



Is Electrical Usage or Vibration Monitoring a Better Predictor of Machine Failure?

Predictive maintenance. Based on the extensive online research, vibration analysis appears to be a better predictor of machine failure than monitoring electrical usage alone. Both methods can be complementary, however, in a comprehensive predictive maintenance program.

Vibration analysis is widely recognized as one of the most effective techniques for detecting and diagnosing rotating machinery faults. It can identify specific issues such as misalignment, unbalance, and bearing defects, which are common causes of machine failure.

Vibration measurements are considered a sensitive and reliable indicator for monitoring both machine condition and energy consumption.

Monitoring electrical usage at a granular level can provide valuable insights into energy consumption patterns, but may not always correlate directly with specific mechanical faults, though there's a strong correlation between vibration levels and power consumption.

Increased vibration levels often lead to higher energy consumption, indicating potential machine faults.

A combined approach using both vibration analysis and electrical signature analysis can provide a comprehensive assessment of machine health. Vibration analysis excels at detecting mechanical issues, while electrical signature analysis can identify electrical faults in motors.

Using both methods together can offer a more complete picture of machine condition and potential failure modes. In conclusion, while monitoring electrical usage is valuable, vibration analysis is generally considered a more direct predictor of machine failure for rotating equipment.

The most robust predictive maintenance programs, however, often incorporate multiple monitoring techniques, including both vibration and electrical analysis, to maximize fault detection capabilities.

For further information, please contact Kit Gutteridge at 484-406-5810 or kgutteridge@sitewatchiot.com.