

# SKF Reliability Systems



## SKF integrated plant monitoring solution prevents unplanned downtime

SKF Reliability Systems online and portable condition monitoring and machine inspection technology has significantly reduced unscheduled stoppages at a major UK paper mill.

The St Regis paper company produces nearly one million tonnes of paper every year. The company's Wansbrough Mill, in Watchet, Somerset, recycles paper and card with an annual output of 135,000 tonnes. The mill has two machines: Paper Machine One (PM1), which produces recycled envelope papers, and Paper Machine 5 (PM5), which produces packaging board.

Planned maintenance is scheduled on a monthly basis, but unplanned downtime on these two machines was cutting into profitability through lost production and the diversion of engineering resources. The previous plant monitoring regime relied on operators listening to and observing the machinery in operation. However, this usually resulted in problems being identified at a rather late stage, when an immediate

unplanned shutdown was often the only suitable solution. Previously, at least one felt roll problem necessitated an unplanned shutdown every month.

St Regis approached SKF Reliability Systems to review its maintenance strategy with the goal of maximising the efficiency of the mill and minimising downtime. On examining the two paper machines, SKF engineers decided to apply two different strategies.

PM5 now has a full SKF online condition monitoring surveillance system incorporating 18 SKF Local Monitoring Units (LMUs), which log and process machine data using 32 channels per LMU and 564 fixed sensors (accelerometers) to monitor vibration on the felt rolls, drying cylinders and press rolls.

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Condition monitoring services

Engineering solutions

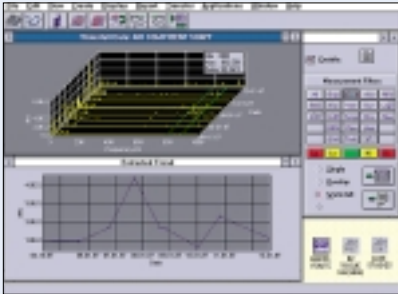
Proactive Reliability Maintenance (PRM)

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Maintenance services

Refurbishment services

Training courses



The vibration measurements are passed to a standard office PC running SKF Reliability Systems proprietary PRISM<sup>4</sup> software. SKF PRISM<sup>4</sup> analyses the incoming signals and converts them into an easy to read, traffic light display for each point, with green representing a normal reading, amber showing an alert condition, and red showing an alarm condition, which may indicate imminent failure.

Any developing problems, indicated by the amber readings, are identified early enough to be dealt with during the next monthly planned maintenance shutdown. Red lights may warrant an immediate action.

With realistic business risks in mind, the condition monitoring regime recommended for PM1 did not need a completely automated system. It was therefore decided to monitor the Machine Glazing Roll on PM1 on a weekly basis with an SKF Microlog portable data collector/analyzer which collects, stores, trends and analyses vibration and process data.

The readings from the Microlog are then processed within SKF PRISM<sup>4</sup> in the same way as those from PM5.

All the ancillary plant associated with both PM1 and PM5, such as pumps, motors, fans and gearboxes, are now monitored using SKF Reliability Systems MARLIN process data collectors, again supported by PRISM<sup>4</sup> software for analysis purposes.

As a result of installing the SKF on-line condition monitoring system and implementing the other condition monitoring and machine inspection regimes, the mill has significantly reduced unplanned downtime. On PM5 alone, unplanned mechanical downtime has been almost completely eliminated.

Jason Woodberry, Planning Engineer, has been more than impressed with the savings made by implementing the new SKF Reliability Systems technology. He explained, *"We initially went with SKF because of the company's expertise in rotating machinery and we have not been disappointed. It's not only the results that we have achieved that have been impressive. The systems are so easy to use and reliable and we have all been given excellent training in not only using the equipment but in identifying the problems that the spectral analysis shows. The SKF engineers also provided key support with setting the system up which eliminated most problems from the off"*.

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