

University of Alabama and Nalco Water: Partnering to Deliver Sustainable Value

NALCO Water
An Ecolab Company

INDUSTRY BRIEF



Cooling System Optimization

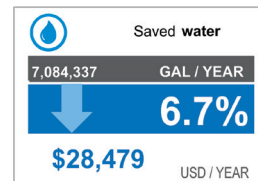
Project Summary: Improved cooling tower cycles of concentration saving 7MM Gallons of water and delivering an eROI of \$73,000 per year.

Description: Nalco Water and University of Alabama teams initiated discussions to investigate tower cycle management and identify areas of improvement. This required a full review and development of a total water management program. The review identified several topics including proper chemical dosage, consistent treatment feed and optimization of the chemical feed to ensure the right chemical, at the right time, in the right amount.

3D TRASAR™ Technology was used in order to ensure that chemical and water use are automated resulting in greater efficiency and round-the-clock oversight via Nalco Water's System Assurance Center. Enlisting this 24/7 service ensured immediate response to any anomalies that would cause over-use of chemicals or water while alerting on-site engineers by email.

The program included:

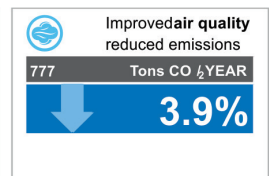
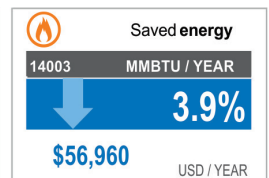
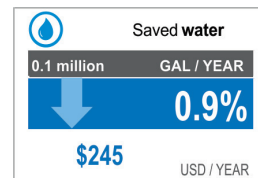
1. On-site technical service
2. State of the art chemistry
3. System modeling & optimization
4. Cutting-edge sensors and controllers
5. Remote monitoring and oversight
6. Real Time System Visibility with envision data dashboards



Boiler System Optimization

Project Summary: Improved overall efficiency by 3.9% which included increased cycles of concentration and the removal of boiler scale reducing fuel spend and lowering additional water usage by 1MM Gallons resulting in an overall savings of \$58,000 annually.

Description: Nalco Water and University of Alabama teams worked closely to install several softener systems to all campus boiler systems that utilized our most advanced boiler treatment chemistry resulting in an increase in cycles of concentration. An innovative internal treatment program, NexGuard™ Technology, combines the most advanced boiler internal treatment chemistry with new 3D TRASAR™ Technology plus state-of-the-art diagnostics, monitoring, feed, and control equipment. The NexGuard program along with 3D TRASAR control removed an average of >1/16" of scale significantly improving heat transfer and boiler efficiency.



WORKING TOWARD A CLEANER, SAFER HEALTHIER WORLD

As a wholly owned subsidiary of Ecolab, Nalco Water is committed to the corporate mission.

- We make the world cleaner, safer and healthier.
- We protect vital resources, ensuring water and energy are available everywhere.
- We help our customers succeed, reducing risk and freeing them to grow.
- We work safely, taking care in all we do.
- We strive to do what's right, what's fair, what's honest.

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