Online Training Course

**Electrical Faults:**
Causes, Analysis, Detection & Remedies

Electrical Power Network Analysis

30 August - 03 September 2020
08:30 to 14:30 Dubai [GMT 4]
Why Choose this Online Training Course?

This Electrical Faults online training course in Dubai teaches practical electrical troubleshooting and is concerned with the calculation of fault currents in electrical power systems. Short-circuit currents are associated with large amounts of very destructive energy and therefore calculations must be made to ensure that the short-circuit ratings of equipment are adequate to cater for these high currents. Accurate assessment of these currents is also essential for determining the settings of the system protection devices.

This online training course includes the preparation of the system for analysis, by manual calculation and by the use of computer analysis. Participants will be introduced to the various fault analysis software programs. Also, all protection device and how to configure the multifunction relay by using relay simulation program will be included.

This AZTech online training course will feature:

- Identification of causes of electrical faults
- Understanding three phase short circuit currents
- Recognition of unsymmetrical faults in transformers
- Partial discharge phenomena and how to apply the required analysis
- Representation of unsymmetrical faults in a power system
- Manual and software assisted of fault currents
- Simulation for protection relays configuration

Who is This Online Training Course for?

This AZTech online training course will benefit all levels of personnel in an electrical installation. It will enable them to identify the causes and apply analysis of electrical faults in a power system.

This AZTech online training course is suitable to a wide range of technical professionals but will greatly benefit:

- Electricians
- Design electrical engineers
- Electrical supervisors
- Plant electricians
- Operations & maintenance engineers, supervisors & technicians
- Maintenance technicians

What are the Goals?

By the end of this AZTech online training course, participants will be able to:

- Understand the various types of fault currents
- Determine the causes of overcurrent and short circuit current
- Explain differences between power system faults
- Analyse the common faults in a power system
- Configure multifunction relays to protect the power system
- Know protection simulation
- Know the partial discharge analysis and detection as case study

How will Training Course be Presented?

This AZTech online training course will utilise a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented. The online course is conducted online using ClickMeeting.
THE COURSE CONTENT

DAY 01: Introduction to Fault Analysis
- Source of fault current in an electrical installation
- Common fault statistics of electrical equipment
- Short-circuit rating of equipment
- Selecting the correct switchgear rating for fault duties
- Overview of per-unit system and one-line diagrams
- Sources of impedance data for all items of plant

DAY 02: Power System Faults
- Power system faults
- Faults calculation and using software for verification
- Partial discharge analysis
- Cables subjected to short-circuit currents
- Surge and lighting faults
- Grounding system to increase power system reliabilities

DAY 03: Power Systems Faults due to Nonlinear Loads
- Overview of symmetrical components and faults
- Consideration of various fault types
- Linear loads and nonlinear loads
- Harmonic analysis
- K factor in transformers
- Power factor correction

Day 04: Protection System
- Short circuit current calculation
- Protection relays according the IEC standards
- High set, low set, and inverse -timed elements
- Co-ordination with other devices and fuses
- Auto-reclosing of feeder circuit breakers
- Various types of overcurrent relays

Day 05: Simulation, Computer Calculations and Analysis Techniques
- Simulation for GE advanced relay (Practical Session)
- Power system relays
- ANSI code
- Different method to reduce the faults in power system
- Using software for fault calculation and analysis
- Failure mode effective analysis FMEA explanation
Electrical Faults:
Causes, Analysis, Detection & Remedies

Electrical Power Network Analysis

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<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>FEES(USD)</th>
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<td>30 Aug - 03 Sep 2020</td>
<td>08:30 to 14:30 Dubai [GMT 4]</td>
<td>$2,350</td>
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REGISTER NOW

THE COURSE SCHEDULE

08:30 - 09:00 Welcome, Setup, Registration
09:00 – 10:30 First Session
10:30 – 11:00 Break (30 mins)
11:00 – 12:30 Second Session
12:30 – 13:00 Break (30 mins)
13:00 – 14:30 Third Session

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CERTIFICATION
AZTech Certificate of Completion for delegates who attend and complete the training course

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