MARK YOUR DIARY | 2027

HIGH VOLTAGE MACHINE MAINTENANCE AND RELIABILITY MASTERCLASS

High Voltage Motors and Generators

Presented by Mike Davis | EMKE

New for 2027 - A Specialist Masterclass

Building on the Electrical Machine Maintenance Masterclass, EMKE is launching machine-specific Masterclasses.

First in the series: Maintenance and reliability of high voltage motors and generators, from stator windings and insulation to rotors, cores and bearings.

Who Should Attend:
Electrical and mechanical personnel working with HV motors and generators, including technicians, engineers, repair specialists, and condition monitoring and reliability professionals.

WHEN

2027

Thursday 11th March

WHERE

Brisbane CBD

Interested in a private In-house or alternate location please contact us:
admin@emkecoach.com

EMKE®
Electrical Machine Knowledge Exchange

High Voltage Machine Maintenance and Reliability Masterclass with Mike Davis

Mark your diary for 2027. Join Mike Davis, a well-known and respected Electrical Machines Practitioner and Coach and founder of EMKE, for an engaging and informative Masterclass dedicated to the maintenance and reliability of high voltage (HV) motors and generators.

This Masterclass is designed to coach attendees to be proactive, confident and safe around HV machines, ensuring they understand the failure processes that affect HV motors and generators and how to keep them running reliably.

Attendees will be provided with the tools they need to describe and identify the functions of HV machine components, the insulation systems used in HV stator and rotor windings, the failure mechanisms common to HV motors and generators, and the electrical and mechanical tests sensitive to each mechanism.

Masterclass Outline

- HV Motor & Generator Familiarisation: stator core and windings, rotors, exciters, bearings
- HV Stator Winding Insulation Systems: resin-rich and global VPI
- HV Machine Failure Mechanisms: thermal, electrical, ambient and mechanical
- Off-line Electrical Tests for HV Motors and Generators
- On-line Condition Monitoring of HV Machines
- HV Machine Inspections and Reliability-Based Maintenance

Learning Outcomes

Understand and improve the maintenance and reliability of high voltage motors and generators through standard inspections, test and maintenance procedures.

The masterclass is presented using a mix of presentation, discussion and small group practical exercises using models to consolidate learning.

🔶 **IDENTIFICATION OF HV MACHINE COMPONENTS AND INSULATION SYSTEMS:**
Identify the components of HV motors and generators and their functions: stator core, form wound stator coils and bars, cage and wound rotors, salient-pole and cylindrical generator rotors, exciters and bearings. Differentiate strand, turn and groundwall insulation, corona protection and stress grading in resin-rich and global VPI windings.

🔶 **RECOGNISING FAILURE MECHANISMS IN HV MOTORS AND GENERATORS:**
Learn how thermal, electrical, ambient and mechanical stresses age HV machines, including partial discharge, slot discharge, endwinding vibration, loose wedges and coils, contamination, core faults and rotor winding faults, and recognise the causes and symptoms of each.

🔶 **APPLICATION OF ELECTRICAL AND MECHANICAL TESTS SENSITIVE TO SPECIFIC FAILURE MECHANISMS:**
Understand what insulation resistance and polarisation index, dissipation factor (tan delta), off line and on-line partial discharge, core tests and rotor winding tests detect on HV motors and generators, and how to interpret the results as an early warning of failure.

🔶 **DEVELOPING MAINTENANCE AND RELIABILITY SKILLS FOR HV MACHINES:**
Use visual inspection findings, test trends and condition monitoring data to prioritise maintenance, plan outages, and support repair, rewind or replace decisions for HV motors and generators.

Who should attend

Electrical and Mechanical Personnel who work on and around high voltage motors and generators, including Technicians, Trainees, Electrical Engineers, Mechanical Engineers, Reliability Engineers, Project Managers, Repair Company Personnel, and Condition Monitoring Engineers & Specialists.

Business Benefits

- Reduce expensive unexpected breakdowns of the HV motors and generators within your facility.
- Minimise surprise failures by training your team in the latest and most efficient methods for inspecting, testing and operating HV machines.
- Improve reliability by matching inspections and tests to the failure mechanisms of HV stator windings, rotors, cores and bearings.
- Close the gap between knowledge and experience and give your team confidence through comprehensive understanding and safety practices when working on HV machines.

Whats Included

- Practical Exercises + Workbook (completed by small teams during the day).
- Case studies of HV motor and generator failures.
- 12 months access to the EMKE Online Electrical Machine Coaching Program.
- A copy of Mikes Motor Minutes E-Book.
- Certificate of Attendance.
- Upon completion of the training, relevant attendees may gain 8 hours of active CPD.
- Arrival beverages, Morning tea, lunch and afternoon tea.

Presenter – Mike Davis, EMKE

Mike Davis is an electrical machines practitioner and coach who helps users of electrical machinery understand fault processes and operate equipment optimally to avoid costly failures. For more than four decades, Mike has led successful electrical machinery companies. Now he passes on his lifetime of engineering experience and knowledge to the next generation of electrical engineers and technicians by coaching and guiding them and presenting technical papers at national and international conferences.

His areas of experience include repairing, redesigning and maintaining rotating electrical equipment, including high voltage motors and generators, developing and establishing testing and inspection programmes for rotating electrical equipment in a variety of industries, and developing and presenting training courses on rotating equipment maintenance.

About EMKE (Electrical Machine Knowledge Exchange) ™

The Electrical Machine Knowledge Exchange (EMKE) offers a unique electrical machine learning experience targeted at technical personnel who work on or around electrical machines.

Contact Us

The High Voltage Machine Maintenance and Reliability Masterclass will be presented in 2027. For more information on our trainings, In-house coaching and our online academy visit www.emkecoach.com or contact us on admin@emkecoach.com.





