



EE076

Facility Electrical Engineering for Supervisory Personnel

Course Introduction:

Facility Electrical Engineering for Supervisors is a course that introduces electrical engineering principles as applied to oil and gas facilities operation without the need for formal electrical engineering training. Through the use of individual and team problem solving you will learn about electrical components, issues, installation and the interfaces between facility engineers, contractors and maintenance personnel. Participants will gain a better understanding of what the Electrical discipline does and what is important to them.

Course Objectives:

Upon successful completion of this course, the delegates will be able to:

- Gain in depth knowledge on facilities electric power distribution, which include circuit arrangements, low and medium voltage switchgear, and single-phase and three phase schemes
- Understand the operation, components, electromotive forces, turns and voltage ratios, losses, efficiency, rating, and connections of transformers
- Understand the difference between direct current, induction and synchronous current motors, motor enclosures, and how to select motors
- Learn the principles of protecting electrical equipment, including time current curves, fuses, circuit breakers, and coordination
- Learn and understand what standby power is, including generators and UPS power systems
- Have knowledge about power factor and correction
- Differentiate what grounding and bonding systems are, with an overview of ignition sources, separately derived systems, and substation grounding

Who Should Attend?

This course designed for those facilities personnel who interface with facility electrical power systems, including project engineers, operation leads, instrumentation, controls personnel, and electrical engineers who are new to electrical power systems within oil and gas facilities.

Course Outline:

Day 1:

- Fundamentals of insulation and conduction

- Direct current, alternating current

Day 2:

- Transformers power and instrument
- Motors Induction and synchronous

Day 3:

- Power distribution
- System protection and coordination

Day 4:

- Standby power systems
- Power generation

Day 5:

- Variable speed drive principles
- Grounding, bonding, and electrical safety
- Hazardous area identification

Course Fees:

To be advised as per the course location. This rate includes participant's manual, Hand-Outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Course Methodology:

A variety of methodologies will be used during the course that includes:

- (30%) Based on Case Studies
- (30%) Techniques
- (30%) Role Play
- (10%) Concepts
- Pre-test and Post-test
- Variety of Learning Methods
- Lectures
- Case Studies and Self Questionnaires
- Group Work
- Discussion
- Presentation

Course Timings:

Daily Course Timings:

08:00 - 08:20	Morning Coffee / Tea
08:20 - 10:00	First Session
10:00 - 10:20	Coffee / Tea / Snacks
10:20 - 12:20	Second Session
12:20 - 13:30	Lunch Break & Prayer Break
13:30 - 15:00	Last Session

