MAWA EVENTS

Address: No. 857, Block A2. Leisure Commerce Square - No 9., 46150 Petaling Jaya, Selangor, Malaysia

Phone: +601116373203 | **Email:** info@mawaevents.net

CUTTING-EDGE BOILER PLANT AND WATER TREATMENT TECHNOLOGIES

"Master the Latest Technologies in Boiler Plant Operations and Water Treatment for Enhanced Efficiency"

Schedule

Date	Venue	Fees (Face-to-Face)
15 – 19 Jun 2026	London, UK	USD 3495 per delegate

► **Available delivery methods:** Face-to-Face & Online Training

Introduction

Boiler plants and water treatment systems are integral components in many industrial processes. As technology evolves, staying ahead of the curve on the latest trends and innovations is crucial for maintaining efficiency, sustainability, and cost-effectiveness. This course is designed to introduce participants to cutting-edge technologies in boiler plant operations and water treatment systems, focusing on the most recent advancements and their practical applications.

Participants will learn about the latest methods to improve energy efficiency, reduce costs, and ensure that systems are operating within the highest standards of safety and environmental compliance. This training will cover emerging technologies, optimization techniques, and maintenance strategies that enhance system performance, increase reliability, and extend the lifespan of equipment.

Objectives

By the end of this course, participants will be able to:

- Understand the latest advancements in boiler plant technologies
- Implement best practices for optimizing water treatment processes
- Troubleshoot and maintain modern boiler systems effectively
- Enhance energy efficiency in boiler plant operations
- Apply cutting-edge technologies to improve system reliability and safety

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Why Attend

- Stay up to date with the latest technologies in boiler plant and water treatment systems
- Learn about energy-efficient practices that reduce operating costs
- Gain hands-on experience with advanced boiler plant and water treatment technologies
- Improve the reliability and longevity of your systems with innovative maintenance practices
- Network with industry experts and gain insights from real-world case studies

Target Audience

This program is designed for:

- Boiler plant engineers and operators
- Mechanical, process, and utility engineers
- Maintenance and reliability managers
- Water treatment specialists
- Facility and plant managers
- HSE officers and energy auditors

Individual Benefits

Key competencies that will be developed include:

- Expertise in the latest boiler plant and water treatment technologies
- Knowledge of energy-efficient practices and technologies
- Advanced troubleshooting skills for modern boiler systems
- Ability to optimize and maintain complex water treatment systems
- Skills to manage compliance with safety and environmental regulations

Organizational Benefits

Upon completing the training course, participants will demonstrate:

- Improved operational efficiency and reduced energy costs
- Enhanced reliability and safety of boiler plant and water treatment systems
- Greater capability to handle emerging challenges in system maintenance
- Better alignment with industry best practices for sustainability and compliance
- Increased team expertise in maintaining cutting-edge equipment and technologies

Instructional Methodology

The course follows a blended learning approach combining theory with practice:

- Strategy Briefings – Detailed overviews of modern boiler and water treatment systems and innovations
- Case Studies – Industry examples of failures and high-performance system upgrades
- Workshops – Interactive sessions analyzing plant data and solving treatment issues
- Peer Exchange – Group discussions on region-specific operational challenges
- Tools – Maintenance checklists, chemical dosage calculators, and monitoring templates

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Course Outline

Detailed 5-Day Course Outline

Training Hours: 7:30 AM – 3:30 PM **Daily Format:** 3–4 Learning Modules | Coffee Breaks: 09:30 & 11:15 | Lunch Buffet: 01:00 – 02:00

Day 1: Boiler Plant Fundamentals and Modern Technologies

- Module 1: Introduction to Boiler Types and Design (07:30 – 09:30)
- Fire-tube vs. water-tube boilers
- Key design features and applications
- Module 2: Combustion Efficiency and Heat Recovery (09:45 – 11:15)
- Burners, fuel options, and energy efficiency strategies
- Heat recovery systems and condensate return
- Module 3: Boiler Instrumentation and Controls (11:30 – 01:00)
- Modern control systems, sensors, and alarms
- Safety interlocks and monitoring
- Module 4: Workshop – Efficiency Gap Analysis (02:00 – 03:30)
- Identifying performance bottlenecks

Day 2: Water Chemistry and Pre-Treatment Technologies

- Module 1: Water Quality and System Impacts (07:30 – 09:30)
- Understanding hardness, alkalinity, conductivity, and pH
- Scaling, fouling, and corrosion risks
- Module 2: Pre-Treatment Processes (09:45 – 11:15)
- Filtration, softening, reverse osmosis, and demineralization
- Module 3: Oxygen Removal and Deaeration (11:30 – 01:00)
- Mechanical vs. chemical deaeration
- Condensate polishing
- Module 4: Monitoring Tools and Online Sensors (02:00 – 03:30)
- Real-time data systems and smart controllers

Day 3: Chemical Treatment and System Protection

- Module 1: Internal Treatment Programs (07:30 – 09:30)
- Phosphate, polymer, and amine-based programs
- Module 2: Corrosion Inhibition and Scale Prevention (09:45 – 11:15)
- Case examples of chemical treatment failures and fixes
- Module 3: Blowdown Management (11:30 – 01:00)
- Manual and automated blowdown best practices
- Module 4: Workshop – Designing a Treatment Program (02:00 – 03:30)
- Build and balance a chemical dosing plan

Day 4: Inspection, Maintenance, and Troubleshooting

- Module 1: Boiler Inspection and Risk-Based Maintenance (07:30 – 09:30)
- ASME standards, NDT methods, and lifecycle management
- Module 2: Common Failure Modes and Root Causes (09:45 – 11:15)
- Corrosion, cracking, scale buildup, and thermal fatigue
- Module 3: Maintenance Planning and Reporting (11:30 – 01:00)
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Preventive and predictive maintenance schedules

- Module 4: Case Study – Boiler Incident Analysis (02:00 – 03:30)
- Investigation and response

Day 5: Energy Efficiency, Emissions, and Future Trends

- Module 1: Boiler Energy Optimization (07:30 – 09:30)
- Benchmarking and reducing excess air/fuel ratio
- Module 2: Emission Control and Compliance (09:45 – 11:15)
- NOx, CO2, particulate controls, and environmental permits
- Module 3: Innovations in Boiler and Water Tech (11:30 – 01:00)
- IoT sensors, AI diagnostics, green boilers, and zero-liquid discharge
- Module 4: Final Group Exercise & Review (02:00 – 03:30)
- Design a plant improvement action plan

Certification

Participants will receive a Certificate of Completion in Cutting-Edge Boiler Plant and Water Treatment Technologies, recognizing their expertise in modern boiler plant operations and advanced water treatment technologies.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation’s unique goals.

In-House / Customized Training Interested in running this course for your team? Please contact us:	TEL: **+601116373203**	EMAIL: **info@mawaevents.net**