



## Electric Power Distribution System For Industrial Plants Training

### Description

#### Course Description

Electric power distribution system plays an important role in the efficient operation of a modern industrial plant. Such a system includes high voltage circuit breakers, switchgear, transformers, motor control centers, electric motors, variable speed drives, etc. A trouble-free electrical system is essential for an interruption-free plant operation.

This course will cover all aspects of power distribution, including system planning, equipment selection and application, system grounding, protection and conformity with electrical code requirements, etc.

Participants will work under instructor guidance to develop a power distribution system single line diagram for a typical industrial plant.

#### Course Objectives

##### After Participating In The course, You Will Be Able To:

- Plan your system and select equipment for it.
- Benefit from a clear understanding of all aspects of power distribution system
- Apply the Electrical Code to your projects
- Deal with the important issues such as load estimating, voltage selection, shortage circuit studies and power protection
- make your distribution system more efficient by applying your new knowledge of the power distribution system and equipment

#### Course Outlines

##### System Planning As Applicable To Industrial Plants

- Load estimates
- Voltage considerations and flicker

- Distribution types
- Substation bus arrangements
- Review of a conceptual single line diagram

### **Short Circuit Studies For Equipment Rating And Relaying**

- Applicable standards
- Method of calculations
- System and equipment data
- An example using hand calculations

### **Load Flow Calculations**

- Importance of load flow
- Voltage drop considerations
- Voltage instability
- Loss of a source
- Effect of current limiting reactors
- Optimization of load flow

### **System Neutral Grounding**

- Ungrounded
- High resistance
- Low resistance
- Solidly grounded systems
- Cable insulation and system grounding
- Generator neutral grounding

### **Review Of Major Equipment**

- Motor control centers, switchgear, power transformers
- Application of power cables
- Application of electric motors
- Surge arresters
- Harmonics in power systems and impact of non-linear loads
- Capacitor applications
- Instrument transformers

### **Development Of Single Line Diagrams**

### **Protective Devices And Relay Setting**

- Protection and co-ordination principles
- Feeder and bus protection
- Protection of medium voltage motors
- Transformer protection
- Generator protection
- Relay settings and co-ordination curves

[www.acculearn.co.uk](http://www.acculearn.co.uk)