COURSE DESCRIPTION

INTCV546
HV Switchgear and Transformers

The goal
The goal of the course is to improve the ability of Personnel from Power Utilities, Power Generation, transmission companies & industries and Consultants responsible for engineering, commissioning, operation and Maintenance of substations to use and select the HV products in better way.

Learning objectives
Upon completion of this course, participants will be able to:

- understand the use of circuit breakers, instrument transformers, disconnectors and surge arrestors, power transformers and its application
- Appreciate the design principles and critical elements of circuit breakers, instrument transformers, disconnector, surge arrestor & power transformers & reactors
- Understand the critical elements of operation & maintenance of circuit breakers, instrument transformers, disconnector, surge arrestor & power transformers & reactors

Participant profile
Personnel from Power Utilities, Power Generation, transmission companies & industries and Consultants responsible for engineering, commissioning, operation and Maintenance of substations.

Prerequisites
Degree or diploma in engineering, basic knowledge of power system.

Topics
HV Circuit Breakers – 72.5 kV to 400kV (SF6)

- Construction standards.
- Interrupting principles.
- Breaker components: interrupters and operating mechanisms
- SF_6 properties, SF_6 gas filling and handling.
- Operation, manufacturing and testing.
- Control schematics.
- Overview of erection, commissioning, maintenance and troubleshooting.
- Overview of condition monitoring of breakers.

- Introduction to controlled switching (point of wave control).
  - Introduction of product portfolio.

Instrument Transformers

- Role of instrument transformers and operating principles.
- Equivalent circuit, errors.
- Design parameters, magnetization, and Ferro resonance.
- Applicable standards.
- CT & CVT selection parameters.
- Manufacturing & testing.
- Storage, transport, installation, operation – Do's & don'ts commissioning.
- Maintenance & troubleshooting.

Disconnectors

- Need of disconnector, operation and construction.
- Applicable standards.
- Disconnector components: current path, operating mechanisms.
- Storage, transport, installation, operation – Do's & don'ts commissioning.
- Maintenance & troubleshooting.

Surge Arrestors

- Need of overvoltage protection, handling of overvoltage's
- Surge arrester: definition, use, features, function.
- Protective characteristic, classification of surge arresters, IEC energy classes.
- Design - polymer housed arresters, Silicone: hydrophobicity.
- Applicable standards.
- Installation, maintenance & troubleshooting.

Power Transformers

- Introduction, basics of transformer & reactors– Design aspects, insulation.
- Transformer selection & application.
- Transformer accessories.
- Manufacturing & testing.
- Demonstration of - Core assembly, active part assembly – winding, drying, Final assembly and testing.
- Testing of power transformer at factory and site – interpretation of results.
- Storage, transport, installation, operation – key issues & precautions,
- Do's & don't, commissioning, essential periodic checks.
- Maintenance and trouble shooting.

Course type

This is an instructor led seminar with practical demonstration at experience center demo room, switchyard and guided tour to manufacturing facilities. The language of the course is English.

Learning methods and tools

Lectures, demonstrations, practical exercises. Laptop or tablet is required to have access to the e-documentation. Please bring your own device.

Duration

The duration of the course is five days.

To Register:

LMS:-MyLearning

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The latest version of the course portfolio, and course schedule can be found on our

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