

PULP & PAPER

U.S. Paper Manufacturer Realizes Nearly \$4M in Avoided Costs with AMS Solutions

RESULTS

- **AMS Asset Monitor** deployed as part of Continuous Online Monitoring (COLM) initiative.
- Paper machine gear problem identified, avoiding **8 hours** of unscheduled downtime and **529 tons** of impacted product.
- **\$3.9M** in failure-related costs avoided during first 2.5 years.

“

By monitoring the dryer can gear condition continuously, and reducing speed, we were able to keep the machine running until a scheduled outage. Without online monitoring, this wouldn't have been possible.

Corporate Analytics Team Lead
U.S Paper Manufacturer

”



AMS™


EMERSON™



APPLICATION

Monitoring a massive, 32-foot paper machine as part of a world-class containerboard manufacturing operation.



CUSTOMER

U.S. paper manufacturer of container board.



CHALLENGE

A problem was spotted with the drive-side gearing on one of the paper machine's dryer cans. The planned annual outage was less than 10 days away but running the machine until then was risky and could potentially incur 8 hours of unplanned downtime, impact 529 tons of product, and result in more than \$125K in business losses.

One option was to use the plant's AMS 2140 portable analyzer to check the condition periodically, but this would be impractical and undesirable, since the affected parts are on the hot end of the paper machine. It also would not provide continuous feedback on the machine's condition versus speed, allowing operators to understand how much stress was being placed on the failing part under various load conditions.

An online approach was needed to place the machine into "intensive care" and watch it closely during the upcoming outage rather than just operating blind and hoping for the best.

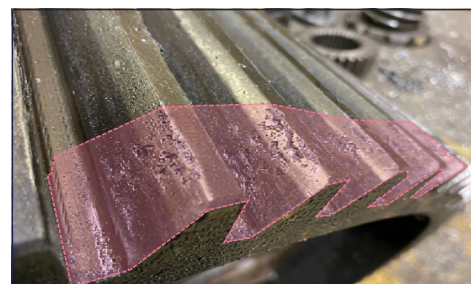


SOLUTION

The AMS Asset Monitor has recently been installed on the machine as part of a plant-wide COLM initiative (Continuous Online Monitoring). Many of the same capabilities that the plant was accustomed to in their AMS 2140 analyzer are also available in the AMS Asset Monitor and not only can the data be viewed in AMS Machine Works software, but a variety of trended variables can be ingested by the mill's Aveva PI System where special AI has been developed. In addition, the AMS Asset Monitor has its own embedded AI incorporating PeakVue Plus and other advanced fault detection algorithms. Plant management felt confident that the machine could continue to run, but at slightly reduced speed, until the upcoming planned annual outage.

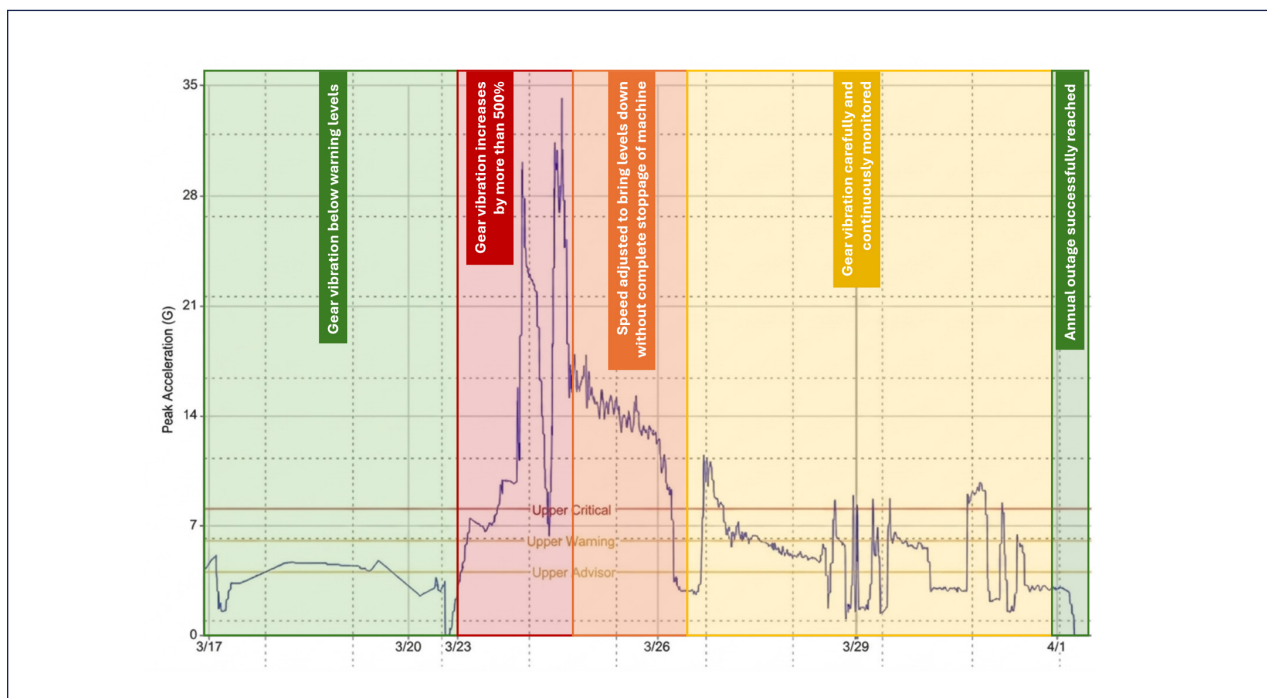
Below, the sequence of events is shown, illustrating how the plant used the AMS Asset Monitor to track vibration levels on the gear, reduce speed to bring the machine within an acceptable risk profile for the days until the annual outage, and how the machine did indeed reach the outage without failure.

Upon successfully reaching the planned outage without needing to stop the machine, the plant inspected the gearing on the #11 dryer can and confirmed substantial pitting and wear as shown in the highlighted area of the photo at right. The gear was repaired and the machine was returned to service at completion of the annual outage, without incurring any extra downtime.





SOLUTION



Part of the COLM initiative's goals are to use online condition monitoring to help plan outages more efficiently by knowing what needs attention in advance, eliminating the need to look for problems and instead focus on fixing already-identified issues by knowing where they are, what they are, and their severity. This case history highlights how the AMS Asset Monitor, integration with the customer's PI historian, and Machine Works software enabled the ability to correlate real-time feedback from machine operating conditions with vibration levels and corresponding stress on the asset. This allowed proper operating and maintenance decisions to be made with high levels of confidence and minimized risk.

“

As part of the machine's drive line, this asset is extremely important. The ability to confidently keep running until the annual outage was a huge win for us, and yet another validation of the COLM initiative across our operations. Over the past 2.5 years we have accumulated close to \$4 million in savings, underscoring for management that the COLM initiative has been an excellent investment delivering compelling ROI.

Corporate Analytics Team Lead
U.S. Paper Manufacturer

”