

TRAINING IN

ELECTRICAL POWER ENGINEERING

MODULE 3

To provide Electrical Training and Assessment for personnel in the following:

Control and Operation of an Electrical Power System

Assessment and Competence evidence record by both knowledge and practical means for delegates attaining the necessary standard of performance supported by a certificate (City and Guilds Accreditation in Progress).

During each program candidates will increase their individual underpinning knowledge by both theoretical and practical demonstrations on equipment. The Practical exercises are supported by relevant lectures.

A course manual is provided to each delegate at no cost.

Trainers are experienced in their field, Electrical Coaching and supporting delegates within a creative and realistic learning environment.

Further more our trainers are articulate in all aspects of offshore and onshore environments.

Instructor Qualification/Experience - 25 years as Senior Authorised Electrical Person on High Voltage distribution networks, Presentation skills, A1 workplace assessor

ELECTRICAL POWER ENGINEERING

MODULE 3

INTENDED AUDIENCE:

Graduates and Technicians in Electrical Engineering with roles and responsibilities for control and operation of a power distribution network

Proposed maximum ten (10) delegates

COURSE OBJECTIVES:

To enable participants to maximize power output reliability in a safe and efficient manner

COURSE DURATION:

Five (5) days

PROGRAMME

Day 1

Motors:

- Theory of synchronous motors Induction motors three phase and single phase
- Output & losses/magnetization
- Starting of induction motors
- Reduced voltage starting/soft start
- Effect on system stability of starting large motors
- Motor starting calculations

Day 2

Motors:

- Reduced voltage effect on torque & current
- Pull out and stall
- Power factor correction of inductive loads
- Motor testing
- Insulation resistance/polarisation index/partial discharge
- Motor protection schemes

Day 3

Electrical System Control:

- Practical Assessment of manual synchronising & parallel operation of a multi source distribution network
 - Plant rating & Security of Supplies
 - Network Control
 - System Power Factor Correction
 - Generator Capability Diagrams
 - Practical Assessment on Load Flow Stability
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Day 4**Control Devices:**

- Power Semiconductor Devices
- Transistor/Thyristor/Triac/Field Effect Transistor
- Variable Speed Drives
- Practical Exercise on Variable Speed Drive

Day 5**Control Devices:**

- Opto-electronic Devices
 - Hall Effect & Piezo-electric Devices
 - Thermocouples /RTDs/Thermistors
 - Final Knowledge Assessment
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