

- COURSE:** NFPA 70E ELECTRICAL SAFETY COMPLIANCE TRAINING
- DATE** Call Mike Mancuso @ (800) 765-3120 for latest schedule or email Mike @ mmancuso@epowerplus.com
- DESCRIPTION:** This course presents electrical safety information based on NFPA 70E “*Standard for Electrical Safety in the Workplace*”. These rules establish the work practices to be used during the operation and maintenance of electrical systems.
- The NFPA requires all employees involved in the operation or maintenance of electrical systems, or who have access to these systems are required to be trained in the safety related work practices. Supplemented by graphic videos and stimulating class discussions this course has the impact required to ensure the employee actually uses the procedures taught.
- DURATION:** 8 Hours (1 Day) Lunch will be provided.
- FORMAT:** Power Point Presentation
Instructor Demonstrations
- AUDIENCE:** Electrical Trades, Supervisors, Engineers, Managers and any other personnel involved in the operation of industrial electrical equipment. Safety personnel should also attend to evaluate/establish their facility safety programs and identify the needs of their employees.
- OBJECTIVE:** This training program will provide the student with the information required to comply with the NFPA 70E requirements in electrical safety, as well as to follow practices found to be valid through years of field experience.
- TOPICS:** Establishing an effective electrical safety program
Burns, Shock, and Hazards of electricity
Personal Protective Equipment selection, care, and use
Establishing an Electrically Safe Working Condition
Hazardous energy control, Lockout and Tagout
Proper use of safety and test equipment
Grounding for employee protection
Short circuit and arc flash studies
Selection and use of protective clothing for arc flash protection
Energized Electrical Work Permit
Shock Hazard Analysis
Safe work clearances
- TUITION** \$395.00 per student
\$55.00 NFPA 70E Standard (Optional)



46575 Magellan Drive, Novi, MI 48377-2452
www.epowerplus.com

(248) 344-0200 / Fax (248) 305-9105
email: info@epowerplus.com

TRAINING REQUEST/ENROLLMENT FORM

- REQUEST ADDITIONAL TRAINING INFORMATION
- REQUEST FOR CLASS ENROLLMENT

CLASS: NFPA 70E Electrical Safety Compliance Training
DATE: Call Mike Mancuso @ (800) 765-3120 for latest schedule or
email Mike @ mmancuso@epowerplus.com

LOCATION: POWER PLUS Engineering, Inc, 46575 Magellan Dr, Novi, MI 48377
COMPANY NAME: _____
ADDRESS: _____
CITY, STATE, ZIP: _____
PHONE & FAX: _____

NUMBER OF PARTICIPANTS: _____ x \$395.00

NFPA 70E Specification (OPTIONAL): _____ x \$55.00

METHOD OF PAYMENT:

- COMPANY CHECK # _____
- MASTERCARD/VISA/AE # _____
Exp Date _____ Security Code _____
EXP: _____
- COMPANY PO #: _____
- OTHER: _____

NAMES OF ATTENDEES _____

AUTHORIZED SIGNATURE: _____

TITLE: _____ **DATE:** _____

PLEASE COMPLETE THE ABOVE AND FAX TO: (248) 305-9105

OR MAIL TO: POWER PLUS Engineering, Inc.
46575 Magellan Dr.
Novi, MI 48377-2452

Map to POWER PLUS Engineering, Inc.



Directions from I-96

- Take the Beck Road Exit North
- Go north on Beck road
- Turn right on Magellan Dr (If you hit West Road you went too far)
- POWER PLUS Engineering, Inc. is at 46575 Magellan Drive

Class runs from 8:00AM to 4:00PM unless otherwise noted

NFPA 70E ELECTRICAL SAFETY QUALIFICATION TRAINING OUTLINE

A comprehensive, 8-hour training program on NFPA 70E Electrical Safety in the Workplace meeting or exceeding the training requirements of the NFPA 70E and OSHA subpart S. All attendees who successfully pass a written examination will be issued a qualification certificate.

Main Course Learning Goals:

- **Understand the importance of an effective electrical safety program**
- **Understand what it takes to be considered a “Qualified Person”**
- **Describe the effects of electricity on the human body**
- **Discuss the hazards of an arc flash event**
- **Conduct a flash hazard analysis**
- **Select the proper PPE for arc flash protection**
- **Explain how to care for and inspect electrical safety equipment prior to use**
- **Conduct a shock hazard analysis**
- **Understand when an Energized Electrical Work Permit is required**
- **Be familiar with methods of shock protection including the use of approach distances, insulating, and shielding materials**
- **Understand the procedures necessary to place equipment in an Electrically Safe Working Condition for maintenance**

To achieve these goals, the following sections of NFPA 70E, at a minimum, are covered during this course:

- **NFPA 70E Art. 110, General Requirements for Electrical Safety-Related Work Practices**
- **NFPA 70E Art. 120, Establishing an Electrically Safe Work Condition**
- **NFPA 70E Art. 130 , Working On or Near Live Parts**
- **NFPA 70E Art. 250, Personal Safety and Protective Equipment**
- **NFPA 70E Annex C, Limits of Approach**
- **NFPA 70E Annex D, Sample Calculation of Flash Protection Boundary**
- **NFPA 70E Art. Annex G, Sample Lockout/Tagout**
- **NFPA 70E Annex H, Simplified, Two-Category, Flame Resistant (FR) Clothing System**
- **NFPA 70E Annex J, Energized Electrical Work Permit**
- **NFPA 70E Annex K, General Categories of Electrical Hazards**

General Topics covered include:

- **Effects of Electrical Shock and Arc Flash on the Body**
- **Personal Protective Equipment Use and Maintenance**
- **Safe Work Practices**
- **Test Equipment Selection and Use**

Additional sections of NFPA 70E and other information may be covered based on attendee interest within the scope of the course.

NFPA 70E ELECTRICAL SAFETY REFERENCES

JOB BRIEF

Job Briefing Requirements,	Art 110.7G
Job Briefing and Planning Checklist (Annex is informational only)	Annex I

ELECTRICAL SAFETY PROGRAM

Electrical Safety Program, General	Art .110.7
Electrical Safety Program (Annex is informational only)	Annex E

LOCKOUT/TAGOUT

Principles of Lock Out /Tag out Execution	Art. 120.2(B)
Responsibilities of Lock out/ Tag out	Art. 120(C)
Hazardous Energy (Lock out/Tag out) Control Procedures	Art. 120(D)
Lock out/ Tag out Equipment	Art. 120.2(E)
Sample Lockout/Tag out Procedure (Annex is informational only)	Annex G

ENERGIZED WORK PERMITS

Energized Work Permit, requirements for	Art. 110.8(B) (2)
Exemptions to Energized Work Permit	Art. 130.1(A) (3)
Energized Work Permits	Art. 130.1(A)
Example Energized Electrical Work Permit (Annex is informational only)	Annex J

ENERGIZED EQUIPMENT

Qualified Person Training Requirements	Art 110.6.D (1)
Un-Qualified Person Training Requirements	Art 110.6.D. (2)
Risk / Hazard Evaluation Procedure	Annex F
Working On or Near Energized Conductors	Art. 110.8.
Use of Test Equipment	Art. 110.9
Establishing an Electrically Safe Work Condition	Art. 120
Working on or Near Live Parts	Art. 130
Approach Boundaries	Table 130.2(C)
Approach Boundaries	Art. 130.2
Restricted Approach Boundary	Art. 130.2(C)
Limited Approach Boundary	Art. 130.2(C) (1)
Flash Protection Boundary	Art. 130.3. A
Limits of Approach	Annex C
[Annex is informational only and C.1.2.3 (1) Contradicts Art. 130.2(C)]	
PPE, Requirements for	Art. 130.7(C)
PPE and FR Clothing (Flash Hazard Analysis completed)	Art. 130.3(B)
PPE and FR Clothing (Flash Hazard Analysis <u>NOT</u> completed)	Art. 130.7(C) (9)
Care/Maintenance of FR Flash Suits	Art. 130.7(C) (16)
General Safety Related Maintenance Requirements	Art. 205

Kenneth A. Krzystowczyk (Kris-toff-check)
NETA Certified Test Technician and Instructor

POWER PLUS Engineering, Inc.
(248) 344-0200
kkrzys@epowerplus.com

Work Summary

Twenty years of experience in the maintenance and repair of electrical distribution systems and electrical equipment associated with naval nuclear reactors and their support systems while serving in the U.S. Navy. Retired from the U.S. Navy as a Master Chief Electrician's Mate (E-9) after 20 years in the Submarine Service.

- Served as a Nuclear Training Program Manager with nearly 20 years experience in the development and delivery of training programs associated with Nuclear Power plant support systems, Nuclear Power plant emergency response, electrical power generation, and electrical maintenance.
- Served as Chief Electrician in charge of the installation, testing, and operation of a prototype computerized Arc Flash protection system.
- As a Submarine Squadron Electrical officer, he was the resident expert on submarine electrical power generation systems, electrical distribution systems, and all associated maintenance.
- After retiring from the Navy, he was employed as an Industrial Fire Chief at a major automobile manufacturing plant. He was responsible for the operational status of all fire suppression/prevention systems. Leader of an industrial fire brigade, tasked with immediate response to fires and other industrial incidents.
- Currently employed as a NETA certified test technician and expert instructor in the field of Arc Flash Hazards and Electrical Safety.

Education

Bachelor of Science Degree, Excelsior College (member of the State of New York University) - Business Admin/Management Studies.

Graduate of numerous accredited U.S. Navy Technical and Leadership Schools.

Is your Arc Flash Program a shambles?



The New changes to the NFPA 70E Standard for electrical safety in the workplace requires facilities to:

- [Train](#) employees exposed to potential arc flash hazards
- Provide [Personal Protective Equipment](#) necessary to protect the workers from arc flash hazards
- Conduct an [Arc Flash Analysis](#) for your site

Additionally, the 2002 NEC added an [Equipment Labeling](#) requirement that covers the majority of electrical equipment in most plants.

Power Plus Engineering understands that these new requirements can be confusing and requires a large amount of your valuable time researching the requirements and dealing with multiple vendors to meet all of these requirements. Power Plus Engineering is your simple solution for meeting the new requirements.

Let us solve your puzzle!

The Power Plus Engineering staff of experts can:

- Conduct an [Arc Flash Hazard](#) Analysis for your site
- Provide [Arc Flash Training](#) for plant personnel
- Determine your PPE needs and provide you with the [Personal Protective Clothing](#) that suits your needs
- Provide [Equipment Specific Labels](#) for all equipment that falls under 2002 NEC Article 110.16



According to the NFPA 70E, a "Qualified Person" is one who is trained and knowledgeable of the construction and operation of the equipment or the specific work method, and be trained to recognize the hazards present. Such persons shall also be familiar with the use of the precautionary techniques, personal protective equipment, insulating and shielding materials, and insulated tools and test equipment.

In addition, to be permitted to work within the limited approach of exposed energized conductors and circuit parts the person shall be trained in all of the following:

- The skills and techniques necessary to distinguish exposed live parts from other parts of electric equipment
- The skills and techniques necessary to determine the nominal voltage of exposed live parts
- The minimum approach distances specified in this section corresponding to the voltages to which the qualified employee will be exposed
- The decision making process necessary to determine the degree and extent of the hazard and the personal protective equipment and job planning necessary to perform the task safely

Do your employees meet these requirements?

Power Plus Training Services specializes in onsite *nationwide* "hands-on" electrical testing and safety training. We offer a variety of courses that are specifically designed to meet all of your requirements.

Courses offered include:

- NFPA 70E Electrical Safety
- Industrial Electrical Safety
- Substation Safety and Operation
- Substation Maintenance
- Circuit Breaker Construction and Maintenance
- Transformer Construction and Maintenance
- NEC Courses
- Custom Training



Power Plus Training Services has combined its technical knowledge and field expertise with sound instructional practices to offer onsite training nationwide designed to go beyond the classroom and onto the job. Unlike most third party training companies, Power Plus Training programs are real, site specific, "hands on" programs. Students walk away from our courses with confidence in their skills practiced during their training.

Courses are conducted by one of our staff of experienced and trained instructors in both the course topic and facilitation of the learning process. All Power Plus Training Services instructors are NETA certified test technicians and spend time in the field. This ensures that our instructors stay current on testing standards. The duality of field experience and instructional responsibilities of all of our instructors assures that they remain current in both the content and process of our training programs.