



## **BOILER TECHNOLOGY PROGRAM**

Delivering productivity, reliability and  
cost saving to your boiler system

# NALCO CHAMPION BOILER TECHNOLOGY PROGRAM DELIVERS BEST-IN-CLASS ENGINEERING APPROACH

---

Nalco Champion offers the most comprehensive, industry-leading approach in understanding and analyzing our partners' boiler systems, and accurately identifying improvement opportunities to increase their competitive advantage.

We understand that operating the complex boiler feedwater systems, found in our global partners' unique refineries and petrochemical plants, requires not only extensive knowledge and experience, but also a proven, standardized, and disciplined approach.

The Nalco Champion Engineering Approach is designed to drive the results, reliability, and cost savings that our global partners' refineries and petrochemical plants require and demand. The approach is standardized globally to ensure the highest quality service and is backed by worldwide resources including the Nalco Champion team of industry technical consultants, product experts, equipment system specialists, and dedicated research personnel.

Our highly trained experts know that boiler reliability is critical in the success of refinery operations. They understand that an unexpected boiler shuts down can impact the on-stream availability of an entire process unit and will result in reduced production and a significant profit loss for the entire refinery or plant. The Nalco Champion Boiler Technology Program is focused on driving boiler system productivity, reliability, and cost savings.



**THE NALCO CHAMPION ENGINEERING  
APPROACH TO BOILER TECHNOLOGY  
PROGRAM INCLUDES:**

- A comprehensive system audit
- 3D TRASAR™ Technology
- Improvements and Benchmarking in Key Performance Indicators

# WE SUCCEED WHEN OUR CUSTOMERS SUCCEED

---

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.

At Nalco Champion, people represent our largest investment as well as our greatest asset. We stay connected to the field and the evolving needs of our customers, delivering best-in-class products and application technologies with superior service. This means we solve more problems more effectively, improve efficiency, and profitability. We serve your operation with a targeted and personal approach.

We are your solutions partner.



# COMPREHENSIVE SYSTEM AUDIT

---

The Nalco Champion Engineering Approach begins with a comprehensive System Audit of your unique boiler systems. This data-driven process examines your boiler system in two categories that are critical in understanding the opportunities for increased productivity, reliability and cost savings.

The first category is a Best Practice Gap Analysis (BPGA). Our BPGA is a comprehensive, on-site review of the mechanical, operational, and chemical attributes of your entire steam system. With these results, our dedicated experts will make the necessary recommendations to impact total system reliability. All systems audited are scored and ranked by quartile. Specific actions are recommended to improve quartile ranking, tracked over time, and are integral to achieving "Best-in-Class" ratings.

The second category of the audit process is the Reliability and Value Generation assessment that focuses on your system's control capability. This assessment determines the impact of control variance, its potential impact on system reliability and the resulting total system costs. From this data, our experts recommend the most efficient and effective techniques to maximize the performance of each area to increase asset reliability, reduce the total cost of operation (TCO), and increase profitability.

## CORE BENEFITS OF A SYSTEM AUDIT



**MAXIMIZE PERFORMANCE**



**INCREASE ASSET RELIABILITY**



**IMPROVE PROFITABILITY**



**REDUCE TCO**

# NALCO CHAMPION 3D TRASAR BOILER TECHNOLOGY

---

We understand that variables like boiler feedwater quality, chemical treatment programs, contamination events, and operational factors significantly affect the total system performance of your unique steam systems. We also know that these variables often cause system stresses that manifest themselves as costly operational problems like pre-boiler corrosion and economizer failures, boiler tube scale, boiler carryover, and fouling of critical downstream equipment such as turbines.

Our proprietary 3D TRASAR Technology is implemented by our global refining partners to effectively detect system variations, and efficiently determine and deliver the correct program dosage. We are proud that it has become the industry standard for monitoring and control that delivers measureable results. At Nalco Champion, we continue to improve this innovative technology as our 3D TRASAR Boiler Technology is customized and upgraded to ensure you realize optimum system control.

## CORE BENEFITS OF 3D TRASAR BOILER TECHNOLOGY

### 3D TRASAR Pre-Boiler Corrosion Control

- Minimizes pre-boiler corrosion, resulting in optimum asset life
- Detects and reacts to the conditions inside the pre-boiler system under actual operating temperatures and pressures, allowing 3D TRASAR technology to deliver superior boiler system performance
- Emulsion breakers for hydrocarbon/ spent caustic separation

### 3D TRASAR Information Management

- Web accessibility and easy reporting capabilities in one, easy to install package.
- Incorporates data-driven processes for ongoing improvement
- Continuously monitors system parameters, which can be analyzed from the control room (DCS), on-line, or by downloading to a laptop computer

### **3D TRASAR Internal Treatment Control**

- The industry standard for monitoring and control that delivers truly measureable results
- Multi-sensor technologies with the most advanced treatment chemistries
- Scaling or corrosive upsets automatically trigger control actions that bring systems back to safe parameters, maintaining clean boiler tubes and optimum heat transfer surfaces 24/7

### **3D TRASAR Boiler Cycle Management**

- Optimizes and controls boiler blowdown
- Increases heat transfer efficiency, reduces energy requirements, increases water reuse, ensures asset protection, and improves the utilization of fuel consumption

## **KEY PERFORMANCE INDICATOR IMPROVEMENTS AND BENCHMARKING**

Data is only as good as its interpretation and application. By effectively utilizing data to monitor and improve your unique system's Key Performance Indicators (KPI's), Nalco Champion experts can track and achieve continuous improvement within your systems to ultimately meet and exceed your goals.

From the system audit, the module scores and "gaps" are benchmarked against other systems, units, or industry standards. From these, a quartile ranking system shows where each system ranks and highlights areas for improvement, allowing you to move toward a first quartile, "best-in-class" operation.

## **CORE BENEFITS OF KPI IMPROVEMENT AND BENCHMARKING**

- Continuous system improvement through disciplined and ongoing tracking of KPI's
- System benchmarking by Quartile Ranking with recommendations to move toward "Best-in-Class" first quartile ranking
- Improved system performance
- Improved system reliability

## Nalco Champion

is the global leader in Refining and Petrochemical Treatment, Water Treatment and Fuel Additives.

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](http://nalcochampion.com) to learn more.**

### 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