

QUESTIONS AND ANSWERS

Nalco Water Products and Services for Process-Critical Closed Loops

Who is Nalco Water, an Ecolab Company?

Nalco Water is the leading provider of integrated water treatment and process improvement services, chemicals and equipment programs for industrial and institutional applications. We have a global presence with more than 10,000 employees operating in 130 countries, supported by a comprehensive network of manufacturing facilities, sales offices and research center. One core competency is the support of process-critical closed loops (PCCL).

What are Process-Critical Closed Loops?

PCCLs are systems, typically with small volumes (e.g., 1-100 gallons) of water that are used to cool or heat key processes. Examples include laser cooling loops, semiconductor tools and testers, Czochralski silicon wafer growers, RF power generators, electric welders, general Temperature Control Units (TCU's), UV lamps, linear accelerators, MRI (Magnetic Resonance Imaging) devices and other medical and industrial equipment. Although the volumes of water are small, their role in regulating the temperature of these pieces of equipment is important. Without proper temperature control, the processes cannot function effectively. In some cases, the systems have to be shutdown or can only operate at reduced throughput and efficiency, increasing Total Cost of Operation (TCO).

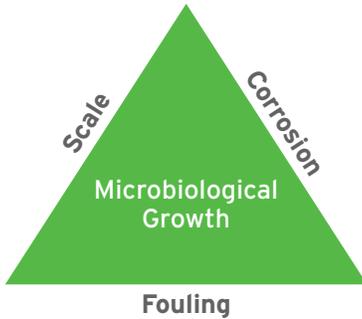
How are my processes impacted by poor performance in these systems?

There are many possible problem areas in PCCL systems including water quality, design and metallurgy. Problems in any of these areas can result in loss of production, higher reject rates, loss of efficiency and catastrophic failures. Cost of downtime can be substantial. Nalco Water has the expertise to address all these problem areas with a holistic approach to your system. Our team helps you test, troubleshoot and bring back to life the systems and processes upon which your business depends. Reliable, predictable performance of water treatment in a PCCL helps you:

- Protect your customer's investment
- Maintain your customer's production schedule
- Satisfy your customer needs

Why is proper treatment critical for these loops?

There are typically four possible water-related problems in these types of systems (scale, microbiological growth, corrosion and fouling).



Any of these can cause reduced efficiency, increase risk of downtime and loss of production throughput. Cost of downtime can be substantial. Customer or production personnel dissatisfaction can occur with the equipment, when poor water treatment quality is the cause of the problem. This, in turn, can result in diminished equipment sales, or additional warranty-related support costs.



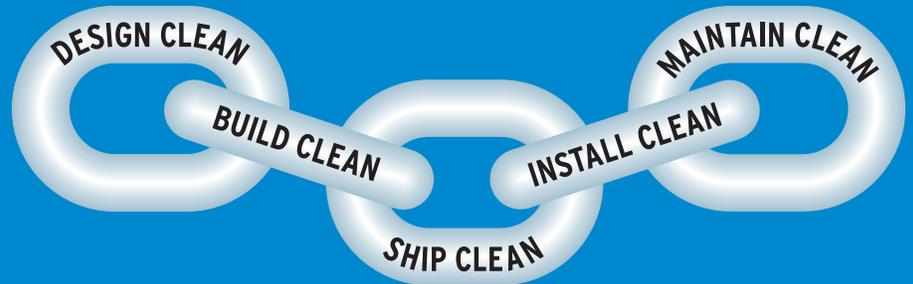
Without effective water treatment



After implementing a water treatment program from Nalco Water

What basic approach does Nalco Water take with PCCL systems?

Our recommended approach is an application of an end-to-end coverage we describe as:



DESIGN CLEAN

Nalco Water works with you and your design engineers to examine existing and potential designs. Often, water-related challenges can be avoided by careful consideration in the design phase.

BUILD CLEAN

Nalco Water works with you at your manufacturing sites around the world, ensuring that the PCCLs in the equipment you are building and assembling are kept free and clear from microbio fouling, scale and corrosion as they're being built. This culminates in a pre-shipment certification of the waterside of the PCCL before the unit is shipped to an end-use customer. This ensures all the water the loop sees during its construction at your manufacturing site meets the standards we jointly develop with you. This helps assure you and your customer that the unit has no in-transit water-related issues (e.g., microbio fouling, scale, corrosion)

SHIP CLEAN

Once certified for shipment, the Build Clean protocols provide you and your customer with confidence that the unit is ready to be installed and started up when it reaches its final destination.

INSTALL CLEAN

Part of any good installation process is a clean, concise procedure for smooth transition to start-up—the PCCL is no exception. Instructions for start-up are developed between your staff and the Nalco Water team to minimize customer challenges.

MAINTAIN CLEAN

The treatment protocol developed by you and your Nalco Water team will be designed to maximize uptime, provide for environmental and regulatory compliance and ease of end-customer application.

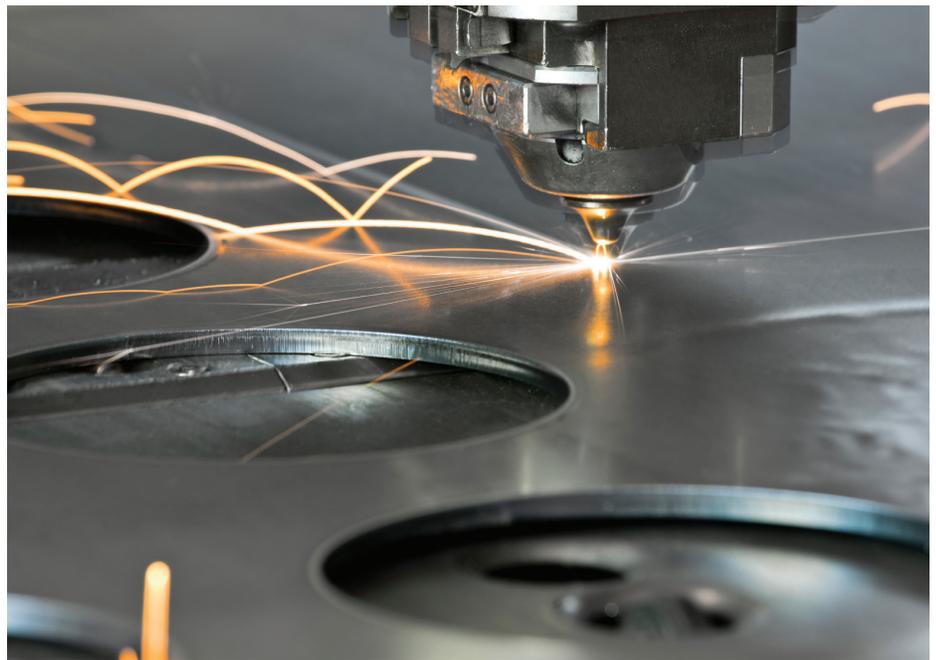
What services can Nalco Water provide for these types of systems?

CONSULTING ANALYTICAL SUPPORT at your manufacturing sites to determine causes of water-related challenges your customers may be experiencing. Our team can offer suggestions to solve those challenges. These solutions might be metallurgical, treatment, operational or a combination.

TRAINING for your service and field engineering staff—we can help your people:

- Understand the basics of water treatment so they can convey the impact of these programs to your customers in terms that are most meaningful
- Develop case studies for your customers based on your specific equipment to accentuate the competitive advantage your products can offer when paired with a water treatment program from Nalco Water
- Properly deploy and implement the water treatment programs

CUSTOMIZED TREATMENT CHEMISTRY for PCCL systems.



Nalco Water can provide you and your team pre-blended Treated Water solutions. Treated Water products contain a blend of scale and corrosion inhibitors and an in-can preservative made down to an at-use concentration in deionized water. Treated Water can be added neat to your system to provide asset protection and minimize your total cost of operation. Treated Water is available in multiple premixed blends to address different metallurgy and manufacturer's spec requirements.

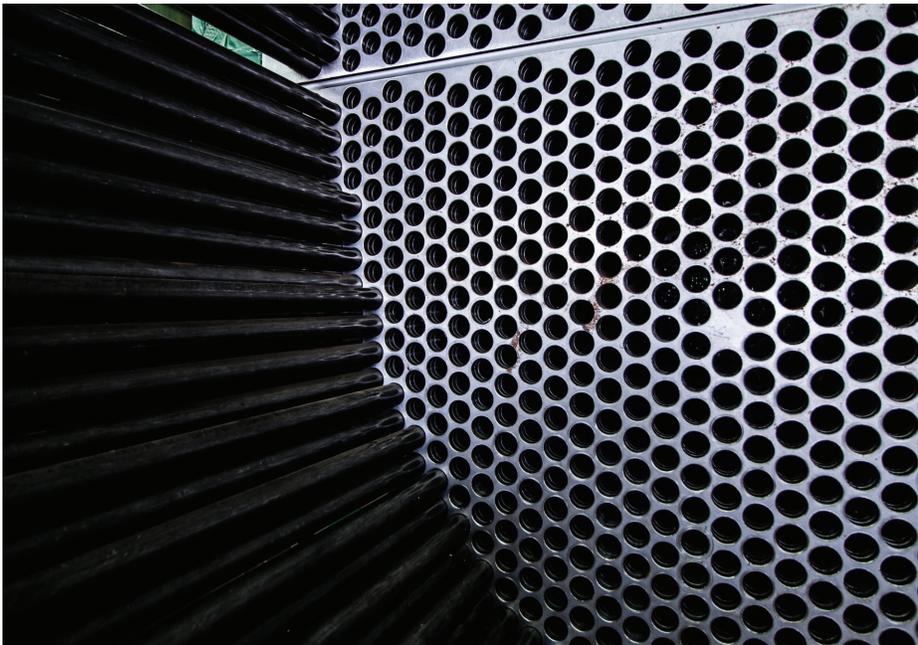
Treated Water is labeled for complete local regulatory and environmental compliance in the countries in which it's used. This includes Safety Data Sheets (SDS) in local languages. This minimizes your exposure to regulatory/shipping liabilities or penalties. Treated Water is also classified as a non-hazardous material.

Nalco Water can work with your staff to design application instructions in local languages. Sales of Treated Water solutions are designed to be managed by your company, sold like a "spare part" while having the support of the world's largest water treatment chemical company, and our knowledge of local distribution, regulatory, environmental and safety issues around the globe. This creates a recurring revenue stream for your company and increases end-user satisfaction.

How can I show a return on my investment with Nalco Water?

We can work with you to help you measure improved customer satisfaction, track reductions in downtime, warranty claims, and improvement in results. Examples of areas in which you could see a return on your investment include:

- Reduced risk of customer production losses due to process equipment going offline because the temperature specification is exceeded (insufficient cooling) or equipment/piping leaks
- Reduced risk associated with production curtailment or product quality loss
- Higher customer satisfaction and repeat business for additional systems, due to higher system uptime, and enhanced reputation for reliability
- New, recurring revenue and profit stream from Treated Water solution sales
- Increased brand value



How can I get started?

Contact your
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