



A Rockwell Automation Company

Cariboo Pulp & Paper Quesnel Tie Line Control Upgrade

The Client:

Cariboo Pulp and Paper Co. is a bleached kraft pulp mill jointly-owned by Weldwood of Canada Limited and Daishowa-Marubeni Ltd.. The mill's annual output is 340,000 metric tons. Daishowa exports 50% of the pulp produced to markets in

Japan, Southwest Asia and the Pacific Rim while Weldwood sells to North America and Europe. The mill is located near Quesnel, BC and employs approximately 400 people.

The Requirement:

Cariboo Pulp and Paper Co. awarded Hinz Automation the contract to design their new Tie Line Controller. The existing GE Tie Line Controller was installed when the plant was built in 1972 and was designed to manage the power supplied from their 33 MW turbine generator and the Utility transformer. The existing controller was a "black box" and it was no longer being supported by the vendor. Although this controller

had been reliable its operational lifetime had been exceeded and it needed to be replaced.

The project must also meet the corporate objective of reduce operating costs. This objective will be met by designing the new control system to operate their generator at its optimal output level thereby reducing the amount of power purchased from the local utility company .

The Design Solution:

Cariboo Pulp and Paper Co. decided the best option for replacing the existing tie line controller was with a PLC/DCS solution. All the field devices and equipment sensors would be rewired to a new GE series 90/70 PLC system. The PLC system would be used to monitor the power system and to determine the optimal output levels for the generator. The PLC system utilizes Genius PowerTRAC modules to monitor the power system. These modules monitor the power system's current and voltage levels. From these values, the module calculates active power, reactive power, and power factor. One of these modules has been installed in the main substation, and is used to monitor the incoming power. The other one has been installed in the turbine generator room, and is used to monitor the generator's output power. The existing DCS system will be used as the operator interface.

The new control system has several enhanced features over the existing controller. As an example, the new tie line controller is designed to optimize the generator power output within the constraints of the power system demand, steam availability and turbine loading. By optimizing the power output from their generator, the plant reduced their imported power requirement from the local utility company by 2,500 MWh per year. Based on the present utility rates of \$ 35.00 / MWh (including demand charge) automating the tie-line controller would generate an approximate savings of \$87,000 per year.



A Rockwell Automation Company

Cariboo Pulp & Paper Quesnel Tie Line Control Upgrade



System Specifications:

- GE 90/70 PLC
- GE Genius PowerTRAC Modules

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

www.hinz.com