

PULP AND PAPER

Better control and enhanced operations for Södra Cell, Mörrum with ABB Quality Control Systems



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Södra Cell Mörrum
pulp mill, Blekinge,
Sweden

The Södra Cell Mörrum pulp mill, located in Blekinge, Sweden, is one of Södra's three pulp mills producing 300,000 tons of softwood paper pulp and 170,000 tons of hardwood dissolving pulp per year.

It is part of the network of production facilities converting its 50,000 family members forest into renewable products such as pulp, timber, building systems, liquid bioproducts and energy. Facing difficulties with their legacy quality control system in the pulp drying machines for TM1 and TM2, the mill turned to ABB for a solution, to improve availability, quality and performance.

Striving for better control

Faced with an obsolete system, the mill faced many challenges including a poor quality of analysis and reduced process controls. Lifecycle management had also become a challenge due to a lack of spare parts and support, and operators were facing inefficiencies with steam usage and accuracies of measurements.

Striving for better control and insight into their quality control and processes, the mill chose to upgrade to ABB's Quality Control System (QCS) for both pulp drying machines, integrated with the 800xA system covering the complete plant, including additional controls and measurements of basis weight and moisture.



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ABB QCS system on site

One of the complexities to be considered during project implementation was the integration with third-party legacy actuators; making the necessary connections to connect the legacy cross-directional controls with the new ABB QCS system.

Futureproofing operations

ABB was chosen thanks to our global expertise and service capabilities, as well as the demonstration of previous successful implementations of QCS and leveraging from installed base and strategy to include everything in their mill wide DCS 800xA systems for mills within Södra Cell Mörrum and sister companies. The mill had trust in our expert QCS team and their knowledge of delivering smooth commissioning and understanding of customers processes.

The new QCS was installed on TM1 in 2021, with a further scanner installed on TM2 in March 2023, for basis weight and moisture measurements.

Being able to implement controls of third-party dilution actuators in headbox and profilers able to control and optimize based on basis weight and moisture measurements. Lifecycle management through spare parts and technical support were also key to the project, and futureproofing operations for the mill.

Great collaboration between ABB's engineers and mill operators has led to a successful resolution of the integration between the new QCS and relevant software and instruments.

Greater control and higher quality

Where previously operators at the mill had to make manual adjustments, ABB's QCS has delivered greater control of the paper machine, ensuring production quality is higher, less downtime and the ability to implement faster production changes while keeping high production quality. Since implementation, the mill has experienced a reduction in sheet breaks, better runnability of the machine and less rejects, improving efficiencies across the entire process.

Operators now have access to automatic grade changes and can more quickly and easily make changes needed to correct quality issues and ensure high performance. Since implementation in March 2023, the mill has only had to make one manual adjustment, where previously manual adjustments were taking place almost daily. Having

the QCS system integrated in the plant overall DCS provides a uniform single interface and improves the operator effectiveness.

Enhanced control of integrated actuators also ensures that the mill has more accurate cross directional controls and more reliable measurements, saving time and energy of sensor calibration and optimization.

ABB's QCS also provides steam savings and can deliver an estimated 2% reduction in production losses, which can equate to a reduction of 1,100 tons of Co2e emissions for each machine, each year.

Delivering comprehensive training and support for the mill's operators ensured a successful implementation, instilling confidence in the large operational change.

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Working closely and collaboratively with all members of the Södra Cell team has been the key to success. It has been very satisfying to see that the goals of increasing product quality and runnability, and facilitating smoother grade changes has been achieved beyond Södra's expectations.

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JACOB SUNDQVIST
Sales Specialist QCS, ABB

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The new ABB system is the biggest change for the mill's operators since machine start up in 1962. Thanks to ABB's training, service and support, our operators have been able to adjust seamlessly, and we now experience better runnability, more control and significant energy savings.

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LENNART WILLANDER
Production Manager, TM1 & TM2, Södra Cell Mörrum