AC-DC MOTOR REPAIR STANDARDS PLUS HIGH-VOLTAGE MOTORS

3-DAYS (INCLUDES MOTOR SHOP DEMONSTRATIONS)

COURSE DESCRIPTION: In this three-day workshop we cover alternating and direct current motor repair testing and measurement standards regarding NEMA, IEEE, API, ISO and EASA publications. Students learn the purpose of specific testing standards plus test data interpretation and how to correctly document test results. Additionally, high-voltage motors (over 5000 volts) are covered; including motor construction, operation, maintenance, and testing. On the third day of this workshop students attend a motor shop tour that includes a broad range of testing and measurement demonstrations; giving students the opportunity to observe various motor components, as well as seeing testing and measurement procedures in a first-rate motor repair shop. After completing this workshop attendees will have a clear understanding of alternating and direct current motor repair testing and measurement standards as well as high-voltage motor operation, maintenance and testing practices.

IS THIS COURSE FOR ME? This workshop is a perfect fit for anyone responsible for performing low, medium and high voltage motor testing and maintenance, as well as anyone responsible for documenting and communicating motor maintenance or motor repair test results. Beginners, intermediate, and advanced motor maintenance personnel, reliability leaders, motor repair technicians, motor shop supervisors and managers will all benefit greatly from this course.

CLASSROOM VS. SHOP/LAB TIME: This workshop is designed for two days of classroom instruction and one-half day of interactive demonstrations at a local motor repair shop. Course attendance is limited to 15 students.

I. Motor Construction & Operation
- ⇒ Alternating Current Motors
- ⇒ Direct Current Motors
- ⇒ High-Voltage Motors (over 5000 volts)

II. AC Motors (Operation & Maintenance)
- ⇒ Stator Windings (Low & Medium Voltage)
- ⇒ Stator Windings (High Voltage; Over 5000 Volts)
- ⇒ Rotor Windings (Induction, Wound Rotor, Synchronous)
- ⇒ Armature Windings (Wave & Lap Windings)
- ⇒ Field Windings (Shunt, Compound & Interpoles)
- ⇒ Motor Frames & Mounting Bases
- ⇒ Antifriction Bearing Maintenance & Lubrication
- ⇒ Sleeve Bearing Maintenance & Lubrication
- ⇒ Air Gap Variance & Deviation
- ⇒ Energized Motor Performance Testing
- ⇒ Motor Repair Testing & Measurements Documentation

III. Motor Repair Standards (Testing & Data Interpretation)
- ⇒ Insulation Resistance Tests (IEEE Std. 43)
- ⇒ Power Factor Tip-Up High-Voltage Motors (IEEE Std. 286)
- ⇒ Partial Discharge High-Voltage Motors (IEEE Std. 56)
- ⇒ High-Potential Testing (NEMA Std. MG1)
- ⇒ Step-Voltage Testing (IEEE Std. 95)
- ⇒ Surge Testing Form-Coil Stators (IEEE Std. 522)
- ⇒ Winding Resistance Tests (API Std. 541)
- ⇒ Winding Inductance Tests (IEEE Std. 1415)
- ⇒ Laminated Core Testing (IEEE Std. 432, IEEE Std. 1415)
- ⇒ Air Gap Variance (IEEE Std. 113)
- ⇒ Air Gap Deviation (API Std. 541)
- ⇒ AC-DC Voltage Drops (IEEE Std. 113, EASA)
- ⇒ Air Gap & Rotor Bar Acceptance Tests (IEEE Std. 1415)
- ⇒ Dynamic Balancing (ISO Std. 1940/1)