MODULE : TB9

EARTHING OF ELECTRICAL SYSTEM FOR HUMAN SAFETY AND GROUNDING OF ELECTRICAL SYSTEM FOR EQUIPMENT SAFETY

COURSE DESCRIPTION:

Earthing

- Distinction between earthing and grounding
- Soil resistivity, influencing factors, soil treatment
- Resistance to earth of different electrodes
- Measurement of grid resistance
- Electrode selection and sizing: case study
- Human element
- Step and touch potentials
- Case study: Ground mat design procedures
- Case study: Earthing in LV and MV systems
- Significance of bonding conductor
- 'Clean earth' for electronic equipment

Grounding

- Types of grounding
- Effectively grounded system
- Advantages and disadvantages of ungrounded system
- Ground fault detection in ungrounded system
- Neutral inversion and ferro-resonance
- Advantages and disadvantages of solidly grounded system

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- Advantages and disadvantages of resistance grounded system
- Sizing of NGR and NGT: case study
- Resonant grounding – applications and difficulties
- Case study : Application of zigzag and open delta for grounding
- Case study : Pitfalls in grounding mix up
- Case study : Neutral grounding of generators – core damage limitation
  - correct and incorrect approaches
- Correct LA, Cable and PT selection for different grounding applications
- Case study : Problems in ground fault relaying