MODULE 5
IMPLEMENTING AN ELECTRICAL SAFETY PROGRAM

At the end of this module, you will be able to…

- Recognize the importance of having an electrical safety program.
- Describe the key components of an electrical safety program.
- Explain the criteria that make an electrical safety program effective.
- Determine your organization's electrical safety principles.
- Determine your organization's electrical safety program controls.
- Determine which tasks should have written procedures.
- Discuss tips for implementing strategies to achieve improvements.
- Use the tools, resources and guidelines provided in this training program to develop and implement your own electrical safety program.
- Describe how to review progress and adjust your plan accordingly.

Electrical Safety Program

One of the recommendations in the National Fire Protection Association (NFPE) 70E standard is to have an electrical safety program. This is a written document that guides and directs employee activity when they are working around electricity. The plan must be appropriate for the voltage, energy level and circuit conditions of the workplace.

Question: Why is it important to have an electrical safety program?

Answer:

The NFPA recommends including the following components in an electrical safety program.

- The organization's electrical safety program principles
- Electrical safety program controls
- Electrical safety program procedures
- Procedures for conducting a hazard/risk evaluation (See Module 2)
- Procedures for conducting job briefings (See Module 2)

It is important to note that a written electrical safety program by itself will probably not be effective. An organization's leadership must do several things to ensure that employees will use and follow the program.

- Appoint a person to oversee the program.
- Be a role model by following the program themselves.
- Give each employee his/her own copy of the written program.
- Train and retrain employees on the program (use both classroom and on-the-job).
- Emphasize in job briefings that employees should read and use the program every time they are working around electricity.

Electrical Safety Principles

Electrical safety principles are the guiding rules of safety in an organization. The NFPA doesn't recommend specific principles. Organizations need to develop their own. However, Annex E of NFPA 70E contains some suggestions.

Directions: As you review these principles from NFPA 70E, Annex E, check those that your organization already holds as well as those it should adopt.

DO	SHOULD DO	PRINCIPLE
❒	❒	1. Inspect/evaluate the electrical equipment.
❒	❒	2. Maintain the electrical equipment's insulation and enclosure integrity.
❒	❒	3. Plan every job and document first-time procedures.
❒	❒	4. De-energize electrical systems before working on them.
❒	❒	5. Anticipate unexpected events.
❒	❒	6. Identify and minimize the hazard.
❒	❒	7. Protect the employee from shock, burn, blast, and other hazards due to the working environment.
❒	❒	8. Use the right tools for the job.
❒	❒	9. Assess people's abilities.
❒	❒	10. Audit these principles.

Source for this list: NFPA 70E, Annex E

Electrical Safety Principles

Question: Think about your organization and what it is like today. What one statement describes its philosophy about safety?

Answer:

Directions: Consider the checklist on Page 3 as well as your own personal beliefs about safety. With your group, identify five safety principles that EVERY company should have.

Principle #1

Principle #2

Principle #3

Principle #4

Principle #5

Based on the above list as well as the list on Page 3, which one or two safety principles would you like to work on implementing when you go back to your job?

Principle #1

Principle #2

Electrical Safety Program Controls

Controls are steps that management takes to monitor the electrical safety program. The NFPA doesn't recommend specific controls. Organizations need to develop their own. However, Annex E of NFPA 70E contains some suggestions.

Directions: As you review these controls from NFPA 70E, Annex E, check those that your organization already uses as well as those it should adopt.

DO	SHOULD DO	CONTROL
❒	❒	1. Every electrical conductor or circuit part is considered energized until proven otherwise.
❒	❒	2. No bare-hand contact is to be made with exposed energized electrical conductors or circuit parts above 50 volts to ground, unless the "bare-hand method" is properly used.
❒	❒	3. De-energizing an electrical conductor or circuit part and making it safe to work on is in itself a potentially hazardous task.
❒	❒	4. The employer develops programs, including training, and employees apply them.
❒	❒	5. Use procedures as "tools" to identify the hazards and develop plans to eliminate/control the hazards.
❒	❒	6. Train employees to qualify them for working in an environment influenced by the presence of electrical energy.
❒	❒	7. Identify/categorize tasks to be performed on or near exposed energized electrical conductors and circuit parts.
❒	❒	8. Use a logical approach to determine the potential hazard of a task.
❒	❒	9. Identify and use precautions appropriate to the working environment.

Source for this list: NFPA 70E, Annex E

Developing Electrical Safety Controls for Your Organization

Directions: Consider the electrical safety controls listed on Page 5. In the space below, write down two controls that your organization uses well. Then write two controls that you feel your organization needs to develop. Finally, write down any obstacles you foresee in trying to develop new safety controls in your organization.

Two Controls Used Well by Organization

Two Controls Organization Needs to Adopt

Potential Obstacles in Adopting Controls

Procedures for Electrical Safety

NFPA 70E specifies that an organization should develop and enforce procedures for working on or near electricity, particularly live parts of 50 volts or more. NFPA 70E specifies two specific procedures that your organization should use.

1. Hazard/risk evaluation procedures
2. Job briefing procedures

If you wish to review the above two procedures, they were covered earlier today in Module 2. In addition to these two procedures, your organization should consider having a procedure for every electrical-related task that is performed. NFPA 70E states that program procedures can include, but are not limited to the items on this list.

DO	SHOULD DO	PROCEDURE
❒	❒	1. Purpose of task
❒	❒	2. Qualifications and number of employees to be involved
❒	❒	3. Hazardous nature and extent of task
❒	❒	4. Limits of approach
❒	❒	5. Safe work practices to be utilized
❒	❒	6. Personal protective equipment involved
❒	❒	7. Insulating materials and tools involved
❒	❒	8. Special precautionary techniques
❒	❒	9. Electrical diagrams
❒	❒	10. Equipment details
❒	❒	11. Sketches/pictures of unique features
❒	❒	12. Reference data

Source for this list: NFPA 70E, Annex E

Developing Electrical Safety Procedures for Your Organization

Directions: Consider the tasks at your organization that involve electricity. Do you have written procedures for performing these tasks? Complete the boxes below to determine which procedures your organization already has and which it needs. Additionally, write down any potential obstacles you foresee in writing new procedures.

Electrically-Related Tasks for which Your Organization <u>has</u> Written Procedures

Electrically-Related Tasks for which Your Organization <u>needs</u> Written Procedures

Potential Obstacles in Preparing New Procedures for Those Tasks that Need Them

Template for Developing an Electrical Safety Program

Directions: Using your work from the class activities and the template on this page as well as on Pages 10 and 11, begin writing your organization's electrical safety program. When you complete the program, compile it into a notebook, and train employees to use it. For more information, refer to NFPA 70E, Section 110.7 and Annex E.

Note: This entire template (Pages 9 through 11) is available on your *Tools and Resources* CD-ROM.

Electrical Safety Principles (List your organization's electrical safety principles from Page 4)

Electrical Safety Program Controls (List your organization's electrical safety program controls from Page 6)

Electrical Safety Program Procedures (List your organization's electrical safety program procedures from Page 8)

Template for Developing an Electrical Safety Program—continued

Complete this form for each electrical safety control you establish.

ELECTRICAL SAFETY CONTROL	
Name of control	
Person Responsible	Frequency
How will control be carried out? ❒ Inspection ❒ Audit ❒ Meeting ❒ Report ❒ Other:	
Criteria for measurement	
Results	
Date control performed	Signature

If required, use the back of this for or additional forms

Template for Developing an Electrical Safety Program—continued

Complete this form for each electrical safety procedure you establish.

ELECTRICAL SAFETY PROCEDURE	
Task Name	Date
Purpose of task	Hazardous nature and extent of task
# of employees involved	Qualifications of employees
Limits of approach	
Safe procedures to perform task:	
PPE to be used	
Materials and tools required	
Special precautions and notes:	
❒ Electrical diagrams attached? ❒ Equipment details attached? ❒ Sketches/pictures of unique features attached? ❒ Reference data attached?	
Procedure developed by:	Position:

If required, use the back of this for or additional forms

Criteria for Success

Directions: Take notes as the class discusses techniques for ensuring your electrical safety program will be a success.

What factors will make your electrical safety program a success?

How can you set goals and determine strategies for improvement?

How can you review progress and adjust your plan accordingly?