

PerformancePartner

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ABB's voice in the pulp and paper industry

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The ABB logo, consisting of the letters 'ABB' in a bold, red, sans-serif font.



Beyond improving quality and productivity, ABB pulp and paper solutions have the added benefit of helping our customers save energy. We supply products and systems that require less material, have greater efficiency and consume less energy, which means lower levels of harmful emissions – particularly during long operating lifetimes. ABB’s control and automation solutions have proven their worth in helping our customers run more energy-efficient operations. In addition, pulp and paper customers recognize ABB’s expertise in renewable and alternative energy solutions and being a responsible partner in achieving their business goals by driving power and productivity for a better world.

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PerformancePartner



Dear Customer,

Year 2007 is proving out what recent history has suggested—the energy costs associated with powering a mill are increasing and it is not a temporary condition. From this point forward, your ability to maintain profitability will be directly tied to efficiencies in power usage and operations.

Today, ABB sits in a unique position. As a global leader both in power and electrification systems and industrial automation technologies, we're best suited to help mills deal with the energy challenge. The combination of these core disciplines provides a backbone of practical experience and expertise to identify energy saving solutions for virtually any type of mill – from small to large, board to tissue, and single mill company to multi-mill corporations.

Inside this issue of PerformancePartner, you will see how Stora Enso's Skoghall Mill underwent a comprehensive modernization project with the specific objective of increasing energy efficiency and reducing environmental impact.

Through an intense planning process, ABB experts helped Skoghall's management identify energy savings opportunities and provide options that allow for equipment and process improvements with a known roadmap of the payback.

You will want to read the results of energy reduction and emissions reductions reported by Stora Enso. Including how the project helped increase annual production 12.5%.

Every industrial operation is unique, but all have areas where substantial energy savings can be realized. Only ABB can offer the team of experts to uncover those opportunities from top to bottom – from mechanical opportunities, right through the forecasting and situational energy usage in the mill.

Looking forward, economic viability and global citizenship will be inseparable from the conservation of energy, and ABB will be leading the way toward a new industrial era.

Best wishes for a prosperous new year.

Roger Bailey
Senior Vice President
Business Unit Paper
roger.bailey@us.abb.com

The right mix

Cellier Activity of ABB France designs and produces state-of-the-art chemical delivery solutions for any chemical or coating requirement.



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Stora Enso Skoghall - Energy2005

ABB partners with Stora Enso in a two-phase energy and environmental investment project, Energy2005, to improve energy efficiency and reduce environmental impact.

>> 6



Global drives solutions ensure quick and smooth start-ups

ABB implements an average of two PM drive systems per week, on time and to the highest quality.



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Mörrum - Setting an industry standard

Södra Cell installed ABB's Pulp Defect Analyzer system with results that could set an industry standard worldwide.



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Protect your software investments

ABB's Automation Sentinel software management program extends the value of your existing

ABB control software investment.

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St. Regis Wansbrough increases quality and productivity

St. Regis Wansbrough implemented a complete consolidation of process control to ABB's System 800xA and achieved dramatic increases in quality, productivity with improved overall control.



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The right mix for increased productivity and efficiency



Designed for the continuous supply of the coating heads, working stations are at the heart of the coating process. They ensure the circulation, filtration, deaeration, recovery and quality control of the coating color prepared in the coating kitchen. The success of the application depends directly on the performance of the working stations.

In any revamping project, the mill owner has requirements for an increase in production capacity, a change in the grade of coated paper or coating application, an improvement of the coating

color quality, a decrease in product loss and effluents and a reduction of operation and maintenance costs. In collaboration with the client, Cellier Activity of ABB France will define and propose the optimum solutions to meet these requirements and ensure a quick payback time.

Main functionalities of the working station are:

- supply of coating heads at the required flow rate, with adequate pressure and minimal pulsation,
- recovery of the coating color from the coating heads,
- correction of the coating color consistency:

filtration of fresh and recovered coating colors (elimination of particles and impurities), deaeration (elimination of air/gas bubbles), temperature regulation (heating/cooling)

Working stations designed and installed by Cellier Activity are customized solutions to meet the requirements of the various coating methods and paper grades. They include core process equipment as well as engineering and automation solutions to guarantee a trouble-free coating process and high quality paper.

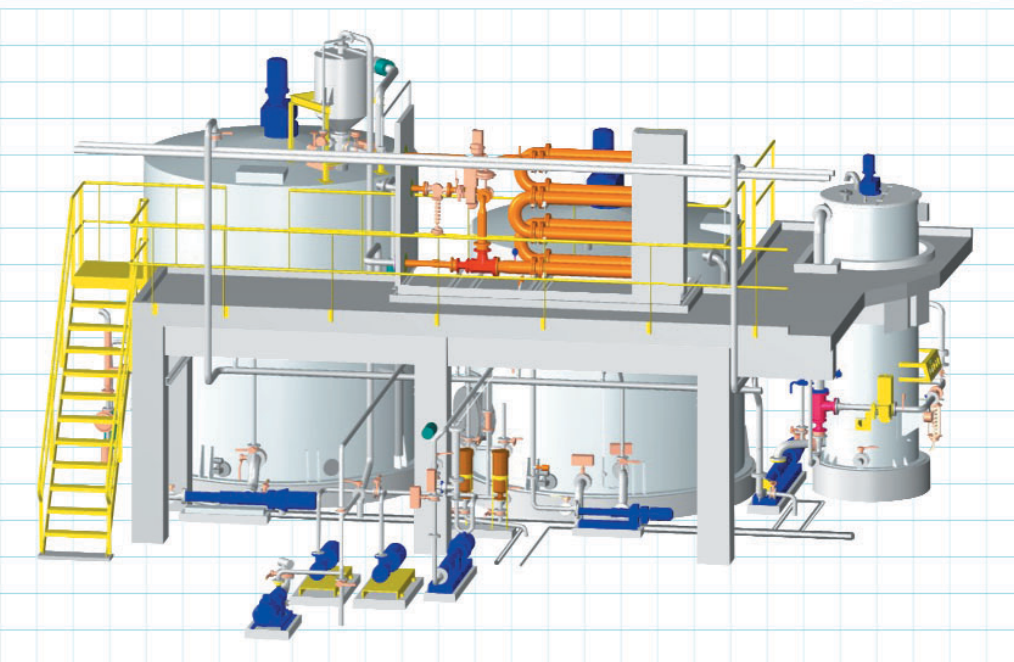
Filtercel LHP: the high-efficiency filter solution

The Filtercel™ is a reliable in-line filter used to remove impurities, fibers, etc. contained:

- in the fresh coat prepared in the coating kitchen, before its delivery on the coating heads,
- in the coating color recovered from the coating heads and re-introduced in the working tank hence reducing the risk of paper break and other defects in the paper sheet.

Implementing a new generation of filter media, the filter basket offers a judicious compromise in terms of open surface and flow-rate, resulting in an increase of 50% in the filtering throughput.

The Filtercel operates several weeks without any manual cleaning operation thanks to its high-pressure cleaning system.





tem (LHP) which regularly and automatically unclogs the filtering media. Using a second Filtercel as stand-by, this solution is perfectly appropriate to “high-requirement” coating color applications and non-stop operation of the working station with operator interventions strictly limited to preventive maintenance works. The Filtercel equipped with the Active Cleaning System (ACS) ensures the removal of difficult particles (i.e. cellulose/felt fibers) or high quantity of contaminants without any pressure drop in the coater feeding line and any loss of coating color.

A working tank with an original design

The conical shape and tangential inlet of the working tank contribute to the correct deaeration and defoaming of the coating color. Furthermore, the tank is easily emptied and cleaned. The fresh and recovered coating colors are homogeneously mixed by the low speed agitator. The working tank and its return lines are cooled by cooling jackets and accordingly instrumented so as to regulate

process parameters such as dry contents, pH and temperature values and keep constant the quality of the color delivered on the coater.

Process engineering

For a delivery system that works, state-of-the-art engineering must apply. Layout and pipe design are optimized to obtain a compact unit with minimal pipe lengths and no retention areas so as to avoid sedimentation and contamination of the coating color, minimize effluent quantities and accelerate transfer times during grade changes.

Fully automated operation

The working station can be equipped with control instruments and automation solutions such as ABB variable frequency drives on pumps which enable a synchronized supply and elimination of pipe vibrations. Integrated with the machine DCS system and interfaced with the control system of the coating color kitchen, they help calculate and anticipate the remaining coating color quantities.

A growing economical interest for in-line native and cationic starch preparation units!

The solutions offered by Cellier Activity for the preparation of native and cationic starches as part of chemical delivery systems are based on the technology of in-line starch jet cooking. They implement:

- All types of starches: potato, tapioca, wheat, maize, etc.
- Thermal heating of cationic starch for wet end application,
- Enzymatic conversion of native starch followed by inhibition for sizing and coating color preparation,
- Jet cookers with innovative design for efficient direct steam injection and easy tuning of flow-rate and cooking temperature.

Their scope includes starch powder silos, handling, metering and transfer devices, reactors, make-down and slurry storage tanks, automation and process control interface systems, as well as associated services.

Considering the increasing and fluctuating purchase price of modified starches, paper manufacturers find a growing economical interest in installing their own starch preparation unit. The advantages of the solutions offered by Cellier Activity in terms of:

- optimal quality of the converted starch,
- process reliability and stability whatever the type of starch,
- high productivity with automated throughput control,
- and low operational and maintenance costs. These benefits help paper manufacturers to secure their process by producing a tailor-made slurry adapted to the required paper grade. Manufacturers can face uncertainty over raw materials availability thanks to a unit capable of handling all types of starch and ensure their independence with respect to a starch conversion unit engineered by a chemical supplier. ■

Stora Enso Skoghall and Energy2005

ABB partners with Stora Enso to improve energy efficiency and reduce environmental impact at Stora Enso's Skoghall Mill



When addressing a gathering of media, Skoghall management, and ABB representatives, EU Commissioner Margot Wahlström stated, “This serves as a model for the rest of the EU,” regarding the completion of the Energy2005 project at Stora Enso’s Skoghall Mill, Sweden. The core objective of the USD 260 million investment was to improve the energy efficiency of the pulp and board mill and reduce its environmental impact, while boosting the mill’s annual board production capacity from 700,000 to 800,000 tons. ABB was Skoghall Mill’s key partner through all stages of the investment.

Stora Enso’s Skoghall Mill is one of the world’s biggest manufacturers of virgin fiber-based liquid packaging board. The mill has two board machines – the older PM 7 board machine has an annual production of some 300,000 tons, primarily of multi-ply coated kraft back (CKB®) folding boxboard and coated white liner. On the other hand, the newer PM 8 board machine mainly produces liquid packaging boards at over 300,000 tons

per year. The board raw material is produced on two pulp lines, a continuous bleached pulp line and a CTMP line. The mill’s end products span a broad weight range of 140 - 400 gsm.

In 2004, Skoghall Mill made a major decision to implement a strategic investment to safeguard the mill’s operations in the long-term. The investment consisted of a two-phase energy and environmental investment project, Energy2005, the benefits of which will be felt far into the future.

The objective of the project was to improve the energy efficiency and environmental balance of the entire integrated mill and to develop the cost efficiency of its production processes. The first project phase involved the modernization of the recovery boiler, together with new evaporation plants for both cooking lines and modernization of the odorous gas systems, tall oil plant, turbines and steam system. In the second phase, the existing oil-fired boiler was converted to a biofuel-fired boiler. The size of the investment was USD 263 million. Both projects, including commissioning and startups, were extremely successful. Mill Manager Ulf Eliasson put this success down to a lengthy and exhaustive planning phase and a good choice of cooperation partner.

Lively media interest

At the end of August, ABB opened its doors to the European media, inviting them to witness first hand the modernization investment at Skoghall and the results achieved there in reduced energy costs and environmental emissions. ABB Process Industries’ contributions to the

delivery were also showcased comprehensively by both Skoghall Mill’s senior management and ABB’s own representatives. Some 30 media correspondents from 11 countries attended the event. The investment was presented on behalf of the Skoghall Mill by Ulf Eliasson, Senior Vice President of Stora Enso Skoghall Boards and Mill Manager of the Skoghall Mill, and Peter Olsson, Senior Manager of the Energy2005 project. ABB expertise was represented by Chief Technology Officer Peter Terwiesch from Zürich and automation expert Karl-Gustav Ramström of ABB Sweden.

“The Other Alternative Fuel”

Energy efficiency is “The Other Alternative Fuel” said Peter Terwiesch in his opening address regarding today’s energy challenges. According to Terwiesch, in addition to its vast economic importance, energy efficiency also has an enormous ecological impact. He continued by stating that energy efficiency tops the priority list by far in terms of its urgency and that now is the time, particularly in view of the continued sharp rise in energy prices, to tackle the energy challenge and combat global warming.

In Terwiesch’s view, the energy-related value chain holds considerable energy saving potential. He stated that the existing available energy resource in the industrial value chain can be doubled. Of this additional 50%, 20-30% could be utilized by ABB technology because, according to Terwiesch, ABB has a strong presence in all segments of basic energy production, logistics and electricity supply for both industrial and household needs.



“Energy efficiency plays a central role in controlling production costs. There is a huge and immediate need for it. In many business sectors, a 20% cut in energy costs can lead to a 10% increase in sales. Furthermore, controlling carbon dioxide emissions is important, both at a global and local level, in our efforts to observe sustainable development principles,” said Terwiesch.

Energy2005 success beyond expectations

As a result of the Energy2005 project, Stora Enso’s Skoghall Mill succeeded in cutting its CO₂ emissions by 170,000 tons per year.

The oil-fired boiler conversion to a 120 MW biofuel boiler together with the new boiler’s 570 GWh process steam production capacity has reduced fuel oil consumption by 60,000 m³ per year. The bio boiler is fuelled by bark and sawdust from the production process as well as forest chips. These biofuels account for 93% of the mill’s total fuel requirement. The new boiler has lifted the mill’s self-sufficiency rate in electricity production from 15% to 35%, bringing a significant reduction in the amount of externally purchased power. Skoghall Mill’s own annual electricity production output is 400,000 MWh, and it is one of the

biggest power producers in the region.

ABB leaves its mark

ABB had a strong presence in many areas of the investment. Among its deliveries were high-power motors and stepless adjustable gear systems to enable the control of motor rotation speeds in line with process requirements, and motor controls to standardize motor running speeds.

For the recovery boiler, ABB delivered its Industrial^{IT} Extended Automation System 800xA for compiling and analyzing process data comprehensively for the entire mill. ABB’s new distributed control system supports operators in optimizing production processes in real-time as efficiently as possible, including in terms of energy targets. Energy conserving processes require sophisticated production units, but also a control system that can centralize their control. In this respect, the 800xA system is more than just a control system. It combines production process maintenance, process design and operative functions within a common environment, where all relevant resources can be monitored in real time and the process as a whole can be controlled. The system is also fully scalable to small and large-scale production systems.

ABB also delivered an instrument for measuring and entering process flow,

temperature and pressure related production data into the mill’s control system.

The latest in cutting edge technology at Skoghall was represented by the MicroSCADA system delivered by ABB, which was being commissioned during the media visit. This system prevents power distribution network failures and faults. The mill’s entire distribution network is controlled by MicroSCADA via a single control terminal. The system provides a complete and comprehensive control platform with a number of special control features, including the ability to re-route the power supply to bypass process parts undergoing maintenance, thus eliminating the need for production shutdowns due to localized repairs. MicroSCADA is used at several Stora Enso mills.

“In 2006, ABB spent USD 1.1 billion on research and delivery-specific development projects. Of this figure, 15% went into developing energy efficiency alone,” concluded ABB Chief Technology Officer Peter Terwiesch.

ABB Sweden’s Karl-Gustav Ramström valued the process automation market at USD 2 billion, adding that if electrification and products are included, the figure tops USD 3 billion. ABB has net sales in this sector of USD 1 billion and, according to Ramström, it is the sector’s clear market leader. ■



All levels of the global Paper Machine (PM) drive programs are easily monitored and accessed through standard interactive windows in the programming tool.

Global PM drives solutions ensure quick and smooth start-ups

ABB is a global market leader in the area of paper machine drive systems. The delivery of high quality world class solutions to all customers with one business model, including the same principal functionality, gives uniform platform for efficient project engineering.

The high quality standard system solutions delivered by ABB have been achieved by the consistency and repeatability of the work. In other words, decades of experience and thousands of projects combined with finely-tuned organizational and personnel skills have enabled the development of solutions that not only meet process requirements in all paper making production situations but which can also be implemented quickly and efficiently.

Ensuring start-up success

A practice of efficient repetitive work is not globally easy to achieve, but as a reference, ABB implements an average of two PM drive systems per week, on time and to the highest quality! So how does the company do this? To begin with, it is

to the customer's and supplier's advantage to standardize and stabilize the work as much as is reasonably possible for quick and smooth start-ups. ABB has been able to do this because of its PM Drives Network. The PM Drives Network encompasses a unique business model and a set of solution standards that are the result of years of experience and expertise in paper machine drive solutions. Global application standards constitute the bulk of the network and the know-how contained in these standards is applied effectively.

Within the ABB's PM Drives Network, with defined standards and certification process ensures that all projects, no matter the size or complexity, are supported by experienced personnel at a local level. Operating in this way, ABB will always strive to maintain the highest quality possible. Standard features include proven electrical design for safety and various safety related functions in the system software.

The quality of ABB's PM drives operation is backed up by clearly defined domains of expertise. For example, local ABB engineering units are authorized at different levels to execute projects to the highest global application standards. These levels are determined by the expected repeatability of the project as well as the experience of project engineers. The authorized units are then committed to train and develop dedicated PM drive experts to efficiently manage the detailed features of the global standards.

Standard platform for commissioning of large, small or complex systems

Primary function of drive system is to deliver the desired power, speed and torque to run the paper web. The motors are regulated by inverters which are themselves highly sophisticated actuators with variety of functions and features as a unit. Providing a standard inverter solution for a single unit is not that difficult, but creating a standard platform for a large coordinated inverter system solution (where tens or even hundreds of inverters are involved) is a demanding task. To production machines for different paper types, the efficient platforms of



solutions can only be centrally maintained.

Requirements, and standards regarding e.g. safety, may vary around the globe but the overall aim amounts to the same thing – efficient and safe operation. However, primary platform functionality, including safety, is set and distributed to local specialists in ABB's PM Drive Network as a standard global application solution. This working model is, among the other, a safety assurance in ABB drive deliveries.

A global operation

Most paper companies, like many global companies, depend to a large extent on the availability of knowledgeable and experienced local support. These paper companies operate globally, and on a global scale benefit of gaining access to the same solutions and consistent services.

Today, working processes are standardized and the expectations for a smooth and prompt start-up are high. In ABB's unique business model of PM Drives Network these are then made

available to each and every project irrespective of whether they are managed locally or globally. There will always be times when wider service resources are required to solve particular problems. Whether the experts are on site or remotely connected, or both, a global solution is easier to take in command because engineers can quickly navigate the familiar system for any necessary changes.

Remote connectivity is one of the most common ways of getting expert help quickly and effectively. Today ABB's PM Drives Network has opened remote data lines and provided tuning services to dozens of systems running at full production.

With ABB's PM Drive Network, customers in any part of the world are offered high quality global solutions with local system service know-how. It is also important for customers to be able to exchange experiences between mills and communication becomes easier if global standard solutions exist. In today's business world, this gives ABB's customers a real competitive advantage. ■



Mörrum mill – setting an industry standard

Södra Cell is one of the world's leading producers of paper pulp. At Mörrum, pulp quality has traditionally been examined in a laboratory, yielding good results over the years. However, the mill began to consider the possibility of on-line defect detection, and initiated a search for a reliable partner. ABB's more than 35 years of experience in web inspection proved compelling and close development cooperation got underway.

As a result of this project, ABB installed its first Pulp Defect Analyzer system in Mörrum's pulp line 2, in January 2007. Based on excellent results,

the next system was ordered and installed in the middle of November 2007.

"We are the leading edge thanks to our Pulp Defect Analyzer, whose measurements could set an industry standard worldwide," said Barbro Andreasson, Process Engineer from Södra Cell.

Highest standards in technology

In terms of pulp quality, the dirt count, describing the overall dirt content of pulp, dirt being any foreign material, is one of the most important factors. Typical pulp defects include small dirt spots and shives. Most pulp defects are minuscule, typically measuring less than one square millimeter. The measurement value for such a quantity is the dirt count number, defined in the corresponding ISO and TAPPI standards.

ABB's Pulp Defect Analyzer detects

and reports defects as small as 0.04 mm². With the help of applied machine vision technology, the size of each defect can be determined to an accuracy of a hundredth of a square millimeter. The system can be installed to cover the entire width of a pulp web.

A digital camera finds defects

The system operates through a single, controllable light beam. Its HDI800 digital smart camera with a linear of 2,048 pixel element and viewing area of 160 millimeters achieves a crossweb resolution of 80 micrometers. Such a resolution equals 12 pixels for each millimeter of pulp.

"Holes, spots, pitches and shives are typical of the defects we detect at Mörrum. Spots of 0.2 – 0.6 units of a mm² are very common," affirms Mats Lennvid, Process Engineer at Mörrum. "For example, in liquid carton board as well as in cigarette paper it is crucial that we detect such defects. Manual inspection alone is insufficient." "We have not needed to change the camera, even if there is dust in the machine," states Sigurd Björkman, Project Manager at Södra Cell Mörrum.

The Pulp Defect Analyzes will be integrated with the Open Control System, also delivered by ABB.

Mörrum mill

Mörrum mill manufactures both short fiber and long fiber pulp, which can be used for practically all types of paper. Total production capacity is 430,000 annual tons and most pulp is exported to paper mills in European countries. Short fiber pulp provides a paper with an even surface and high print quality. It is manufactured from broad leaved trees and is used for fine paper and specialty paper products such as labels. Long fiber pulp comes from conifers and is especially used in paper grades with high strength requirements. It has many applications, ranging from mail-order catalogues to tea bags. Pulp machine 2 manufactures pulp from short and long fiber alike. ■



Automation Sentinel protects the value of your existing software investments by keeping them current with the latest industry standards

With the introduction of open standards for operating systems and standard PC hardware and software, a new challenge was introduced to process automation system owners. While in the past there was a level of protection from

frequent software updates and the need for constantly increased connectivity requirements, now these parameters are in a constant state of flux. The need for a focused and active lifecycle management program is clear.

ABB's Automation Sentinel software management program extends support for the value of your existing ABB control software investment, while it establishes an affordable path forward to the next generation of System 800xA functionality. It provides the best overall ROI for your past, present and future ABB software investments.

Quality Control QCS800xA, built on the System 800xA Extended Automation platform, is the next generation Quality Control solution.

Program subscribers receive all available updates and enhancements to their current System 800xA licensed software, and have the option to stay with that version for an extended period of time—up to seven years—until they are ready to upgrade to the latest version of the appli-

cation. When subscribers do upgrade, Automation Sentinel provides the functional equivalent System 800xA software application at no additional licensing cost—making Automation Sentinel the most affordable way to evolve your current software and enjoy the productivity benefits of the latest System 800xA operating environment. This level and length of support is unprecedented in our industry.

Automation Sentinel also provides the most cost-effective path to get your heritage Quality Control solution including AccuRay 1180M, 1190, and Nexus into System 800xA's enriched operating and engineering environment for expanded visibility and tighter control of your production processes, and sets the stage to add new features and functions later on.

Simple, safe and secure program puts YOU in control

- Manage your lifecycle costs: Plan and budget your evolution path forward with predictable costs—no surprises!
- Get the most out of what you already have: Extended technical phone support and services.
- Works with your schedule: Upgrade your software on your timetable.
- Provides dependable support: Planned, long-term product support ensures that your control system will be ready to move forward along with your business.
- The most affordable evolution path to the enriched System 800xA operating environment.

Complementing ABB's portfolio of evolution planning products and services, Automation Sentinel is another reason why ABB has the best track record in the business for control system investment protection. ■



Increased product quality, 17% increased production and decreased maintenance costs at St. Regis Paper



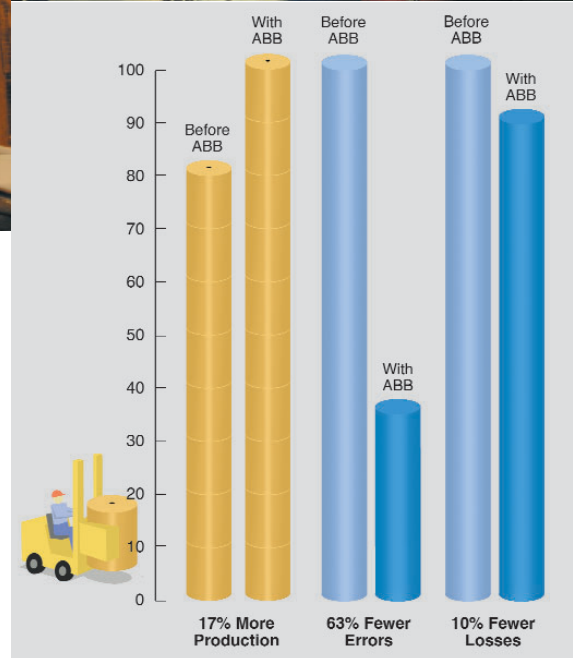
The St. Regis' Wansbrough Paper Mill (St. Regis), part of the USD 3.6 billion DS Smith plc group of companies, produces 150,000 tons per year of paper products, including corrugated case materials, plasterboard liner, machine-glazed envelope grades and coreboard. It is the largest manufacturer and supplier of coreboard grades in the UK.

St. Regis' paper making processes use 100% recycled paper as raw material. Because raw materials vary greatly, they cause frequent paper machine distur-

bances that can lead to downtime as a result of web breaks. St. Regis' processes, which included raw materials handling, integrated recycled fiber and stock preparation plant, stock approach, paper machine and drying and converting, were all controlled by many disparate control systems, some of which were becoming obsolete. This situation did not allow for the homogenous interface between operations and process that enables process and control improvements.

The solution: ABB's System 800xA

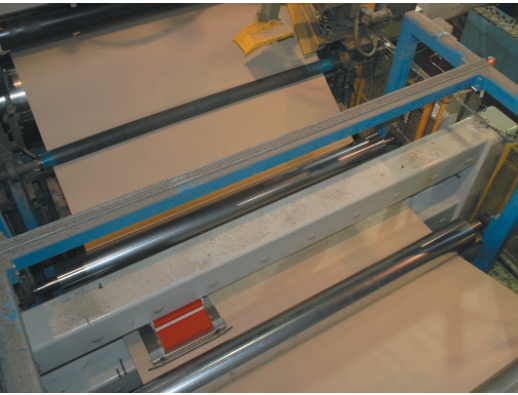
St. Regis implemented a complete consolidation of process control to ABB's System 800xA with Quality Control QCS800xA, Scanning Platform, sensors, Profile xP actuators as well as integration



of existing Motor Control Centers (MCCs), variable speed drives and instrumentation. St. Regis also utilized ABB Services for on site and remote support.

System 800xA provides an integrated platform for ABB automation systems such as process control, drive systems and quality management systems. Thus, ABB delivers true integration, based on the same, shared user interface at the same process stations, a common system architecture and optimal functionality.

The 800xA system extends the performance range of traditional automation systems for a continuous increase in productivity. The extensive use of industry-standard hardware and software solutions ensures tried and tested cost-efficient customer systems as well as efficient integration of third-party systems, external sys-



tems and components. Visualization and operation take place on industry-standard servers and PC clients.

The comprehensive Quality Control System QCS800xA features a Scanning Platform SP1200 with basis weight, moisture, fiber orientation and caliper measurements.

ABB's QCS800xA controls the machine direction and cross direction sheet properties. Advanced controls include stock blending for two stock flows, coordinated speed change and speed optimization control as well as ABB's latest generation Auto Grade Change control for reduced losses and reduced time in the grade change process. Also included are control of the cross direction weight and moisture. The moisture cross direction profile control is performed with the use of one of ABB's latest actuators from its xP family, the Air-Water xP. This recently introduced actuator utilizes patented technology to provide precision application of a water mist to the sheet to improve the moisture profile. All of the reliability issues associated with previous generation, non-ABB systems are overcome while improved moisture profiles are provided.

Results

The upgrade project was conducted in phases to avoid a prolonged shut-down and to reduce risk. All four shut-downs were completed on or ahead of schedule. St. Regis and ABB are very happy with the project and the results.

"Mill personnel now have the visibility to get the process running efficiently, while the system monitors, co-ordinates and controls all machine functions" said

Chris Kellaway, Mill Operations Manager. "Much improved alarm functions and process variable trending have already allowed mill operators and the technical team to begin a program of process optimization."

System maintenance near zero

"System maintenance is almost zero," stated John Kennedy, Mill Process Control Engineer. "On-line engineering has enabled system changes to be made quickly. Enhancements and modifications for process trials can be implemented far faster (than before the project), contributing to an earlier return on investment."

Enhanced control resolution reduces downtime and maintenance costs; improves product quality

The Air-Water xP from ABB has been a revelation. ABB's patented actuators have no electrical parts inside the machine hood and provide a control resolution 256 times better than previous generation equipment. The maintenance effort has been reduced to "just a wipe over during a scheduled machine shutdown," stated Chris Kellaway. This alone has reduced unplanned downtime and maintenance costs while improving product quality.

St. Regis, Wansbrough has achieved record output increases since the upgrade project's completion. The project led to a more stable process which in turn resulted in improved uptime, fewer sheet breaks and faster and more consistent start-ups due to effective sequence control and operator visibility into process activity. St. Regis now has faster, more consistent grade changes as well. Product quality has been raised, resulting in fewer product returns. Variations have been reduced beyond project guarantees.

Reduced time to decision and action

By integrating various mill automation systems into System 800xA (including third-party PLCs), operators control the

entire plant through one user interface – all data is available through one system. Operators are able to correlate variables from across the mill, which aids process troubleshooting and process optimization. "Speed of response to potential problems has been improved. Now we're able to make the right decision the first time," said Mark Hughes, PM 5 Production Manager.

"Availability of timely and pertinent information has enabled improved understanding of the root causes of barriers to increased throughput and quality and reduction of downtime and losses. The Alarm System and Trend Package provide immediate warnings to operators that attention is required, permitting much faster, appropriate action to prevent unwanted disturbances. The system is superb," Hughes added.

Graham Hill, PM 5 Machineman had this to say: "Grade changes are very good. I can work on the machine while the software looks after the grade change – I don't need to be in the control room, like I had to before the system went in. Last week the system performed a fully coordinated change from 130 gsm to 280 gsm, with a reduction in speed of 470 m/min. to be on specification in only 29 minutes. It allows me to do my job instead of spending time managing grade changes."

Conclusion

A recent posting at St. Regis announced that the week's record of nearly 3,000 tons of product exceeded the previous record – by over 100 tons. Record uptime and a record low "broke level" were achieved in the same week.

By consolidating all process control to ABB's System 800xA Extended Automation, St. Regis Wansbrough achieved increased throughput, reduced downtime, improved product quality, decreased maintenance expense, improved process alarming and improved overall control. Quite simply, their 17% increase in production (without increased machine speed), 63% reduction in errors from set-point, minimum 10% decrease in losses after sheet break and 5% reduction in random sheet breaks say it all. ■

Major Industrial^{IT} orders

Australia

ABB received a Composite Plant order worth USD 50 million from **Visy Pulp and Paper Pty. Ltd.** for a new production line to be built at the Tumut pulp and paper mill. The production capacity of the mill will increase from 300,000 tons to 700,000 tons per year.

The ABB delivery to Tumut includes power distribution, process electrification, drive system, quality control and automation systems, instrumentation and building electrification of the new pulp mill and board machine as well as interfaces to the existing pulp and paper mill. As the Composite Plant supplier, ABB is responsible for project management, dimensioning, engineering, equipment delivery, engineering, site and installation management, installation materials, commissioning and training. The complete integrated electrical, automation and instrumentation solution reduces project timeline and secures on-schedule start-up.

ABB deliveries to the Tumut mill take place in 2008. The board machine is scheduled to start up in spring 2009.

China

Anfui Jinfeng mill has placed an order for a Web Imaging System HDI800 for their mill.

Finland

UPM has placed an order for a Web Imaging Solution HDI800 for their Rauma mill.

France

Arjo Wiggins SA has placed a Web Imaging HDI800 and an Automatic Bracking System order for their Besse mill. Both the Palalda mill of Arjo Wiggins and Arjo Wiggins de'Aa have ordered two Web Imaging Solutions for the paper machines.

Hungary

W. Hamburger GmbH has placed a PM Drive Solution PMC800 order with Multi Drives AC800xA for their Plant Dunapack in Dunaújváros.

Indonesia

PT Surya Pamenang has ordered a Web Imaging HDI800 System for their mill.

Poland

Mondi Packaging has placed a Direct Drive Solution order including MultiDrives AC800xA for their Swiecie mill.

Russia

Segeza Pulp and Paper mill has placed an order to ABB for a Paper Machine Drive System.

South Africa

Mondi Kraft has placed a PM Drive System order for their Felixton Mill.

Spain

Smurfit Kappa Nervión S.A has ordered a PM Drive solution for their paper machine in Spain.

Sweden

ABB has been commissioned to replace the existing instrumentation, process control systems, operators' control desks and cross connection systems by innovative technology for the operational control of the Energy and Environment Section at **Stora Enso Hylte AB**. The parts of the process that are involved comprise two boilers, MAVA water management, hydrosulphite, chemical water, workplace air quality and off-site water treatment. ABB has also received an order from **Metsä Tissue, Katrinefors** mill for new process control systems, drive systems and electrification equipment for one of its two tissue machines.

The new systems at Hylte Mill will optimize and increase productivity of power and chemicals throughout the Hylte Mill operation. The new systems being supplied to Katrinefors Mill will similarly improve productivity on the machine and reduce maintenance costs.

The contracts, which are totally valued at over USD 10 million, include ABB's Industrial^{IT} System 800xA (Extended Automation), plant construction, commissioning and training services. The machine rebuild at Metsä Tissue also includes the supply of integrated Paper Machine Drive System PMC800 and intelligent control units for energy-efficient operation. Stora Enso Hylte AB also has options to integrate other parts of the production process in the 800xA system from ABB.

"These contracts signify the continued heightened confidence in ABB," says Kent Jansson, General Manager, Pulp and Paper business unit in Sweden. "It's important for our customers that products and systems work well together and that there are opportunities to upgrade to more modern functions or integrate further products or solutions as needs change. In addition customers increasingly want to buy everything from a sole supplier and here ABB is unique with its wide range of automation systems and well-documented ability to succeed with overall projects," Kent Jansson adds. "This expertise was clearly the decisive factor in our being awarded these two projects." Start-up of the tissue machine at Katrinefors mill is planned for October 2008, while delivery and production trials of the new equipment at Hylte will take place progressively over the period from autumn 2008 to spring 2010.

Switzerland

Tela Kimberly-Clark has placed a PM Drive solution order for the paper mill in Balstahl.

USA

International Paper in Georgetown has ordered a Web Imaging System HDI800.



ABB showcases its technology leadership at Malaysia trade show

ABB personnel shared their technology knowledge during a recent trade show in Malaysia. ABB participated in the Advances in Pulp and Paper Technology exhibit and seminar held July 10-2, 2007, in Kuala Lumpur. The show highlighted breakthroughs in pulp and paper automation.

During a seminar, S.R. Subramani of ABB Singapore presented a well-received paper, "On-line Optimization and Simulation in Pulp and Paper Production." He described how advanced technology supports production planning, removes production bottlenecks and can simulate the dynamics of a mill environment.

On the exhibit floor, ABB introduced its Drive Systems, Automation System and the new Information Portal IP800xA. ABB's live demos attracted many of the 100 exhibit participants, who included R&D managers, policy makers, manufacturers, government officials and trade association representatives.

ABB celebrates 100 years in China

ABB celebrated its 100 year anniversary in China with a gala banquet held in Beijing on September 14, 2007. Pulp and paper customers took part in the commemorative festivities along with representatives from academia and the trade media.

ABB's relationship with China began in 1907, when ABB delivered a steam boiler to a Chinese customer.

A highlight of the banquet was a welcome speech from Lin Shuming, the General Manager of ABB North Asia Pulp and Paper. "I would like to take this opportunity on behalf of ABB Pulp & Paper China, to thank you all for your continuous support and care to us over the past years," he said.

Guangzhou Paper, APP Ningbo, Tiger Paper, Bohui Paper, Huatai Paper, Lee & Man, Sun Paper, APP Gold East, Chenming Group and Nine Dragon were represented, along with many other paper mills.

The pulp and paper industry is growing strongly in China, and ABB Pulp & Paper is growing with it. ABB currently has over 12,000 employees in China.



ABB launches new Network Platform scanner at Paperex in New Delhi

ABB introduced its new breakthrough product, the Network Platform, at the Paperex trade show in New Delhi, India, December 7-10, 2007.

Pradeep Dhoble, Chief Executive of ITC Limited's Paperboard and Specialty Paper Division; Roger Bailey, Senior Vice President of ABB's Process Automation Business Area in North America and Business Area Group Vice President of Pulp and Paper Industries; and N. Ravi, President of ABB's Process Automation Division in India, took part in a special ceremony to launch the new product.

ABB Network Platforms are the industry's strongest and smartest scanners. They provide mills with the process information needed to optimize product quality.

The Network Platform's rock-solid design and powerful processing facilitates fast, accurate measurement of the moving web – even in the harshest mill environments. As an integral part of the Quality Control System, the platform gives papermakers the highest profile resolution and most advanced control available.

The new Network Platform reduces overall system lifecycle costs. Advanced capabilities include smart diagnostics, step-by-step expansion and complete end column access for all maintenance tasks. These capabilities also minimize downtime, startup requirements and installation time.

Along with introducing Network Platforms, ABB staff demonstrated many other products, solutions and services for the pulp and paper industry at their booth.

ABB personnel also delivered a well-received paper at Paperex on Cutting the Inefficiency of Paper Re-Trimming (CMP solutions). Dr. Iiro Harjunkoski and Karunesh Agarwal collaborated on the paper and presentation, which attracted much attention and a lively discussion.

Paperex in New Delhi drew over 22,000 visitors and 382 exhibitors from 26 countries.

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