

CASE STUDY

Solid Chemistry Helps Commercial Center Reach Environmental & Safety Goals

BACKGROUND

A very large commercial center had been using liquid chemistry water treatment products in its cooling system for many years. The technical results had always been acceptable; However, the management team was looking for a solution that supported their sustainability efforts.

SOLUTION

The management team in tandem with their water treatment partner added sustainability as a metric along with traditional water treatment maintenance objectives to form a comprehensive, multi-directional series of goals for the new program.

The facility management team worked with their water treatment partner to install AP Tech Group blended solid concentrate water treatment products for their five cooling towers and chillers. Each consisted of 1,000 tons of refrigeration using slightly soft municipal water for make-up.

RESULTS

With the blended solid concentrate product implementation, cycles of concentration were increased from 5 to 10, which enabled significant water savings and reduced chemical usage. Additionally, PLC-based controllers were installed for instantaneous corrosion monitoring, eliminating the need for traditional corrosion coupon analysis. Another benefit was the integration of automation to determine how many chillers were needed to meet the load demand. The system used “bleed and feed” method to deliver the blended solid concentrate water treatment products.

Over the next six months, the blended solid concentrate program provided as good or better system protection as the previous system. A major improvement was seen across the board in sustainability metrics as measured by the teams 5-star rating system (see *Commercial Rating System Chart*).



INCREASED SUSTAINABILITY



REDUCTION IN WATER TREATMENT EXPENSES



COMMERCIAL CENTER STUDY

COMMERCIAL CENTER RATING SYSTEM

PERFORMANCE RATIOS	LIQUIDS	SOLIDS
NET LOSS OF WATER	****	*****
CYCLES OF CONCENTRATION	****	*****
CONSUMPTION OF CHEMICALS	****	*****
DOSING SYSTEMS	***	*****
CONTROL SYSTEMS AND MONITORING	***	*****
STORAGE SPACE FOR CHEMICAL CONTAINERS	***	*****
STORAGE SPACE FOR EMPTY CONTAINERS	**	*****
NEED TO BUILD CONTAINMENT BINS	**	*****
OCCUPATIONAL SAFETY	***	*****
OPERATING FACILITIES	***	*****
TOTAL AVERAGE	***	*****