

TRAINING SESSION PLAN

TITLE: STEAM BOILER ENGINEER GRADE 2

TIME: 08:00AM to 17:00PM

Objective: Trainees will be able to understand the definition, purpose, classification/comparison, fundamentals of steam, and terminology related to steam boilers.

DAY 1

LEARNING POINT	TIME
Introduction to Steam Boilers <ul style="list-style-type: none">• Classification/Comparison• Fundamentals of Steam• Terminology	08:00 AM – 10:00AM (2 hours)
Legislation and Standards for Steam Boilers <ul style="list-style-type: none">• Legislation Overview• Occupational Safety and Health Regulations 1994• Occupational Safety and Health (Plant Requiring Certificate of Fitness) Regulation 2024• OSH(Notification Accident, Dangerous Occurrence, Poisoning and Occupational Disease) Regulation 2004• Occupational Safety and Health (Use and Standard of Exposure Chemical Hazardous to Health) Regulations 2000• Codes of Practice and Guidelines• Roles and Responsibilities of Steam Engineers• Plant Safety, Management, and Maintenance Policy• Boiler House Management	10:00AM – 12:00PM (2 hours)
LUNCH	12:00PM – 13:00PM (1 Hour)
Boiler Design <ul style="list-style-type: none">• Applicable Codes & Standards• Steam Plant Conceptual Design• Boiler Design• Fabrication• Boiler Components• Parts, Essential Fittings, Safety Devices• Practical Demonstration Boiler Model	13:00PM – 16:00PM (3 Hours)
Boiler Installation, Testing and Commissioning <ul style="list-style-type: none">• Boiler installation	16:00PM – 17:00PM (1 Hours)

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DAY 2

LEARNING POINT	TIME
Continue Boiler Installation, Testing and Commissioning <ul style="list-style-type: none">• Testing and Commissioning• Pre-Commissioning – Cause & Effect Matrix• Burner Tuning• Refractory Drying Out Procedure• Alkaline Boiling Out & Post-Inspection Procedure• Steam Test Procedure	08:00 AM – 12:00PM (4 Hours)
LUNCH	12:00PM – 13:00PM
Boiler Operation Operational Responsibilities Overview <ul style="list-style-type: none">• Start-Up / Shutdown• Burner Operation & Interlock• Water Level Control System• Pressure Control System• Furnace Draft Control System• Furnace Purging	13:00PM – 17:00PM (4 Hours)

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DAY 3

LEARNING POINT	TIME
Continue Boiler Operation Operational Responsibilities <ul style="list-style-type: none">• Blowdown Control System• Steam Pressure Control System• Test Gauge Glass• Emergency Shutdown• Boiler Water Treatment	08:00 AM – 12:00PM (4 hours)
LUNCH	12:00PM – 13:00PM
<ul style="list-style-type: none">• Steam Management• Boiler Efficiency & Burner Efficiency Storage of Idle Boiler <ul style="list-style-type: none">• Overview of Storage Methods	13:00PM – 17:00PM (4 Hours)

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DAY 4

LEARNING POINT	TIME
Continue Boiler Operation Storage of Idle Boiler <ul style="list-style-type: none">• Dry Storage Using Silica Gel• Dry Storage Using Nitrogen• Dry Storage Using Vapor Phase Corrosion Inhibitors (VpCI) • Wet Storage Using Chemical• Wet Storage Using Nitrogen	08:00 AM – 12:00pM (4 Hours)
LUNCH	12:00PM – 13:00PM
Introduction to Combustion <ul style="list-style-type: none">• Combustion Theory• Types of Fuel• Emission Control	13:00PM – 15:00PM (2 Hours)
Inspection, Maintenance and Repair of Boilers <ul style="list-style-type: none">• Boiler Defects & Potential Root Causes	15:00PM – 17:00PM (2 Hours)

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DAY 5

LEARNING POINT	TIME
Inspection, Maintenance and Repair of Boilers <ul style="list-style-type: none">• Materials, Creep, and Fatigue• Corrosion and Control	08:00 AM – 12:00PM (4 Hours)
LUNCH	12:00PM – 13:00PM
Inspection, Maintenance and Repair of Boilers <ul style="list-style-type: none">• Welding and Welding Mechanical Failure• Non-Destructive Testing and Inspection (NDT/NDE)	13:00PM – 15:00 PM (2 Hours)
Boiler Mock-up Test <ul style="list-style-type: none">• Practical Demonstration• Mock-up Test• Review and Discussion	15:00PM – 17:00PM (2 Hours)

Contact Hours 40 hours