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## Electrical Maintenance Training

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

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

Our Electrical Maintenance training course will provide students with a solid understanding of theory and standards. The course will also make students aware of issues concerning the proper application, installation and maintenance of these types of equipment with a strong emphasis on safety. Our electrical maintenance training course will cover a wide range of material starting from the basics and moving on to more complex issues. This course provides an overview of electric power system design and theory, focusing on the types of equipment used most commonly in the Utility, Industrial, Commercial and Institutional applications. Basic Circuit Breaker and Transformer construction, electrical safety, and common maintenance techniques are major components of this course.

### COURSE OBJECTIVES

This course is designed to enable students to:

- Understand Switchgear, Circuit Breaker and Transformer Design

- Work safely around substation equipment.
- Understand the operating principles associated with the covered equipment.
- Understand typically used protection and control systems.
- Understand the interrelationships of electrical tests.
- Understand the interpretation of test results.

### **WHO SHOULD ATTEND**

This course is recommended for skilled trades, supervisors and anyone involved in the electrical maintenance and operation of Circuit Breakers, Power Transformers, Cable Testing and Motor Testing and Maintenance.

### **STUDENTS RECEIVE**

- FREE 100-Page Digital Electrical Maintenance Handbook (Value \$20)
- \$100 Coupon Toward any Future Electricity Forum Event (Restrictions Apply)
- 1.4 Continuing Education Unit (CEU) Credits
- FREE Magazine Subscription (Value \$25.00)
- Course Materials in Paper Format

### **COURSE OUTLINE**

#### **DAY ONE**

##### **Electrical Safety Aspects**

- Legislation
- Electrical Hazards

- Energized Work
- Personal Protective Equipment
- Job Planning
- Equipment Failure Costs

### **High, Medium, Low Voltage Switchgear**

- Ratings
- Definitions
- Types
- Typical Construction
- Control Power Systems

### **Electrical Maintenance of Protective Equipment & Instrument Transformers**

- Potential Transformers
- Current Transformers
- Transformer Differential Protection
- Feeder Protection
- Motor Protection

### **Circuit Breaker Construction & Features**

- Contact Operation
- Arc Extinguishing Mediums, Sulphur Hexafluoride Gas, Air, Vacuum and Oil
- Manual and Electrical operating Controls
- Safe Operating Methods

### **Circuit Breaker Maintenance, Care & Testing**

- Mechanical Inspections
- Contact Resistance Tests
- Insulation Resistance Tests
- Insulating Gas and Oil Analysis
- Travel Analysis

## **DAY TWO**

### **Transformer Construction**

- Tank
- Core, Coils, Types and Ratings
- Bushings
- Tap Changers
- Factory Testing
- Dry, Oil and Liquid Filled Types

### **Operation**

- Theory of Operation
- Vector and Connection Diagrams
- Important Electrical Relationships & Formulas

### **Auxiliary Equipment**

- Gas Relays
- Fans and Pumps
- Gauges
- Tap Changer Controls

### **Failure Causes**

- Detailed analysis of several case histories
- Lightening
- Oil Decay
- Component Failures
- Internal Faults
- External Faults

### **Testing Practices & Standards**

- Oil Analysis
- Chemical Analysis
- Dissolved Gas Analysis
- Furan, Inhibitor, Power Factor Water and PCB Testing

### **Electrical Maintenance Testing**

- Insulation Resistance and Polarization Index Tests
- Turns Ratio, Excitation Current and Polarity Testing
- Capacitance and Power Factor Testing
- Winding Resistance Tests

### **COURSE TIMETABLE**

#### **Both days:**

Start: 8:00 a.m.

Coffee break: 10:00 a.m.

Lunch: 12:00 noon

Finish: 4:30 p.m.

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