CASE STUDY

Automation and Control Technology Saves a Major Sports Complex Millions of Gallons of Water

Background

A 260,000 sq. ft. sports and exhibition facility had been operating their water treatment system with liquid chemical drums at its remote facility using feed pumps. Corrosion was shortening equipment life and, after a system audit, it was discovered that the condensers were reaching temperatures above the 3.0°F industry standard. A lack of system automation and control was contributing to many of the inefficient and costly problems the facility was facing.

Solution

ChemTreat partnered with a venue management company to provide a comprehensive water treatment service plan for the arena. ChemTreat conducted a complete system audit comparing the existing system conditions to recognized industry standards. The results showed that the facility needed improved water treatment control, higher performance scale and corrosion inhibitors, and more comprehensive data collecting and reporting capabilities.

With our long-standing relationship, we focused on building a water treatment service plan around these objectives to achieve results in the following areas:

- Increased energy efficiency & utility savings
- Improved safety and reduced liability
- Extended capital equipment life
- Improved LEED point standing through the use of new sustainable technologies
- Eliminated chiller system down time

The facility agreed to implement the following recommended improvements:

- **Hazardous chemical bulk storage was replaced with smaller volumes of non-hazardous products.**
- **All chiller condensers were inspected and cleaned to ensure maximum heat transfer and energy efficiency.**
- **Key Performance Indicators were implemented to provide a means for quantifying success and improvement.**
- **To better manage the operation, a new control and automation package was installed.**
- **The package included feed control of the scale inhibitor. The equipment provided continuous monitoring and alerted personnel to deviations in system conditions.**
- **CTVista®, an internet-based data managementprogram, was installed for the storage of service reports, lab reports, operator reports, SDS, and other pertinent system information.**

Results are examples only. They are not guaranteed. Actual results may vary.

CS10-048 ENG
Mar 2015

	Target	Actual Results Over One Year
Chiller Condensers	< 3.0°F	1.0° F
Mild Steel Corrosion Rate	< 3 mpy	< 0.5 mpy
Copper Corrosion Rate	< 0.5 mpy	< 0.1 mpy

Results

The implemented changes provided the facility with significant improvements. The risk of employee exposure to hazardous chemicals was reduced, improving safety. Equipment life was significantly extended due to the reduction in corrosion rates. Automated system installments reduced downtime, provided quantitative measurements for areas needing improvement, and implemented system alerts for off balance results. Running higher cycles of concentration without sacrificing heat exchanger efficiencies saved over 4 million gallons of water per year. The changes allowed the facility not only to meet their targets but also to exceed them, as seen above.

Summary

The water treatment program changes at the arena resulted in reduced chemical handling, extended asset life, and enhanced system performance and control – all while reducing costs. In helping to implement an improved water management program, ChemTreat not only delivered sustainable products, technology enhancements, and reduced operational cost, but also established a lasting relationship built on trust and expertise that will create value for years to come.

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