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## CSA Z463 Electrical Maintenance

Contact us Today for a FREE quotation to deliver this course at your company's location.

<https://www.electricityforum.com/onsite-training-rfq>

The CSA Z463 Standard governing the Electrical Maintenance of Industrial, Commercial and Institutional Electrical Power Systems has been designed to improve the safety of electrical workers and the protection of electrical equipment through the proper application of electrical maintenance strategies.

This comprehensive one-day workshop provides invaluable information to anyone who wishes to know and understand the role of the NEW CSA Z463 electrical maintenance standard, which governs the procedures for the optimal maintenance of electric power systems. The importance of planning, programming and implementing electrical maintenance practices will be emphasized. This workshop also deals with safety considerations involved in electrical maintenance procedures for all the components of any electrical system. This will be an interactive forum where the instructor will lead the discussion between students so as to maximize the educational experience.

This Electrical Maintenance workshop discusses various methods to properly identify electrical equipment and systems that directly affect the safe operation of electrical equipment and reliability, as well as the electrical safety of front-line electrical workers.

As well as helping delegates keep abreast of the latest technologies and techniques available in this area, this workshop offers students an excellent opportunity to ask specific questions and exchange ideas relating to their own electrical maintenance activities. This workshop is designed to be an interactive, problem-solving, learning environment for delegates of all disciplines.

Electrical Maintenance personnel will learn predictive and preventative maintenance techniques and priorities through a through examples of common and catastrophic electrical failures.

This workshop will present electrical maintenance strategies that are designed to integrate into their existing business management systems, with other programs such as hazardous energy lockout control programs, as well as electrical safety programs.

This workshop will therefore incorporate information about two other important CSA Electrical Standards:

- CSA Z460 Control of Hazardous Energy and Other Methods,
- CSA Z462 Workplace Electrical Safety

This Electrical Maintenance workshop promotes the importance of electrical maintenance of electric power systems, and provides practical advice, as well as electrical maintenance and testing requirements for electrical equipment and systems, from various electrical maintenance references and sources.

The purpose of this workshop is to encourage the safe, reliable, and cost-effective operation of industrial, commercial and institutional electrical equipment through the proper application of electrical maintenance and testing practices.

## **LEARNING OUTCOMES**

- Understand how CSA Z463 should be applied to electrical maintenance procedures
- Understand the correct steps to minimize risk of electrical injuries and electrical equipment failure
- Understand how to improve electrical equipment efficiency
- Understand specialized maintenance practices for industrial electrical equipment

### WHO SHOULD ATTEND

This course is a must for electrical engineers, electrical maintenance personnel, plant electricians, electrical contractors, power specialists, maintenance managers, consultants and technologists responsible for the design, construction, installation, inspection, operation, or maintenance of electrical systems, electrical technicians, inspectors, safety personnel and other employees responsible for the operation and maintenance of electrical systems in a commercial, industrial, institutional setting.

### STUDENTS RECEIVE

- 100+Page Electrical Maintenance Handbook
- A **FREE** Digital Intelligent Power Today Magazine Subscription
- **\$100** Coupon Toward Any Future Electricity Forum Event (Restrictions Apply)
- Course Materials In Paper Format

### COURSE OUTLINE

#### Course Instructor

*John Robin, Electrical Safety & Maintenance Consultant, The Electricity Forum*

#### DAY ONE

## **1. The Quality Management System**

- Planning an Electrical Preventive Maintenance Program
- Equipment Loss
- Production Economics
- Main Parts of and EPM Program
- Inspections
- Training for Safety and Technical Skills

## **2. Maintenance Practices**

- Proactive versus Reactive strategies
- Five Maintenance Strategies and factors affecting your plant
- Abnormal Environments and the effect on maintenance
- Parts inventory and effect on your plant
- Just in time delivery strategies
- Commissioning tests
- Identifying and analyzing equipment failure

## **3. Electrical Maintenance and Impact on Worker Safety**

- Poor maintenance and effect on worker
- Poor maintenance and change to Hazard and risk assessments
- Proper risk assessment principals
- Regular equipment inspections
- Protection settings
- Arc Flash ratings
- Arc Flash Personal Protective Equipment
- Arc Flash remediation techniques
- Proper grounding and bonding techniques

- Electrical personnel training

#### **4. Emergency Preparedness**

- Responding to Electrical accidents
- Removing victims from energized equipment
- Electrical Emergency Response plans
- Emergency response equipment
- Restoring power after an event
- Emergency lighting in Electrical rooms
- Routine checks of safety equipment – Gloves, safety grounds, hot sticks

#### **5. Energized Maintenance Practices**

- Energized maintenance – pros and cons
- Energized testing
- Infrared Thermography
- Corona imaging
- Oil Analysis
- Vibration Analysis
- Battery testing
- Power washing energized High Voltage equipment

#### **6. Maintenance on De-energized Electrical Equipment**

- Safe work requirements on de-energized equipment
- Electrical isolation on High Voltage systems
- Protective grounding on High Voltage systems
- De-energized maintenance frequencies for:
  - High voltage lines and switchgear
  - Medium voltage lines and switchgear

- Motor Control sections at 480 and 600 volts
- Protective relays

## **7. Hazardous Location Equipment Maintenance**

- Certifications
- Maintenance procedures verifying Equipment integrity
- Hazards in dealing with fine dust and vapors
- Area cleanliness
- Portable tools and temporary lighting in Hazardous Locations
- Commissioning plans

## **8. Electrical Testing**

- Types of electrical tests
- Mechanical inspections and tests
- Component verification
- Function testing

## **9. Equipment Maintenance Practices**

- Switchgear
- Transformers
- Cables
- Disconnect and Circuit Switches
- Circuit Breakers
- Protection and control equipment
- Ground grid verification
- Rotating machinery
- Motor control Centers
- Power distribution centers

- Variable Frequency Drives
- Battery systems
- Power factor Correction capacitors
- Substation bus inspection
- Backup Generator checks
- Uninterruptible Power Supplies
- Robotic transfer switching

## **10. Specialized Equipment**

- Supervisory control and Data Acquisition systems (SCADA)
- Programmable Logic Controllers (PLC)
- Alarms, Signals, and Communication Systems
- Telecommunication, Radio, and Television Towers
- Surveillance and Security Systems
- Fire Alarm and Fire Detection Systems
- Automatic fire pump startup testing
- Lighting, signs, and Emergency lighting
- Seasonal Heat Trace verification
- Crane inspection
- Elevator inspection
- Use of electricity in mines
- Quick Connect Cable Connectors (480 & 600 volt)

## **COURSE TIMETABLE**

Start: 8:00 a.m.

Coffee Break: 10:00 a.m.

Lunch: 12:00 noon

Restart: 1:15 p.m.

Finish: 4:30 p.m.

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