

TRAINING SESSION PLAN

TITLE: STEAM BOILER ENGINEER GRADE 1

TIME: 08:00AM to 17:00PM

Objective:

1. Trainees will gain an understanding of the legislation and standards related to steam boilers, including occupational safety and health regulations, codes of practice, guidelines, and roles and responsibilities of steam engineers.
2. Trainees will gain an understanding of the codes and standards, conceptual design, actual design, components, fittings, and safety devices related to boiler design.
3. Trainees will gain a comprehensive understanding of boiler operation, including fundamental responsibilities, safety precautions, emergency procedures, maintenance practices, steam management, and efficiency considerations.
4. Trainees will gain an understanding of boiler defects, potential root causes, materials, creep and fatigue, corrosion and control, welding and welding mechanical failure, and non-destructive testing and inspection (NDT/NDE).
5. Trainees will gain an understanding of machinery integrity, including the concepts of fit for services and process safety management.

DAY 1

LEARNING POINT	TIME
Registration, Safety Briefing & Breakfast Legislation and Standards for Steam Boilers <ul style="list-style-type: none">• Legislation Overview Terminology• Plant Requiring Certificate of Fitness Regulations 2024	08:00AM – 12:00PM (4 HOURS)
LUNCH	12:00PM – 13:00PM
Legislation and Standards for Steam Boilers <ul style="list-style-type: none">• Occupational Safety and Health Regulations• Codes of Practice and Guidelines• Roles and Responsibilities of Steam Engineers• Plant Safety, Management, and Maintenance Policy	13:00PM – 17:00PM (4 HOURS)

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DAY 2

LEARNING POINT	TIME
Safety Briefing & Breakfast Boiler Design <ul style="list-style-type: none">• Applicable Codes & Standards• Steam Plant Conceptual Design• Boiler Design• Boiler Components• Parts, Essentials Fittings, Safety Devices	08:00AM – 12:00PM (4 HOURS)
LUNCH	12:00PM – 13:00PM
Boiler Operation <ul style="list-style-type: none">• Introduction to Boiler Operation• Fundamental Operational Responsibilities• Starting Cold Boilers• Connecting More Than One Boiler• Operating Under Emergency Situations	13:00PM – 17:00PM (4 HOURS)

DAY 3

LEARNING POINT	TIME
Safety Briefing & Breakfast Boiler Operation <ul style="list-style-type: none">• Idling Procedure and Maintenance• Uses of Low-Pressure Steam and Hot Water Boiler• Special Types of Boilers for High Pressure and Temperature Steam• Steam Management• Boiler Efficiency and Burner Efficiency	08:00 AM – 12:00PM (4 HOURS)
LUNCH	12:00PM – 13:00PM
Inspection, Maintenance, and Repair of Boilers <ul style="list-style-type: none">• Boiler Defects & Potential Root Causes• Materials, Creep, and Fatigue• Corrosion and Control• Welding and Welding Mechanical Failure	13:00PM – 17:00PM (4 HOURS)

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DAY 4

LEARNING POINT	TIME
Safety Briefing & Breakfast Inspection, Maintenance, and Repair of Boilers <ul style="list-style-type: none">• Non-Destructive Testing and Inspection (NDT/NDE)• Practical Demonstration and Hands-on Activities	08:00 AM – 10:00AM (2 HOURS)
Machinery Integrity <ul style="list-style-type: none">• Introduction to Fit for Services• Introduction to Process Safety Management• Case Studies and Examples	10:00 AM – 12:00PM (2 HOURS)
LUNCH	12:00PM – 13:00PM
Machinery Integrity <ul style="list-style-type: none">• Fit for Services Assessment• Process Safety Management Implementation• Integration of Fit for Services and Process Safety Management	13:00PM – 17:00PM (4 HOURS)