Timken® StatusCheck® Monitoring Helps Keep Paper Mill Powered Up

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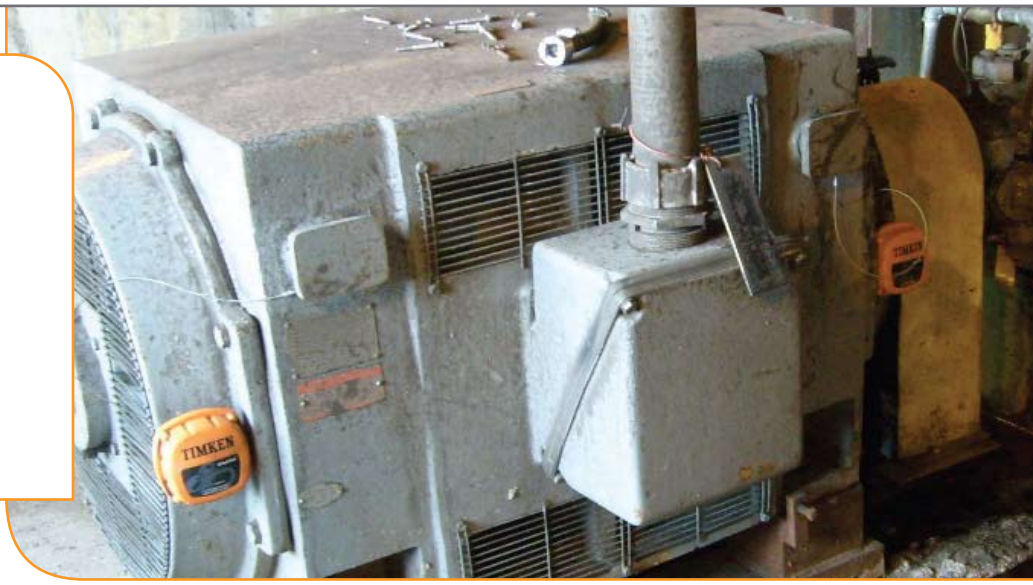

Customer
Grays Harbor Paper
Hoquiam, WA

Application
Boiler pump and associated motors

Results
During the first four months of operation, the StatusCheck system has already notified maintenance personnel of an imminent motor bearing failure significantly reducing downtime and repair costs.

Located along the Pacific Coast of Washington state, Grays Harbor Paper LP (GHP) produces uncoated, free-sheet paper for printing and copying applications. Products include 100 percent post-consumer, recycled paper made with renewable energy called Harbor 100.

GHP generates much of its own electricity by burning waste wood from logging and other sources in steam boilers that run turbine generators.

In late 2008, GHP installed the Timken® StatusCheck™ system to help monitor three boiler feedwater pumps and associated motors. The wireless system monitors bearing operating conditions and issues alerts via e-mail or text message when it detects excessive levels of temperature and vibration.

"The feedwater pumps were chosen because they are extremely expensive due to their multi-stage design, high output pressure, lower tolerances and high historical maintenance costs," explained Bob Brennand, GHP mill manager. "If the pump fails and shuts down a boiler, the cost to the mill is approximately $6,000 an hour."

GHP's backup pump is not always available due to preventative maintenance or occasional rebuilding, which might take it out of service for four to six weeks, according to John O'Hearn, Timken sales specialist for the Northwest Region.

"The mill has a limited number of employees available to monitor the condition of operating equipment, so the StatusCheck system is an excellent way to leverage limited resources," O'Hearn said. "Now that the mill has invested in the infrastructure of StatusCheck, adding additional monitoring is fairly inexpensive and has a high return."

Features

- Wireless configuration
- Flexible software with adjustable alarm thresholds
- Dual mounting (magnetic or threaded)
- Spring-loaded temperature probe
- Two-axis vibration detection
- Measures ambient temperature
- Industrial-strength packaging
- FCC approved

Benefits

- Economical solution for critical assets, (i.e., fans, pumps, motors and gearboxes)
- Easy installation
- Does not interfere with normal machine operations
- Simple interpretation (no vibration analysis training is required)
- Ideal for early detection of problems on steady-state equipment

Operating Conditions

- Ambient temperature up to 85° C (185° F) at point of transmission
- Measuring temperature up to 232° C (450° F) at tip of probe
- One-half mile line of sight transmitting range
- 50 G peak shock load measuring capacity
- Physical size: 97 x 100 x 58mm (3.85 x 3.85 x 2.30 in.)
- Transmission rate interval: adjustable (four user-selectable rates)
- Battery life up to three years depending on transmission rate
- Receiver data link: RS-232 (50' cable) or RS-485 (4,000' cable)

"During the first four months of operation, the StatusCheck system has already notified our maintenance personnel of an imminent motor bearing failure," adds Brannand. "Because of this we were able to schedule a motor replacement. In the past, the bearing would likely have failed, leading to a higher repair cost and more downtime."

These early savings have led to plans by GHP to install additional StatusCheck devices to monitor critical locations in the mill, including other pumps, fans and equipment for which a limited number of spares is available, according to O'Hearn.

The StatusCheck condition monitoring system is a unique wireless system designed to detect excessive levels of temperature and vibration that could lead to overheating and breakdown of critical equipment.

Commonly, when a bearing, gear or other critical machine element becomes worn, contaminated, damaged or is lacking lubrication, the component and/or the machine itself will experience an increase in temperature and vibration. The StatusCheck system can accurately sense and report these increases. This allows for corrective action prior to failures – helping to prevent machine damage, expensive repairs and prolonged downtime.

The StatusCheck transmitter is self-contained with its own internal power source, electronics and sensors. It attaches directly to the outer frame of a machine and uses wireless RF communications to transmit vibration and temperature readings from the machine.

With this system, multiple StatusCheck transmitters (up to 100) can be in use on one or more machines, all of which send signals back to a common central receiver. This receiver is connected to a PC and Timken StatusCheck software displays real-time data, logs information and triggers alarms when thresholds are exceeded. Alarms can generate e-mails that can be routed to pagers, cell phones or personal digital assistants (PDAs) for maintenance notification.

For more information on StatusCheck or other Timken sensor and condition monitoring options, contact your Timken sales representative.

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