HydroChem

Case Study

NeuroMast™ –Multi-Parameter Water Sensing and Control

HydroChem has worked with its Australian and international partners to develop and refine a continuous water sensing and control system – NeuroMast™.

Background

Technology associated with water sensing and control systems has rapidly progressed over the past 3 years.

Sensing and control of water chemistry parameters that were once only viable at a municipal water treatment level are now available for cooling water systems in commercial and industrial environments.

The benefits associated with continuous sensing and control are now available to cooling tower system owners and water treatment providers.

Issues/Challenges

Cooling water sensing and control technology has always been challenged by the dual issues of cost and reliability.

For a number of years, systems that sense and control various parameters have been available for municipal water treatment plants. However, these systems cost upwards of $50,000 and require frequent upkeep (daily, or at least once a week).

For cooling tower water treatment, these costs are prohibitive. In addition, cooling towers are attended at most weekly (but often monthly) – at which point the traditional municipal systems are not appropriate.

The challenge has been to develop a reliable system that monitors the available parameters at a cost cooling system owners can afford and can be maintained by providers within their normal service programs.

Aims/Objectives

To develop and bring to market a water sensing and control system for the following parameters:

1. TDS sensing to control water bleed-off and water consumption
2. ORP sensing to control oxidising biocide dosing
3. Inhibitor concentration sensing to control inhibitor dosing
4. pH sensing to control pH adjustment chemistry
5. Online corrosion monitoring
6. Modem for remote access and alarms

Solutions

HydroChem has been closely aligned with Australian sensor suppliers for over 30 years. In this time, HydroChem has assisted in the development of systems that are commonly used on commercial and industry cooling water systems throughout Australia.

NeuroMast™ Installation

Benefits

HydroChem has now introduced its NeuroMast™ sensing and control of inhibitor chemistries.

The NeuroMast™ inline fluorometer probe measures the concentration of a fluorescent tracer, PTSA in water. The probe has extra photo-electric components that monitor the color and turbidity of the sample water. This extra feature allows the probe to automatically compensate for color and turbidity to eliminate interferences common in real-world samples.

The performance of the probe is designed to be stable and consistent for a long period time.

Results

Sensing and control of inhibitor chemistries successfully:

- Reduces use of chemicals in system as the dosage is controlled by the sensor not based on pumping rate adjusted by technicians
- Minimises corrosion rates as the system is constantly sensing and controlling the appropriate concentration of chemistry in system water

HydroChem's sensing and control systems have been recognised and adopted by high profile clients throughout Australia.

In one instance, the online measuring and monitoring system alerted HydroChem to a water loss event that could have otherwise gone unnoticed for months. In this case, the system recognised and alarmed due to low TDS.

HydroChem was able to notify its client immediately thereby avoiding a significant water loss event.

As always with proactive management of potential risks, the benefit is in avoiding the risk event – which is often a significant cost saving.

Contact

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