

Wind Turbine Health Indicators

ADAPT Wind 1.7

New Features for 2013

The Bently Nevada Asset Condition Monitoring team is constantly working to improve our wind turbine monitoring capabilities. ADAPT Wind version 1.7 offers the latest and greatest in wind technology. From the addition of long synchronous waveform displays that allow enough bandwidth to show impacting and capture multiple main shaft revolutions, to new enhancements for sideband and harmonic cursoring, our goal is to make sure your wind operations remain on the cutting edge of monitoring and diagnostic capability.

Our constant focus on innovation has led to two groundbreaking technologies for ADAPT Wind 1.7 that offer unique capabilities in the wind industry.

Shaft Crack Detection



In the world of vibration monitoring, tiny undetected cracks in the main shaft can lead to a canyon of problems.

To combat this issue, the Bently Nevada engineering team has outfitted the latest version of the ADAPT platform with an additional eddy current probe and keyphasor on the main shaft near the main bearing. Based on these sensor placements, the ADAPT system now has the ability to monitor shaft vibration, specifically searching for tiny cracks in the shaft by using acceptance regions for the 1X and 2X amplitude and phase. This proven monitoring technique is common in some other Bently Nevada vibration applications, and a one-click configuration option for the new ADAPT platform means it's easier to setup than ever before.

Change Detection

Successful wind operators prepare for all sorts of potential issues, but maximizing the value of all that preparation requires real-time diagnostics that alert you to changing conditions.

The new change detection algorithm included in the ADAPT system is more than just a statistical alarm. It represents a patent-pending algorithm technology that uses a combination of statistics and digital signal processing techniques to create a true change indicator that minimizes conventional errors associated with traditional statistical alarming. It also provides an early warning system for bad actors compared to purely threshold-based alarming. Even if an anomaly does not cross preset alarm thresholds, the new ADAPT system will notify users that some kind of change has occurred. This feature is especially important to newer installations, where alarm thresholds may not be perfectly dialed in yet.



The result is that users see a Change Alert list indicating which turbines and associated components have undergone a change and may require further attention. So you can be confident that ADAPT Wind will help you see changes in your wind operations as they are happening, while you still have time to investigate and correct any problems.

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