

Vortex CHC

MAKING CAVITATION WORK FOR YOU

Vortex CHC Case Study

Customer / Project:
Governor's State University

Website:
<http://www.govst.edu>

Location:
University Park, IL

Industry:
Education

Challenges:
Scaling
Corrosion
Bacterial growth

Solution:
CHC unit 80 gpm

Results:
No Scaling

Corrosion rate decrease

Bacteria load decrease

Water savings: > 2 million gal annually

1 million gal of non-potable water reuse

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The Challenge:

A state university uses cooling water to operate three centrifugal chillers and thereby supply their facilities with 1,600-tons of cooling capacity. The system's four-celled, 6,000 gallon cooling tower supports a recirculation rate of 4,800 gpm. A chemical maintenance program with sulfuric acid for pH control treated the cooling water. However even with chemical treatment, control of scale, fouling, and micro-biological activity was an issue. In addition, maintenance workers objected to handling the hazardous chemicals.

The Solution:

In July 2001 installation of a CHC system replaced the chemical treatment program. The CHC system included an 80-gpm CHC unit and cyclone separator. A conductivity controller and a corrosion coupon rack were also installed.

Installation of the CHC system has been a success. Chemical treatment with sulfuric acid was discontinued and handling of over 1,500 gallons of sulfuric acid per year eliminated. Attainable cycles increased and resulting blowdown from the system reduced by 75%. System corrosion rates have also dramatically decreased. Chiller tubes, previously brushed each year, no longer require cleaning. Routine inspection confirms that operating performance standards are met.

Cycles of concentration have improved from 2.5 with chemical treatment to 7 with CHC maintenance. Annual water savings are over 2 million gallons, and over 1 million gallons of non-potable water now available for reuse. The state's water chemist, who had been reluctant to recommend CHC non-chemical treatment, has overwhelmingly endorsed the system's performance.