

Earthing and neutral considerations

Covering a review of:

- TN-C and other installation types of earthing
- How the earth and neutral connect to the UPS and disconnection of the earth or neutral
- How different topographies of UPS manage the neutral
- Potential problems, possible solutions and 4 pole changeover systems

UPS fundamentals – the history, basics, efficiency, installation requirements and batteries

Covering a review of:

- Storing energy and technology history
- Making DC from AC and semi-conductor speeds
- Inside an IGBT and digital control of IGBT's
- The range of UPS, UPS topologies and inside a practical UPS
- IT loads and leading power factor

Rotary v static UPS

Covering a review of:

- The benefits and negatives of Rotary and Static UPS
- Product life
- Management of the two technologies
- Faults, controls and configurations

Critical power supplies – tier structure, static switches and faults and operational considerations

Covering a review of:

- Circuit design
- Tier ratings
- Static switches

Industrial (Oil & Gas, Renewable and Nuclear Energy) and special UPS bespoke to client requirements

Covering a review of:

- The regulations applicable
- Production and project management for industrial projects
- Design considerations

Emergency lighting – the case for centralised systems

Covering a review of:

- Different forms of lighting design requirements
- Maintained versus non-maintained
- Centralised system and why you cannot use a UPS
- Different types of circuits

Generator sizing and installation requirements – planning your installation

Covering a review of:

- Important installation requirements that must be considered
- The significance of routine maintenance, monitoring and load bank testing

UPS and electrical installation, fault handling and mitigation scenarios

Covering a review of:

- Inverters that can trip fuses
- Circuit breakers without going to bypass or when there are no mains present
- Discrimination, harmonics and the use of transformers

Battery technology and design considerations

Covering a review of:

- Lead acid batteries & recycling
- Considerations with design
- New battery technologies and the problems with new technologies