

# DIESEL GENERATOR (REF:OTSDES001)

## 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



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## Day 5

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

## Course Review and Assessment

