



## PROVIDER OF STEAM AND HOT WATER BOILER TRAINING





**Leigh Ridlington**  
*Managing Director*

Paul Bough, a cornerstone of our company, has retired after many years of dedicated service. His contributions have been invaluable and we wish him all the best in his well-deserved retirement. However, we are delighted to announce that Paul will continue to share his expertise by delivering training courses moving forward. His extensive knowledge and experience remain an essential asset to the industry and we are confident that he will continue to make a significant impact in this capacity.

Following the retirement of Paul Bough, I have taken over as the new Managing Director. With a wealth of experience and a fresh perspective, I am committed to ensuring that we continue to lead the industry in steam and boiler training.

#### **Celebrating Growth and Success**

We are proud to report that our year-on-year turnover has consistently increased, reflecting our commitment to excellence and the trust our clients place in us. This growth is a testament to the hard work and dedication of our entire team.

#### **Exciting New Courses for 2025**

Looking ahead, we have ambitious plans for 2025. We are thrilled to announce the launch of several new courses designed to meet the evolving needs of our industry:

- **Steam Design Course:** Covering the fundamentals and advanced concepts of steam system design, this course ensures participants are well-equipped to handle complex projects.
- **Three New Legionnaire's Courses:** These courses focus on various aspects of engineering, providing in-depth knowledge and practical skills.
- **Hot Water Close Circuit Course:** A comprehensive course dealing with the water treatment of these systems, ranging from low, medium to high temperature systems.
- **First Aid in the Boiler House Course:** Equipping participants with essential first aid skills specific to the boiler house environment, enhancing safety and preparedness.
- **SBW1 & SBW2:** Equipping participants with the knowledge and skills necessary for the effective and efficient management of steam equipment, boiler house operations and water treatment processes.



## Promoting Safety and Efficiency

Training for boiler operators and managers is essential to ensure both safety and optimal performance in boiler operations. Proper training minimises accidents, reduces downtime and guarantees adherence to regulations.

## Key Advantages of Training

1. **Safety:**  
Well-trained operators are better prepared to manage emergencies, perform regular safety checks, operate boilers correctly and spot potential hazards, greatly reducing accident risks.
2. **Efficiency:**  
Training helps operators run boilers at peak efficiency, leading to energy savings and lower operational costs.
3. **Compliance:**  
Being well-versed in industry standards and regulations is vital. Training ensures operators and managers stay current with the latest requirements.

Investing in thorough training programs for steam boiler operators and managers is not only a regulatory necessity but also a strategic choice that boosts safety, efficiency and overall operational performance.





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DO NOT LET THIS HAPPEN TO YOU



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## STEAM AWARENESS

### Overview

The Steam Awareness is a ½ day Basic Course and is designed to provide plant operators, production personnel and site staff with a solid foundation in understanding steam systems, their operation and safety guidelines. This introductory course covers the basics of steam formation, temperatures and pressures, water hammer and relevant health and safety guidelines.

### Who Should Attend?

- Plant operators
- Production personnel
- Site staff responsible for steam-using equipment and operations
- Individuals beginning their careers where steam will play a significant role

### Course Objectives

- Ensure compliance with safety and environmental regulations.
- Understand what steam and condensate is and how they are formed
- Understand the components and operation of steam systems.
- Safe Isolation of equipment.

### Course Content

#### **The Law - Why Do We Need to Be Trained?**

- Understanding the legal requirements for steam plant operation
- Importance of compliance with safety and environmental regulations
- Consequences of non-compliance

#### **Safe Isolation and Reinstatement of Steam Systems**

- Understand how to safely isolate steam and condensate systems
- Understand how to safely reinstatement steam and condensate systems

#### **Introduction to Steam Systems**

- Understand how steam and condensate is formed
- Understand pressure, temperature and energy
- Understand how steam is distributed and condensate returned
- Understand the typical equipment found
- Understand what water hammer is



### Duration and Delivery

**Duration:** 1/2 Day.

**Location:** M&M Training Centre, or on your site.



## BOILER AWARENESS

### Overview

The Boiler House Awareness Basic Course is a half-day course designed to provide plant operators, production personnel and site staff with a solid foundation in understanding boiler systems, their operation and safety guidelines. This introductory course covers the basics of boiler operation, safety protocols and relevant health and safety guidelines.

### Who Should Attend?

- Plant operators
- Production personnel
- Site staff responsible for boiler operations and equipment
- Individuals beginning their careers where boiler operations will play a significant role

### Course Objectives

- Ensure compliance with safety and environmental regulations.
- Understand what boiler systems are and how they operate.
- Understand the components and operation of boiler systems.
- Learn safe isolation of equipment.



### Course Content

#### **The Law - Why Do We Need to Be Trained?**

- Understanding the legal requirements for boiler plant operation
- Importance of compliance with safety and environmental regulations
- Consequences of non-compliance

#### **Introduction to Boiler Systems & Operation**

- Overview of boiler and boiler house components and their functions
- How boilers operate
- Basics of combustion
- Basics of water treatment
- Basics of Boiler Blowdown
- Basics of Water Level Control
- Basics of Boiler Alarms
- Procedure of opening/ closing the crown valve

### Duration and Delivery

**Duration:** 1/2 Day.

**Location:** M&M Training Centre, or on your site.

## STEAM UTILISATION

### Who Should Attend?

This course is intended for all personnel that are involved with the steam plant. Also, for those who are responsible – or may become involved with the installation/ maintenance of steam equipment.



We recommend this course is taken in conjunction with our Boiler House Course.

### Aims

To ensure that all personnel involved with steam equipment understand the principles of steam and are able to recognise how steam equipment should be sized, installed and checked to give maximum efficiency and safety. Delegates are given the opportunity to take a certified examination which is a recognised qualification valid for 5 years.

### Course Content

- Why Do We Need to Be Trained on Steam?
- What Is Steam?
- Formation of Steam
- Steam Tables
- Steam Production
- Steam Distribution
- Steam Design
- What is Condensate?
- Steam Traps
- Steam Trap Sizing
- Steam Headers (Manifolds)
- Trapping of Process Plant
- Pressure Reduction
- System Control
- Control Valves
- Valves and Ancillaries
- Electric Condensate Recovery Units
- Thermal Expansion
- Safe Operation of Valves

### Duration and Delivery

**Duration:** 1 Day.

**Location:** M&M Training Centre, virtually, or on your site.



## BOILER HOUSE

### Who Should Attend?

Our Boiler House course is intended for all personnel involved with the operation and management of steam boiler plant.

We recommend this course is taken alongside our Steam Utilisation Course.



### Aims

To provide a detailed understanding of the operation of steam boiler(s) and to ensure operators are aware of the mandatory requirements and safety procedures surrounding the operation of a boiler. Delegates are then given the opportunity to take a certified examination, which is a recognised qualification valid for 5 years.

### Course Content

- Legislation
- Boiler Construction
- Different Types Of Boilers
- The Boiler House & Equipment
- Water Quality
- Water (Pre-Treatment)
- Boiler Feed Tanks
- Water (Post Treatment)
- Boiler Blowdown & TDS
- Boiler Water Level Control
- Boiler Burner Control (Pressure)
- Burner Combustion
- Ventilation
- Energy Saving Potential
- Boiler Routines
- BG01 Compliance
- Safe Isolation
- Boiler Inspections

### Duration and Delivery

**Duration:** 1 Day.

**Location:** M&M Training Centre, virtually, or on your site.





## BOILER HOUSE (E-MODULES)

Developed in conjunction with “e-tech learning” we now offer our certified Boiler House course to be undertaken at the delegates own pace.

Upon receipt of purchase order, delegates are granted access to an advanced web-based learning platform that enables them to undertake 9 distinct modules. Following the completion of each module, delegates will undertake a multiple choice examination that assesses their understanding of the topics covered in the preceding module.



The e-modules offer a significant advantage, as delegates have the freedom to progress through the modules at their preferred pace (maximum of 1 month). Additionally, each module can be paused and rewind if needed. This lowers the need to organise shift cover and arrange travel/ hotels.

### Course Modules

- Safety First – Legislation and Compliance
- Boiler Design and Construction
- Boiler Fixtures and Fittings
- Water Quality
- Water Management
- Combustion and Boiler Control
- Operations and Procedures
- Energy Saving Techniques
- Environment and MCPD

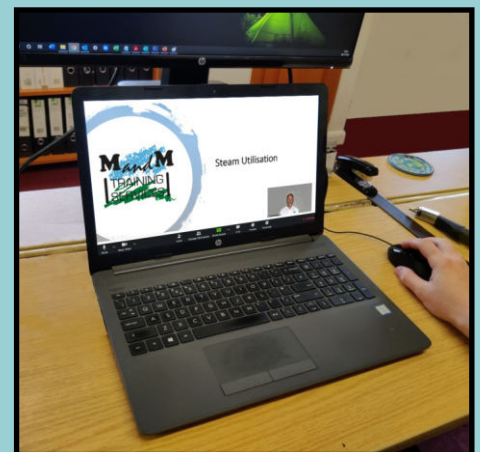


### Who Should Attend?

Our Boiler House course is intended for new starters and apprentices who will be having involvement with the boilers/ boiler house equipment.

### Aims

To provide a detailed understanding of the operation of steam boiler(s) and to ensure operators are aware of the mandatory requirements and safety procedures surrounding the operation of a boiler.



## ALARM RESPONSE TRAINING

### Overview

This course is typically adjusted for your own Boiler House, incorporating literature, procedures and photographs pertaining to your own equipment and alarms. This may necessitate a visit prior to presenting the course to gather the required information.

The Boiler House Alarm Response Training Course is designed to equip Boiler House managers, operators, maintenance personnel and alarm responders with the essential skills and knowledge to respond effectively to boiler house alarms. This comprehensive course focuses on the reasons why prompt response is critical, safety protocols, alarm diagnostics and swift, informed decision-making to mitigate risks and maintain operational continuity.



### Course Objectives

By the end of this course, participants will:

- Understand the types and causes of boiler house alarms.
- Learn how to identify and prioritise alarms based on severity.
- Master the procedures for safe and efficient alarm response.

### Course Content

#### **Safety Protocols and Compliance**

- The Law, Regulatory standards and best practices.
- Ensuring personal and team safety during alarm response.

#### **Introduction to Boiler Systems**

- Boiler components and functions.
- Worst case scenario of not responding to a critical alarm
- Common boiler alarms and their triggers.

### Key Benefits

- Gain confidence in managing boiler house alarms.
- Minimise downtime and operational disruptions.
- Ensure compliance with safety regulations.
- Enhance teamwork and communication in high-pressure situations.

#### **Alarm Diagnostics and Prioritisation**

- Types of alarms: high-pressure, low-water, temperature and more.
- Tools and techniques for troubleshooting.

#### **Hands-On Training (if training is carried out on the site that the boiler house is located).**

- Practical exercises in alarm response.
- Simulated scenarios for critical and non-critical alarms.

### Duration and Delivery

**Duration:** 1 Day

**Location:** M&M Training Centre, or on your site.

Please note that the best learning experience will be achieved by presenting this course on the site that the boiler house is located.

## 1-DAY WATER TREATMENT

### Who Should Attend?

Our Water Treatment course(s) are intended for operators of industrial steam boilers and plant managers who wish to understand the importance of water quality for their boiler.

This course is typically taken in conjunction with our Steam Utilisation and Boiler House Course.



### Aims

Upon completion, this course will enable the delegates to undertake the most important/regular tests on their industrial steam boiler. Complete with video demonstrations, the delegate will be able to optimise their boiler plant water treatment, improving safety, efficiency and steam quality.

### Course Content

- Safety, Legislation & Guidelines
- Water and its Impurities
- Water Pre – Treatment Methods
- Hotwells & Deaerators (Thermal De-Aeration)
- Water Post Treatment (Chemical Dosing)
- The Boiler Water
- Consequences of Impurities in the Boiler
- Blowdown & TDS
- Magnetite
- Idle Boilers
- Getting it Wrong
- Sampling & Testing



### Duration and Delivery

**Duration:** 1 Day

**Location:** M&M Training Centre, on your site and virtually.



## 2-DAY WATER TREATMENT

### Who Should Attend?

Our Water Treatment course(s) are intended for operators of industrial steam boilers and plant managers who wish to understand the importance of water quality for their boiler.

This course is typically taken in conjunction with our Steam Utilisation and Boiler House Course.



### Aims

Upon completion, this course will enable the delegates to undertake the most important/regular tests on their industrial steam boiler. Complete with practical and video demonstrations, the delegate will be able to optimise their boiler plant water treatment, improving safety, efficiency and steam quality. All delegates be given an option to receive the latest copy of BG04.

### Course Content

#### **Day 1**

- The Water Cycle
- Contamination of Water
- Blowdown Calculations
- Water Treatment Methods
- Good Practices
- Feed tanks/ Hotwells
- Idle Boilers
- Bottom Blowdown & TDS
- Consequences of High TDS
- Safety & Legal Requirements
- Typical Water Treatment Testing Kits



#### **Day 2**

- Practical demonstrations/ physical water treatment testing.

Delegates must bring samples of their own boiler water in enabling to gain greater knowledge/ experience with their own WT regime.

### Duration and Delivery

**Duration:** 2 Day

**Location:** M&M Training Centre, on your site.

## BOILER HOUSE MANAGERS AWARENESS

Until now, there was little training available which is focused directly on the management of the boiler house. Consequently, since launching the course in 2022 - it has received an astonishing amount of interest. Therefore, dates are filling up rapidly.



### Who Should Attend?

Our BHMA course is suitable for:

- Boiler house managers
- Employees hoping to become boiler house managers
- Supervisors
- Safety professionals/ representatives responsible for operation, manning and safety within the boiler house

### Aims & Objectives

The principal aim and objectives of the programme is to provide delegates with the range of tools required to manage all aspects within the boiler house, to ensure that it is safe, efficient and environmentally friendly

### Course Content

- Legislation, guidelines & best practices
- Hazard analysis
- What can go wrong?
- Pressure systems overview
- Emergency procedures
- Managers checklists
- Boiler house checks
- Efficiency gains



### Duration and Delivery

**Duration:** 1 Day

**Location:** M&M Training Centre, on your site and virtually.

## ENERGY EFFICIENCY & CO2 REDUCTION (EE & CO2 RED)

### Who Should Attend?

Our course is suitable for:

- Boiler house managers
- Plant/ Boiler operators
- Supervisors
- Safety professionals/ representatives responsible for operation and manning of the boiler house



### Aims

The principal aim and objectives of the programme is to provide delegates with the range of tools required to combat their plants energy efficiency. During the course, delegates will be taught how to calculate losses from: steam, energy, water and chemicals.

### Course Content

- |  |   |
|--|---|
| <ul style="list-style-type: none"> <li>• Environmental Issues</li> <li>• Steam Tables</li> <li>• Formation of Steam</li> <li>• Steam Distribution</li> <li>• Condensate &amp; Water Hammer</li> <li>• Savings from Returning Condensate</li> <li>• Steam Traps &amp; Losses</li> <li>• Steam Trap Testing</li> <li>• Air in the Boiler &amp; Steam System</li> <li>• Heat Exchanger Load Calculation &amp; System Control Issues</li> <li>• Economy, steam leaks, Insulation + blowdown</li> </ul> | <ul style="list-style-type: none"> <li>• Hot wells</li> <li>• TDS &amp; Bottom Blowdown</li> <li>• Blowdown Savings from Water Treatment &amp;/OR Heat Recovery</li> <li>• Heat Transfer</li> <li>• Combustion</li> <li>• Pre-Heating of Combustion Air</li> <li>• Boiler &amp; Plant Efficiency</li> <li>• Condensate Closed Loop Systems</li> <li>• Economisers</li> <li>• Maximising Efficiency Gains</li> <li>• The Future</li> </ul> |
|--|---|

### Duration and Delivery

**Duration:** 2 Day

**Location:** M&M Training Centre, on your site and virtually.





**STEAM, BOILER HOUSE & WATER TREATMENT - (SBW 1 & 2)****Overview**

SBW 1 is a comprehensive 3-day training course designed to equip participants with the knowledge and skills necessary for the effective and efficient management of steam equipment, boiler house operations and water treatment processes.

The SBW 2 course builds on the SBW 1 course, with the first three days covering the same material. It includes an additional fourth day focused on practical water treatment training, where participants work directly with water samples provided by their own facility.

To ensure participants meet the course prerequisites, evidence of the student's role and/or experience as an operator or manager within the boiler house must be provided prior to attendance. This will be assessed to confirm eligibility for the course.

At the end of each day, students must successfully pass an exam (one per day). These exams are more advanced than those offered in the 1-day courses and successful completion grants the student a pass certificate accredited for 5 years. This certificate confirms that the student has acquired the necessary knowledge but does not by itself prove competence.

**Competency Assessment:**

To be deemed fully competent, participants must undergo a separate competency assessment, which can be purchased upon course completion.

- The assessment involves a site visit, typically 2–3 months after the student has passed the course. This allows time for the student to refine their skills in a practical setting.
- During the site visit, practical competency checks are conducted to ensure the student can effectively apply their learning in the workplace.
- Upon successful completion, the student will receive a certificate of competency, confirming their ability to perform tasks safely and efficiently in a boiler house environment.

**Course Objectives:****SBW1:**

- Understand the fundamental principles of steam generation and utilisation.
- Safely operate boiler house equipment.
- Implement strategies to reduce energy consumption and improve boiler efficiency.
- Monitor and treat water quality to prevent scaling, corrosion and fouling in steam systems.
- Understand and comply with health, safety and environmental regulations in boiler house operations.

**SBW2:**

- Gain practical knowledge of carrying out water treatment testing



## STEAM, BOILER HOUSE & WATER TREATMENT - (SBW 1 & 2)

### Course Content

#### **Day 1: Introduction to Steam Systems & Utilisation (SBW 1 & 2)**

- Law, regulations, approved codes of practice and guidance applicable to steam systems.
- How steam and condensate are generated, distributed (basic design) and the removal of condensate.
- Steam quality and the removal of air and gases from steam.
- Water hammer: what it is and why it must be avoided.
- Reading and using steam tables.
- Key steam system components: stop valves, pressure reduction valves, regulators, steam traps and condensate recovery equipment.
- Thermal expansion of pipework and safe valve operation.
- Steam system isolation (HSG 253).

#### **Day 2: Boiler House Operations (SBW 1 & 2)**

- Boiler types: wetback, dry back, steam generators and vertical tubeless.
- Key boiler components: gauge glasses, level limiters and pressure transmitters.
- Key boiler house components: burners, economisers, feedwater systems, hot wells, deaerators and fuel systems.
- Combustion and heat transfer.
- Boiler annual inspections.
- Boiler cold start and warm start procedures.
- Daily and weekly boiler house checks.

#### **Day 3: Water Treatment for Steam Systems (SBW 1 & 2)**

- The role of water quality in boiler performance and longevity.
- Types of water treatment and equipment: softening, demineralisation and reverse osmosis.
- Effects of poor water quality: scaling, corrosion, fouling and efficiency reduction.
- Basics of water chemistry: pH, hardness, alkalinity, conductivity and total dissolved solids (TDS).
- Treatment options for steam systems: chemical dosing, filtration and monitoring systems.
- Bottom blowdown and side (TDS) blowdown: objectives and management.

#### **Day 4: Practical Water Treatment Testing (SBW 2)**

- A wide range of practical testing and fault finding.

### Duration and Delivery

**SBW 1:** 3 Days

**SBW 2:** 4 Days

**Location:** M&M Training Centre, or on your site.

## Boiler Operation Accreditation Schemes (BOAS)

### Who Should Attend?

The BOAS course is an advanced course and is only intended for boiler operators, managers and supervisors with a minimum of 100 operating hours spread over 6-months (for which evidence must be provided).

We therefore encourage delegates to attend our other courses prior to attempting BOAS. This will allow all delegates to put into practice things learnt and slowly start to gather the necessary evidence and experience needed prior to applying for BOAS.

### Aims

To provide a thorough and complete understanding and training in preparation for the BOAS qualification, whilst promoting safety and energy efficiency in the boiler house, with due regard for environmental aspects and legal requirements.

BOAS trained staff can ensure the boiler plant runs at its optimum efficiency. Correct training can potentially save thousands of pounds in fuel costs, chemicals and equipment used and reduce repairs.

### Content

- Safety & Legal
- Boiler Design & Construction
- Heat Transfer
- Water Treatment
- Combustion & Draught
- Fuel Concepts
- Control & Instrumentation
- Boiler Auxiliaries
- Environment
- Energy Efficiency
- Operation
- Management



Category	Duration	Location
Cat 1 - Hot Water Boilers (At Any Pressure / Temp)	4 Days	M&M Training Centre, or on your site.
Category 2 - Conventional Shell Type Steam Boilers	4 Days	
Category 5 - Steam Coil Generators	1 Day	



## STEAM PLANT MAINTENANCE

**Overview**

This course is tailored to meet the specific needs of your steam plant, incorporating literature, procedures and photographs relevant to your own equipment and maintenance protocols. Therefore, a site visit may be necessary prior to the course to gather the required information and ensure the training is fully aligned with your operational environment and equipment.



The SPM is designed to provide steam plant managers, operators and maintenance personnel with the essential skills and knowledge to maintain efficient, safe and reliable steam plant operations. This comprehensive course covers the critical aspects of steam plant maintenance, emphasising safety, efficiency and regulatory compliance.

**Course Objectives**

- Understand the components and operation of steam plant systems.
- Learn effective maintenance strategies and best practices.
- Identify and address common maintenance challenges.
- Ensure compliance with safety and environmental regulations.

**Course Content****Safety Protocols and Compliance**

- The Law
- Regulatory standards and legal requirements.
- Best practices for maintaining safety during maintenance activities.

**Introduction to Steam Plant Systems**

- Overview of steam plant components and functions.
- Common operational challenges and their implications.
- Safe Isolation procedures.

**Key Benefits**

- Enhance the reliability and efficiency of steam plant operations.
- Minimise unplanned downtime and maintenance costs.
- Ensure compliance with safety and environmental standards.
- Foster a culture of proactive maintenance and safety.

**Maintenance Strategies and Best Practices**

- Routine and preventive maintenance schedules.
- Diagnostic tools and techniques for identifying issues.
- Handling critical maintenance tasks.

**Hands-On Training**

- Practical exercises in maintenance procedures.

**Duration and Delivery**

**Duration:** 2 Days

**Location:** M&M Training Centre, or on your site.

The best learning experience is achieved when the course is conducted on-site, allowing participants to engage directly with their own equipment and systems.

## STEAM TRAP TRAINING

### Overview

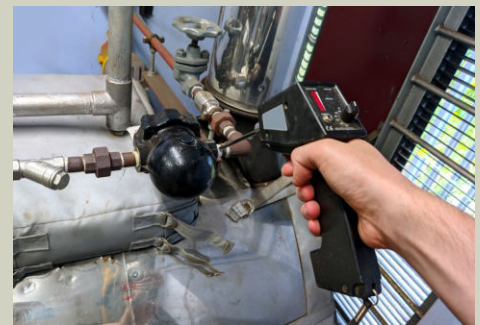
This course is designed to provide participants with the knowledge and practical skills required to test, diagnose, failed steam traps effectively. Incorporating customised materials and site-specific details, the training ensures participants gain a thorough understanding of steam trap operation and testing procedures. A preliminary site visit may need to be conducted to gather necessary information for tailored content.

### Who Should Attend?

- Maintenance personnel and engineers.
- Energy managers and auditors.
- Facilities management teams.
- Boiler house operators and technicians.

### Course Objectives

- Understand the role and function of steam traps within a steam system.
- Learn to identify different types of steam traps and their applications.
- Develop skills to test and diagnose steam trap performance accurately.
- Recognise the impact of faulty steam traps on system efficiency and energy costs.



### Course Content

#### **Introduction to Steam Traps**

- Functions and importance of steam traps in steam systems, including sizing and how condensate is discharged and returned.
- Overview of steam trap types and how they work
- Common issues caused by steam traps.

#### **Steam Trap Testing Procedures**

- Visual inspection techniques.
- Diagnostic tools: ultrasonic detectors, infrared cameras, etc.
- Identifying leaks, blockages and improper operation.
- Recording Results

#### **Hands-On Training**

- Practical demonstrations of steam trap testing techniques.

### Key Benefits

- Improve the efficiency and reliability of steam systems.
- Reduce energy consumption and operational costs.
- Ensure compliance with industry standards and safety regulations.
- Develop proactive maintenance strategies for long-term benefits.

### Duration and Delivery

**Duration:** 1 Day

**Location:** This is an on-site course only, allowing participants to work directly with their own steam system.

## STEAM SYSTEM DESIGN

**Overview**

The Steam Boiler and Steam System Design Course is designed to provide plant engineers, designers, consultants, contractors with the essential skills and knowledge to design efficient, safe and reliable steam systems. This comprehensive course covers the critical aspects of steam and boiler plant design, emphasising safety, efficiency and regulatory compliance.

**Who Should Attend?**

- Plant engineers
- Designers
- Consultants
- Contractors who design, manufacture and install steam systems.

**Course Objectives**

- Understand the regulatory compliance requirements of designing a steam system and the steps to take.
- Calculate the steam demand and steam load to ensure the boiler is appropriately sized.
- Size and specify other boiler house equipment such as the Hotwell, water treatment equipment etc.
- Specify and size valves, steam pipes, condensate pipes, control valves, steam traps, pressure reducing valves and regulators, safety relief valves, drop out pockets, expansion and many other components within the system.

**Course Content****The Law**

- Key pieces of legislation, guidance notes and best practices.
- Consequences of non-compliance.

**Pre-Design**

- The design risk assessment, the URS, P&IDs and HAZOPs.

**Mass Balance Survey**

- Calculating steam load requirements.
- Factors that can reduce the output capacity of steam raising plant.

**The Steam and Condensate Systems**

- The primary header, pipe geometry and trapping.
- Expansion of pipework.
- Isolations, pressure reduction, safety relief and system control.
- Process trapping, stall conditions and pumped condensate recovery.

**Sizing and Calculations**

- Sizing calculations: mass flow, working velocities and pipe size.

**Designing a new packaged system.**

- Reviewing new parameters and designing a system to suit; using all formula and guidance given throughout the duration of the course.

**Duration and Delivery**

**Duration:** 4 Days

**Location:** M&M Training Centre, or on your site.



## LOW TEMPERATURE HOT WATER BOILER

### Overview

The Low Temperature Hot Water Course is designed to provide plant engineers, designers, consultants and those responsible for the safety and operation of LTHW systems with the essential skills and knowledge to operate, safely, low temperature hot water systems. This comprehensive course covers the critical aspects of LTHW boilers, emphasising safety, efficiency and regulatory compliance.

### Who Should Attend?

- Boiler House Managers
- Boiler House Operators



### Course Objectives

- Know all the relevant legislation and guidelines.
- Understand different types of boilers.
- Identify all boiler fittings.
- Understand different types of pressurisation units.
- Have a basic understanding of different system layouts.
- Understand basic boiler controls.
- Have a good understanding of different water controls, parameters and what can go wrong.
- Understand the requirements for ventilation.
- Understand energy-saving opportunities within the boiler house.
- Understand how to carry out all boiler operations.

### Course Content

#### **Legislation and Guidelines**

- Law, regulations, approved codes of practice and guidance applicable to low temperature hot water boilers and systems.

#### **Introduction to Boilers**

- Understanding different types of boilers
- Identifying boiler fittings

#### **Pressurisation Units**

- Understanding different types of pressurisation units

#### **System Layouts**

- Basic understanding of different system layouts

#### **Basic Boiler Controls**

- Understanding basic boiler controls

#### **Water Controls and Parameters**

- Good understanding of different water controls, parameters and what can go wrong

#### **Combustion and Ventilation**

- Understanding combustion and the issues with poor combustion
- Requirements for ventilation

#### **Energy Saving Opportunities**

- Understanding energy-saving opportunities within the boiler house

#### **Boiler Operations**

- Understanding how to carry out all boiler operations

### Duration and Delivery

**Duration:** 1 Day

**Location:** M&M Training Centre, on your site and virtually.

## HOT WATER CLOSED SYSTEMS &amp; WATER TREATMENT

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# COMING SOON

## FIRST AID IN THE BOILER HOUSE

### Overview

This course is designed to provide participants with essential first aid knowledge and skills specific to the unique environment of a boiler house. Participants will learn how to address injuries, medical emergencies and hazards commonly encountered in boiler house operations.



### Who Should Attend?

- Boiler house managers, operators and technicians.
- Maintenance and facilities management teams.
- Health and safety officers.
- Emergency response personnel.

### Course Objectives

By the end of this course, participants will:

- Understand the potential risks and medical emergencies associated with boiler house operations.
- Learn essential first aid techniques and responses tailored to the boiler house environment.
- Develop confidence in managing emergencies effectively while awaiting professional medical assistance.

### Course Content

# COMING SOON

- Identifying and mitigating potential risks.
- Emergency protocols and evacuation procedures.

### Basic First Aid Techniques

- Managing burns, scalds, other heat-related injuries.
- Treating cuts, bruises and fractures.
- Chemical eye contamination, inhalation and ingestion
- Head, body impact injuries
- Recognizing and responding to medical emergencies (e.g., cardiac arrest, heat exhaustion).
- Use of Defibrillators and CPR.

### Practical Training

- Hands-on practice of first aid techniques.
- Simulated scenarios for handling common boiler house emergencies.
- Assessing and improving emergency response readiness.

### Duration and Delivery

**Duration:** 1 Day

**Location:** M&M Training Centre, or on your site.



## LEGIONELLA AWARENESS (L1)

**Overview**

This course is designed to provide participants with a fundamental understanding of Legionella bacteria, the risks it poses and the control measures required to prevent outbreaks. The training is suitable for individuals responsible for water systems or those involved in maintaining compliance with health and safety regulations.

**Who Should Attend?**

- Maintenance personnel and facilities managers.
- Health and safety officers.
- Duty holders and responsible persons.
- Anyone involved in water system maintenance and management

**Course Objectives**

- Understand what Legionella bacteria are and the health risks associated with them.
- Recognise high-risk systems and conditions that promote Legionella growth.
- Learn the legal and regulatory requirements for managing Legionella risks.
- Gain knowledge of basic control measures and monitoring techniques

**Course Content****Introduction to Legionella and Legionnaires' Disease**

- What are Legionella bacteria?
- How Legionella spreads and its health implications.
- Overview of Legionnaires' disease and associated risks.

**Legal and Regulatory Requirements**

- Key legislation and guidance (e.g., HSWA, COSHH, ACOP L8, HSG274).
- Responsibilities of duty holders and appointed persons.
- Record-keeping and compliance documentation.

**Risk Factors and High-Risk Systems**

- Conditions that encourage Legionella growth.
- Identifying high-risk water systems (e.g., cooling towers, hot and cold water systems).
- The importance of risk assessments.

**Control Measures and Monitoring**

- Basic water system maintenance practices.
- Legionella control schemes.
- Schematic diagrams.

**Duration and Delivery**

**Duration:** 1 Day

**Location:** M&M Training Centre, on your site, on virtually.

## LEGIONELLA APPOINTED PERSON (L2)

**Overview**

This course is designed to provide participants with the essential knowledge and skills required to fulfil the role of the Legionella Appointed Person. The training focuses on understanding Legionella risks, implementing control measures and ensuring compliance with regulatory requirements.

**Who Should Attend?**

- Anyone appointed as a responsible person for Legionella management

**Course Objectives**

- Be aware of the history, medical aspects, occurrence, ecology and transmission.
- Be aware of what Legionella bacteria need to grow and where they thrive.
- Describe the responsibilities of the responsible people.
- Implement the legal requirements of the responsible people.
- Manage the risks using competent personnel
- Assess the efficiency of the system records.
- Assess sampling and record keeping procedures.

**Course Content****Legal and Regulatory Requirements**

- Overview of relevant law, regulations and guidelines (e.g., ACOP L8, HSG274, HTM04-01).
- Role and responsibilities of the appointed person.
- Roles and responsibilities of other members of staff.

**Understanding Legionella and its Risks**

- Overview of Legionella bacteria and Legionnaires' disease.
- Identifying high-risk systems and environments.
- Health implications.

**Key Benefits**

- Gain confidence in managing Legionella risks effectively.
- Ensure compliance with legal and regulatory requirements.
- Reduce the risk of Legionnaires' disease outbreaks.
- Enhance the safety and well-being of building occupants.

**Risk Assessment and Logbook Management**

- Understanding risk assessment and risk assessment review
- Assessing records and results
- Record-keeping and compliance of documentation and keeping of relevant records

**Duration and Delivery**

**Duration:** 1 Day

**Location:** M&M Training Centre, on your site and virtually

## LEGIONELLA & EVAPORATIVE COOLING TOWERS (L3)

### Overview

This course is designed to provide participants with comprehensive knowledge and practical skills for managing Legionella risks in evaporative cooling tower systems. Participants will learn about the causes of Legionella proliferation, compliance with regulations and effective risk management strategies.



### Who Should Attend?

- Maintenance personnel and facilities managers.
- Health and safety officers.
- Duty holders and responsible persons.
- Anyone involved in water system maintenance and management.

### Course Objectives

- Understand the risks associated with Legionella in cooling towers.
- Learn the regulatory requirements for managing Legionella.
- Develop skills to assess, monitor and control Legionella risks effectively.
- Gain knowledge of best practices for cleaning, maintenance and water treatment.

### Course Content

#### **Legal and Regulatory Compliance**

- Overview of regulations and guidelines (e.g., ACOP L8, HSG274 Part 1).
- Responsibilities of duty holders and appointed persons.
- Record-keeping and compliance requirements.

#### **Risk Management Strategies**

- Conducting Legionella risk assessments.
- Water treatment and monitoring techniques.
- Maintenance schedules for cleaning and disinfection.

#### **Understanding Legionella and Evaporative Cooling Systems**

- Overview of Legionella bacteria and associated health risks.
- Identify how evaporative cooling systems work and the different types of systems.
- Key factors influencing Legionella growth in water systems.

### Key Benefits

- Reduce the risk of Legionella outbreaks in cooling tower systems.
- Ensure compliance with health and safety regulations.
- Improve the efficiency and safety of cooling tower operations.
- Foster a proactive approach to Legionella risk management

### Duration and Delivery

**Duration:** 1 Day

**Location:** M&M Training Centre, on your site and virtually

## COMPETENCY CHECKS

### Competency Checks

Whilst a number of our courses are certified/accredited, they do not provide proof of competency. Competence is a combination of:

- Training
- Skills
- Experience
- Knowledge

Therefore, we recommend an additional service in which we can conduct competency checks on delegates. This involves our trainers attending site, reviewing operational procedures, assessing the delegate's ability and evidence of their experience.

Operators will be asked to demonstrate a variety of tasks from:

- Safe entry into the boiler house
- Describing the functions of the boilers controls/ ancillaries
- Blowdowns (TDS, Bottom & Gauge)
- Calibration of instruments
- Start-up / shutdown procedures
- Many more

### Duration and Delivery

**Duration:** 1 day. (A maximum of 4 delegates)

**Location:** On your site





## TECHNICAL BOILER HOUSE RISK ASSESSMENTS

### Technical Boiler House Risk Assessment

A suitable and sufficient Technical Boiler House Risk Assessment is a legal requirement under The Management of Health and Safety at Work Regulations 1999 (MHSWR), Section Three.

A Technical Boiler House Risk Assessment is an example of the type of record that should be kept and made available for scrutiny under The Pressure Systems Safety Regulations 2000 (PSSR), Regulation Fourteen and is further recommended within BG01 Guidelines and The Health and Safety Executive Publication: INDG436.

### What We Offer

Not just an Operational Task Risk Assessment, the Technical Boiler House Risk Assessment assesses the entire Boiler House; including things such as:

- The Steam Boiler(s) and Boiler Controls
- The Primary Steam Header and Distribution System exiting the Boiler House
- The Feed Water Tank (Hotwell)
- The Water Treatment Plant and Associated Feedwater System
- The Blowdown Vessel and Boiler Blowdowns



Within our detailed Technical Boiler House Risk Assessment; we consider issues such as, although not limited to:

- The likelihood and severity of potential injuries
- The location and layout of the boiler room
- Operational risks
- Manning levels
- Additional controls for remote and/or unmanned boiler operation
- Conformance with current Guidelines and Regulations
- Achievable efficiency gains
- Documentation available concerning steam raising plant and equipment

M&M Training offer an independent risk assessment of your Boiler House, carried out by engineers who provide you with a written report. Should there be any issues, these will be identified within the report by the use of a simple **traffic light system**.

The report will also recommend any necessary control measures needed and the reduced level of risk shown within the traffic light system. We are then able to offer our services to help you take the necessary steps, to keep all personnel and the surrounding property safe.

## TECHNICAL WATER TREATMENT RISK ASSESSMENT

### Overview

At M&M Training Services, we specialise in providing comprehensive **Technical Water Treatment Risk Assessments** tailored specifically for steam and hot water boiler houses. Our expert team ensures that your facility complies with all relevant safety regulations, minimising the risk of boiler failures, corrosion and other hazardous events.

### The Importance of Technical Water Treatment Risk Assessments

- **Legal Requirement:** Conducting a Technical Water Treatment Risk Assessment is a legal obligation for businesses operating steam and hot water boiler houses.
- **Compliance with Combustion Engineers Association Guidelines:** Our assessments are conducted in line with the CEA guidance documents BG01 (Guidance on the Safe Operation of Boilers) and BG04 (Boiler Water Treatment). This ensures that the risk assessments are comprehensive and adhere to industry best practices.



### Why Choose M&M Training Services?

- **Expertise and Experience:** Our team has extensive knowledge of steam and hot water systems and water treatment regulations. We conduct thorough assessments to identify potential hazards and propose effective mitigation measures.
  - **Independent Assessments:** Unlike assessments conducted by a client's own water treatment company, our risk assessments are entirely independent. This ensures an unbiased evaluation, providing you with a comprehensive and objective understanding of your boiler house's condition.
- Comprehensive Assessments:** We scrutinise every area of risk within your boiler house, documenting our findings and providing a detailed report with prioritised recommendations.
- Compliance with Regulations:** Our assessments ensure that your facility complies with all relevant legislation, including the HASAW Act 1974, PUWER 1998, Water Industries Act 1961, MHSWR 1999, PSSR 2000, DSEAR 2002, MCPD 2015, PER 2016, BS EN 12953, BS 2790 and BS2486 + others.
- Peace of Mind:** With our thorough risk assessments, you can be confident that your boiler house is operating safely, efficiently and in compliance with all legal requirements concerning water treatment.

### What We Offer

- **Detailed Risk Assessments:** Comprehensive evaluation of potential hazards related to water treatment in steam and hot water boiler houses.
- **Mitigation Strategies:** Practical recommendations to eliminate or reduce identified risks.
- **Documentation and Reporting:** Detailed reports outlining findings and proposed actions, ensuring transparency and accountability.
- **Guidance and Support:** Guidance on implementing recommended safety measures and ongoing support to maintain compliance.

## DSEAR ASSESSMENT

### Overview

At M&M Training Services, we specialise in providing comprehensive **DSEAR (Dangerous Substances and Explosive Atmospheres Regulations) risk assessments** tailored specifically for steam boiler houses (we do not use generic software).

Our expert team ensures that your facility complies with all relevant DSEAR requirements, minimising the risk of fires, explosions and other hazardous events.

### The Importance of DSEAR Risk Assessments

- **Legal Requirement:** Conducting a DSEAR risk assessment is a legal obligation for businesses operating steam boiler houses
- **Identifying Overlooked Hazards:** Many existing site DSEAR risk assessments do not sufficiently address the boiler house, missing critical risks such as furnace side explosions and inadequate air changes within the boiler house, among others.



### Why Choose M&M Training Services to carry out your DSEAR Risk Assessment?

- **Expertise and Experience:** Our team has extensive knowledge of steam systems and DSEAR regulations. We conduct thorough DSEAR risk assessments to identify potential hazards and propose effective mitigation measures.
- **Comprehensive Assessments:** We scrutinise every area of risk within your steam boiler house, documenting our findings and providing a detailed report with prioritised recommendations.
- **Peace of Mind:** With our thorough DSEAR risk assessments, you can be confident that your steam boiler house is operating safely and in compliance with all legal requirements concerned with DSEAR regulations.

### What We Offer

- **Detailed Risk Assessments:** Comprehensive evaluation of potential hazards related to dangerous substances and explosive atmospheres.
- **Mitigation Strategies:** Practical recommendations to eliminate or reduce identified risks.
- **Documentation and Reporting:** Detailed reports outlining findings and proposed actions, ensuring transparency and accountability.
- **Guidance and Support:** Guidance on implementing recommended safety measures and ongoing support to maintain compliance.

## SOP'S & EOP'S

### What are SOP's & EOP's?

**SOP = Standard operating procedures.**

A written instruction of how to operate the piece of equipment or system safely and within its operating limits under standard (normal) operating conditions. Producing the Standard operating procedures (SOP) is part of the risk assessment exercise itself and provides a written means to instruct employees on how a particular procedure should be carried out and lays out boundaries of responsibility.

The process of writing a SOP necessitates thinking through all steps of a procedure and encourages the elimination of potential risks to the process itself. This is critical to providing reassurance and governance.

Operating procedures should clearly lay down instructions for operation of process plant that take into consideration COSHH, manual handling, permit to work, PPE Regulations, quality, HAZOP and SHE requirements.

A common example within the boiler house would be how to undertake a gauge glass blowdown.

**EOP = Emergency Operating procedure**

Procedures for staff, or other trained & competent personnel to follow in an emergency.

The template falls much the same as the SOPs, however the risks now can vary quite significantly and thus dynamic risk assessments must be undertaken when attending such an event.

A common example within the boiler house would be attending a boiler low level alarm condition.



### Why provide SOP's & EOP's?

These documents in essence, provide guidance on the step-by-step explanation / instructions on how to conduct specific tasks and/or interact with equipment or systems. By setting out the way a certain task or activity can be undertaken safely, we aim to mitigate mistakes (either in action or timing) that could lead to situations where the safe operating envelope may be breached are averted.

It can be used to satisfy legal compliance requirements too.

The three key reasons for managing health and safety in an organisation and providing such SOPs & EOPs are:

1. Legal
2. Financial
3. Moral & Ethical



## SOP'S & EOP'S

### What Procedures are Provided?

Whilst our procedures will be tailored specifically to your boiler house, below is an example list of procedures we will aim to produce.

### SOP's

- |  |                                   |
|--|-----------------------------------|
| 1. Safe Entry Into The Boiler House                | 20. Draining Down The Hotwell     |
| 2. Daily Checks                                    | 21. Adding Salt To The Brine Tank |
| 3. Gauge Glass Procedure                           | 22. Adding Chemicals To The Tanks |
| 4. Automatic Bottom Blowdown Override Test         | 23. Log Keeping                   |
| 5. Boiler TDS Sample                               | 24. Defect Log                    |
| 6. Inspecting The TDS Probe                        | 25. Boiler House Security         |
| 7. Calibrating The TDS Probe                       |                                   |
| 8. Boiler Flame Failure Test                       |                                   |
| 9. Boiler Evaporation Test                         |                                   |
| 10. High Water Level Test                          |                                   |
| 11. Pre-Requisite Checks for Boiler Start-Ups      |                                   |
| 12. Cold Start Up                                  |                                   |
| 13. Warm Start Up                                  |                                   |
| 14. Letting Steam Onto The Range – System Offline  |                                   |
| 15. Isolating the boiler from the header           |                                   |
| 16. Conservation When The Boiler Is Out Of Service |                                   |
| 17. Shutting Down A Boiler Fully                   |                                   |
| 18. Draining The Boiler                            |                                   |
| 19. Isolating The Fuel Supply – Gas                |                                   |



### EOP's

- |  |                         |
|--|-------------------------|
| • Boiler Alarm Response                                    | • Water Leak – Flood    |
| • Boiler Critical Alarm –Plant Emergency Shutdown Pressure | • Steam Leak            |
| • Boiler Critical Alarm – Low Water Level                  | • Boiler High TDS Alarm |
| • Boiler Alarm – High Water Level                          | • Chemical Spill        |
| • Boiler Alarm – High Pressure                             | • Evacuation            |
| • Burner Lockout   |                         |
| • Loss Of Fuel Supply – Gas                                |                         |
| • Fire   |                         |
| • Mains Power Failure                                      |                         |

## HSG-253 ASSESSMENTS

### Overview

At M&M Training Services, we specialise in providing comprehensive HSG 253 Isolation Risk Assessments tailored specifically for your steam and hot water boiler houses. Our expert team ensures that your facility complies with HSG 253 minimising the risk of accidents and hazardous events during maintenance and operational activities.

### The Importance of HSG 253 Isolation Risk Assessments

- **Legal Requirement:** Conducting an HSG 253 Isolation Risk Assessment is a legal obligation for businesses operating steam and hot water boiler houses.
- **Compliance with HSG 253 Guidelines:** Our assessments are conducted in line with the Health and Safety Executive's (HSE) HSG 253 guidelines (Safe Isolation of Plant and Equipment), ensuring that the risk assessments are comprehensive and adhere to industry best practices.
- **Identifying Overlooked Hazards:** Many existing site risk assessments do not sufficiently address isolation of steam, condensate and hot water systems, missing critical risks such as inadequate isolation procedures, potential for accidents during maintenance and improper locking and tagging practices.



### Why Choose M&M Training Services?

- **Expertise and Experience:** Our team of highly experienced engineers and safety consultants have extensive knowledge of steam systems and isolation procedures as outlined in the HSG 253 guidelines. We conduct thorough assessments to identify where and what type of isolation is required such as Double Block and Bleed Proven Isolation or Double Block and Bleed with proven and Positive Isolation amongst other types.
- **Independent Assessments:** Unlike assessments conducted by your in-house team, our risk assessments are entirely independent. This ensures an unbiased evaluation, providing you with a comprehensive and objective understanding of your boiler house's isolation procedures.
- **Comprehensive Assessments:** We scrutinise every area of risk within your boiler house, documenting our findings and providing a detailed report with prioritised recommendations.
- **Compliance with Regulations:** Our assessments ensure that your facility complies with all relevant legislation, including the HASAW Act 1974, PUWER 1998, Water Industries Act 1961, MHSWR 1999, PSSR 2000 and HSG253 amongst others

## What our customers have to say...

*Had Nathan on site today to evaluate our boiler economisers. Top level work done and executed professionally. Superb to work with Flomar & M&M.*

*"Thank you so much! Whilst the rest of the country ground to a halt, Flomar were able to hand deliver critical spares which enabled production to stay online"*

*"Superb organisation! The venue and facilities were superb. I learnt a lot, without a doubt the best course I have ever attended in my 11 years"*

*"Flomar were the only company that presented us with a plan customised specifically to our needs. A great team to work with, who took a good old-fashioned pride in their work."*

*"The practical parts of the courses has given our employees an insight to 'behind the scenes'. They now fully understand the mechanics of our system."*

*"Paul delivered the BOAS course in a way that is easy to understand. His knowledge and passion made me feel comfortable and stopped any worry about the course being online."*

*"I could not have completed it without you in my corner! The part that I am most pleased with, is that I completed the BHMA first. This helped tremendously. Your advice and guidance with the evidence pack, proved invaluable."*

*"Thank you so much! Whilst the rest of the country ground to a halt, Flomar were able to hand deliver critical spares which enabled production to stay online"*

*An excellent organisation to deal with and a knowledge that is on another level. Our staff always return with enthusiasm and positive feedback.*

*"For several years, we've worked with M&M and Flomar to deliver training for our boiler operators. This encompasses boiler house, Steam utilisation and water treatment but also CAT 2 BOAS. More recently, we've also engaged in TBRA for four of our STCs, the standard of which is very high.*

*The level of training provided is exceptionally high, a testament to the level of experience held by the trainers at M&M. Their firsthand exposure to various industries contributes significantly to that. The trainers impart their knowledge and real-world experience to the candidates so people can really relate to that. I've had some great discussions in the classroom on issues I've faced on site and then have the confidence to take the steps needed to resolve once and for all.*

*Having undergone BOAS training three times, I consistently learn new things. This has greatly contributed to my professional growth. I have built some strong relationships here and I've always found M&M and Flomar readily available to provide advice when needed. A great asset to the industry. "*





## INTRODUCING FLOMAR LTD



"With over **40 years experience** providing **steam and hot water solutions**, Flomar has gained industry wide respect.

Independence from specific equipment manufacturers allows us to recommend the **best equipment available**, tailored to your needs.

Whether you wish to improve plant efficiency, increase steam demand or hot water consumption, our team will provide the **best solution** for you."

**Mr. Leigh Ridlington**  
Managing Director

### Products

- Isolation Valves
- Steam Traps
- Control Valves
- Pressure Reducing Valves
- Pipeline Ancillaries
- Safety Valves
- Hotwells, CRUs & Associated Equipment

### Services

- Steam System Design
- PED, PESR & PSSR Assessments
- Steam Trap Surveys
- Steam Efficiency Surveys
- Insulation Surveys
- Boiler House Upgrades
- Burner & Boiler Servicing
- Boiler Room Care Packages

