

Monitoring Exhaust Fans

Customer

Company – Banner ASIC production facility with multiple air evacuation fans located on building roof.

Background – Exhaust fans located on the roof of buildings create a negative airflow, pulling potentially harmful fumes out of a production process or work area. Air quality and workplace safety regulations require such exhaust systems.

Requirement – Maintain employee safety and production uptime by ensuring that process exhaust fumes are removed from the work areas or from specific machine processes.

Challenges – Because of the remote location of exhaust fans, stoppages are not identified until potentially harmful fumes collect in the workplace. This is a critical workplace safety concern. Such a failure also leads to loss in productivity. The repair or replacement of the fan components may require special safety devices because of the location and replacement parts may not be readily available.



Solution

A QM30VT vibration sensor and DX80 Node mount monitoring fan motors by collecting continuous vibration values. Data transmits wireless to the DXM100 Controller running a machine learning algorithm that defines alarm thresholds. When the thresholds exceed normal operating levels, alarms are triggered via cloud services and corrective action initiated.

Why Banner?

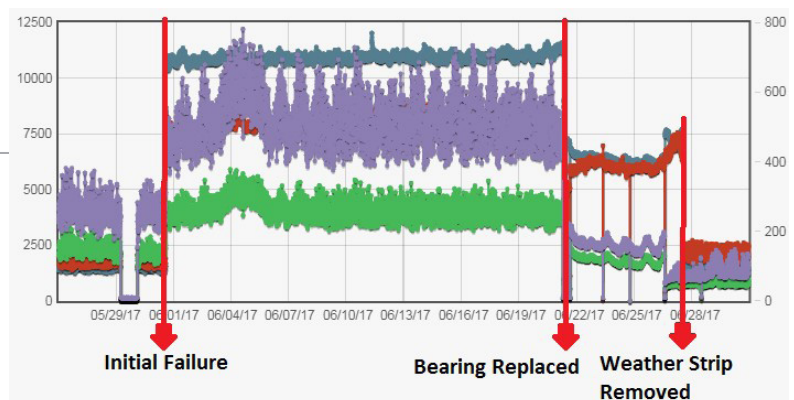
Value – Predictive maintenance verses reactive maintenance

- Banner Wireless vibration systems detected an anomaly first thought to be caused by a bad motor bearing. After replacement the anomaly remained and upon further inspection a piece of weather seal was found to have dislodged and affixed to a fan blade causing an out-of-balance condition. Facilities maintenance was able to remove the obstruction and avoid damage to the exhaust unit which would have exceeded \$2000 to replace
- Alarms alerted maintenance personnel in advance of potential build-up of toxic fumes in the workplace; a safe work environment was maintained and a reportable incident avoided.

Expansion – After the wireless network was in place, additional monitoring points were added to HVAC fans.

Customer Benefits

- Maintained safe workplace environment and prevented a potential fire from the fan overheating
- Preventing a single failure paid for the wireless solution
- Prevented loss of productivity by scheduling the repair
- Easy retrofit installation



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