



شركة ميرك العربية السعودية  
MEIRC Saudi Arabia

## Operation & Maintenance of Generators

**Duration 5 Days**

### Introduction

This course covers specific requirements and recommendations for the installation, operation and maintenance of generators

### Who Should Attend

Engineers & Technicians

### Course Objectives

Upon completion this program, participants will be able to:

- ❖ Specific requirements and recommendations for the installation, operation and maintenance of generators
- ❖ find critical information from professional sources such as the EGSA, IEEE, NFPA, NECA and NETA.
- ❖ Understand what backup system and emergency plan is best suited for your facility
- ❖ read and understand vendor drawings and technical information for generators
- ❖ Know how and when to successfully test onsite generator equipment
- ❖ work with parallel energy sources
- ❖ Perform synchronizing procedures and load sharing
- ❖ troubleshoot using a logical, systematic approach to isolate and repair generator problems

### Course Outlines

1. **GENERATORS AND PRIME MOVERS**
  - 1.1.1. Overview: Generator Purpose, Operation and Control
  - 1.1.2. Types of Prime Movers
  - 1.1.3. Generator Basic Electrical Fundamentals
  - 1.1.4. Grounding Types and Construction
  - 1.1.5. UPS System Fundamentals
2. **PROTECTION AND TRANSFER OF ELECTRICAL POWER**
  - 2.1.1. Circuit Breakers
  - 2.1.2. Switchgear
  - 2.1.3. Transfer Switches
  - 2.1.4. Parallel Operation
3. **GENERATORS AND ENGINE CONTROLS**
  - 3.1.1. Governors
  - 3.1.2. Voltage Regulators
  - 3.1.3. Engine Protection
  - 3.1.4. Onsite Generator Controls including PLC's and SCADA Systems
4. **AUXILIARY SYSTEMS**
  - 4.1.1. Fuel Systems
  - 4.1.2. Cooling Systems
  - 4.1.3. Exhaust Systems
  - 4.1.4. Vibration Attenuation
  - 4.1.5. Sound Attenuation
  - 4.1.6. Engine Starting Systems
  - 4.1.7. Load Banks
  - 4.1.8. Emissions Control



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**5. GENERATOR APPLICATIONS Generator Applications**

- 5.1.1. Cogeneration
- 5.1.2. Emergency Power Systems
- 5.1.3. Legally Required Standby Systems
- 5.1.4. Optional Standby Systems
- 5.1.5. Applicable Codes and Standards

**6. TROUBLESHOOTING AND MAINTENANCE OF ONSITE POWER GENERATION SYSTEMS**

- 6.1. Developing a Logical Systematic Approach to Troubleshooting
- 6.2. Common Generator Problems
- 6.3. Recommended Generator Maintenance Practices**