



3D TRASAR™

Delivering Results to the Refining
and Petrochemical Business

3D TRASAR™

BEST-IN-CLASS TECHNOLOGY FOR COOLING WATER

A sustainable water treatment system is critical to the reliability and profitability of any refinery or petrochemical plant. However, these environments are often the most challenging water treatment environments. High heat flux and skin temperatures, difficult water conditions, process leaks, and tight operating budgets require the cooling water programs to operate under maximum stress.

ADVANCED MONITORING AND CONTROL FOR EVERY COOLING SYSTEM

Without a comprehensive system in place to monitor and mitigate potential threats such as fouling, corrosion, or scale, a refinery or petrochemical plant jeopardizes the reliability of processes and increases overall operating costs and runs the risk of operational setbacks that can cost millions of dollars in lost production and profits.

Nalco Champion is focused on understanding the stresses in your system and designing a program that can respond to these demands, resulting in reliable operations and maximum throughput.

Nalco Champion Cooling Water Treatment Programs Include:

- The MOC (Mechanical, Operational, and Chemical) Approach
- 3D TRASAR Technology
- Information Management

We begin each project with a thorough audit of the mechanical, operational and chemical (MOC) aspects of each system. With audit results in hand, we work to develop and deploy a tailored solution that provides the optimal results for your cooling water systems.



WE SUCCEED WHEN OUR CUSTOMERS SUCCEED

With Nalco Champion, the global leader in water treatment technologies, our partners avoid financially devastating setbacks and ensure that their water treatment systems are always running at their best.

By partnering with Nalco Champion, your organization receives a comprehensive solutions approach that is not only aligned with your short and long-term goals but is also backed by state-of-the-art research and technical support facilities throughout the world.

THE MOC APPROACH

The MOC Approach is a systematic, total systems approach to cooling water management. Our data driven process thoroughly examines the mechanical, operational and chemical components of your system. The results of the MOC audit are used to identify the specific MOC stresses on your system. Only after identifying these system stresses, and quantifying their effect on asset reliability and operating costs, can our experts make meaningful recommendations for improvement. Our approach is unmatched in its ability to provide our experts with the data necessary to identify safe, efficient, and profitable ways to maximize the asset reliability, reduce total operating costs, and increase unit profitability through sound engineering practices.

THE MOC APPROACH TO COOLING WATER SYSTEMS

MECHANICAL

- Cooling Tower Design
- Heat Exchanger Design
- Heat Exchanger Stresses
- System Hydraulics

OPERATIONAL

- Makeup Variation
- Statistical Analysis
- Key Control
- Benchmarking

CHEMICAL

- Makeup Water Benchmarking
- Reliability Modeling
- Zone Analysis
- Chemical Treatment

DETECT DETERMINE DELIVER

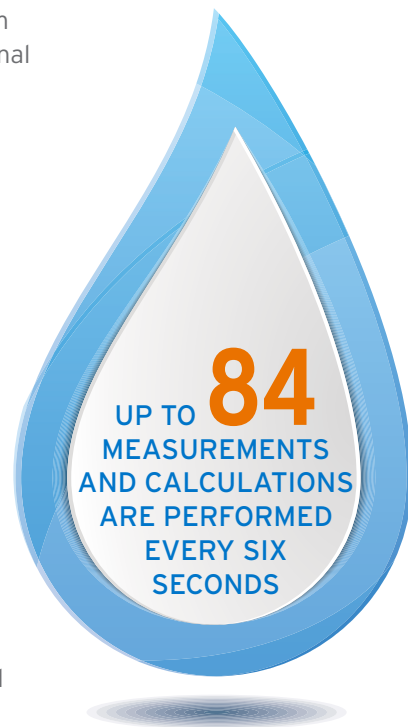
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The relationship between water chemistry, system demands, contaminants, bioactivity, and operational factors change constantly (often dramatically) to alter the stress on your cooling water system. These changes manifest themselves as common operational challenges of scale, corrosion, fouling, and microbiological growth.

3D TRASAR Technology utilizes real-time monitoring and patented actives-based controls for those variables related to scale, corrosion, fouling, and microbiological growth. Our industry-leading water treatment technology, **DETECTS** changing process parameters and system stress, **DETERMINES** corrective actions, and **DELIVERS** unprecedented return on investment through targeted performance and reliable operations. These operating conditions, system upsets and automated corrections are continuously recorded and communicated to both your operations team and your Nalco Champion representative. The net result: systems that run closer to their optimal limits with minimal risk.



**Industry
Leading**

3D TRASAR TECHNOLOGY UTILIZES REAL-TIME MONITORING AND PATENTED ACTIVES-BASED CONTROLS FOR THOSE VARIABLES RELATED TO SCALE, CORROSION, FOULING, AND MICROBIOLOGICAL GROWTH.

CORE BENEFITS 3D TRASAR

3D TRASAR Corrosion Control: Combines innovative, environmentally friendly, corrosion inhibition chemistry with advanced corrosion monitoring and control capabilities to provide “state-of-the-art” corrosion protection, 24/7.

- Continuous, on-line corrosion monitoring to ensure targeted performance
- Patented, Innovative, all-soluble, environmentally friendly corrosion inhibitors
- Real-time automation of targeted corrosion inhibitor levels
- 24/7 automated monitoring and upset response

3D TRASAR Scale Control: Continuously monitors and maintains dispersant polymer, to a prescribed active level in the system, at all times. System upsets automatically trigger control actions that help maintain clean heat transfer surfaces.

- Real-time monitoring and control of active dispersant polymer levels to ensure scale inhibition
- Highest performing scale inhibition treatment programs designed to keep your system clean
- Monitoring technology with no moving parts and minimal maintenance required
- Patented high stress polymers to ensure best in class chemistry with 3D TRASAR automation.

3D TRASAR Technology Control of Oxidizing Biocide:

Automatically controls the application of bleach or chlorine gas. An ORP analyzer or external chlorine analyzer allows for continuous monitoring and control of the oxidizing biocide feed.

- Microbiological Control: Automated on-line monitoring and control of oxidizing biocide chemical feed
- Optional on-line hydrocarbon leak detection capabilities

3D TRASAR Information Management: Continuously monitors system parameters and key performance indicators (KPIs), which can be analyzed from your control room (DCS), on-line or by downloadable application.

An important part of the 3D TRASAR Technology for Cooling Water offering is the ability to assess and interpret what is actually happening in your system. Up to 84 measurements and calculations are performed every six seconds and recorded into the information database every fifteen minutes. Our wide array of monitored parameters, measured continuously by the 3D TRASAR system, provides a comprehensive picture of system operations and may be used to efficiently optimize performance.

Your data may also be made available on a secure, Nalco Champion web site. These secure sites are designed for ease of use and have multiple tools available to assist in the monitoring of key performance indicators and correlating them to existing operating conditions. Our system also offers multiple tools designed to clearly and quickly communicate system assurance.



Nalco Champion is the global leader in Refining Process Treatments, Fuel Additives, Petrochemical Processes and Water Treatments.

For more than 80 years, we have worked to build an unrivaled level of experience and expertise with over 1,200 employees operating in more than 350 refineries and 400 petrochemical plants across six continents. Our comprehensive global network of onsite experts, industry technical consultants, research centers, manufacturing plants, and supply facilities enables us to consistently deliver a high level of value to our local, regional and multinational customers. Our business is to solve the toughest challenges facing the industry, while delivering targeted solutions to our local, regional and multinational customers. We are taking energy further. [Visit nalcochampion.com to learn more.](http://nalcochampion.com)

Nalco Champion Headquarters

3200 Southwest Freeway
Suite 2700
Houston, TX 77027
Telephone: + 1-713-627-3303

North America

7705 Highway 90A
Sugar Land, TX 77478
Telephone: +1-281-263-7000

Europe

Ir. G. Tjalmaweg 1
2342 BV Oegstgeest
The Netherlands

Asia Pacific

2 International Business Park #02-20
The Strategy Tower 2
Singapore 609930

Latin America

Av. Das Nações Unidas
17.891, 6º andar Santo Amaro 04795-100
São Paulo-SP, Brasil

Middle East

P.O. Box 17063
Jebel Ali - Dubai
United Arab Emirates