

# Data Centre Power (DCP™)

The Data Centre challenge is not just about hardware costs. It is increasingly about the reduction of energy consumption.

With the requirement for very high levels of availability; this means that standby or duplicated systems are provided for business critical data and applications.

Although hardware performance keeps increasing the total power consumed in Data Centres is also rising. The operational costs of commercial Data Centres are almost directly proportional to how much power is consumed by the equipment. Worse still, a lot of that power is wasted.

In today's society, organisations are trying to reduce their carbon footprint, efficient and effective use of power is the name of the game in major Data Centres, even to the extent that many operators turn off the lights.

This training course looks more closely at the different methods of providing electrical power to a Data Centre and identifies strategies to minimise the hidden electrical power costs and face the so called IT Power Crisis.

All the Data Centre courses have been fully updated to take into account the requirements of the 2009 EU Code of Conduct on Data Centres Energy Efficiency.

## Course Content

### Power Review

- Power consumption trends
- Energy availability, security and cost

### Regulation

- Which regulations affect Data Centres?
- Environmental pressures

### Power Basics

- Ohm's law, Joule's law, the Kirchhoff laws
- Electrical parameters
- AC and DC
- Transformers
- 1 phase and 3 phase
- Residual currents
- Harmonics

### Power to the Data Centre

- Where does the electricity come from?
- Electrical supply options
- Costs of electrical power
- Types of tariff available

### Distribution in the Data Centre

- Power distribution and associated losses
- TN-S systems
- Energy efficient design

### Standby Power

- UPS, batteries and redundant systems
- (N+0, N+1, N+N)
- UPS considerations
- Standby generators

### Design Guidelines

- General principles
- Data Centre requirements
- Transformers
- Electrical circuit requirements
- Main, Feeder, Sub-main circuits
- Power Distribution Units
- Final circuits
- Cable and fuse sizing

## 1 Day Module

**Classroom based with Instructor led discussions and ongoing assessments. Final online assessment and case study.**

### Qualification

- ▶ BTEC unit toward CDCDP™
- ▶ BICSI CECs ITS 6, NTS 6, RCDD 6, RITP 6
- ▶ CNet certificate

### Who Should Attend?

Any individual involved or responsible for the management of an existing Data Centre or those looking at the best practice for the design of new facilities.

### Related Training

- ▶ Certified Data Centre Technician - CDCT Pro™
- ▶ Certified Telecommunications Project Management - CTPM™
- ▶ Certified Data Centre Management Professional - CDCMP™
- ▶ Certified Data Centre Energy Professional - CDCEP™
- ▶ EU Code of Conduct in Data Centres
- ▶ BICSI RCDD

### Course Objectives

To understand the types of electrical power, standby and emergency power and determine options for efficient power distribution.

### Prerequisites

Must have attended and passed the CDCD™ module or have previous experience in the given discipline.

### Course Requirements

Please bring a laptop.