

Electrical Control System overhaul achieves zero-issue start-up, bringing site-wide integration, easier control and peace of mind to Uruguay pulp mill



Montes Del Plata, the joint venture between Arauco and Stora Enso for the production of sustainable eucalyptus cellulose pulp, had identified opportunities for improvement in its electrical system, which was causing production losses. Working with ABB, the Uruguayan pulp mill undertook a system overhaul to find the visibility and ease-of-use that enabled better maintenance and operational functionality.

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Montes Del Plata mill

A calculated risk

The Montes del Plata mill in southwest Uruguay had taken a multi-supplier approach when they commissioned their pulp mill in 2009. ABB was responsible for the motors, drives, MicroSCADA (now Hitachi Energy), and medium and low voltage electrical equipment. The high voltage equipment and controls were from a competitor.

This siloed approach made managing, modifying and optimizing the electrical system complex, while the recovery from – and prevention of – blackouts was a time-consuming challenge.

The mill, who was happy with how ABB supported the mill, floated the idea of an integrated system that would also move the competitive protection relays under ABB’s control. These were a small but critical part of the system and were working well. Yet, after several discussions with the ABB team, the customer trusted ABB to replace the entire system for streamlined integration. This was due to the mill’s confidence in ABB to handle any issues that resulted from the electrical system overhaul.

Huge undertaking with zero issues

The ABB team won an order for complete mill integration with ABB Ability™ System 800xA Electrical Control System including replacing the protection relays in high voltage and the MicroSCADA (which had 80 protection relays). ABB Ability™ System 800xA Power Control Library (specialized libraries for electrical control), and electrical asset monitoring were also included. The combined power of this solution would give the mill the visibility of the full system for easier operations and faster, more informed maintenance.

The project was complete in spring of 2022, with a ‘silent start up’ which meant a very smooth transition.

“This project was a big risk for us due to the amount of change. I anticipated a start-up of this magnitude would have problems but in reality, we had zero,” said Federico Ferreira, Main Electrical Engineer and Project Lead for Montes Del Plata. “In fact, we were only 15 minutes short of our anticipated start time, so it was excellent.”



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 ABB Ability™ System 800xA Power Control Library will help Montes Del Plata on its journey towards an automated electrified and digitalized mill.

First issue finds immediate resolution

After start-up, the mill experienced electrical disturbances caused by the process itself. The mill was able to analyze the issue remotely with both the deep information found within the system, as well as support from ABB.

“In 30 minutes, we were back online. And in less than five hours, we had made an improvement so we would not have the issue again,” said Ferreira. “This gave us peace of mind that we’d be fine going into the weekend and was a huge improvement on how long it took to troubleshoot in the past.”

For comparison, Ferreira said that a major blackout in 2016 took almost two months to investigate and he estimates given the new integrated system, tools and support from ABB, they would have found the root cause in two days or less. Plus, as of publication date, the mill has not experienced any production losses due to outages since implementation of the new system.

New graphics improve the operator experience

Part of the package included in the Power Control Library are High-Performance Visual Control graphics, which make it easier for all users to take the right decisions in any situation and allow operators, maintenance, and engineers to collaborate in new ways.

Developed based on Abnormal Situation Management best practices, these graphics help focus the eye on the most critical electrical issues such as alarms, electrical faults and trips. Additionally, the user experience is streamlined, with minimal click throughs to get operators to the information they need most.

“We notice the difference most within engineering, where these graphics make it easier to find things,” said Ferreira. “That said, when you change something as radically as we did, the typical reaction is ‘we don’t like this’. Yet, the information is clear, and we are working without problems, so for me the whole system is very good.”

An open door for continuous improvement

One of the biggest differences with a fully integrated ABB system is the ability to modify.

“We can now make a lot of improvements to the system that we could never have done before,” said Ferreira. “With the old system, we couldn’t see the logic or how it was set up. Now we have at least 15 things we’d like to try with ABB to bring additional benefits to our site.”

For example, the way the site handles load shedding can be approached differently. The mill now has all substation controls centralized into one electrical control system making it easier to manage different scenarios. And during blackouts, the set-up of different scenarios enables breakers to open based on specific conditions.

“We took a big risk to move everything to ABB but for me the project and outcome was excellent,” concluded Ferreira.

Full scope

- ABB Ability™ System 800xA Electrical Control System with Power Control Library and Electrical Asset Management
- Network equipment (switches/routers)
- High Voltage Protection Relays REX640 and cabinets
- Engineering, installation and commissioning

About the economically-friendly industrial complex

Montes del Plata Mill is a eucalyptus wood pulp mill run as a joint venture between Finnish renewable products producer Stora Enso and Chilean pulp producer Arauco, producing 1.4 million tons per year.

The mill’s pulp production process recovers energy from the processed biomass and helps diversify Uruguay’s power supply. In fact, the mill is able to deliver around 500 GWh of surplus energy per year to Uruguay’s electricity grid, which equates to the equivalent energy consumption of 200,000 homes or around 5% of the country’s total energy needs.

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