



3D TRASAR™ Boiler Technology

*A New Dimension of Boiler Performance
for People, Planet, Profits*

NALCO  **Water**
An Ecolab Company

3D TRASAR Boiler Technology Detects Changing Process Parameters, Determines Corrective Action Delivers Return On Investment.



Nalco Water was built on boilers. We've worked in thousands of boiler plants, asking and listening, auditing and sampling for over 80 years. Now we've pushed far beyond traditional performance boundaries to help our customers produce safe, reliable, cost-effective steam.

3D TRASAR™

DETECT, DETERMINE, DELIVER

3D TRASAR Boiler Automation can detect, determine and deliver the next level of boiler performance. 3D TRASAR Boiler Technology detects system variability, then determines and executes the appropriate response before problems occur. 3D TRASAR technology delivers measurable results that are not attainable with other offerings, allowing your Nalco Water sales engineer to establish boiler-specific best practices.

Detect

3D TRASAR Boiler Technology detects system changes with leading-edge boiler treatment chemistries, sensors, hardware and software.

- The patented Nalco Water Corrosion Stress Monitor™ (NCSM) detects & reacts to preboiler corrosion stress
- Next generation fluorescence tracing technology is used to control boiler scale and deposits
- Monitors ever-changing system demands
- Identifies potential causes of system variability and upset conditions

Determine

3D TRASAR Boiler Technology determines and executes the correct response.

- Compares current conditions to the defined optimum
- Takes appropriate corrective action
- Records, reports and communicates system performance
- Provides expert assistance 24/7



Deliver

3D TRASAR Boiler Technology delivers economic and operational advantages.

- Saves water
- Reduces energy costs
- Increases steam production reliability
- Extends asset life
- Maintains production levels
- Reduces maintenance and increases labor efficiency
- Enhances plant safety
- Contributes to Sustainable Development goals

Overview

Boiler systems are dynamic and require knowledge and tools to address that variability. Since changing conditions impact different parts of the boiler system ... often without warning ... 3D TRASAR Boiler Technology is your most effective defense. The Nalco Corrosion Stress Monitor detects and responds to preboiler corrosion stress in real time, delivering direct measurement under actual operating conditions. The 3D TRASAR Boiler System then uses tracing technology to prevent scale formation inside your boiler.



3D TRASAR web allows you to view data from the Internet anytime, anywhere. Improved documentation of system conditions and data tracking can help you and your Nalco Water sales engineer identify trends, diagnose problems early and enhance plant safety.

Preboiler Corrosion Control

The Nalco Water Corrosion Stress Monitor minimizes preboiler corrosion by measuring and reacting to the net oxidation/reduction potential of the bulk feedwater, at the actual boiler operating temperatures and pressures. The Nalco Water Corrosion Stress Monitor detects changes in oxidation/reduction stress, determines the corrective action and responds

in real-time by changing oxygen scavenger or metal passivator feed to protect the system. It is now possible to detect and immediately react to the conditions inside the preboiler system under operating temperatures and pressures, allowing 3D TRASAR Technology to deliver superior boiler system performance.

Boiler Scale & Deposit Control

Nalco Water continues to improve tracing technology, making it the industry standard for monitoring and control that delivers measurable results. Boiler scale and deposit control is achieved with the next generation version of our fluorescence instrumentation coupled with the most advanced boiler internal treatment chemistry. This program detects system variations, determines the correct treatment dosage and adjusts feed rate in real time.

Delivering Real Value

The Nalco Water 3D TRASAR Boiler Technology creates significant value with preboiler corrosion control and boiler scale and deposit control. 3D TRASAR Boiler Automation can also help optimize and control boiler blowdown. The outcome is increased heat efficiency, reduced energy requirements, increased water reuse, asset preservation, and improved utilization of fuel to heat your boiler.

Contact your local Nalco Water sales engineer for more information on how Nalco Water and 3D TRASAR Boiler Technology can help deliver savings and improve your operation, or visit us at www.nalco.com/3DTRASAR.

eROI CASE STUDIES

Food processing plant in Northern Europe reduced energy costs by €96,000 per year and realized €4,700 per year in fresh water and wastewater savings.

A large university improved sustainability, saving \$26,000 per year in energy and water savings from improved management of boiler blowdown.

The Nalco Water Corrosion Stress Monitor helped an electric power plant reduce the cost of boiler shutdown and startup by approximately \$700,000 per incident, through a combination of:

- A significant decrease in start-up time
- The ability to plan the outage when replacement power costs were low

A paper mill avoided \$430,000 per day in lost production by minimizing boiler outages related to preboiler corrosion failures.

A specialty tire manufacturer improved competitive advantage in several ways:

- Enhanced reliability of steam generation for production support saved tens of thousands of dollars per year
- Extension of boiler asset life saved \$70,000 per year
- Improved labor utilization resulted in \$15,000 savings per year

We combine Nalco Water expertise with the industry's most advanced technology

3D TRASAR™



DETECT system variability and operational problems

DETERMINE proper corrective actions

DELIVER the results that drive optimal performance and savings

Nalco Water, an Ecolab Company

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