Smurfit Kappa’s Nettingsdorfer mill in northern Austria, came to a crossroads when the aging drives on their PM6 started causing unscheduled downtime. Mill managers had a decision to make: should they replace their drive system? And if so, what kind of replacement drives would be the best investment for them?

After intensive analysis the mill chose to add a completely new drive system – and they asked ABB to supply them with Direct Drive highly-advanced gearless technology.

The last time Nettingsdorfer purchased a new drive system for their PM6 was in 1984, when the paper machine’s speed averaged 750 m/min. But 20-plus years and several machine rebuilds later, PM6 was running at speeds up to 1,100 m/min – and the original drives were struggling to keep up. The outdated drive system wasn’t designed to operate at high speeds, and as a result the automation was experiencing heavy wear and tear – and the paper machine, which had a long history of solid output, was beginning to have unscheduled shutdowns.

The Smurfit Kappa Group has a set procedure for making new equipment investments; each of the company’s mills needs to perform a rigorous analysis before proceeding with a purchase. In Nettingsdorfer’s case, mill managers began to discuss replacing the PM6 drives a full five years before placing their order.

As Nettingsdorfer considered which kinds of drives to purchase, mill executives kept in mind their main goals: reducing downtime and lowering maintenance costs. To determine which technology would best meet their objectives, they assessed both conventional gears and gearless direct drives.

After comparing each alternative, the mill decided that although a conventional drive system would cost less in the short term, gearless drives would be more cost effective in the long run because they keep maintenance costs low, while increasing machine uptime. Importantly, gearless drives use less energy so they are a greener alternative.
Gearless for a longterm solution

One of the world’s largest paper companies, the Smurfit Kappa Group has sales of more than USD 10.1 billion and 40,000 employees in more than 30 countries. The company is the European leader in containerboard, solid board, corrugated and solid board packaging.

Nettingsdorfer won the “Paper Mill of the Year” award for 2009, an honor they received at the Smurfit Kappa Management Conference in Dublin, Ireland in March 2010.

At the awards ceremony, Smurfit Kappa COO, Ian Curley, stressed that Nettingsdorfer was a “worthy winner thanks to its continuous and exemplary reliability and planning securi-ty.” He also cited the high levels of dedication and individual responsibility shown by the mill’s staff, which, he said, led to Nettingsdorfer’s excellent performance.

In his remarks, Curley singled out the success of the PM6 drives project and said it played a key part in the decision to give the award to Nettingsdorfer. Said Curley: “This highly complex and demanding project was only possible due to the considerable expertise of all employees and the strict organizational measures within the proposed time and budget constraints, without any production losses.”

Implemented in the summer of 2009, the PM6 project involved installing a totally new drive system. ABB provided new control automation including motors, frequency converters, transformers and cabling.

The Direct Drive solution is a combination of AC drives, traditional or new Permanent Magnet motors and both motor control and system control features designed for the Direct Drive. Used in pulp and paper mills around the world since 1999, ABB’s Direct Drive dramatically reduces the need for mechanical drive components and machine space by coupling the motor directly to the paper machine.

Energy consumption reduced by 10 percent

Nettingsdorfer planned that their PM6 would have to be shutdown for three weeks while the installation of their new drive system took place. But it took only 19 days for the old drives to be removed and all of the new components installed. An hour after startup, the new system was producing sellable paper.

With the new drive system in place, the mill quickly found that PM6 was running smoothly, with dramatically increased availability. Unplanned shutdowns were no longer the problem they had been when the machine had the outdated drives. Another benefit: speed control was now more precise. Mill managers calculate that with these changes they have added two full production days per year.

Maintenance was now easier and more predictable with gearless technology, reducing costs, staff time and downtime.

One of the most critical advantages Nettingsdorfer gained is reduced energy consumption. The mill estimates that it saves 10 percent on its energy use, resulting in a savings of USD 243,000.

Working with ABB, the mill has been able to implement the gearless automation that will help them meet performance, maintenance and energy consumption goals for years to come.

For more information, please contact:

ABB Ltd.
Finnabair Industrial Park
Dundalk, Co. Louth, Ireland
Tel: +353 42 9385100
Fax: +353 42 9385124

ABB Engineering Ltd.
S.P. Building, No. 5, Lane 369, Chuangye Road
Kangqiao Town, Pudong District
Shanghai, 201319, P. R. of China
Tel: +86 21 6105 6777
Fax: +86 21 6129 8499

ABB Inc.
579 Executive Campus Drive
Westerville, Ohio 43082, USA
Tel: +1 614 818 6300
Fax: +1 614 818 6571
www.abb.com/pulpandpaper

© 2011 by ABB Inc.