


An Intensive 5-Day Training Seminar On

# Boilers:

## Operation, Maintenance, Inspection, Control and Troubleshooting

26 - 30 Sep 2021, Dubai



 View Details

# Boilers:

## Operation, Maintenance and Troubleshooting

### INTRODUCTION

Boiler is an essential component of modern power plant as well as in any process and petrochemical plant. Modern boiler has to produce steam in an efficient and safe manner with the lowest operational cost that is practical. The safety of steam production and boiler operation presents important element in the overall steam production management. Boiler operation has to be in an environmentally acceptable way, including the aspects of combustion, but also chemical water treatment and other safety considerations.

This EuroMaTech training course will cover many important aspects of boiler operation, combustion control and feed water management. Methods of efficiency improvement of the boiler operation will be explained and discussed. Best practices for preventive and corrective maintenance based on inspection according to Codes & Standards will be explained and discussed. Problems in boiler operation will be discussed and problem-solving and troubleshooting will be illustrated through several real-world case studies and presented in the form of training courses. Maintenance and repair of the auxiliary mechanical equipment such as fans and pumps will be explained in detail.

**Participants on the Boilers training course will develop the following competencies:**

- Better understanding of boiler and steam generator technologies
- Parallel operation for generators
- Knowledge about effective operation and maintenance of boilers
- Complete understanding of water treatment and its impact on boiler performance
- Applying modern maintenance techniques for boilers (RBI, FMEA and RCA)
- Modern techniques for boiler control systems and close monitoring

### WHO SHOULD ATTEND?

- Technicians and Engineers in charge of Boiler Operation
- Technical Personnel dealing with Boilers Maintenance
- Boiler Inspectors and Contractors
- Technical Personnel in charge of Steam Generation and Distribution Systems

### PROGRAMME OBJECTIVES

- Explanation of functions of controls, safeguards, interlocks and alarm systems
- Describe correct procedures for boiler starting up and shutdown
- Explanation of the malfunctions that can cause boiler shutdown
- Identification of the appropriate boiler feed water treatment methods
- Identification of important steps in inspection of cooling towers
- Knowing how to apply effective inspection and discover weakness points
- Recommendation of the best practice for condition monitoring

### TRAINING METHODOLOGY

This EuroMaTech Boilers training course will be conducted along training course principles with formal lectures and interactive worked examples. The emphasis will be on the explanation of all technical points and providing answers to problems that are encountered in everyday industrial practice regarding the efficient operation and maintenance of industrial boilers. Each learning point will be reinforced with practical examples and case studies. There will be ample opportunities for active discussion during the training course and video presentations. The sharing professional experiences and exchange will help solidify the gained knowledge. All training course materials will be provided.

### PROGRAMME SUMMARY

This EuroMaTech training course covers essential elements of boiler efficient and safe operation including the details of boiler control systems: safeguards, interlocks and alarm systems, required for start-up, shutdown. Preventive and corrective maintenance programs are discussed and explained as well as the troubleshooting procedures to avoid boiler accidents. The Boilers training course will enable the participants to develop deeper understanding of boiler operation so as to be able to solve practical problems as they encounter them.

# PROGRAM OUTLINE

## DAY 01

### Overview of Steam Generation and Use

- Overview of Boiler Types and Industrial Steam Generators
- Elements of Boiler Plant: *Fired Tube Boilers and Water Tube Boiler*
- Steam Generation Basics
- Generation operation parameters
- Power types - *KW, KVAR, KVA*
- Synchronization techniques and basic conditions
- Flame Characteristics
- Products of Combustion and Environmental Regulations

## DAY 02

### Boiler Efficiency and Performance

- Boiler Efficiency: *Economic and Environmental Aspects*
- Boiler Feed Water Preheating Train
- Air Economizers and Waste Heat Utilization
- Boiler Performance and Specifications
- Evaluating Boiler Efficiencies
- Boiler Blow-Down Control Recovery
- Steam Distribution System Losses

## DAY 03

### Boiler Safety Operation and Control

- Boiler Control Strategies: *Safeguards, Interlocks and Alarm Systems*
- Explain PLC for boiler controls (*practical*)
- Burner Management System (*BMS*)
- Safe Start Up and Shutdown Procedure
- Scale and Corrosion Control
- Chemical & Physical Treatment of Feed Water
- De-aeration of Feed Water: *Removing of Oxygen and CO2*

## DAY 04

### Boiler Inspection, Maintenance and Repairs

- Routine & Periodic Boiler Inspections: *Risk Based Inspection (RBI)*
- Common Boiler Problems in Operation
- Abnormal Operating Conditions and Operator Actions
- Maintenance Work Done Periodically
- Checklist for Maintenance of Fuel Supply System
- Maintenance of Condensate Recovery and treatment
- Using CMMS (*computer management maintenance systems*)

## DAY 05

### Boiler Troubleshooting and Accident Prevention

- Boiler Failures and Accidents: *Root Cause Analysis*
- How to apply FMEA (*Failure Mode Effective Analysis*)
- Boiler Troubleshooting Guide
- Applying RBI (*Risk-Based Inspection techniques*)

## IN-HOUSE TRAINING

EuroMaTech is capable of conducting this training programme exclusively for your delegates. Please e-mail us on [inhouse@euromatech.ae](mailto:inhouse@euromatech.ae) for further information and/or to receive a comprehensive proposal.

## QUALITY CERTIFICATIONS & ACCREDITATIONS

EuroMaTech is proud to be associated with the following accreditation bodies:



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## Operation, Maintenance, Inspection, Control and Troubleshooting

✓	Date	Venue	Fee(\$)
	26 - 30 Sep 2021	Dubai	US\$4,950

*This fee is inclusive of instruction materials, documentation, lunch, coffee/tea breaks & snack. All Fees are subject to 5% Value Added Tax (VAT).\**

### Your Details

Name (Mr/Ms):.....  
Position:..... Organisation:.....  
Address:.....  
.....  
City / Country: .....  
Telephone / Fax: .....

### Mode Of Payment

- Please find enclosed a cheque made payable to EuroMaTech  
 Please invoice me  
 Please invoice my company as follows:

Contact Name: .....  
Company Name: .....  
Address:.....

#### Documentation

High Quality material has been prepared by the Seminar Leader for distribution to delegates. In addition, a special note pad to facilitate note taking will be provided.

#### Certificates

A Certificate of Completion will be issued to those who attend & successfully complete the programme.

#### Schedule

Our Course timings commences at 08:30 and concludes at 14:00, followed by lunch on a daily basis.

#### Hotel Accommodation

EuroMaTech has negotiated special rates for a limited number of rooms in the hotel. Early registration will help to secure a room at the reduced rate.

#### Registration & Payment

Please complete the registration form on this page & return it to us indicating your preferred mode of payment. For Further Information, Contact Your Nearest EuroMaTech Office.

#### Cancellation Policy

Request for seminar cancellation must be made in writing & received at EuroMaTech three weeks prior to the seminar date. A U.S.\$250/- processing fee will be charged per delegate for each cancellation. Thereafter, we regret that we are unable to refund any fees due, although in such cases we would be happy to welcome a colleague who would substitute for you.

#### Disclaimer

EuroMaTech reserves the right to alter the content, location of the Seminar, or the identity of the speakers in case of events beyond our control.

**\*VAT Announcement:** The Government of UAE have introduced Value Added Tax (VAT) on goods and services from 01-January-2018. In compliance with the legislation issued by the UAE Government, we will be applying a 5% VAT on the fees for all our programs and services offered from January 2018 as applicable and stipulated in the FTA circulars.

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