



**Workshop on Boiler Plant:
Start-Up, Operations, Maintenance & Troubleshooting**

February 19 – 23, 2024, 1st Run: Lagos & Abuja
August 19 - 23, 2024, 2nd Run: Lagos & Port Harcourt

For Tutor -Led Class: 9am – 4:30pm

Workshop fee: N300, 000 per Participant

For online: Delivery via Zoom

Online course fee: N250, 000 per Participant

Available for In-plant Training

**600 U\$D for foreign
Participants**

Program Overview:

This is a practical maintenance engineering training course enabling delegates from technical and production disciplines to understand the rudiments of functional responsibilities that guarantees high level of Boiler Plant availability and reliability. This 5-Day Course teaches the practicality of Boiler Maintenance in a most suitable manner ready for implementation and monitoring.

For Whom:

This course is designed for all levels of Technical Personnel in the oil & Gas Industry as well as in Chemical and Process Industries but will greatly benefit Technical Personnel in charge of Production, Maintenance & Operations Engineers, Boiler Operators, Supervisors and Engineering Managers

Learning Objectives:

At the end of the program, participants will be able to:

- explain the concept of Boiler Plants and their applications;
- comprehend the derivation, calculation & application of reliability centered maintenance to Boiler Plants;
- measure the effectiveness and efficiency of Boiler Plant Maintenance functions;
- evaluate investment opportunities in maintenance engineering vis-a-vis Boiler Plants;
- ensure Boiler Plant availability and reliability based on production planning models;
- ensure cost-benefit analysis of Boiler maintenance activities with respect to production high level timing goals; and
- have a good overview of uncertainty and risk in the maintenance of Boiler Plants.

Course Outline:

DAY 1 - Combustion Process and Heat Transfer Fundamentals

- Basics of Thermodynamics
- Heat Transfer and Combustion
- Introduction to Steam Boilers
- Latent Heat & Sensible Heat
- Steam Properties

- Purity of Steam
- Mass and Energy Balance
- Conduction, Convection, and Radiation
- Combustion Fundamentals
- Excess Air & Flue Gases Relation

DAY2 - Boiler Types & Operational Overview

- Classifications of Steam Boilers
- Boiler Functional Overview
- Main Pressure Parts Components of Steam Boilers
- Burners Types & Operational Controls
- Low NOx Burners
- Draft System of Steam Boilers
- Water Treatment System

DAY 3 - Boiler Control Systems & Protection Mechanisms

- Boiler Control and Protection
- Safety Valves and Flame Safeguard
- Oxygen Trim
- Burner Management System
- Continuous Blowdown Control
- Drum Level Control

DAY 4 - Operation and Safety of Steam Boilers

- Boiler & combustion systems hazard codes
- Principles of Boiler Operation
- Pre-startup procedures
- Start-up & Shut down Procedures
- Routine Operation during Boiler Service
- Emergency Procedures

DAY 5 - Maintenance Management and Troubleshooting of Boilers

- Problems of Steam Boilers
- Preventive Maintenance Program
- Destructive Test of Steam Boilers
- NDT of Steam Boilers
- Steam Boiler Repair

Approaches to Boiler Plant Maintenance

- Systematic Approach to Boiler Plants Maintenance: MTTR, MTBF, FTE, etc. analysis
- Planning & Implementation of RCM for Boiler Plant
- Cost-Benefit Analysis of RCMS in Boiler Plant

Training Methodology

Lectures, discussions, exercises, case studies, audio-visual aids will be used to reinforce these teaching/learning methods.

LOCATIONS

1 - HCA Learning Centre. Acme House 2nd Floor, 23, Acme Road, Ogba, Industrial Scheme, Ikeja, Lagos, Nigeria

2 - Green-Minds Hotel, Plot 764, Cadastral Zone B05, E. Ekukinam Street, Utako District, Abuja

3 – 4 Okwuruola Street, off Stadium Road, Rumuola, Port Harcourt, Rivers State.

Open Course Fee: N300, 000
In-plant Fee Negotiable

WORKSHOP FEE:

N300, 000 per participant, VAT –N22, 500

Note: this covers Workshop Fee, Tea/coffee break, Lunch, course materials and certificate of attendance.

Payment should be made into our Accounts:

Account Name: Human Capital Associates Global Consult Ltd.

Union Bank of Nig. PLC: Account No: 0097961537

First Bank of Nig. PLC: Account No: 2033683960

Keystone Bank Ltd.: Account No: 1007150325

**For Booking / Enquiry, Call: 234-8051365946, 234-7087578814
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& 234-9112830607**