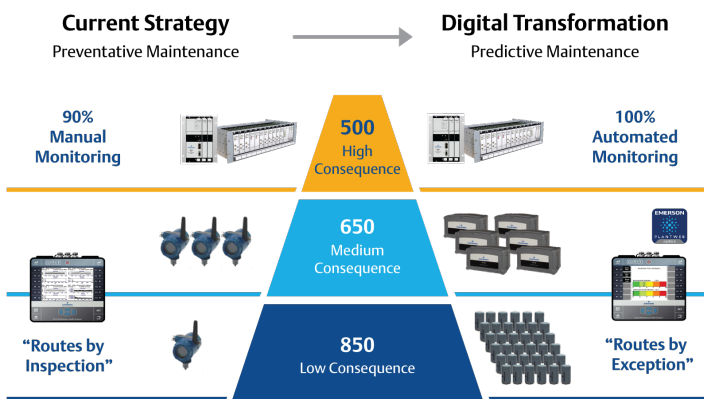SCALLON CONTROLS
Emerson Impact Partner

EMERSON

Steam Turbine Failure Drives Predictive Maintenance Mindset
AMS Asset Monitor Greatly Mitigates This Plant's Risk

This Pulp & Paper mill experienced a catastrophic turbine failure on one of its most critical machines—responsible for manufacturing specialty paper and representing about 20% of the mill's capacity. Thanks to an existing relationship with Scallon Controls, an 'all hands on deck' response enabled the customer to take advantage of newer technology, resulting in increased safety, predictive analytics, and improved operational certainty.
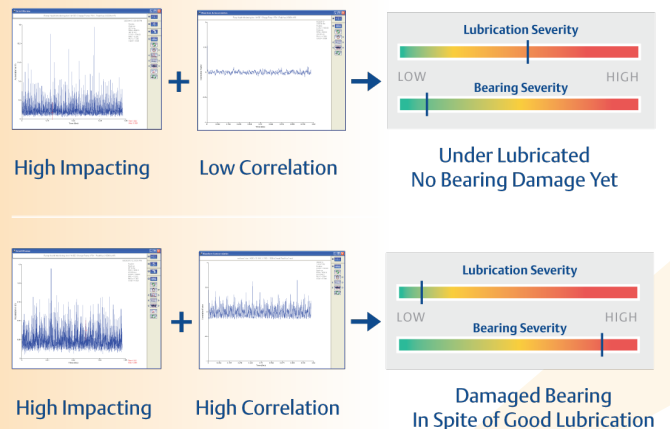
This situation was caused by a burst supply pipe that leaked, locked up a bearing, and ruined the entire internals of the steam turbine—in short, a catastrophic failure of a critical asset. The customer had no visibility into the condition of the bearing or shaft since their last physical monitoring, no tie into their DCS, and therefore no operator alert system. Furthermore, when dealing with superheated conditions, human safety is a real factor. Their previous reliability program relied on technicians taking readings with portable analyzers and wireless vibration monitors not designed for hazardous conditions. While acceptable in some environments, this industry calls for a more robust and proactive solution.

With the Turbine Down, the Company Was Losing $100K per Day

The Scallon Controls and Emerson team of engineers responded by custom-designing and fabricating the solution—featuring AMS Asset Monitors—in less than half the typical timeframe, due to the criticality of this customer's turbine. While the turbine was being rebuilt, Scallon Controls was not only working to get everything back online, but also creating a long-term, proactive, and predictive maintenance approach—to improve safety, mitigate risk, and give valuable insights into the condition of this mill's assets.

Current Strategy
Preventative Maintenance

Digital Transformation
Predictive Maintenance

90% Manual Monitoring

100% Automated Monitoring

500 High Consequence

650 Medium Consequence

850 Low Consequence

"Routes by Inspection"

"Routes by Exception"

The customer wanted a continuous monitoring solution that tied into their DCS system so alerts could be given to Operations when conditions reached a 'concern' level, as well as analytics for predictive modeling.

Prescriptive Analytics

High Impacting   Low Correlation

Lubrication Severity
LOW   HIGH
Bearing Severity

Under Lubricated
No Bearing Damage Yet

High Impacting   High Correlation

Lubrication Severity
LOW   HIGH
Bearing Severity

Damaged Bearing
In Spite of Good Lubrication

AMS Asset Monitor, Emerson's Edge Analytics Device

- Low Cost Edge Implementation
- Easy Installation and Configuration
- Measures and Analyzes
- Embedded Prescriptive Analytics
- Relays for Machine Protection

General Features

- Accomodates up to 12 CHARMs
- Hazardous Area Rated
- Compact and Light Weight
- Embedded Prescriptive Analytics
- Native Web Interface
- Remote Connectivity
- OPC UA Output
- AMS Optics Interface
- Health Apps for Pump and Heat Exchanger

A Strategic Approach Yields Significant Business Results

- Multiple data points on multiple assets enable the analyst to see trends and set baseline highs and lows.
- Operators are now alerted if something is out of the baseline or not running correctly. Various levels of alerts (yellow or red) can be set/customized, by asset.
- Safety improvements reduce the personal risk of superheated steam and high-speed spinning, which are potential hazards.
- Data can be manipulated within their system for higher diagnostic confidence and predictive analytics.
- Transitioning to a culture of predictive maintenance focused on how it's supposed to run versus how it actually runs.
- Reducing asset risk of unexpected and/or catastrophic failures prevents a potential shutdown of the entire paper machine.
- Predictive maintenance optimizes production run lengths and enables more effective scheduled downtime by reducing events.

If You Eliminate Just One Unplanned Shutdown, You've Already Paid for the Solution. Contact Our Reliability Experts to Learn How.

scalloncontrols.com

For over 45 years, Scallon Controls has been serving The Golden Triangle and adjacent counties throughout East and Southeast Texas with quality products, superior service, and an unwavering commitment to our customers. As an Emerson Impact Partner, we are the leader in Control Valves, Natural Gas & Industrial Regulators, Isolation Valves & Valve Automation, Pressure Relief Valves & Tank Management, Industrial Control Systems, and Reliability Solutions. Our extensive 20 acre campus, headquartered in Beaumont, houses our Controls, Valves, and Automation centers of excellence. Scallon is known for our 'customer-first' culture, extensive solutions portfolio, and loyal team of field technicians and engineering experts.