CATCH OF THE WEEK

Suction strainer fouling on a coker cutting pump at an oil refinery

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

What did GE's analytics software find?

In early March, the suction strainer differential pressure (DP) on a high pressure coke cutting pump started trending upward from a previously stable value of ~0.05 kg/cm2. In mid-May, the DP began to increase at a greater rate than before, and actual values reached 0.12 kg/cm2. The strainer was cleaned by site personnel at this time. Following the cleaning, the DP began to increase again, starting from a new baseline of ~0.08 kg/cm2. After approximately six weeks, the strainer DP reached the upper range of the instrumentation and remained there for approximately three weeks. The pump then started showing signs of unstable operation, as noted by the erratic balance line flow. The Proficy SmartSignal solution detected this problem and notified the customer. The site received no other indication of the high DP because the alarm trigger in the pump local panel was not connected to the operator alert system. GE's Industrial Performance & Reliability Center (Industrial PRC) kept the customer

notified of the plugging in the strainer and also let the customer know when the issue had escalated to the point of causing pump cavitation, as seen by the erratic movement in the Balance Line Flow.

What was the underlying cause?

In response to the alert from the Proficy SmartSignal software and the Industrial PRC, the customer cleaned the strainer and connected the pump strainer DP alarm (now set to 0.08 kg/cm2) to the alert system. After the strainer was cleaned, the strainer DP dropped to acceptable levels and the Pump Balance Flow stabilized.

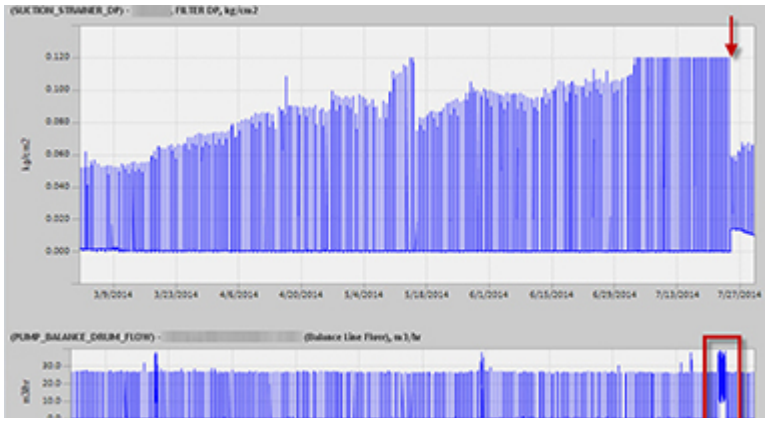
What was the value to the customer?

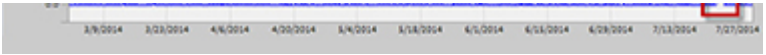
Cavitation of a pump causes excessive wear and can result in a catastrophic failure of the pump, resulting in production losses and mechanical repair costs. The early notification from the Industrial PRC allowed the customer to understand the issue, conduct a preventative maintenance action, and augment its machine safety systems. Subsequent reports and monitoring helped the customer verify the maintenance action was successful.

MEET GE'S EXPERTS

Toby Johnson
Customer Reliability Engineer

WHAT THEY SAW





In mid May, the strainer was cleaned. The DP then began to rise steadily until it hit the sensor maximum range of 0.12 kg/cm2. Balance line flow for the pump began to behave erratically, signaling pump cavitation.

Mike Roe

Customer Reliability Manager

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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