



3 Days Training Programme on **Advanced Power System Protection, Short Circuit Calculation, Parameters, Relay Setting & Relay Co-ordination with Hands ON**

(27-29 Jan 2020 and 16-18 March 2020 at Nagpur)

[Complete practical approach with many case studies and hands on.](#)

HANDS ON:

- Complete explanation of **Electromechanical relay** (Overcurrent, Differential and distance etc.) and relay setting.
- **Hands-On on Numerical relay**, explanation and setting. All details.

Description:

Protection of Electrical power systems requires an understanding of complete power system design, system faults and their detection, as well as their safe disconnection. This course presents a comprehensive and systematic description of the concepts and principles of operation and application of protection schemes for various power system elements, setting and relay coordination. The course begins with an overview of power system, various causes of system failure, improper relay setting, components of power system protection schemes as well microprocessor-based relays and their application. This course deals with protection systems from a practical perspective and includes important functional aspects such as testing and coordination of protection systems.

Upon Completion of this course the participant will be able to:

- Enhance your knowledge and skill of electrical system protection techniques including fault and related relay setting.
- Understanding of Electrical protective devices.
- Understand problems generally faced and solutions successfully adopted by industry.
- Learn to calculate the basic fault currents flowing in any part of the electrical system.
- Improve your electrical system protection against possible electrical faults.

Who should attend?

This course has been specifically designed for Electrical utility Managers, engineers, supervisors, having knowledge of Power system, Power Distribution Managers and others involved in the electric power generation and distribution systems. The course will definitely be beneficial for the all the other department people concerned with the plant operations, maintenance and safety. It could be also useful for the procurement and quality personnel also.



Major Contents:

1. Important basics of Power System protection and key elements (Transformer, Line etc)
2. Key Elements of Power system and Protection
3. Types of Power System Protection
4. Importance of relay, Relay setting and Co-ordination
5. Power system protection for Transformer, Line & Bus Bar, Motor.
6. Advanced Relay coordination concepts.
7. Differential, Overcurrent, S/C, Protection, NGR, earth transformer etc.

Sub contents:

- ü PROTECTIVE RELAY COORDINATION IN ELECTRICAL POWER SYSTEM
- ü Type of faults in electrical system and electrical machines
- ü Methodology adopted for detection of faults
- ü Protective relays for protection of electrical power system
- ü Security of power supply and isolation of faulty section/ equipment in the event of faults and on interrupted operation of healthy sections of power system and equipment
- ü Primary and Back up protection relays
- ü Short circuit withstand capability of electrical equipment and fault clearing time
- ü Critical fault clearing time based on power system stability consideration
- ü Discrimination/ coordination of relay operations in power system main and back up protection relays
- ü Relay co-ordination based on magnitude of fault current, operating time of relays
- ü Relay errors, Relay overshoots
- ü Relay coordination for Carrier aided protection systems and communication based protective systems using optical fiber cables for transmission lines and cables
- ü Numerical relays: Introduction, advantages and applications.

Case Studies and Real time Solution:

Certification

Every successful participant will be awarded an Attendance Certificate

Delivery Methodology

- Pre Course Test



- Classroom Sessions, Animations & Videos
- Real Life Case studies
- Assignments & Exercises
- Discussion and Interaction
- Feedback and Assessment
- Post Course Test
- Delivery 9:30 AM to 17:00 PM

Registration Details

Dates of the program: (27-29 Jan 2020 and 16-18 March 2020 at Nagpur)

Participation fees: INR 27000/- 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 Solutions 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. (GST Code: 27ABBPW5589J1ZV; SAC Code 99-9293; State Code 27)

Venue: At CISAT, Pratapnagar Square, Nagpur-440022, Maharashtra, India.

For Registration,

1. **We prefer on line Registration through our web www.cisat.co.in.**
2. **In other case do send confirmation via email to Vikas 00-91-7709012815; vikas@cisat.co.in; cisat.nagpur@gmail.com; or you can do call Vikas +91-7709012815 or 8669546332**

TERMS & CONDITIONS FOR Workshop:

1. All training courses will require a minimum of 6 participants.
2. In the event of cancellation of a course, we will endeavor to inform all candidates a week before the course is due to take place. In such case all course fees paid will be reimbursed in full or the payment will be transferred in full to another course.

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3. CISAT shall not accept liability for any consequential loss and shall have no liability to reimburse any other costs that may have been incurred, including transport costs, accommodation etc.
4. Special arrangements can be made for group bookings.
5. Certificate of participation will be issued when payment has been received in full.

Contact for any In-house Training Program at your plant or location.

- HR Solutions and complete professional Training (HR/Soft Skill/Technical-Electrical/Mechanical/Automation /Process/Certification/Out Bound/Safety/Manufacturing excellence- TPM, TQM, 5S, Six Sigma etc)
- Course Content and presentations development – Customized to your company requirement.
- E-learning Development, Virtual Learning
- Online LMS or HR Automation system- Automated
- Employee Certification, skill or competency mapping and testing, Mentoring etc. From workers to Management level employees

Centre For Industrial Solutions and Advanced Training

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“A Complete Training Solution under One roof”

(Technical- Electrical/Mechanical/Automation/Chemical, Behavioral, Soft Skill, Safety, Out Bound training, Business Excellence, Safety Audit, Energy Audit, Automation Solution)