Global Horizon
TRAINING CENTER

Training Course:
Modern Electrical Power System

20 - 24 October 2025
Kuala Lumpur (Malaysia)
Royale Chulan Kuala Lumpur

Training Course:
Modern Electrical Power System

Training Course code: EN12332 From: 20 - 24 October 2025 Venue: Kuala Lumpur (Malaysia) - Royale Chulan Kuala Lumpur Training Course Fees: 6500 Euro

Introduction

The course starts by reviewing current practice to establish a sound understanding of the underlying principles of power system transmission, distribution, operation and control. Next are considered the developments that are taking place as a result of new forms of generation, load interconnection, fault level limitation and numerous advances in system innovation. The manner in which the new technologies are implemented is related to geographical location, sites requiring additional power, government strategy and technical motivation for change. Not all power systems will advance at the same rate, but all will take advantage of the benefits of technology to a greater or lesser extent, thus improving the overall electrical efficiency.

The course aims to make candidates aware of improvements that technological advances makes possible and to consider implementation these on their system, whether it be a utility, a large end user, or an industrial islanded system. Asset management, DSM, non linear loads, harmonics and on line diagnostics of plant are also considered, as are ways of improving the utilization and efficiency of system plant.

Objectives

Upon Completion of this Course, participants will have knowledge about :

- The operation and power flow characteristics of small large networks and how the network can be arranged to deliver more real power over the transmission system to the load centers
- The form and use of a range of FACTS devices to improve system operation
- Fault level limiting devices
- New CT and VT optical transducers and protection relaying system using microprocessor configured relays
- To deal with non-linear loads and the problem of Harmonics, at the PCC point of common coupling
- Protection systems for thermal monitoring of cable networks
- Alternative forms of generation and embedded generation. Carbon emission limiting, etc.
- Diagnostic monitoring of plant and in particular GIS substations
- Advances in power electronics and the application of back to back HV-DC links on stability
- High speed fault limiters and real time stability monitors
- Demand side management

Target Audience

This course is designed for Participants those who involved with the planning, operation and maintenance of small to large scale power networks. Designers, Engineers and Technicians from Distribution Companies, Power Utilities, Engineering Professionals in the Electricity Supply Industry and Petrochemical Companies who have to deal with aspects of generation, transmission and distribution should be interested in learning how to handle increased demand.

Outlines

Day 1:

Introduction to Modern Electrical Power Systems

- Overview of a typical systems covering generation, transmission and distribution
- Determination of flow of real and reactive power
- Determination and control of fault level
- Control of reactive power and voltage
- Control of active power and system frequency
- The requirements for reactive compensation voltage profiles
- Quality of supply

Day 2:

Current Operational Problems

- Coping with rising demand for power transmission and distribution
- The costs associated with increasing fault level
- Catering for increasing load on the existing system ratings of plant
- Monitoring of plant conditioning. temperature
- A review of analytical methods and demonstration of software for optimizing system operation
- Increasing problems of heavily loaded systems, stability, voltage dips

Day 3:

Introduction to System Operation

- Active Power and Frequency Control - automated

- Voltage Control and Reactive Power Requirements automated
- Generation, including combined cycle and small embedded generators
- Transmission voltage levels - line and cable design, power loading and de-rating for temperature effects

Day 4:

Emerging Technologies

- Energy and the Environment - solar power, geothermal power, etc. CO2 and its impact on the world
- Demand Side Management remote load control minimizing demand optimizing transmission coping with dips and swells
- Optical Current Transducers for Protection
- High Voltage Applications - Surge protection, current limiters network switching, etc

Advances in Control and Monitoring

- Power Electronics Applied to Power Systems
- Flexibility in AC Systems
- Series Controlled Capacitors
- Changing maintenance schedules, remote surveillance of plant and the introduction of unmanned substations
- Data logging

Day 5:

Making the System Work Harder

- Power Dynamics Management the low frequency oscillation
- Advanced protection and Control Techniques
- Fault Current Limiter
- Diagnostics partial discharge techniques
- Optical cable temperature monitoring

System Protection

- Digital and Micro Processor Protection
- Electrical Insulation
- Condition Monitoring of Plant

Registration form on the Training Course: Modern Electrical Power System

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Complete & Mail or fax to Global Horizon Training Center (GHTC) at the address given below

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