TRANSFORMATIONAL
PERFORMANCE SOLUTIONS

Boiler Operation, Maintenance & Safety

In most facilities, the boiler is a device with a high potential for disaster. This makes boiler operations development a vital part of any facility's overall safety program. This development course is available in both virtual and in-person, instructor-led formats, it is a two-day Boiler Operation, Maintenance & Safety course that provide your team with the practices and procedures to eliminate any dangerous potential.

Description:

This course offers a great overview for maintenance technicians, multi-craft tradespeople, building managers, stationary engineers, or anyone seeking to improve their boiler maintenance and operation skills. The goal of this development is to ensure the student gains a comprehensive understanding of commercial, industrial and utility boiler systems. Boiler inspections, operating controls testing, and general troubleshooting tips will all be discussed. Overall, this program is designed to help maximize safety, dependability, and efficiency, thus extending boiler life, improving boiler efficiency, saving energy costs for the employer, and establishing a culture of safe work practices among the employees.

Course Outline:

Day One – Topics

Boiler Types and Configurations

1. Firetube Boilers
2. Water tube Boilers
3. Cast Iron Boilers
4. High Pressure Boilers
5. Low Pressure Boilers
6. Steam Boilers
7. Hydronic Boilers

Fundamentals of Combustion and Heat transfer

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1. Theory of Combustion
2. Thermodynamics
3. Steam Tables

Burner Operation and Control

1. Gas Train
2. Oil Train
3. Standard Burner
4. High Turndown Burner
5. Burner Controls

Boiler Operation and Testing / Standard Operating Procedures

1. Start-Up and Shut-Down
2. Normal Operation
3. Boiler Blowdowns
4. Water Quality Analysis and Treatment
5. Valve Types
6. Safety Valves
7. Low Water Cutoff Controls

Boiler Room Safety

1. Boiler Accidents
2. Cause and Effect

Day Two – Topics

Cause and Effect Case Study

1. Safety Valves
2. Confined Spaces
3. Lockout/Tagout

Operation Standards

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1. ASME Codes
2. NFPA Codes
3. NBIC Code

Controls and Safety Devices for Automatically Fired Boilers

1. Water Level Control
2. Temperature Control
3. Pressure Control
4. Fuel Trains

Inspection and Maintenance of Commercial and Industrial Boilers

1. Fireside
2. Waterside
3. Burner
4. Auxiliary Equipment

Boiler and Burner Efficiency

1. Heat Exchanger Efficiency
2. Combustion Efficiency
3. Efficiency Tests
4. Condensate Return
5. Steam Traps

Troubleshooting

1. Burner
2. Controls
3. Additional

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