Partial Discharge Training

We believe that it is important to empower end users with the knowledge they need to holistically manage and maintain their assets. Offering a wide range of training from basic machine design through to complex condition monitoring techniques.

Training Outline

The following modules will be covered during this training;

- High voltage machine design and assembly
- Failure mechanisms common to high voltage machines
- Partial discharge testing description and interpretation
- Safety hazards in undertaking partial discharge testing

Learning Outcomes

The following outcomes will be achieved through completion of this training.

Attendees will be able to:

1. Identify and describe the function of machine components
2. Identify and describe different insulation types in stator windings
3. Describe the failure mechanisms common to high voltage machines
4. Describe setup and procedure for Partial Discharge Test
5. Describe partial discharge test procedure and relate to partial discharge data
6. Identify common symptoms of failure mechanisms
7. Relate observed condition of machine windings to reliability
8. Understand safe working practice when undertaking partial discharge testing of electrical machines

Training Location

We can conduct training on-site for your business, alternatively we can organise off-site facilities.

Who should participate?

Engineers, service technicians, electrical and mechanical maintenance personnel, who have beginner or intermediate level experience with motors and generators and their operation.

Inclusions

- Specified training course
- Course notes
- Online assessment
- Certificate of attendance

CONTINUED PROFESSIONAL DEVELOPMENT CPD

Participation in this course may be eligible for CPD. Please check with your authorising body for full details.

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Training Program Outline

Following is the program for the training;

Machine Design and Assembly
Module 1

- Frame assembly
- Stator core construction
- Stator windings
- Stator insulation systems

Common Failure Mechanisms
Module 2

- Description of failure modes
- Failure mechanism symptoms
- Stator and insulation failure mechanisms

Partial Discharge Test Theory: Interpretation
Module 3

- Partial discharge testing
- Partial discharge theory
- Pulse characteristics
- Noise separation
- Partial discharge location
- Slot partial discharge
- Endwinding partial discharge
- Factors effecting partial discharge levels
- Pulse phase analysis
- Partial discharge quantities
- Pulse distribution patterns

PD Review
Module 4

- Review of PD results of selected Machines
- Dominant failure modes
- Qmax Benchmark
- NQN Benchmark
- What do the results mean for maintenance and reliability?

Presenter

Mike Davis is an Electrical Engineer with over 45 years' experience in rotating equipment, essentially centred on the repair, redesign and maintenance of electrical rotating plant.

He has developed an intense academic interest in machine failure mechanisms and root cause analysis of electrical machinery failure, and has presented papers throughout Australia, New Zealand, United States of America, South East Asia and South Africa.

Over the last 20 years Mike has developed tailored machines training courses which have been presented to end users in USA, NZ, Australia, South Africa, Indonesia, Singapore and Malaysia.

Mike has been actively involved in several Australian Standard committees and also undertaken a statutory role as an accredited assessing authority for the New South Wales Department of Minerals and Energy.

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