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Case Study :: SSA in the Middle East

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Customer Success Story :: SSA in the Middle East

GE's System 1* and a Supporting Services Agreement enabled a Middle Eastern company to effectively identify and monitor material loss on their machine train.

GE's Bently Nevada* has a Supporting Services Agreement (SSA) with a customer in the Kingdom of Saudi Arabia. The SSA includes post-commissioning and optimization of a Bently Nevada 3500 Rack and System 1 software making it possible for the customer to leverage the value of its condition monitoring system and properly perform machinery diagnostics.

PROBLEM

A machine train, consisting of a motor-driven compressor, was running on normal operation load when radial vibration readings on the motor drive end and non-drive end side increased, reaching the alarm level.

System 1 software showed that the vibration amplitude had experienced a step change of 50 microns and phase shift of 100 degrees. Thereafter, the vibration behavior was relatively stable. Based on the abnormal amplitude, phase change and spectral analysis, the customer suspected possible material loss from the rotor. The machine was immediately taken offline.

SOLUTION

Using the data taken from System 1, the customer determined that one blade from the internal drive end fan side had broken and detached from the fan body. The root cause of both this failure, and a similar failure on an identical machine train, was excitation of the motor fan assembly's natural frequency.

PAYBACK

System 1 gave the customer's mechanical team essential diagnostic data allowing them to promptly make a critical decision to shut down the machine train for further investigation, protecting the machine from any further damage.

By using System 1, the customer was able to detect a meaningful change of both static and dynamic data and could then make informed decisions.

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BENEFITS

- **Efficient machinery diagnostics** allowed the customer to quickly identify the problem, and solve it, without a loss in production.
- **By optimizing System 1 and the Supporting Services team**, the customer was able to make an informed and timely decision.
- **Reduces production losses** through careful analysis of reliable and accurate condition data.

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