CASE STUDY

Turning pump failures into predictive success at a pulp and paper facility



Key facts:

Company: Pulp and paper facility

Region: North America

Octave products used: Attune APM *(HxGN APM)*

Key benefits:

- Significant cost savings by reducing unnecessary pump rebuilds and avoiding high repeat maintenance costs
- Improved reliability and uptime with longer mean time between failure (MTBF), minimizing production and stabilizing output
- Stronger collaboration and efficiency as maintenance and operations teams aligned on sharing data, enabling proactive decisions that streamlined workflows

A leading pulp and paper facility was facing mounting reliability challenges that placed a heavy burden on both budgets and production.

- Over $225,000 USD in pump maintenance costs within a two-year period
- MTBF averaging only 35 days, driving constant repairs
- Operator rounds failed to capture early warning signs
- Frequent pump switching caused inefficiencies and false failures
- Underutilization of condition monitoring data in maintenance planning
- Unnecessary rebuilds driven by incomplete or poor-quality data
- Production downtime directly tied to pump reliability issues

Objectives

To overcome these challenges, the facility set ambitious goals: reduce maintenance costs, extend the life of critical assets, improve the MTBF and effectively leverage condition monitoring. At the same time, leadership wanted to minimize production impacts and foster a stronger collaboration between operations and maintenance, ensuring decisions were driven by accurate, shared data.

Approach

The facility adopted a reliability-driven strategy powered by advanced monitoring and analytics. A detailed root cause analysis uncovered the primary drivers of pump failures, guiding the integration of condition monitoring systems for real-time visibility into asset health. Advanced alerts enabled early interventions, while operational protocols were refined to reduce false alarms from pump switching. Trend analysis of pressure and tank-level data revealed hidden inefficiencies and the stronger collaboration between operations and maintenance ensured that corrective and preventive actions were executed seamlessly.

Outcomes

The transformation from reactive maintenance to predictive, data-driven asset management produced measurable improvements across cost, reliability and teamwork. These outcomes not only solved immediate pump-related issues but also established a foundation for continuous improvement.

- **Proactive maintenance adoption:** Real-time monitoring and advanced alerts enabled maintenance teams to intervene before minor issues became major breakdowns. This shift reduced the reliance on emergency repairs and allowed teams to schedule interventions strategically, lowering stress on resources.
- **Significant cost savings:** By avoiding unnecessary rebuilds and preventing repeat pump failures, the facility cut a large portion of its repair expenditures. These savings directly offset the previous $225,000 USD spent in two years and freed budget capacity for other reliability initiatives.
- **Improved MTBF and equipment reliability:** Pumps began operating significantly longer between failures, raising the MTBF well above the previous 35-day average. This improvement enhanced production stability and extended asset lifecycle.
- **Minimized production impacts:** Early detection and timely intervention sharply reduced unplanned outages. Operations no longer had to absorb the productivity losses and delivery risks caused by recurring pump failures.
- **Enhanced operator accountability:** Updated operator rounds, equipped with compliance tracking and feedback loops, ensured that inspections captured meaningful data. This built greater accountability, consistency and accuracy into daily operations.
- **Automated decision-making:** Analytics and thresholds were defined to automatically trigger maintenance actions. This automation eliminated reliance on subjective judgement, increased consistency and ensured that issues were addressed before escalating.
- **Cross-team alignment:** Maintenance and operations teams began working from a shared dataset, fostering stronger collaboration. Instead of operating in silos, both groups aligned on asset health insights, building trust and streamlining communication.
- **Scalable reliability framework:** The success of this program positioned the facility to extend predictive maintenance practices beyond pumps. Plans were initiated to apply the same methodology to other critical systems, creating a repeatable model for reliability across the plant.

Together, these outcomes not only restored confidence in pump performance but also demonstrated the value of predictive maintenance as a long-term business strategy. The initiative created a culture of reliability.

Lasting impact

By reimagining its approach to pump reliability, the pulp and paper facility transformed a costly cycle of breakdowns into a repeatable model of predictive success. What had previously been reactive and inefficient is now a proactive strategy powered by real-time monitoring, advanced analytics and stronger cross-team collaboration. The result not only reduced maintenance costs and improved uptime but also created a cultural shift toward continuous improvement. With this foundation in place, the facility is well-positioned to sustain reliability gains and scale predictive practices across its entire operation.

To learn how Attune APM supports predictive maintenance and reliability improvements, visit our website, here.

About Octave

Octave is a leader in enterprise software, turning data into decisive action and intelligence into your edge. Our software solves for and simplifies complexity, from the design and build to operations and protection of people, property and assets – for any scope, at any scale. For decades, we've partnered with customers to sharpen performance, elevate efficiency and amplify results. From factory floors to entire cities, our solutions are tuned to scale up what's possible from day one onward.

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