ENERGY AND TRANSPORTATION

FLASHPOINTS

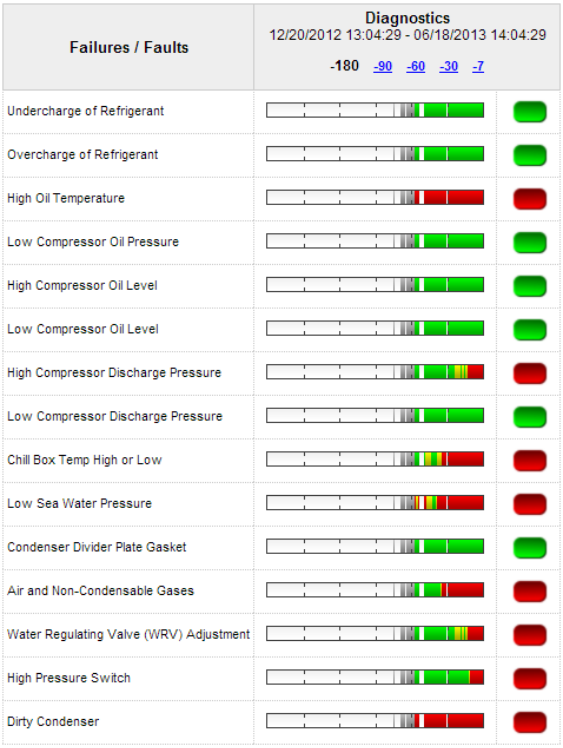
DATA-DRIVEN SOLUTIONS THAT IGNITE CUSTOMER SUCCESS.

VOL. 1 JUNE 2016

CAT® ASSET INTELLIGENCE DETECTS A DIRTY CONDENSER

What Happened?

Cat Asset Intelligence uses advanced analytics to qualify raw data into actionable information. Hundreds of thousands of raw data values for each asset are evaluated against a tailored set of rules and intelligently converted into much smaller representative sets of data. Algorithms then determine whether the criteria is met for a fault condition to exist, all without a human in the loop. A Cat Asset Intelligence Fleet Advisor was notified by the system that multiple faults were in an alarm status for a single refrigeration plant. Careful analysis determined the root cause of all of these alarms to be a single fault, the dirty condenser.

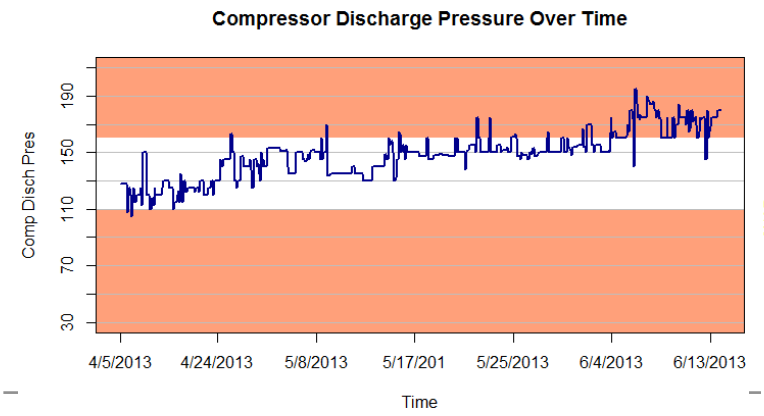


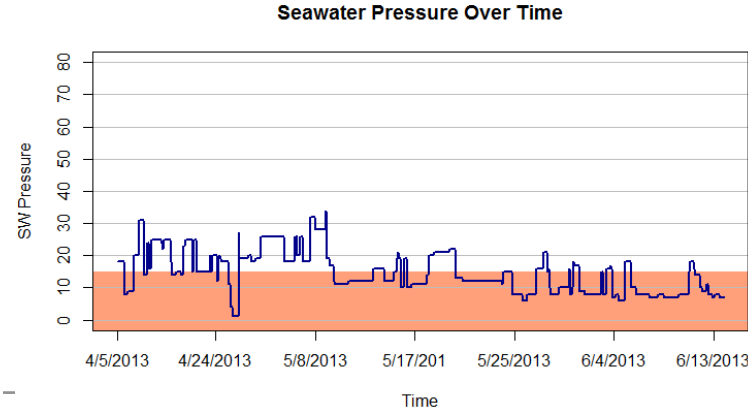
What Was the Underlying Cause?

While the system can show any user which faults are in alarm status, sometimes trained personnel are required to determine the root cause of these alarms. Using logic best known to equipment experts, Asset intelligence Engineers used “cascading faults” to determine that the one root cause all of these faults have in common is a dirty condenser. Compressor Discharge Pressure and Seawater Inlet Pressure were used in order to determine this common root cause. Compressor Discharge Pressure gradually increased over time while seawater pressure was simultaneously gradually decreasing over time. Both of these changes are associated with increased fouling of the condenser.

What Was the Value to the Customer?

The ability of a knowledgeable engineer or fleet advisor to determine the root cause of multiple alarming faults can save an abundant amount of time and money. This identification can reduce the amount of time and money spent on inspections conducted on equipment that is not the root cause of the alarms. This identification can also lead to fixing, cleaning, or replacing the damaged or dirty equipment sooner. A fouled condenser could lead to the wear and seizing of a compressor from increased lubricating and cooling oil temperature. Replacing a condenser would cost between $6000-$26000 in equipment alone. Estimating approximately 16 hours of labor costing $300 per hour, labor would cost approximately $4800. Overall, it would cost approximately $10000-$30000 to replace a condenser.





CAT CONNECT

EQUIPMENT PRODUCTIVITY SAFETY SUSTAINABILITY

LEDM0123-00