

MODULE : TB10

FIELD ELECTRICAL ENGINEERING PRACTICES (FEPP)

COURSE DESCRIPTION:

Introduction

AC & DC power, Voltage, Current, Real and Reactive power, Power factor.

Typical power distribution diagram, Standard symbols and NEMA device classification. How to read Electrical drawings (Power & Control), Detailed explanation (How to interpret) control schematics for, DOL Starter, Star/Delta Starter, Forward Reverse Starter, Auto-Manual Starter for Motor Feeders.

Generator (LT to HT and KW to MW)

Active & Reactive Power Sharing, Modes of Control; Droop Control, Constant Power, Isochronous mode. Parallel operation, synchronizing & methods of synchronizing, Protection for Generators.

Excitation Systems

AVR, AVR set points and adjustment, AVR Trouble shooting and fault finding in AVR.

Motor

Types of motors, starting methods, starter module, contactor, bimetal relay & setting of bimetal relay, trouble shooting.

Transformer

Rating specification, Vector Group, Parallel operation, Cooling methods, Tap changer.

Cables

Types, Size and number of cores; cable selection criteria.

Fuses

Selection criteria for power and control fuses, grading of power and control fuses.

Battery & Battery Charger

Lead acid and Nickel cadmium; Voltage and AHR Ratings; Boost charging and trickle charging rates; Battery maintenance; Battery charger circuits.

Instrument Transformers

CT's, PT's, Rating, specification, Transformers basic selection, application.

Instruments for measurements

Insulation tester (megger); Multimeter; Clip-on meter; AVO meter; single / Three phase varic.

Fault finding in electrical circuit

Power and control circuits.

Human Safety

Reasons for electric shock hazards & its Prevention.

Earthing of Electrical System

Switchyard grounding grid design, Earthing in LV & MV systems, Bonding, "clean " Earth.