

This 2-day course is just **\$550** per day
(Earn 1.6 CEUs)

Please help our logistics team and register early.
Cancel up to 14 days in advance without penalty*.

Promo Code: X05

Basic Electricity

for the Non-Electrician™

BE-AX

A 2-Day "Hands On" Training Course for Building, Plant & Facility Maintenance

Learn About:

- Basic pump principles
- How to properly select the right pump & motor for the job
- Installation, start-up and commission a pump
- Correctly aligning a pump and motor
- Properly maintaining pumps and pump systems
- Properly operating a pump system
- Reading pump gauges and what those readings mean
- Reading and applying pump curve charts
- Distinguishing a "pump" problem from a "system" problem
- Identifying, correcting and avoiding cavitation problems
- Preventing mechanical seal failure
- Conducting pump failure analysis so as not to repeat errors

ST. CITY SEMINAR DATES

AK	Anchorage	Dec 17-18 '18
AL	Birmingham	Dec 3-4 '18
AL	Mobile	Oct 29-30 '18
AZ	Phoenix	Nov 12-13 '18
AZ	Tucson	Nov 5-6 '18
CA	Burbank	Oct 15-16 '18
CA	Fresno	Oct 29-30 '18
CA	Modesto	Dec 17-18 '18
CA	Oakland	Oct 1-2 '18
CA	Oakland	Dec 10-11 '18
CA	Ontario	Nov 26-27 '18
CA	Orange County	Dec 17-18 '18
CA	Sacramento	Oct 1-2 '18
CA	Sacramento	Jan 28-29 '19
CA	San Diego	Nov 5-6 '18
CA	San Jose	Feb 11-12 '19
CA	Santa Rosa	Feb 18-19 '19
CO	Denver	Dec 10-11 '18
CT	Hartford	Nov 5-6 '18
DC	Washington	Nov 26-27 '18
DE	Wilmington	Dec 3-4 '18
FL	Ft. Lauderdale	Feb 18-19 '19
FL	Jacksonville	Dec 17-18 '18
FL	Orlando	Jan 7-8 '19
FL	Tampa	Nov 26-27 '18
GA	Atlanta	Oct 1-2 '18
GA	Atlanta	Jan 14-15 '19
GA	Marietta	Oct 9-10 '18
GA	Marietta	Jan 28-29 '19
HI	Honolulu	Jan 7-8 '19
IA	Des Moines	Jan 28-29 '19
ID	Boise	Jan 14-15 '19
IL	Elk Grove Village	Nov 5-6 '18
IL	Joliet	Jan 14-15 '19
IL	Naperville	Dec 3-4 '18
IN	Evansville	Feb 11-12 '19
IN	Fort Wayne	Oct 9-10 '18
IN	Indianapolis	Jan 21-22 '19
KS	Wichita	Jan 21-22 '19
KY	Louisville	Jan 21-22 '19
LA	New Orleans	Oct 15-16 '18
MA	Peabody	Dec 3-4 '18
MA	Worcester	Jan 21-22 '19
MD	Baltimore	Nov 12-13 '18
ME	Portland	Feb 11-12 '19
MI	Ann Arbor	Jan 7-8 '19
MI	Grand Rapids	Oct 1-2 '18
MI	Grand Rapids	Feb 4-5 '19
MI	Kalamazoo	Feb 18-19 '19
MI	Romulus	Jan 28-29 '19
MN	Minneapolis	Oct 1-2 '18
MN	Minneapolis	Mar 4-5 '19
MO	Kansas City	Feb 25-26 '19
MO	St. Louis	Nov 12-13 '18
NC	Charlotte	Oct 29-30 '18
NC	Greensboro	Oct 29-30 '18
NC	Raleigh	Nov 12-13 '18

ST. CITY SEMINAR DATES

NE	Omaha	Dec 10-11 '18
NH	Manchester	Feb 11-12 '19
NJ	Newark	Jan 14-15 '19
NM	Albuquerque	Dec 17-18 '18
NV	Las Vegas	Dec 10-11 '18
NV	Reno	Jan 7-8 '19
NY	Albany	Oct 22-23 '18
NY	Albany	Feb 25-26 '19
NY	Buffalo	Jan 21-22 '19
NY	Long Island	Feb 18-19 '19
NY	Rochester	Nov 12-13 '18
NY	Syracuse	Jan 14-15 '19
NY	White Plains	Dec 10-11 '18
OH	Cincinnati	Jan 21-22 '19
OH	Cleveland	Nov 5-6 '18
OH	Columbus	Oct 22-23 '18
OH	Dayton	Feb 11-12 '19
OK	Tulsa	Nov 26-27 '18
OR	Portland	Feb 11-12 '19
PA	Allentown	Nov 5-6 '18
PA	Harrisburg	Oct 29-30 '18
PA	Philadelphia	Nov 26-27 '18
PA	Pittsburgh	Jan 21-22 '19
RI	Providence	Oct 9-10 '18
SC	Columbia	Feb 18-19 '19
SC	Greenville	Nov 26-27 '18
SD	Sioux Falls	Oct 22-23 '18
TN	Knoxville	Feb 18-19 '19
TN	Memphis	Dec 10-11 '18
TN	Nashville	Dec 17-18 '18
TX	Arlington	Dec 3-4 '18
TX	Austin	Jan 28-29 '19
TX	El Paso	Dec 10-11 '18
TX	Houston	Nov 12-13 '18
TX	Lubbock	Jan 14-15 '19
TX	San Antonio	Nov 5-6 '18
TX	Temple	Feb 18-19 '19
UT	Salt Lake City	Oct 29-30 '18
VA	Norfolk	Dec 10-11 '18
VA	Richmond	Dec 3-4 '18
WA	Seattle	Feb 11-12 '19
WA	Tacoma	Jan 14-15 '19
WI	Madison	Feb 11-12 '19
WI	Milwaukee	Dec 10-11 '18

Don't see a date/location that works? Join a live classroom from anywhere with our simulcast option. Dates include:

Oct 22-23 '18
Nov 26-27 '18

Basic Electricity for the Non Electrician

Purpose of Training:

This course provides students a practical, real world education in basic electricity. Specific needs and concerns of each student will be addressed so that upon completion they'll be able to reduce equipment downtime, improve overall efficiency and safety, and fix problems they've never been able to fix before. Solutions learned in this class will more than pay for the cost of training, a dozen, hundred or thousand times over.

What You will Learn:

- How electricity gets to your facility and is wired throughout
- How to work with both AC and DC currents
- Practical knowledge of voltage, current & resistance
- How to calculate and apply electrical formulas
- How to measure electrical power in your facility & equipment
- How to identify and understand the most common electrical circuits
- What electrical test equipment works best for your needs
- How to read basic electrical distribution diagrams
- NFPA 70E Electrical Safety, Arc Flash and PPE
- Lockout Tagout rules and procedures
- How to find electrical answers in the National Electrical Code®
- What types of conductors and insulation materials to use
- How to select proper wire size and raceways for your job
- The do's and don'ts of electrical wiring
- The causes of most electrical problems & how to fix them
- Grounding basics and proper application of GFCI's
- Electric maintenance practices and repair

Who should Attend?

This course is designed for maintenance personnel or anyone who needs to understand basic industrial electricity at their plant, building or facility. Our instructors have broad industrial and commercial knowledge so students come from a large variety of industries, skill-levels, company sizes and job titles. Mechanics, Technicians, Cross-Trained and Multi-craft personnel, Apprentices, Machine Operators, and even Engineers and Electricians who need a refresher or are looking for new ideas will benefit from this class.

Training Outcomes

Basic electrical "hands on" maintenance tasks presented in this seminar will teach students to:

1. Safely and correctly verify a circuit is de-energized.
2. Take voltage and resistance readings
3. Take clamp-on ammeter readings.
4. Perform basic circuit checks for shorts, opens and ground faults
5. Read and interpret their facility's one-line electrical drawing and electrical floor plan.
6. Choose what electrical PPE they must wear
7. Choose the right type and size wire
8. Determine how many wires they can pull into a conduit.
9. How to terminate using compression terminals and

- twist-on wire connectors.
- 10. Wire a variety of common electrical devices
- 11. Work in accordance with an Assured Equipment Grounding Conductor Program as required by OSHA and the National Electrical Code®.

Discussion Topics

Electrical Fundamentals

- Production & Distribution of Electricity
- DC and AC in Plants and Facilities
- Voltage, Current and Resistance; Ohm's Law
- Basic Electric Circuits
- Series Circuits
- Parallel Circuits
- Series / Parallel Circuits
- Power: Types & Control
- Single-phase and Three-phase Systems
- Workplace Electrical Safety

Electrical Test Equipment for Everyday Use

- Multimeters
- Voltage Testers
- Verifying a Circuit De-energized
- 3 Modes of Failure: Opens, Shorts, Ground Faults
- Clamp-on Ammeter
- Megohmmeters
- Meters for Special Circumstances

Understanding Your Building Electrical System

- Reading Electrical Single-Line Diagrams
- Major Components
- The Electrical Service
- Main Distribution Centers
- Transformers
- Switchgear and Circuit Breakers
- Overcurrent Protective Devices
- Feeders
- Disconnects
- Motors
- Panelboards and Branch Circuits
- Lighting Circuits
- Electrical Floor Plans & Facility Wiring

Working Safely with Industrial Electricity

- Hazards & Dangers of Electricity
- Personal Protective Equipment (PPE)
- Lockout/Tagout (LOTO)
- Developing Safe Work Practices

The National Electrical Code (NEC)

- Purpose and Overview
- Important Definitions and Terminology
- Overview of Installation Requirements
- "Qualified Persons"

Wire Selection

- Conductor Types & Materials
- Selection of Wire Insulation
- Sizing the Wire for the Job

Installing Wire (Conductors)

- Raceways
- Cable Trays
- Conduits
- Fittings and Boxes

Installing and Wiring Equipment

- Wire Nuts, Terminals and Crimpers
- Switches and Receptacles
- Fluorescent Ballasts
- Motors
- Temporary Wiring

Basic Troubleshooting Techniques

- Branch Circuit Problems
- Control Circuits
- Isolation of Components
- Checking & Replacing Fuses

Electrical Maintenance Activities

- Performing Checks as part of an Assured Equipment Grounding Program
- Use and Operation of GFCI's
- Types of Electrical Maintenance
- Special Precautions

Seminar Agenda

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

"The most practical course I've ever taken. This seminar was excellent!"

Jim Monteith – Maintenance, Gorham House

Training Philosophy

Our training is designed with practical, real-world facility and industrial applications in mind. It is unbiased, unaffiliated and non-commercial so you are assured of a real education and not a product sales pitch. It focuses less on theory and more on the actual steps students need to properly maintain equipment or fix specific problems at their own plant or facility. Our instructors will simplify the subject matter for the novice or go in-depth to answer an engineer's toughest question. We have over 200,000 hours of experience of live classroom training using these methods, and it is why our students keep coming back.

About Our Instructors

Our team of 60 field-experienced instructors is the backbone of our training seminar schedule. All of our instructors must meet three core requirements: 1) Relevant formal education in the seminar topic area, 2) documented hands-on work experience in their area, and 3) specific experience as a maintenance training instructor.

*No Risk Registration & Money Back Guarantee

Not sure whether you or your employees will be able to attend an upcoming seminar? You can reserve your space in the class at any time and cancel without penalty. Cancellations made more than 14 days prior to the seminar may be refunded or rescheduled. Cancellations made within 14 days may be rescheduled for any future topic and/or date. If you're not satisfied with the course, we'll promptly refund your payment.

On-Site Training

TPC Training conducts hundreds of on-site trainings at customer facilities each year. Every public seminar class in our Course Catalog can be conducted on-site, with the same expert instructors. To arrange an on-site training, email us at onsite@tpctraining.com.

To be removed from future mailings, please mail or fax your addressed envelope or postcard along with the mailing promotion code and removal note to: TPC Training, P.O. Box 3397, Englewood CO, 80155. Fax: 303-531-4565.