Orbit Magazine

Sea Debris

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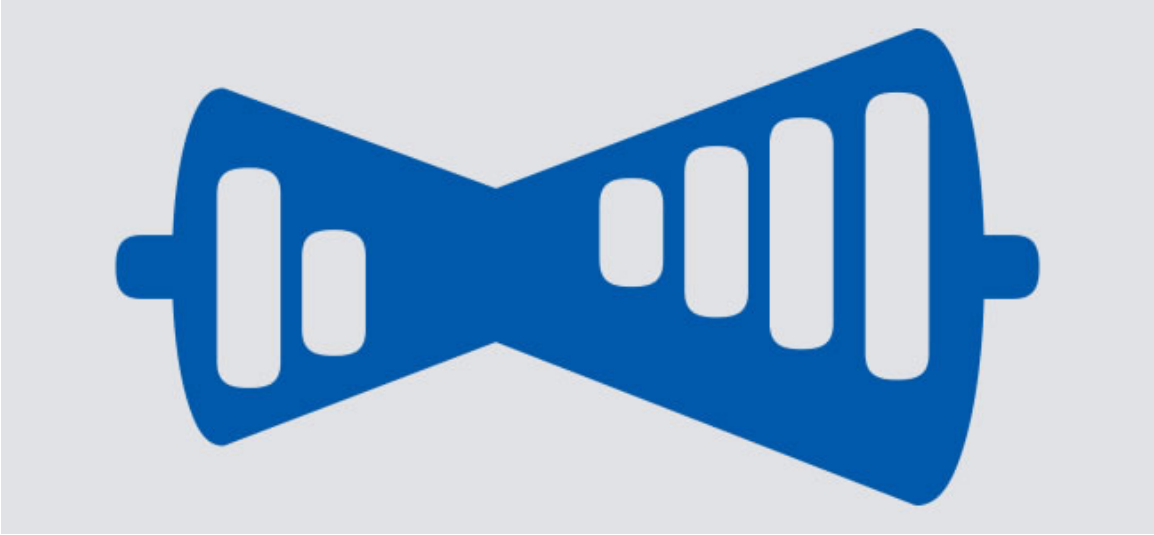

Sea Debris Detected in the Lube Oil Cooling System of a Combustion Turbine on an Oil and Gas Offshore Platform

Customer Success Story from GE's Industrial Performance & Reliability Center

What did GE's Analytics Software Find?

In August 2013, shortly after startup, the lube oil supply temperature on a bearing on a combustion turbine increased from 150°F to 175°F (65°C to 80°C). At the same time, the lube oil supply pressure dropped from 78.3 psig to 72.5 psig (5.4 barg to 5.0 barg). Also, the scavenge temperatures began to return higher than expected values. The platform was not aware of these changes, as no alarms had triggered in the control room. Experts in GE's Industrial Performance & Reliability Center (Industrial PRC) notified the customer of these changes and began to track this potential problem on their regular weekly call.

What was the Underlying Cause?

Operators on site examined the situation and learned that, during the time the turbine was down, debris from the sea was able to collect in the lube cooling system. After startup, the debris reduced cooling water flow and didn't allow for proper cooling of the oil. This caused the temperatures to increase and the pressure to drop.

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What was the Value to the Customer?

The notification of the issue from the Industrial PRC allowed the platform to take preventive action to clean the system and remove the debris before the temperatures increased further. The temperatures returned to model predictions after maintenance was performed. If this preventive measure had not been taken, temperatures could have continued to increase, resulting in a need to shut down the turbine, causing a loss of production.

What They Saw

The screenshot shows a steady increase in the lube oil temperatures with a drop in the supply pressure, deviating from model predictions. The temperatures and pressure returned to predicted levels after maintenance was performed.

GE’s Industrial Performance & Reliability Center, using Proficy SmartSignal software, provides comprehensive predictive monitoring across all critical rotating and non-rotating equipment plus key balance-of-plant equipment. The Catch of the Week highlights some of the critical catches detected every day.

> Real customers, real stories. What if you have small, undetected issues that might lead to big problems? We can help you find out.

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