Nalco Water Saver™ Technology reduces tower blowdown by 3.4 million gallons

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NALCO
An Ecolab Company

CASE STUDY – INSTITUTIONAL

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BACKGROUND

The Nalco Headquarters of Ecolab, in Naperville, IL, is a 750,000 sq.ft. commercial building. The power house generates 100 percent of the site's electricity needs using a gas-fired turbine. Waste heat from the generator is used to power the steam boilers and steam absorption chillers. Centrifugal chillers are also used to trim cooling needs.

SITUATION

One of the newest programs for cooling water is the Nalco Water Saver Technology, which consists of on-line electrochemical softening equipment, 3D TRASAR® control technology and a Nalco chemical program. The power house at the Naperville headquarters was identified as an attractive site for the Water Saver Technology. Tower make-up water is Chicago city water, with 130 ppm hardness levels and 110 ppm of total alkalinity.

Normal cooling tower operation would run 3.5-4.5 cycles of concentration. This represents an opportunity to save water because the system will increase tower cycles 2-5X while maintaining clean heat transfer surfaces and low corrosion rates.

PROGRAM

In the four months since the Water Saver Technology was installed, tower cycles increased to as high as 22 with no adverse effects on chiller kWh/ton draw, exchanger deposits or increased corrosion rates.

"The Water Saver Technology allowed us to reduce cooling tower blowdown by 3.4 million gallons during the 2012 cooling season," said Robert Adams,

Environmental Indicators	eROI	Economic Results
Water savings from reduced blowdown was 3.4 million gallons	WATER	Savings of $27,268

Nalco reports eROI values to customers to account for contributions in delivering both environmental performance and financial payback.

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Director of Engineering. "We increased our tower cycles by more than 5 times on average over the summer of 2012, which was one of the hottest seasons in 100 years.

"Our average load is 3,500 tons of air conditioning during the summer, and we have centrifugal chillers and steam absorption chillers running all season.

We were confident that this new Nalco program would be successful because the 3D TRASAR system is part of the offering. We have used 3D TRASAR technology successfully for the past 15 years."

ENVIRONMENTAL/ECONOMIC RESULTS

Water savings from reduced blowdown was 3.4 million gallons. Facility water costs are $5.56 per 1,000 gallons and $2.26 per 1,000 gallons sewer charge, for a total of $8.02 per 1,000 gallons.

Without the Water Saver Technology in place, the water bill would have increased by $27,268.

Nalco Naperville Facility

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