

Customer Case

ASPA PULP

Intellinova Parallel EN

Pulp and Paper

Sweden

Wood chipper monitoring and condition-based maintenance boost productivity

Swedish pulp mill Aspa Pulp produces bleached and unbleached softwood pulp that is used in a broad range of applications in paper and sold globally. It has an annual production capacity of approximately 200,000 tons.

Wood chipper monitoring

Aspa pulp mill prioritizes continuous improvement throughout its various production processes. A recent part of these efforts is the implementation of SPM's wood chipper monitoring solution to monitor knife sharpness in the process-critical wood chipper.

By monitoring the sharpness of individual knives, damage to knives caused by stones or other solid parts getting past the stone trap and metal detection and entering the chipper is detected. The overall sharpness of the knives is also monitored, allowing condition-based replacement of the knives.

The wood chipper monitoring solution's main benefit is the resulting high-quality chips with uniform size and thickness, allowing the digester to run more efficiently, thereby increasing Overall Equipment Efficiency (OEE; calculated from Availability (A), Performance (P, production speed, tons/hour), and Quality (Q)).

Since the implementation of SPM's wood chipper monitoring solution at the Aspa mill, a significant performance (P) increase has been gained. Thanks to the higher wood chip quality and other improvements, the increase in digester throughput is estimated to be in the order of 10%. The increased chip quality also increases the processability later in the production process.

Knife sharpness monitoring is an essential tool for optimizing raw material yields. Dull knives result in an increased amount of chips and fines that can only be used for energy production.

While a shorter knife running time incurs higher knife costs, the higher OEE compensates amply for this extra cost.

Open to innovation, driven by progress

Innovation is an ongoing part of everyday life at the Aspa pulp mill. The company is open to reconsidering and evaluating current working methods and perspectives. Therefore, testing SPM's wood chipper monitoring solution was an obvious choice for Aspa to see how they could increase productivity and save money in the wood-chipping process.

Implementing new ways of monitoring the wood chipping process has increased performance, especially that of the digester, which runs more smoothly and thus produces higher-quality pulp.

Better planning, smoother operations

The combination of process optimization and condition monitoring brings new value to the Aspa production unit.

Intellinova online systems monitor the dryer machine's main rolls. These systems utilize SPM's patented HD technologies for vibration and shock pulse monitoring, providing exceptionally early warning for bearing and gear faults. The online system plays a pivotal role in Aspa Pulp's goal of running the dryer machine with the highest possible availability (A).

Condition-based monitoring also means that even minor reductions in the operating condition are detected and can be corrected at an early stage, for example, lubrication, imbalance, and high temperature. Aspa Pulp has many success stories of condition monitoring of pulp dryers, pumps, fans, and more.

Large parts of the production process are based on 24/7 production, with only parts of weekends and major maintenance stops available time for maintenance activities. This was a major reason for choosing a condition monitoring solution from SPM that provides a planning horizon allowing the mill to add maintenance efforts to already predetermined stop times.

Optimized maintenance cuts costs and reduces environmental impact

Moving from time-based to condition-based chipper knife replacement not only saves the mill money and time, but using the knives as long as possible also helps reduce the environmental footprint.

Any major breakdowns during planned production also affect the internal production schedule. In many cases, this forces the production line and personnel to work harder, often leading to increased costs, higher energy consumption, and reduced opportunities for the maintenance department to do their planned jobs.

Improvements in spare part handling

The extraordinary pre-warning times provided by SPM's patented HD condition monitoring technologies allow Aspa Mill to save considerable sums by optimizing spare part handling, reducing tied-up capital in spare parts, etc.

Work environment

A system that helps avoid unplanned stoppages and disruptions to critical machinery contributes to reducing personal stress that, over time, risks ending in ill health. It enables personnel to focus on their regular work with continuous improvements in a safe and favorable work environment.

