

MV-HV ELECTRICAL MAINTENANCE TRAINING



October 1-2 , 2019 | Mississauga, ON

October 3-4 , 2019 | Winnipeg, MB

October 8-9 , 2019 | Edmonton, AB

October 10-11 , 2019 | Richmond, BC

MV-HV - Recommended Practices For Electrical

BONUS FEATURES

- **FREE** 130-Page Electrical Testing and Maintenance Handbook
- **\$100 Coupon** Toward any Future Electricity Forum Event
- 1.4 Continuing Education Unit (CEU) Credits
- **FREE** Magazine Subscription
- Forum Presentations in Paper Format
- Refreshments and lunch included

2-DAY COURSE
\$799

RECOGNIZED BY



EARN CONTINUING
EDUCATION UNITS (CEUS)

complete course details:

www.electricityforum.com/electrical-training/high-voltage-electrical-maintenance-training

MV-HV ELECTRICAL MAINTENANCE TRAINING

Preventive maintenance is the key to reducing accidents, saving lives, and avoiding costly breakdowns and work stoppages. This latest Edition has been updated to reflect the latest industry developments and safety strategies. Our MV-HV Electrical Maintenance training course is your best guide for creating and administering an effective Electrical Preventive Maintenance (EPM) program.

A well-administered EPM program is the surest way to reduce accidents, save lives, and minimize costly breakdowns and unplanned shutdowns of production equipment. Learn about preventive maintenance for industrial and commercial electrical systems and equipment, and learn test procedures you can implement at once.

Our "MV-HV - Recommended Practices For Electrical Equipment Maintenance" training course is an in-depth examination of the most recent standards governing Electrical Maintenance Practices, NFPA 70b - Recommended Practices For Electrical Equipment Maintenance and CSA Z463 Workplace Electrical Equipment Maintenance Practices. These recommended practices apply to preventive maintenance for electrical, electronic, and communication systems and equipment installed in industrial, commercial and institutional power systems.

This course is designed to alert electrical maintenance personnel in utility, industrial, commercial and institutional

facilities to the latest North American Electrical Maintenance and Testing Specifications.

These specifications cover the suggested field tests and inspections that are available to assess the suitability for continued service and reliability of electrical power distribution equipment and systems.

The purpose of these specifications is to assure that tested electrical equipment and systems are operational and within applicable standards and manufacturer's tolerances and that the equipment and systems are suitable for continued service. This program will also deal with the important subject of troubleshooting electrical systems and choosing the proper preventive maintenance testing equipment and procedures.

WHO SHOULD ATTEND

This comprehensive two-day course is designed to benefit those working in maintenance that desire to increase their practical knowledge of electrical maintenance standards and practices. The course is open to industrial, commercial and institutional electrical engineering and maintenance professionals, plant electricians, electrical maintenance supervisors, field and plant personnel.

AGENDA - DAY 1

PART 1

WHY ESTABLISH AN ELECTRICAL PREVENTIVE MAINTENANCE (EPM) PROGRAM

- Value and Benefits of a Properly Administered EPM Program EPM and Energy Conservation

PART 2

WHAT IS A EPM AND WHAT ARE ITS BENEFITS?

- Planning an EPM Program
- Personnel Safety
- Equipment Loss
- Production Economics
- Main Parts of an EPM Program
- Programmed Inspections
- Recordkeeping
- Training for Safety and Technical Skills

PART 3

PLANNING AND DEVELOPING A PROGRAM

- Survey of Electrical Installations
- Data Collection
- Single Line Diagrams and Data
- Electrical Equipment Installation Change
- Lighting System Diagrams
- Ventilation
- HVAC
- Control and Monitoring
- Emergency Procedures
- Test and Maintenance Equipment
- Identification of Critical Equipment

- Establishment of a Systematic Program

- Inspection Frequency
- Forms, Planning, Records

PART 4

PERSONAL SAFETY

- Qualification, Tools, Equipment, Training, Arc Flash, NFPA 70e, PPE

PART 5

FUNDAMENTALS OF ELECTRICAL EQUIPMENT MAINTENANCE

- Scheduling, cleaning, environmental concerns, equipment additions and retrofits

PART 6

SUBSTATIONS AND SWITCHGEAR ASSEMBLIES

- Insulators
- Conductors
- Air-Disconnecting Switches
- Grounding Equipment
- Enclosures
- Switchgear Assemblies
- Air Circuit Breakers
- Arc Interrupters
- Oil Circuit Breakers
- Interrupter Switches
- Gas-Insulated Substations and Gas-Insulated Equipment
- Maintenance and Repair of the GIS and GIE

- Surge Arresters

- Instrument Transformers and Auxiliary Transformers
- Protective Relays, Meters, and Instruments
- Ground-Fault Indicators
- Network Protectors

PART 7

POWER AND DISTRIBUTION TRANSFORMERS

- Liquid-Filled Transformers
- Regular Inspections
- Current and Voltage Readings
- Temperature Readings
- Liquid-Level Indicator and Pressure/Vacuum Gauges
- Special Inspections and Repairs
- Liquid Maintenance and Analysis
- Fault-Gas Analysis
- Dissolved-Gas-in-Oil Analysis
- Dry-Type Transformers
- Regular Inspections
- Current and Voltage Readings
- Temperature Readings

PART 8

POWER CABLES

- Visual Inspection
- Aerial Installations
- Raceway Installations
- Cable Testing

complete course details:

www.electricityforum.com/electrical-training/high-voltage-electrical-maintenance-training

**PART 9
MOTOR CONTROL EQUIPMENT**

- Motor Control Preventive Maintenance Guide
- Components and Maintenance of Motor Controls
- Enclosures
- Bus Bar, Wiring, and Terminal Connections
- Disconnects

- Molded Case Breakers
- Fuses
- Contactors
- Motor Overload Relays — Thermal Types
- Pilot and Miscellaneous Control
- Devices
- Mechanical Interlocks

**PART 10
ELECTRONIC EQUIPMENT**

- Care and special precautions

AGENDA - DAY 2

**PART 11
MOLDED-CASE CIRCUIT BREAKERS**

- Types of Molded-Case Circuit Breakers
- Phase-Fault Current Conditions
- Ground-Fault Tripping
- Special-Purpose Breakers
- Inspection and Cleaning
- Loose Connections
- Mechanical Mechanism Exercise

**PART 12
GROUND FAULT PROTECTION**

- Personal and Equipment Protection

**PART 13
FUSES**

- Fuses Rated 1000 Volts or Less
- Fuses Rated over 1000 Volts
- Installing and Removing Fuses
- Inspection, Cleaning and Servicing
- Replacement

PART 14

- Rotating Equipment
- Maintenance, cleaning, Testing
- Stator and Rotor Windings
- Brushes, Collector Rings, and Commutators
- Bearings and Lubrication

**PART 15
LIGHTING**

- Cleaning, Relamping, Disposal

**PART 16
WIRING DEVICES AND PORTABLE TOOLS**

- Heavy-Duty Industrial-Type Plugs, Cord Connectors, and Receptacles Periodic Inspection of Crucial Wear Points Employee Training Cord and Attachment Plug Care

**PART 17
TESTING AND TEST METHODS**

- Acceptance Tests and Maintenance Tests
- Frequency of Tests
- Special Precautions and Safety
- Qualifications of Test Operators
- Insulation Testing
- Dielectric Absorption
- Protective Device Testing
- Circuit Breaker Tests
- Transformer Turns-Ratio and Polarity Tests
- Impedance Testing of Equipment Grounding Conductor
- Infrared Inspection
- Meggaring, Continuity, Hi-Pot testing of equipment

**PART 18
UNINTERRUPTIBLE POWER SUPPLY (UPS) SYSTEMS**

- UPS System Maintenance Procedures — General
- System Tests, Routine Maintenance, Special Tests

**PART 19
POWER QUALITY**

- Harmonics
- Transients (Surges)
- Voltage Sags and Swells
- Long-Duration Undervoltages and Sustained Voltage Interruptions
- Unbalanced Voltages and Single Phasing
- Symptoms — Grounding
- Voltage Fluctuations and Flicker

**PART 20
GROUNDING**

- Symptoms and Causes of Inadequate Grounding
- Grounding System Inspection, Testing, and Monitoring
- Solutions to Inadequate Grounding

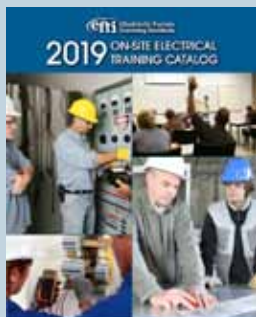
**PART 21
SUPERVISORY CONTROL AND DATA ACQUISITION (SCADA)**

- Concurrent Maintenance
- Preventive Maintenance
- Testing
- Reliability-Centered Maintenance (RCM)

PART 22

- EPM from Commissioning (Acceptance Testing) Through Maintenance
- Commissioning Planning Stages
- Submit Functional Performance Tests (FPTs)
- Costs of Commissioning, New Construction

“Our motivation is your education.”



Download Our FREE 60-Page
On-Site Electrical Training Catalog TODAY!

THE
ELECTRICITY
FORUM
TRAINING
INSTITUTE

ON-SITE TRAINING BENEFITS:

- Affordable and Cost Effective
- Course Customization
- Flexibility of Schedule
- Convenience for Employees
- CEUs/PDHs

www.electricityforum.com/catalog



1 (905) 686-1040



(905) 686-1078

**ON-LINE:**

www.electricityforum.com/electrical-training/high-voltage-electrical-maintenance-training

**MAIL:**

The Electricity Forum
1885 Clements Rd., Unit 218
Pickering, ON L1W 3V4



**REGISTER 3 DELEGATES
AT FULL PRICE
AND GET THE 4th REGISTRATION FREE!**

SAVE \$50

REGISTER AND PREPAY 14 Days prior to course date and receive an early bird discount of \$50 off the full price.

ATTENDEE INFORMATION

To receive registration fee discounts, you must **REGISTER AND PREPAY** prior to the course date.

NAME _____

TITLE _____

COMPANY _____

ADDRESS _____

CITY _____

PROVINCE _____

POSTAL CODE _____

E-MAIL _____

TEL () _____

FAX () _____

METHOD OF PAYMENT **Bill My Credit Card** **AMEX** **VISA** **MasterCard**

Card # _____

Exp. Date _____

Signature _____

Card Holders Name _____

The registration fee to attend this course is \$799.00 + Tax. The fee includes forum participation, refreshments.
NOTE: LUNCH IS PROVIDED WITH THIS COURSE.

Register and prepay 14 days before forum date and receive an early bird discount of \$50.00

WHEN & WHERE**Toronto, ON - October 1-2, 2019**

Hampton Suites Airport Hotel
3279 Caroga Dr., Mississauga
Tel: 905-671-4730

Winnipeg, MB - October 3-4, 2019

Sandman Hotel & Suites Winnipeg Airport
1750 Sargent Ave.
Tel: 204-775-7263

Edmonton, AB - October 8-9, 2019

Sawridge Inn Edmonton South
4235 Gateway Blvd NW
Tel: 780-438-1222

Richmond, BC - October 10-11, 2019

Sandman Signature Vancouver Hotel & Resort
10251 Edwards Drive
Tel: 604-278-9611

INTERESTED IN ON-SITE ELECTRICAL MAINTENANCE TRAINING?**Cost Effective On-Site Electrical Training**

Save the cost of travel and hotels AND save on our regular public enrollment registration fees. For more information, contact Randy Hurst, President, The Electricity Forum (905) 686-1040. You can write to randy@electricityforum.com or you can go to our on-site electrical training quotation page and ask for a FREE quotation: www.electricityforum.com/onsite-requestforquote