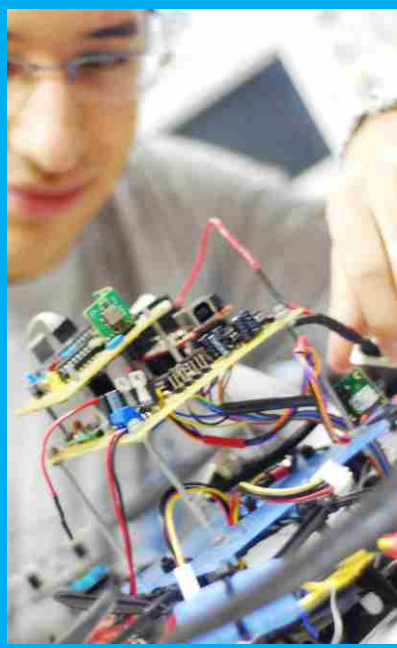


ELECTRICAL DISTRIBUTION DESIGN, INSTALLATION AND COMMISSIONING



What You Will Learn...

- Understand the level of failure-proofing that specific equipment may require
- Know the various available options of critical power supply systems
- Evaluate these options objectively
- Specify the solution that is the best and most economical for your needs
- Design a suitable power distribution system for emergency power
- Manage the installation, commissioning and maintenance of the distribution system

SmartBrains Oil and Energy Institute provides premium training courses for energy industry executives and fresh engineering graduates. Our success and distinguished reputation is thanks to our commitment to provide first-class programmes to our clients. Combining leading professionals from across the industry as lecturers and an interactive, practical format, the lessons learnt in a SmartBrains for Energy course are directly transferable back to the work place.

Our Strategic Objectives

To be recognized by industry and employers as a highly reputable training organization. Provide dynamic leadership, sound management and excellence in training. Continue to improve our services through quality management processes. Invest in and value our people through professional development activities. Grow our business through innovation and to continue to be financially secure. Be influential in the economic development of the industries we serve nation wise

Our Mission

“To provide quality training and assessment services and to prepare our students for a fulfilling professional career in their chosen industry. We are committed to upholding our values of providing excellence in training”

Course STRUCTURE



“I would like to thanks T&P Team of Smartbrains who helped me to get skill set on Electrical System Design. The learning experience was good and placement is excellent”

Zeeshan Ahmad
Ankit Electrotech Engineers Pvt Ltd, Noida

DAY ONE

POWER QUALITY

- Electrical parameters
- What is power quality?
- Problems - effects and mitigation
- Reliability
- Available solutions and making the right choices

STATIC UPS SYSTEMS

- Configuration
- Types of static UPS systems
- UPS metering, indications, alarms and protection
- Power quality and UPS
- UPS configurations
- Redundant UPS configuration and building high reliability power supplies

VOLTAGE VARIATIONS

- Voltage amplitude
- Voltage sag and its effects
- Equipment sensitivity
- Control measures
- Voltage improvements, fluctuations and flicker

CONTINUITY OF POWER

- Power failure
- Needs of equipment
- Understanding failures
- Interruptions and voltage/frequency excursions
- Uninterrupted, emergency and standby power
- Redundancy and automation

DIESEL TECHNOLOGY AND CLASSIFICATIONS

- Basic engine processes
- Reciprocating engines
- Spark ignition engines
- Diesel and dual fuel engines
- Speed and service classifications

BASIC ENGINE DESIGN AND RATINGS

- Design characteristics and formulas
- Turbo charger
- Ambient conditions
- ISO ratings
- Performance and efficiency
- Engine speed
- Fuel combustion methods

CONVENTIONAL UNINTERRUPTED POWER SUPPLY

- Main classification
 - Rotary and static
- Rotary, advanced and hybrid UPS

NEW TECHNOLOGIES

- Problems in existing technologies
- Maintenance issues on prolonged operation
- Environmental problems
- Fuel cell
- Micro turbine

FUEL CELL

- Historical perspective
- Operating principle
- Types of cells available and comparison
- Fuel cell system for backup power overview
- Comparison with battery powered UPS
- Case study

MICRO TURBINE

- Conventional gas turbine power plant
- Efficiency issues and combined cycle power generation
- Comparison of micro turbines with conventional turbines
- Typical micro turbine based standby power unit
- Case study involving critical process application

CONFIGURING POWER DISTRIBUTION SYSTEM FOR EMERGENCY LOADS

- Integrating emergency and critical power needs in the distribution network
- Multiple units nearer the consumer vs. larger centralised units
- Paying attention to motor starting requirements and accompanying voltage sag
- Typical distribution scenarios in large industrial systems for integration of emergency power
- Automation of starting, load changeover and shutdown

PARALLEL OPERATION AND TIE PROTECTION

- Parallel operation between emergency sources
- Load sharing between sources
- Parallel operation of emergency source with normal source
- Utility stipulations and local codes
- Issue of tie-line separation
- Static transfer switch and its application in critical power installations

Why

SmartBrains?

SmartBrains is the ultimate choice for all the working & non working engineer's in energy Sector training requirements. Our extensive portfolio of energy training courses are:

- ▶ 100% focused on the Oil and energy industry.
- ▶ Guided by the industry's renowned professionals with unprecedented knowledge of the Oil and energy industry.
- ▶ Highly interactive program with practical and relevant case studies.
- ▶ Training by extensively researched self developed cutting edge techniques.
- ▶ Skill development techniques with comprehensive set of documentation, practical skills and tools used in the Industry.

Admission

Requirements

- ▶ Duly Filled Application Form
- ▶ 2 Photographs
- ▶ Photo State of Qualifying Examination
- ▶ Address Proof
- ▶ I.D. Proof
- ▶ Latest Resume



- ▶ The perfect opportunity to develop network and experiences with knowledge sharing.
- ▶ Internationally acclaimed engineering qualification.
- ▶ Designed for both Fresh engineers and working professionals to attain growth in oil and energy industry.
- ▶ One of the finest international faculty.
- ▶ Interactive, interesting and motivational training sessions.
- ▶ Access to enormous reference books and research materials.

Declaration

- ▶ This training program is on AUTONOMOUS basis conducted by SmartBrains.
- ▶ SmartBrains has right to expel any student at any time for misbehavior, poor attendance without refunding the fees.
- ▶ Certification will be issued only after completion of course, submission of all assignments and passing all the examinations.
- ▶ SmartBrains has its own rules and regulations about conducting examinations and assessment of examinations

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