



## 2 Day's Training Program on Electrical HV/MV/LV Switchgear

(Design, Selection, Maintenance, Protection, Standards and Safety)

17-18 August 2018 at Nagpur, Maharashtra, India

### Objective:

- To understand the various parts and critical elements of Electrical LV & HV System.
- To understand the operation, testing and maintenance of Circuit Breakers.
- To understand the maintenance, troubleshooting & Protection of Protective Devices
- To understand do's & don'ts for Protective Devices.

### Learning Outcome:

The participant will be confident about

- Technical Design and layout of Switchgear in an Electrical system.
- He will understand about selection based on design.
- Testing, maintenance and condition monitoring.
- Safety and applicable standards.

### Who should attend:

Practicing Engineers, Supervisors, Person's involved in design, O&M, DET or GET with adequate knowledge of electrical system. Other who are interested in enhancing knowledge.

### Contents:

1. Overview of Switchgear
2. Components of Switchgear
  - a. Relay, CB, Control Panel, Cable, LA, Fuse, Autorecloser etc.
3. Technical and Economic Aspects
  - a. Layout, Design and Calculations for HV & LV
4. Selection, Installation, Commissioning & Testing
5. Protection of Switchgear
  - a. Various Schemes
6. Faults, Fault detection and Analysis techniques
7. Maintenance techniques
8. Condition Monitoring Techniques (Routine, Schedule, preventive and predictive)
9. Modern Techniques and Best practices
10. Applicable International Standards
11. Safety and Continuity of Operation
12. Circuit Breakers (ACB, VCB & SF6)
  - Introduction – Design, Operation and Construction, Interrupting principles
  - Breaker Components: Interrupter, operating Mechanisms (Drive)
  - SF6 properties, SF6 gas filling & handling
  - Breaker Testing SF6 gas filling
  - Operation – Do's & don't
  - Maintenance & troubleshooting
  - Pole, operating mechanism,
  - Condition Monitoring of Breakers
  - Circuit Breaker Care



# Centre For Industrial Solution and Advanced Training

AN ISO 9001:2015 CERTIFIED

(Technical- Electrical/Mechanical/Automation/Chemical, Behavioral & Soft Skill, Safety, Business Excellence, Safety & Energy Audit)

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## 13. Ring Main Units

- Basic Design, Operation
- Features, Interlocks, RMU Applications
- Handling, Storage, Erection
- Cable Termination and CT Assembly
- Testing at Site, Commissioning
- Common Problem and troubleshooting

### Delivery Methodology:

- Introduction and Objective Setting
- Pre and Post test
- Knowledge Presentations,
- Assignments & Exercise,
- Case Study,
- Feedback and Assessment
- Discussion and Interaction
- Delivery 6.5 Hrs per day.

## Registration Details

**Dates of the program:** 17-18 August 2018 at Nagpur.

**Participation fees:** 20000/- Per participant (GST extra@18%, Includes Course material, Tea/snacks/Lunch, Excluding Lodging & Boarding) Nonresidential Training Program.

**Payment:** ECS/NEFT/DD in favor of “Centre for Industrial Solution and Advanced Training” Payable at Nagpur, Maharashtra, India. Account No: 0509102000003353 Bank: IDBI, Wardha- 442001, MS, India. IFSC Code: IBKL0000509; Swift Code IBKLINBBNGP; MICR Code 442259001.

**Venue:** *KEC International Training Centre, Butibori, Nagpur, Maharashtra, India*  
(20 min from Nagpur Airport towards Wardha or Hyderabad. City busses are available from Nagpur)

**For Registration, please contact:**

1. Mr Vikas 7709012815; 8669546332; cisat.nagpur@gmail.com, vikas@cisat.co.in
2. Mahendra Dhande: 9168326662;

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## Centre For Industrial Solution and Advanced Training

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