Orbit Magazine

Case Study: Condition Monitoring

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Condition Monitoring

AN EXAMPLE OF HOW GE HELPS CUSTOMERS REMOTELY IN THE OIL & GAS INDUSTRY DURING AFTER-OUTAGE STARTUP ISSUES

Customer remedies high vibrations in recycle compressor unit with GE's System 1* Condition Monitoring and Diagnostics Solution using Remote Monitoring and Diagnostics (RMD) to reduce downtime.

A Norwegian-based company with operations mainly in the offshore Oil & Gas industry experienced high vibrations in a critical machine located at one of its offshore platforms operational in the Norwegian Offshore sector.

PROBLEM

A GE customer completed their annual outage successfully, but when an attempt was made to startup on one of its 1st/2nd stage recycle compressors, it tripped several times on high vibrations at the electric motor and the Low Speed Shaft of the gearbox for unknown reasons. The customer could not identify the root cause of the elevated vibrations during these startups.

SOLUTION

The decision was made to take advantage of the Supporting Services Agreement (SSA) the customer had in place with GE's Bently Nevada product line by contacting the RMC in the Netherlands. Although the RMC team did not know the exact details of the machine configuration, in particular the configuration of the startup control system, they were able to remotely log into the System 1 software platform to immediately assess the situation remotely. By looking at the data stored in System 1, they were able to analyze why the high vibrations were occurring. In less than one hour from the initial support request, the RMC team advised the customer that the four startup attempts were similar in behavior and the issue manifested at the Electric Motor and on the Low Speed Shaft of the Gearbox. Based on the available data it was clear that the higher than normal ramp rate, which had occurred during these startups, was likely the reason for the high vibrations. This diagnosis was confirmed when after replacing the faulty Variable Frequency Drive Speed Control Card, the machine could be taken online without any vibration issues.

PAYBACK

System 1 provided real-time and accurate information after the platform outage. Immediate support for the analysis could be delivered by using a connection to the System 1 server from a remote location. The detailed information the customer received from System 1 made it possible to reduce the number of possible causes and led to a prompt identification of a malfunction of one of the cards from the unit's Variable Frequency Drive. The immediate exchange of the card led limited unnecessary downtime and loss of production, which resulted in substantial savings for the customer.

BENEFITS

- Short response time to investigate issue due to the SSA.
- Limitation of unnecessary downtime resulted in an estimated $4 million USD in cost savings.
- Prompt assessment of the data prevented unneccessary loss of production.
- Reduced resolution time and travel due to the remote response.

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