Electrical Faults: Causes, Analysis, Detection & Remedies

06 - 10 Sep 2015
Dubai, United Arab Emirates
Why Choose this Course?

This course 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 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.

This course will feature:

- Identification of causes of electrical faults
- Understanding three phase short circuit currents
- Recognition of unsymmetrical faults in transformers
- Representation of unsymmetrical faults in a power system
- Manual and software assisted of fault currents

What are the Goals?

By the end of this 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 symmetrical and unsymmetrical faults
- Analyse the common faults in a power system
- Interpret manual calculation verses software aided fault current calculations

How will this be Presented?

This course will utilise a variety of proven adult training techniques to ensure maximum understanding, comprehension and retention of the information presented. This includes presentation and discussion of case studies [with appropriate solutions], latest videos, technologies, and various commercial fault current analysis software.

Questions are encouraged throughout, particularly at the daily wrap up sessions. This provides opportunities for participants to discuss with the Presenter specific issues and, if possible, find appropriate solutions. Specific goals of each participant will be discussed to ensure that their needs are fulfilled whenever practicable.

Course Schedule:

DUBAI, UNITED ARAB EMIRATES
06 - 10 Sep 2015

Who is this Course for?

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

- Electricians
- Electrical supervisors
- Plant electricians
- Operations & maintenance engineers, supervisors & technicians
- Maintenance technicians
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
Three-phase short-circuit currents
- Review - summary - discussion
- Manual calculation of three-phase short-circuit current
- Industrial systems and fault current analysis
- Tutorial - based on attendees plant
- Cables subjected to short-circuit currents
- Compliance with regulations

DAY 03
Unsymmetrical fault conditions
- Overview of symmetrical components and faults
- Consideration of various fault types
- Sequence networks
- Consideration of phase shift in two-winding transformers
- Consideration of earth impedance
- Consideration of three-winding transformers

DAY 04
Representation of unsymmetrical faults in power systems
- Review - summary - discussion
- Fault diagrams of electrical equipment
- Interconnected sequence networks
- Special considerations with reference to limitation of earth fault current
- Demonstration examples based on industrial power systems
- Introduction to fault current analysis software

DAY 05
Computer based calculation of faults
- Introduction to a scaled down fault analysis software
- Common network faults
- Industrial standards namely ANSI, NEC & NFPA 70 compliance
- Case studies of faults in a high voltage network
- Case study of faults in a low voltage network
- Q&A and wrap up session

Register Now: +971 4 427 5400 | +971 4 427 5401 | info@aztech.ae | www.aztech.ae
REGISTRATION DETAILS

Family Name: .................................................................
First Name [Mr./Ms.]: ......................................................
Position: ...........................................................................
Company: ........................................................................
Mailing Address: .............................................................
Telephone .................................................................
Mobile .............................................................
Fax .................................................................
Email ...............................................................  

AUTHORISATION

Authorised by: .................................................................
Position: ...........................................................................
Telephone .................................................................
Fax .................................................................
Email ...............................................................  

FEES

US$ 4,150/- per participant
This fee is inclusive of Documentation, Lunch and Refreshments

MODE OF PAYMENT

☐ Please invoice my company  
☐ Please invoice me  
☐ Please find enclosed a cheque payable to AZTECH

CERTIFICATION

A Certificate of Attendance will only be awarded to those delegates who attend the entire programme

HOTEL ACCOMMODATION

Hotel accommodation is not included in the Registration Fee. A reduced corporate rate and a limited number of rooms are available for attendees wishing to stay at the hotel venue.

Please make your request for accommodation at least 3 weeks prior to the commencement of the programme.

CANCELLATIONS & SUBSTITUTIONS

You must notify the Registrar of cancellations at least 2 weeks before a scheduled seminar in order to be eligible for a credit. If you cannot attend, you may send a replacement from your organisation at no charge. There is a $250 handling charge for all cancellations or rescheduling. We reserve the right to cancel a seminar due to low enrollment. All registrants will be notified in advance and a full refund will be provided upon request.

DISCLAIMER

Circumstances beyond the control of AZTech may necessitate postponement, change of venue or substitution of the Instructor. As such, AZTech reserves the right to implement such amendments.

4 WAYS TO REGISTER

Tel: +971 4 427 5400  
Fax: +971 4 427 5401  
Email: info@aztech.ae  
Website: www.aztech.ae

ABOUT AZTECH

TRAINING & CONSULTANCY

A leading international provider of training, seminars, and learning solutions. We offer Strategy, Management & Leadership Development Programs, Functional & Technical Seminars, Customised In-house Programs, and Business Consultancy for Performance Solutions.