



A Rockwell Automation Company

Gerdau MRM Steel Generator Back Up and Pump Control

The Client:

Gerdau MRM Steel, a rolling mill in Selkirk, Manitoba is a world class producer of specialty steel products including blades and cutting edges, elevator guide rails, truck trailer beams, and rebar. Their annual

shipments total approximately 291,000 tons of steel and annual sales total nearly \$180 million.

The Requirement:

MRM needed to repaint the inside of their water tower but the water tower was being used for an emergency water supply and, if required, process water. In order to satisfy safety and insurance guidelines, MRM needed an alternate emergency water supply while the water tower was out of service. The solution chosen was to install an emergency generator for the existing water pumps to ensure they would be available at all times.

After the work on the water tower was completed, MRM required further changes to their pump control to improve the process. They wanted to change to a lead-lag control philosophy based on water level.

MRM was also upgrading one of the pumps from 50 HP to 60 HP. This meant a new starter control cabinet would be needed as well as new power cable.

The Design Solution:

An analysis of the current process water system concluded that there was enough water pressure to provide the required emergency water. However, in order to ensure the pumps were available during a power failure in the plant, a back up generator was required.

The backup generator chosen was a 200 kW, 600A unit mounted on a trailer. A transfer switch was also installed to automatically switch over to the generator power after the generator was successfully started so that water could be restored within seconds.

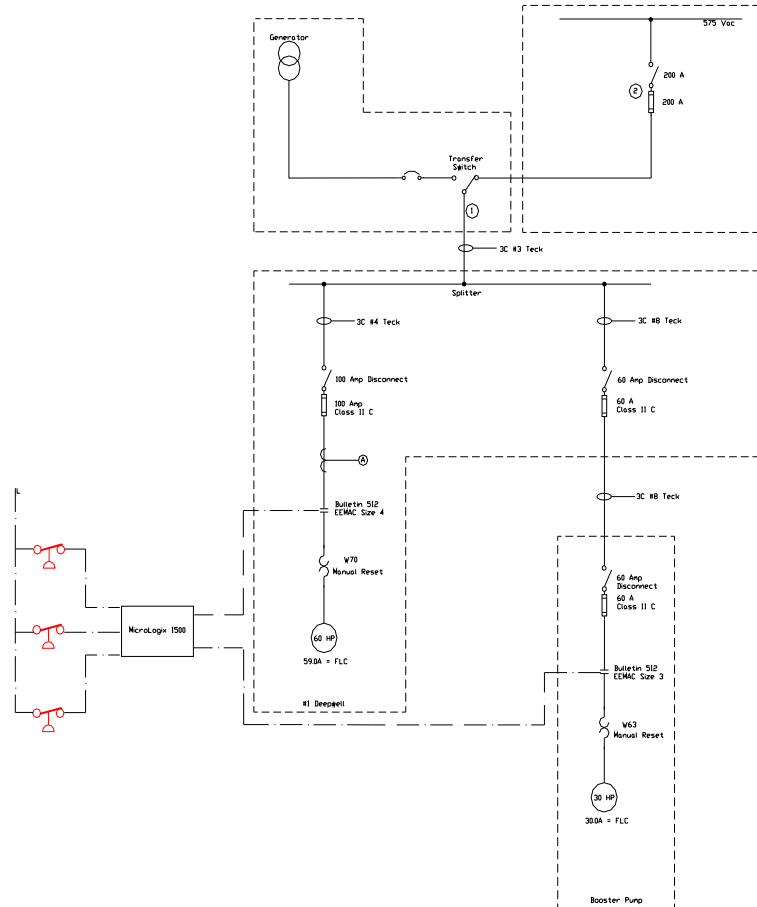
During the painting of the water tower, three pumps were used and were controlled via water pressure.

After the painting was completed, programming changes were made to an existing PLC 5 so that all the pumps were controlled via water level, with the two main pumps running in an alternating lead-lag fashion and the booster pump would come on if a low level set point was reached. This control change will greatly reduce the maintenance requirements for the pumps.



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System Specifications:

- Allen-Bradley MicroLogix 1500
- Allen-Bradley PLC 5
- Trailer mounted 200 kW Generator
- 600 Amp Transfer Switch
- 3 Differential Pressure Switches
- 1 Tank Level Bubbler
- 3 Motor Starters

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

www.hinz.com