



3D TRASAR™ Technology and System Assurance Center prevent costly damage to critical cooling equipment

NALCO Water
An Ecolab Company

CASE STUDY - MANUFACTURING

CH-2036



BACKGROUND

A large manufacturer of German automobiles and commercial vehicles has its main manufacturing plant in Western India. It is the largest investment by a German company to date in the growing Indian market. The company is committed to environmentally friendly and sustainable production through more efficient use of resources and reductions in emissions during manufacturing. Its water utility section has a Plate and Frame Heat Exchanger (PFHX) application in conjunction with its cooling towers to provide efficient on-site cooling. The customer relies on the best-in-class automation of 3D TRASAR Cooling Water Technology supported by the 24/7/365 System Assurance Center and the Nalco Water sales team for complete water treatment control and monitoring.

SITUATION

In early March 2017, the System Assurance Center received a pH low alarm with a value of 3 from the plant's 3D TRASAR controller. The System Assurance Engineer immediately analyzed the situation and discovered an abnormal acid influx in the water line that runs across the PFHX application. If the pH remained low for a longer duration, it had the potential to irreversibly damage the asset. See Figure 1 for the data points that triggered the alarm.

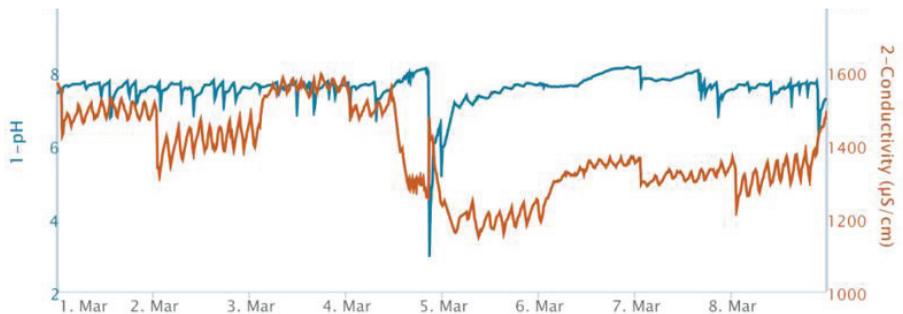


Figure 1 - 3D TRASAR System data from the event

ENVIRONMENTAL IMPACT

Prevented premature replacement of plant assets due to quick detection/response to acid leak.



ECONOMIC RESULTS



Asset replacement costs valued at \$62,000 USD.

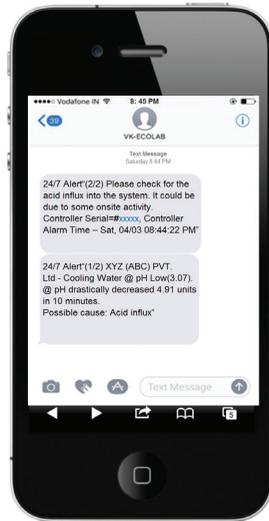
eROI is our exponential value: the combined outcomes of improved performance, operational efficiency and sustainable impact delivered through our services and programs.

SOLUTION

After analyzing the 3D TRASAR System data, the System Assurance Center engineer immediately phoned the plant's Nalco Water sales engineer. A detailed alarm analysis was also emailed to the sales engineer and to the customer contact.

Since the pH value had dropped dramatically, the sales engineer contacted the plant's operations staff to understand the conditions onsite. The customer had recently undertaken preventive maintenance on one of the cooling towers. The investigation revealed the root cause of the problem: improper functioning, or leakage, of a sulfuric acid pump or valve. This had resulted in an influx of acid in the water line running through the PFHX application. The situation was soon escalated to the plant's maintenance manager and corrective actions (draining the cooling tower and raising the pH) were carried out.

Figure 2 shows the detailed system data from the 3D TRASAR System and response timeline.



ECONOMIC RESULTS

Fast and appropriate action within 60 minutes from the time that the 3D TRASAR Technology first triggered the alarm helped the customer protect the Plate and Frame Heat Exchanger, saving approximately US\$62,000. The timely alert and recommendations from the System Assurance Center, along with the coordination between the Nalco Water sales representative and the plant's operations staff, also played a pivotal role in protecting the customer's asset. Without the warnings from the 3D TRASAR controller and the corrective actions by the System Assurance Center and Nalco team, the situation could have been far worse. The condition would have gone on much longer, potentially causing irreparable damage to critical cooling equipment. Fortunately, the Nalco Water systems and teams responded quickly and properly, helping the customer avert such a scenario.

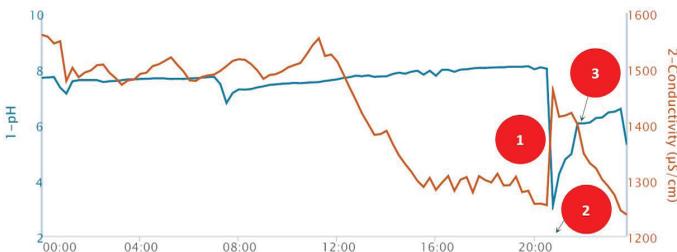


Figure 2 - Detailed data and corresponding timeline of response

1. pH drops to 3 units - a critical level.
2. System Assurance Center spots acid influx that could damage the plates of the heat exchanger if the situation had continued unnoticed.
3. pH returned to normal after corrective actions were taken onsite

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