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Case Study :: Planning an Outage

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CUSTOMER SUCCESS STORY :: Planning an Outage

An example of how GE helps customers in the Natural Gas industry.

A gas producing company in the Middle East uses System 1* to correlate thermodynamic performance with vibration data to plan outage.

GE's Bently Nevada* has a supporting service Agreement (SSA) with a customer in the Middle East. The agreement includes regular software and hardware maintenance aimed at improving data availability and quality, as well as ongoing Machinery Diagnostic Services dedicated to proactive monitoring of hundreds of critical machine trains. The customer's machinery assets are monitored by one of the largest installed bases of system 1, and associated Bently Nevada software and hardware in the world.

PROBLEM

The customer began experiencing an increase in vibration on the casing of the boiler feed water pump. When noticed, the customer initially dismissed this behavior to be a result of a temporary process disturbance.

Further investigation of the process and performance data through System 1 and Bently Performance thermodynamic monitoring software revealed significant degradation of pump internals. The pump efficiency had dropped from 52% to 40% over a period of more than a year with a corresponding low net positive suction head, indicating likely cavitation.

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SOLUTION

GE performed system optimization and set software alarms to properly monitor and alert upon further deterioration. Persistent performance degradation, indicated by both vibration and performance data, prompted the customer to shut down the unit for inspection. Upon opening the pump internals for inspection, erosion was found due to cavitation. The erosion of the pump had caused a significant reduction in efficiency, shown in performance trends.

After replacement of the pump housing and damaged internals, the unit was returned to operation. The pump's efficiency was restored and vibration readings returned to normal.

PAYBACK

With both vibration and performance data available through system 1, the customer was able to diagnose critical deterioration of the pump and plan for the outage in advance. Without the high quality system 1 and performance data maintained through the supporting services Agreement, it is likely that the pump condition would have worsened, leading to further machine degradation and resulting in high maintenance costs.

BENEFITS

- Industry leading expertise – allowed the customer to proactively inspect the unit before additional machine degradation occurred.
- Responsive and knowledgeable Machinery Diagnostic Services team – helped with early detection, preventing high maintenance costs and unplanned downtime.
- Accurate data available through System 1 and Bently Performance – gave Machinery Diagnostic services the ability to diagnose the problem and plan an outage in advance of additional damage.

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