



# POWER SYSTEM PROTECTION AND RELAY COORDINATION

**Advance Electrical Design & Engineering Institute**

**(AEDEI)** ISO 9001:2008 Certified Institute of Electrical Design & Engineering training programs for Dedicated to Electrical Engineers . **AEDEI** is latest venture for providing the quality education in the best possible



## ADVANCE TRAINING ON RELAY COORDINATION & PROTECTION (ADVANCED LEVEL)

Relay Fundamental principle



Relay Setting Calculations



Hands on Concept



Ground-fault protection

Transformer protection

Generator protection

Differential protection

Distance protection

Bus bar Protection

Over Current Protection

## DETAILING OF SYLLABUS FOR POWER SYSTEM PROTECTION AND RELAY COORDINATION

- ❖ Introduction to power system protection and (ANSI Code of relay )
- ❖ Power system Protection concepts (Type of protection)
- ❖ Power System Protection philosophies
- ❖ Short-circuit calculations (Ohmic Methodology / Per Unit Calculation (IEC 60909/ IEEE 242 :1986))
- ❖ Instrument Transformer (CT's, PT's) selection & application
- ❖ Ground fault protection calculation and Criteria for setting pickups and time dial (TMS and PMS)for DMT and IDMT relays
- ❖ Step by step relay setting and co-ordination exercise for ground fault relays
- ❖ Ground fault relay (ABB , Alstom (MICOM), SIEMENS Relay setting and concept review
- ❖ Protection against Overload; Overload v/s overcurrent, Overload capability, Short Circuit Protection; Phase overcurrent and Ground overcurrent Protection, Grounding of transformer neutral. Transformer internal faults (buchholz relay, Winding Relay, Oil relay, MOG, OSR, Over flux etc)
- ❖ REF & Differential Protection for Transformer ; Comparison of REF and Differential Schemes, Application of REF protection , REF scheme
- ❖ Transformer Differential Protection scheme, Differential Scheme for Three Winding Transformer, CT Specification for Differential and REF applications.
- ❖ Bus bar protection, Overcurrent , earth fault , differential protection and type of bus bar protection
- ❖ Selection of bus bar relay, busbar relay calculation , setting of relays.
- ❖ Incoming and Outgoing feeder Relay selection Bus coupler Relay Setting
- ❖ Generator protection: Plain over current and voltage restrained over current protections, differential, REF

- ❖ Distance relay (Device 21) application and principles
- ❖ Distance Relay type (Mho, Impedance Relay ), Calculation of distance relay
- ❖ Selection of distance relay and setting of ABB, Alstom relays
- ❖ Communication of distance and differential relays
- ❖ Upstream and downstream relay coordination, breaker and relay tripping setting , protection zone selection
- ❖ Overview of O&M of relays

## Instructor /faculty Experience & Area of specialization

*A dynamic professional with over 10+ year experience in Electrical design engineering.*

*Core Experience: switchyard design & Engineering up to 765 KV, Railway traction OHE, Thermal power plant and solar power plant.*

*Expertise Area: Protection Schemes, Switchyard Engineering .*

## About us

**[Advance Electrical Design & Engineering Institute \(AEDEI\)](#)** ISO 9001:2008 Certified Institute of Electrical Design & Engineering training programs for Dedicated to Electrical Engineers . **[AEDEI](#)** is latest venture for providing the quality education in the best possible facilities is a key aim of Skill developments for various verticals in Electrical Engineering design.

**[ELECTRICAL SYSTEM DESIGN COURSE](#)** : Our trained Electrical Design Engineers working in various filed of Electrical industries (Design & Engineering, develops and supervises the manufacture, installation, operation and maintenance of equipment, machines and systems for the generation, distribution, utilization and control of electric power **[More..](#)**

**[SOLAR POWER PLANT DESIGN & ENGINEERING COURSE](#)** : The most significant future of solar energy is that it clean energy does not harm environments **[More..](#)**

**[ENTREPRENEURSHIP SOLAR TRAINING](#)** : The most significant Business future of solar energy is that it clean energy does not harm environments **[More..](#)**

**[TECHNICAL TRANSFORMER DESIGN COURSE](#)** : Transformer Design tool assists design engineers in choosing the most appropriate core material and size for a number of turn ratio and housing **[More..](#)**

**[INSTRUMENTATION DESIGN COURSE](#)**: Automation & Instrumentation is the eyes and ears of the control system allowing the operators to see what is going on within the plant or system being controlled **[More..](#)**

**[TECHNICAL CABLE DESIGN COURSE](#)** : A very important topic in the design and engineering of Cable design is the ampacity of power cables, which can appear to be surprisingly good over the short term **[More..](#)**

**[Railway/metro Traction Design Course](#)**: Advance Electrical design & engineering institute will provide career opportunities for fresh as well as experienced engineers wanting to make a career in railway/metro traction OHE design & engineering training course in India . **[More..](#)**

**[Process Design Training Course](#)** :Process Design Engineering aims at providing professional industrial training & exposure to design principle for various Process industries - for Chemical Engineers.

**[PLC SCADA TRAINING COURSE](#)**

**[HVAC DESIGN](#)**

**[MEP DESIGN TRAINING COURSE](#)**

**[QA/QC-ELECTRICAL COURSE](#)**

**[POWER SYSTEM SOFTWARE DESIGN COURSE](#)**