

# DIESEL GENERATOR

## Course Objectives

This course is intended to provide a theoretical overview of the operations and maintenance of a diesel generator.

## Course Description

This course is intended to provide an overview of the operations and maintenance of a diesel generator. The course starts with an introduction to the operations and maintenance of a diesel engine, covering all aspects of a modern diesel engine and associated systems.

A description of the Electrical systems associated with a diesel engine are then covered in detail including generator operations, generator components, excitation systems and voltage regulation.

## Who Should Attend

This is an excellent course for all employees involved in the operations and maintenance of diesel generators. This course would be of specific benefit to those who are involved in the use of diesels as emergency generators which would include most power stations, oil platforms and petrochemical plants.

## Pre-Requisites

All Attendees should have a sound power generation background.

## Course Outcome

At the end of this course you will have the theoretical knowledge required to apply when working with diesel generators.

## Course Outline

### Day 1

- Introduction
- Diesels as Prime Movers
- Diesel Systems and Terminology
- Compression Ratio
- Bore
- Stroke
- Combustion Chamber
- Diesel Operation
- Diesel Systems

### Day 2

- Generator Construction
- Generator Operations
- Synchronising
- Loading/Unloading
- Reactive Capability
- Power Factor

### Day 3

- Generator Testing and Commissioning
- Load Testing
- Load Rejection
- Generator Fault Finding
- Rotor Earth Fault
- Shorted Turns
- Stator Winding Faults
- Generator Repair Capability

### Day 4

- Voltage Regulators and Excitation systems
- Excitation Principles
- Static Excitation Systems
- Brushless Excitation Systems
- PMG's

# DIESEL GENERATOR (REF:OTSDES001)

## Day 5

System operations  
Droop Control  
Isochronous Control or Islanded Mode  
Black Start Operations

## Course Review and Assessment