees. Communication between the PLC's and the HMI's 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 touchscreens 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 - 4160V utility substation. 4160V - 480V unit substations distribute power throughout the plant to provide feeders to electrical equipment and 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 was installed and pre-wired within the MCC's 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.

# Oriented Strand Board Plant




## System Specifications:

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