

American Trainco - Over 100,000 Satisfied Students

Eliminate chronic Electrical problems....

Electrical PM & Best Practices

for Facility and Industrial Maintenance

For a schedule
of classes in your
area, call us @

1-877-978-7246

or visit

www.AmericanTrainco.com

Time proven
techniques
and practical
activities you
can put to use
immediately

"A very productive and worthwhile class!"

Jay Keith - Senior Electrician, Starz Entertainment group

**Earn College Credit
with This Course!**

This course now carries American Council on Education (ACE)
College Credit Recommendations.

Catch a problem BEFORE it happens!



- This seminar can also be presented at your facility for larger groups
- Reserve Your Space Now! **CALL 1-877-97-TRAIN**

Or check us out on the web at www.AmericanTrainco.com

A great
course for
electricians
or multicraft
technicians

Real World Training...for Real World Needs



▶ **“A commonsense approach for everyday electrical maintenance”**

Electrical PM & Best Practices

PURPOSE OF SEMINAR

There is only one way to ensure maximum uptime and minimum expense in maintaining your electrical equipment & systems – catch a problem BEFORE it happens! This course is dedicated to helping electrical personnel and maintenance technicians do just that. By implementing simple preventive maintenance practices, routine inspections, and scheduled testing you will be able to keep your plant or facility operating at absolute peak efficiency while reducing your electrical maintenance costs.

This class is also designed to produce results for your facility immediately! At American Trainco we approach our students as if they were our own employees, teaching them practical skills so that they can go back to their plant or building and readily apply what they have learned. Armed with easy to implement ideas for preventing electrical failures, students will return to their workplace with the information they need to establish a complete and very effective preventive maintenance program.

TRAINING OUTCOMES

Upon completion of this course students will receive a personalized American Trainco Certificate of Completion and 1.6 CEU's (Continuing Education Units) approved by the Maintenance Training Association of the Americas indicating that the student has learned to:

1. Identify common causes of electrical failure
2. Coordinate effective PM scheduling
3. Establish routine testing procedures
4. Apply PM strategies & techniques such as RCM, TPM and Root Cause Failure Analysis
5. Interpret results of Infrared Testing
6. Safely conduct electrical maintenance
7. Implement recommended repair “best practices”
8. Monitor and maintain power quality
9. Design an electrical equipment maintenance program
10. Develop and use simple walk-through checklists

WHO SHOULD ATTEND

This seminar is a must for anyone who works with electrical equipment and systems at industrial plants, utilities or commercial and private building facilities. General maintenance personnel, workers in cross-training programs, electricians and engineers will find this course extremely useful. Attendees come from a wide variety of industries, skill-levels, company sizes, and job titles, so if you're not sure you'll fit in or will benefit from the class, don't worry - you will - as long as you work with electricity! People who will benefit from attending this seminar include...

Maintenance Personnel in:

Manufacturing Plants Commercial Buildings
Hospitals Waste Water Facilities
Schools Government Buildings
Research Facilities Shopping Centers
Apartment Buildings

Including:

Electricians Apprentices
Mechanics HVAC Technicians
Boiler Operators Machine Operators
Engineers Alarm Technicians
Building Engineers Stationary Engineers
Maintenance Supervisors
Electronic and Instrumentation Technicians
Multicraft & Cross Training Personnel

UNAFFILIATED and NON-COMMERCIAL

Unlike some training experiences, you won't get a sales presentation at an American Trainco seminar - all you get is an honest, commercially unbiased education. We do not engage in the practice of selling or promoting any other company's products or services, so you know that by attending one of our seminars, your time and money is well spent.

ABOUT OUR INSTRUCTORS

When we hire our instructors, we want to know three things:

- 1) Do they have a formal education?
- 2) Have they ever spent time in the field doing actual work?
- 3) Are they teaching experts?

If they answer "yes" to all these questions, then we start getting picky. Instructors who want to teach with American Trainco truly need to be a leader in their field. We don't hire field people without teaching experience, and we don't hire teachers without field experience. Our instructors need to have both and are required to keep our classrooms entertaining and lively, ensuring our students a positive and enjoyable learning experience.

HIGH QUALITY PRESENTATIONS

Black and white transparencies never made it in the door at American Trainco. From the start we demanded that all our presentations would be lively, attractive, crisp and clear. Our instructors use state-of-the-art computers, projection equipment and software to bring you a high quality visual experience. And our books are designed with the maintenance person in mind too. We know that they don't always have a lot of time to read volumes of literature so our manuals are quick and to the point, providing students the same charts, descriptions, pictures and bulleted items they'll see during the presentation.

CERTIFICATES-TESTING-COLLEGE CREDIT

After completion of this seminar students will receive a Certificate of Completion and 1.6 CEUs (Continuing Education Units) approved by the Maintenance Training Association of the Americas. Students may also elect to take the MTAA Certification test associated with this topic. Those seeking college credit recommendations must attend both days of this course and successfully pass the MTAA Certification test. This course is recommended by ACE for 1 college credit hour. Transcripts are available through American Trainco.

COURSE OVERVIEW

I. INTRODUCTION

- A. Key Reasons for Performing Electrical Maintenance
- B. Overview of Electrical PM Programs
- C. NFPA 70B, Recommended Practices for Electrical Equipment Maintenance
- D. Primary Components of an Electrical Maintenance Program
- E. Fundamental Principles of Effective Electrical Equipment Maintenance
- F. Cost vs. Benefit Analysis

II. MAINTENANCE MANAGEMENT

- A. Different Approaches to Maintenance Management
- B. Factors in Developing Your Own Program
- C. Computerized Maintenance Management Systems (CMMS)
 - i. RCM
 - ii. TPM
 - iii. Root Cause Failure Analysis
- D. NFPA 70B – Key Resource for Electrical PM
- E. Benefits of a “Qualified Electrical Worker” Program

III. ELECTRICAL TESTING METHODS

- A. Types of Tests
- B. Test Equipment
- C. Personnel Safety
- D. Interpreting Test Results

IV. INFRARED TESTING

- A. Advantages and Disadvantages
- B. Equipment to be Tested
- C. Interpreting Results

V. POWER QUALITY

- A. Understanding Power Quality & Harmonics
- B. Monitoring Power Quality
 - i. Transient Conditions
 - ii. Voltage Fluctuations
- C. Maintaining Power Quality

VI. GROUNDING SYSTEM MAINTENANCE

- A. Earth Resistance
- B. Grounding Electrode System
- C. Personnel Protective Grounding
- D. Ground Fault Circuit Interrupters (GFCI) for personnel protection
- E. Portable Electrical Tools and Equipment
- F. Assured Equipment Grounding Conductor Program

VII. RECOMMENDED MAINTENANCE AND REPAIR PRACTICES

- A. Equipment Cleaning and Lubrication
- B. Transformers
- C. Power Cables
- D. Motor Controls
- E. Electronic Equipment
- F. Molded Case Circuit Breaker Panels
- G. Fuses
- H. Rotating Equipment
- I. Lighting
- J. Wiring Devices
- K. Busways & Cable Trays
- L. Uninterruptible Power Supply (UPS)
- M. Hazardous (Classified) Location Equipment

VIII. SPECIAL CONDITIONS / STUDIES

- A. Long Intervals Between Overhauls
- B. Short-circuit studies
- C. Coordination studies
- D. Load-flow studies
- E. Reliability studies

IX. HOW TO BUILD A WALK-THROUGH INSPECTION CHECKLIST FOR YOUR FACILITY

X. OTHER BEST PRACTICES & GROUP DISCUSSIONS

- A. What Works at Your Facility?
- B. What Works at Other Facilities?
- C. Where to Go to Find Out More

SEMINAR AGENDA

7:30 am	Registration
8:00am	Class Begins
12:00-1:00pm	Lunch (on your own)
4:30pm	Class Ends

SEMINAR FEES

\$985 per student, both days

NO RISK REGISTRATION and MONEY-BACK GUARANTEE

If you're not yet sure you'll be able to attend this seminar, you can still make a reservation to hold your space in class. While payment is due prior to the start of the seminar, you may choose a full refund or credit for cancellations made at least 24 hours in advance. Student substitutions can also be freely made at any time prior to the start of the seminar. Refunds will not be issued for registered attendees who fail to show up and have not given a notice of cancellation. In the rare event that should you not receive the expected value after attending our seminar, simply notify us in writing of your reasons and your money will be promptly refunded.

IN-HOUSE TRAINING

You can bring this or any other maintenance training program directly to your plant or facility. Simply call us and tell us what you're looking for. In addition to our own American Trainco seminars and instructors, we have established relationships with literally hundreds of other expert instructors and consultants who conduct training in virtually all areas of maintenance; and our custom training staff is among the most experienced in the industry. Chances are good we will be able to meet your needs. Just call and ask...

Dan or David at **1-877-97-TRAIN**, email **DavidH@AmericanTrainco.com**, or visit us on the web at **www.AmericanTrainco.com**.

Some of the other training topics we can bring to your site include:

- Arc Flash Electrical Safety
- Basic Electricity for Non-Electricians
- Electrical Troubleshooting
- Air Conditioning & Refrigeration
- Boiler Operation, Maintenance & Safety
- Variable Frequency Drives
- PLCs for Non-Programmers
- Electrical Diagrams, Schematics & Drawings
- Standby Generators & Emergency Power
- Pumps & Pump Systems
- 2008 National Electrical Code®
- Electrical PM & Best Practices
- Hydraulics
- Saving Energy at Your Facility
- Inventory Control for Maintenance
- Predictive Maintenance & Condition Monitoring

Reserve Your Space Now!

CALL 1-877-97-TRAIN

Or Online at:

www.AmericanTrainco.com

REGISTRATION

Electrical PM & Best Practices for Facility and Industrial Maintenance

SEMINAR FEE
\$985 per student, both days



FIVE EASY WAYS TO REGISTER:

- 1) **Internet** www.AmericanTrainco.com
- 2) **Fax** (303) 531-4565
- 3) **Phone** Toll Free 1-877-97-TRAIN 1-877-978-7246 or (303) 531-4560
- 4) **Mail** this form to: American Trainco, Inc. P.O. Box 3397 Englewood, CO 80155
- 5) **E-mail** the information requested on this form to: sales@AmericanTrainco.com

For a schedule of classes
in your area, call us @

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or visit

www.AmericanTrainco.com

Simple
ways
to stop
problems
BEFORE
they
happen

Primary Contact/Authorizing Supervisor: Name _____

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City _____ State _____ Zip _____

Phone _____ Fax _____ Email _____

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E-Mail

Seminar City

Name	Title	E-Mail	Seminar City

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Phone	Fax	Email

Supplemental Products To Complement This Seminar

FREE SHIPPING

NFPA 70B Rec. Practices for Electrical Equipment Maintenance (NFB001) \$80.00 QTY

Guidelines on establishing an effective electrical preventive maintenance program designed to help you reduce accidents, save lives, and minimize unplanned shutdowns!

Power Quality Measurement and Troubleshooting (APB093) \$52.00 QTY

This Book covers the fundamentals of power generation, distribution, quality, monitoring, and troubleshooting. On-line and portable power monitoring and testing concepts are detailed. Power quality measurements are introduced with common applications.

Test Instruments (APB126) \$75.00 QTY

This Textbook provides an overview of the latest information on the safe, efficient, and practical use of electrical test instruments. As electrical devices have become more technologically complex, taking accurate measurements has become more critical.

2008 National Electrical Code® Book (WMB001) \$86.00 QTY

The 2008 NEC® is the world's most widely adopted safety code book and is up-to-date with the latest electrical innovations, advanced techniques, and proven practices.

(Colorado Residents Add 2.9% Tax, Canadian Residents Add 6% GST).

We carry a full line of electrical training and evaluation products including assessments, books, videos, DVDs, compliance kits, on line training, in house training and more! Call for details or go to www.martinlearning.com

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