

Module Overview

This module provides an introduction to the theory of alternating current, along with AC circuits, inductors, capacitors, transformers, and three-phase systems.

Objectives

Upon completion of this module, the trainee will be able to do the following:

1. Describe how single-phase and three-phase alternating current is developed.
2. Calculate the peak and effective voltage or current values for an AC waveform.
3. Describe phase relationships in AC circuits.
4. Describe impedance and explain how it affects AC circuits.
5. Describe the operating principles and functions of inductors.
6. Describe the operating principles and functions of capacitors.
7. Explain the principles and functions of transformers.
8. Explain the following terms as they relate to AC circuits:
 - True power
 - Apparent power
 - Reactive power
 - Power factor

Performance Tasks

This is a knowledge-based module; there are no performance tasks.

Materials and Equipment

| | |
|---|---|
| Markers/chalk | Calculator |
| Pencils and scratch paper | Common capacitors |
| Whiteboard/chalkboard | Inductors, resistors, capacitors, power sources, and wiring to build RL, RC, RLC, and LC circuits |
| <i>Power Line Worker Level Two: Transmission</i> PowerPoint® Presentation Slides (ISBN 978-0-13-274333-4) | Voltmeter |
| Multimedia projector and screen | Transformers |
| Computer | Copies of the Quick Quiz* |
| Appropriate personal protective equipment | Module Examinations** |

* Located at the back of this module.

* Single-module AIG purchases include the printed exam and performance task sheet. If you have purchased the perfect-bound version of this title, download these materials from the IRC using your access code.

Safety Considerations

Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly. Ensure that trainees are briefed on basic electrical safety and shop safety policies.

Additional Resources

This module presents thorough resources for task training. The following resource material is suggested for further study.

Principles of Electric Circuits: Conventional Current Version, 2009. Thomas L. Floyd. New York: Prentice Hall.

Teaching Time For This Module

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 17½ hours are suggested to cover *Alternating Current and Three-Phase Systems*. You will need to adjust the time required for hands-on activity and testing based on your class size and resources.

| Topic | Planned Time |
|---|--------------|
| Session I. Introduction; Sine Wave Generation and Terminology | |
| A. Introduction | _____ |
| B. Sine Wave Generation | _____ |
| C. Sine Wave Terminology | _____ |
| Session II. AC Phase Relationships; Resistance; Inductance and Capacitance; Types of AC Circuits | |
| A. AC Phase Relationships | _____ |
| B. Resistance in AC Circuits | _____ |
| C. Inductance in AC Circuits | _____ |
| D. Capacitance | _____ |
| E. RL, RC, LC, and RLC Circuits | _____ |
| Session III. Power in AC Circuits | |
| A. Power in AC Circuits | _____ |
| 1. True Power | _____ |
| 2. Apparent Power | _____ |
| 3. Reactive Power | _____ |
| 4. Power Factor | _____ |
| 5. Power Triangle | _____ |
| Sessions IV and V. Transformers | |
| A. Transformers | _____ |
| 1. Transformer Construction | _____ |
| 2. Operating Characteristics | _____ |
| 3. Turns and Voltage Ratios | _____ |
| 4. Types of Transformers | _____ |
| 5. Transformer Selection | _____ |
| Session VI. Three-Phase Power Distribution Systems | |
| A. Three-Phase Power Distribution Systems | _____ |
| 1. Voltage and Current Imbalance in a Three-Phase System | _____ |

Session VII. Review and Testing

A. Module Review

B. Module Examination

1. Trainees must score 70 percent or higher to receive recognition from NCCER.
2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.



Module Overview

This module covers complex rigging tasks for transmission structure erection as well as crane stability considerations during load lifts and detailed requirements for personnel platforms and their use.

Prerequisites

Prior to training with this module, it is recommended that the trainee shall have successfully completed *Power Industry Fundamentals*; and *Power Line Worker Level One*.

Objectives

Upon completion of this module, the trainee will be able to do the following:

1. Explain lift planning and rigging system planning.
2. Explain the strength calculations for various type of rigging including any derating for D/d ratios.
3. Explain crane stability as well as personnel platform requirements and operational considerations.
4. Demonstrate the determination of a load's weight and center of gravity.
5. Demonstrate the selection of an appropriate lifting device for a particular load.
6. Demonstrate hand signaling requirements for a blind lift.

Performance Tasks

Under the supervision of the instructor, the trainee should be able to do the following:

1. Demonstrate the determination of a load's weight and center of gravity.
2. Demonstrate the selection of an appropriate lifting device for a particular load.
3. Demonstrate hand signaling requirements for a blind lift.

Materials and Equipment

Multimedia projector and screen
Power Line Worker Level Two: Transmission
PowerPoint® Presentation Slides
(ISBN 978-0-13-274333-4)
Computer
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment

Handheld advanced-function calculators
Examples of drawings and manufacturer-supplied information for load weight and CG
Instructor-selected loads with documented or marked weight and CG
Copy of *Bob's Rigging and Crane Handbook*
Module Examinations*
Performance Profile Sheets*

* Single-module AIG purchases include the printed exam and performance task sheet. If you have purchased the perfect-bound version of this title, download these materials from the IRC using your access code.

Safety Considerations

Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly.

Additional Resources

This module presents thorough resources for task training. The following resource material is suggested for further study.

Bob's Rigging and Crane Handbook, Latest Edition. Leawood KS: Pellow Engineering Services.

Teaching Time for This Module

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 17½ hours are suggested to cover *Transmission Structure Rigging*. You will need to adjust the time required for hands-on activity and testing based on your class size and resources. Because laboratories often correspond to Performance Tasks, the proficiency of trainees may be noted during these exercises for Performance Testing purposes.

| Topic | Planned Time |
|---|--------------|
| Session I. Introduction; Lift Planning and Execution; Rigging System Planning | |
| A. Introduction | _____ |
| B. Lift Planning and Execution | _____ |
| C. Rigging System Planning | _____ |
| 1. Determining Load Weight | _____ |
| 2. Determining Load Center of Gravity | _____ |
| D. PT/Laboratory | _____ |
| 1. Have trainees demonstrate the determination of a load's weight and center of gravity. This laboratory corresponds to Performance Task 1. | |
| Sessions II–V. Rigging Equipment Selection | |
| A. Rigging Equipment Selection | _____ |
| 1. Slings | _____ |
| 2. Standard and Custom Spreader/Lifting Beams and Slings | _____ |
| B. PT/Laboratory | _____ |
| 1. Have trainees demonstrate selection of an appropriate lifting device for a particular load. This laboratory corresponds to Performance Task 2. | |
| 2. Have trainees demonstrate hand signaling requirements for a blind lift. This laboratory corresponds to Performance Task 3. | |

Session VI. Crane Stability; Personnel Platform Requirements and Usage

A. Crane Stability

1. Quadrants of Operation
2. Centers of Gravity and Crane Stability

B. Personnel Platform Requirements and Usage

1. Design Criteria
2. Platform Specifications
3. Personnel Platform Loading
4. Rigging
5. Crane and Operational Requirements
6. Personnel Platform Inspection
7. Trial Lifts

Session VII. Review and Testing

A. Review

B. Module Examination

1. Trainees must score 70% or higher to receive recognition from NCCER.
2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.

C. Performance Testing

1. Trainees must perform each task to the satisfaction of the instructor to receive recognition from NCCER. If applicable, proficiency noted during laboratory exercises can be used to satisfy the Performance Testing requirements.
2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.

Module Overview

This module covers the typical transmission structures in use today. It also describes transmission structure construction/erection requirements. Foundations, guying, and grounding for transmission structures are explained along with grounding test methods. Also included are specifications and drawings for the framing and erection of a wood H-frame suspension transmission structure.

Objectives

Upon completion of this module, the trainee will be able to do the following:

1. Describe the different types of transmission structures.
2. Describe transmission structure construction/erection requirements.
3. Explain the different types of transmission structure foundations.
4. Describe different guying methods.
5. Perform a site inspection to determine:
 - Accessibility
 - Hazards
 - Environmental concerns
 - Right-of-way access through private property
6. Using applicable specifications and drawings, frame and erect a wood H-frame tangent transmission structure.
7. Test structure grounds:
 - Ground rods
 - Counterpoise

Performance Tasks

Under the supervision of the instructor, the trainee should be able to do the following:

1. Perform a site inspection to determine:
 - Accessibility
 - Hazards
 - Environmental concerns
 - Right-of-way access through private property
2. Using applicable specifications and drawings, frame and erect a wood H-frame tangent transmission structure.
3. Test structure ground:
 - Ground rods
 - Counterpoise

Materials and Equipment

Multimedia projector and screen
Power Line Worker Level Two: Transmission
PowerPoint® Presentation Slides
(ISBN 978-0-13-274333-4)
Computer
Whiteboard/chalkboard
Markers/chalk
Pencils and paper
Appropriate personal protective equipment

Access permission to a proposed transmission line project or numerous photos of the landscape for a similar proposed project
Copies of *Appendix A* and *B*
Components for wood H-frame structures
Power drills and hole saws
Heavy duty saber saws
Wrench sets
Torque wrenches

continued

Hole boring, erection rigging, and lifting equipment
 Ground resistance testers
 Access permission to a transmission structure for ground resistance testing

Copies of Quick Quiz*
 Module Examinations**
 Performance Profile Sheets**
 * Located at the back of this module.

** Single-module AIG purchases include the printed exam and performance task sheet. If you have purchased the perfect-bound version of this title, download these materials from the IRC using your access code.

Safety Considerations

Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly.

Additional Resources

This module presents thorough resources for task training. The following resource material is suggested for further study.

Electric Power Transmission Systems, Second Edition. Upper Saddle River, NJ: Prentice Hall.

Teaching Time for This Module

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 50 hours are suggested to cover *Transmission Structure Erection*. You will need to adjust the time required for hands-on activity and testing based on your class size and resources. Because laboratories often correspond to Performance Tasks, the proficiency of trainees may be noted during these exercises for Performance Testing purposes.

| Topic | Planned Time |
|--|--------------|
| Session I. Introduction; Transmission Structures | |
| A. Introduction | _____ |
| B. Transmission Structures | _____ |
| 1. Lattice Steel Structures | _____ |
| 2. Tubular Steel or Concrete/Synthetic Material Structures | _____ |
| 3. Wood Structures | _____ |
| Sessions II–VI. General Transmission Line Construction Requirements | |
| A. General Transmission Line Construction Requirements | _____ |
| 1. Access | _____ |
| 2. Right-of-Way Clearing | _____ |
| B. PT/Laboratory | _____ |
| Have the trainees demonstrate their evaluation of a proposed project site for the following: | |
| • Accessibility | |
| • Hazards | |
| • Environmental Concerns | |
| • Right-of-Way Access Through Private Property | |
| This laboratory corresponds to Performance Task 1. | |

Sessions VII–XVII. Structure Foundations; Structure Framing and Erection

A. Structure Foundations

B. Structure Framing and Erection

1. Examples of Structure Framing and Erection
2. Framing and Erection of a Wood H-Frame Transmission Structure

C. PT/Laboratory

Have the trainees demonstrate the proper framing and erection of the tangent wood H-frame structure as covered in *Appendix A* and *B*. This laboratory corresponds to Performance Task 2.

Sessions XVIII and XIX. Guys and Anchors; Electrical Grounding, Bonding, and Testing

A. Guys and Anchors

B. Electrical Grounding, Bonding, and Testing

C. PT/Laboratory

Have the trainees test the resistance of structure ground rods and counterpoise. This laboratory corresponds to Performance Task 3.

Session XX. Review and Testing

A. Module Review

B. Module Examination

1. Trainees must score 70 percent or higher to receive recognition from NCCER.
2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.

C. Performance Testing

1. Trainees must perform each task to the satisfaction of the instructor to receive recognition from NCCER. If applicable, proficiency noted during laboratory exercises can be used to satisfy the Performance Testing requirements.
2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.

Module Overview

This module contains information and instructions for the installation of transmission line equipment and conductors. Trainees are required to demonstrate the ability to install equipment on transmission structures; install, terminate, and sag conductors; and splice conductors.

Objectives

Upon completion of this module, the trainee will be able to do the following:

1. Explain tower and pole rescue procedures.
2. Describe the effects of electrostatic and electromagnetic induction.
3. Install temporary grounding to create an equal potential zone (EPZ).
4. Prepare a transmission structure for conductors by installing:
 - Insulators
 - Yoke plates
 - Stringing blocks
 - Pilot line
 - Pulling cable
5. Use Kellems grips socks and double Kellems grips to install:
 - Phase conductors
 - Overhead shield conductors and optical ground wire
6. Operate single- and multiple-conductor pulling and tensioning machines.
7. Splice conductors using compression sleeves.
8. Identify and install different types of connectors including compression and AMPACT™ types.
9. Sag an installed conductor using:
 - Sag scope or transit
 - Dynamometer
 - Return wave timing
10. Complete the installation of a conductor by:
 - Dead-ending the conductor
 - Clipping-in the conductor and removing stringing block
 - Installing dampers and spacers
 - Installing warning lights and day markers

Performance Tasks

Under the supervision of the instructor, the trainee should be able to do the following:

1. Install temporary grounding to create an equal potential zone (EPZ).
2. Prepare a tower for conductors by installing:
 - Insulators
 - Yoke plates
 - Stringing blocks
 - Pilot line
 - Pulling cable
3. Use Kellems grips and double Kellems grips to install:
 - Phase conductors
 - Overhead shield conductors and optical ground wire
4. Operate single- and multiple-conductor pulling and tensioning machines.
5. Splice conductors using compression sleeves.

continued

Performance Tasks (*continued*)

6. Identify and install different types of connectors including:
 - Compression
 - AMPACT™
7. Sag an installed conductor using:
 - Sag scope or transit
 - Dynamometer
 - Return wave timing
8. Complete the installation of a conductor by:
 - Dead-ending the conductor
 - Clipping-in the conductor and removing stringing block
 - Installing dampers and spacers
 - Installing warning lights and day markers

Materials and Equipment

Multimedia projector and screen
Power Line Worker Level Two: Transmission
PowerPoint® Presentation Slides
(ISBN 978-0-13-274333-4)
Computer
Whiteboard/chalkboard
Markers/chalk
Pencils and scratch paper
Appropriate personal protective equipment
Handheld advanced-function calculators
Transmission structures (minimum 2)
Insulators
Protective grounding cables
Kellems grips
Pilot line
Conductor on reel
Shield conductor
Conductor pulling and tensioning machines

Stringing blocks
Compression sleeve splices
Articulated running board
Running ground
Hydraulic compression tool
Tap connectors
AMPACT™ tool
Compression connectors
Vibration dampers
Spacers
Warning lights
Day markers
Sag scope
Dynamometer
Sag chart
Module Examinations*
Performance Profile Sheets*

* Single-module AIG purchases include the printed exam and performance task sheet. If you have purchased the perfect-bound version of this title, download these materials from the IRC using your access code.

Safety Considerations

Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly.

Additional Resources

This module presents thorough resources for task training. The following resource material is suggested for further study.

Electric Power Transmission Systems, 2nd Edition, Upper Saddle River, NJ: Prentice Hall.

Teaching Time for This Module

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 50 hours are suggested to cover *Transmission Equipment Installation*. You will need to adjust the time required for hands-on activity and testing based on your class size and resources. Because laboratories often correspond to Performance Tasks, the proficiency of trainees may be noted during these exercises for Performance Testing purposes.

| Topic | Planned Time |
|---|--------------|
| Sessions I and II. Introduction; Safety | |
| A. Introduction | _____ |
| B. Safety | _____ |
| 1. Electric Shock Hazards | _____ |
| 2. Reducing Electric Shock Hazards | _____ |
| C. Transmission Structure Rescue Procedures | _____ |
| D. PT/Laboratory | _____ |
| Have trainees install grounding to set up an equal potential zone on a transmission structure. This laboratory corresponds to Performance Task 1. | |
| Sessions III–VI. Preparing a Transmission Structure for Conductors | |
| A. Preparing a Transmission Structure for Conductors | _____ |
| 1. Insulators | _____ |
| 2. Installing Stringing Blocks | _____ |
| 3. Installing a Pilot Line | _____ |
| B. PT/Laboratory | _____ |
| Have trainees prepare a transmission structure for conductors by installing insulators, yoke plates, stringing blocks, pilot lines, and pulling cable. This laboratory corresponds to Performance Task 2. | |
| Sessions VII–X. Installing Conductors | |
| A. Installing Conductors | _____ |
| 1. Stringing Conductors | _____ |
| B. PT/Laboratory | _____ |
| 1. Have trainees use Kellems grips and double Kellems grips to install phase conductors, overhead shield conductors, and optical ground wire. This laboratory corresponds to Performance Task 3. | |
| 2. Have trainees operate single- and multiple-conductor pulling and tensioning machines. This laboratory corresponds to Performance Task 4. | |
| Sessions XI–XII. Conductor Splicing | |
| A. Conductor Splicing | _____ |
| B. PT/Laboratory | _____ |
| Have trainees splice conductors using compression sleeves. This laboratory corresponds to Performance Task 5. | |

Sessions XIII–XIV. Connectors

A. Connectors

1. Compression Connectors
2. Powder-Actuated Tap Connectors

B. PT/Laboratory

Have trainees install different types of connectors, including compression and AMPACT™ connectors. This laboratory corresponds to Performance Task 6.

Sessions XV–XIX. Dead-End, Sag, and Clip-In Conductors; Completing the Conductor Installation

A. Dead-End, Sag, and Clip-In Conductors

1. Dead-End Conductors
2. Sag Conductors
3. Clip-In Conductors

B. Completing the Conductor Installation

1. Vibration Dampers
2. Spacers
3. Warning Lights and Day Markers

C. PT/Laboratory

Have trainees complete the installation of a conductor by sagging and dead-ending the conductor; clipping-in the conductor and removing the stringing blocks; installing dampers and spacers; and installing warning lights and day markers. This laboratory corresponds to Performance Tasks 7 and 8.

Session XX. Review and Testing

A. Review

B. Module Examination

1. Trainees must score 70% or higher to receive recognition from NCCER.
2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.

C. Performance Testing

1. Trainees must perform each task to the satisfaction of the instructor to receive recognition from NCCER. If applicable, proficiency noted during laboratory exercises can be used to satisfy the Performance Testing requirements.
2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.

Module Overview

This module contains information and instructions for the maintenance of transmission line equipment and conductors. Trainees are required to demonstrate the ability to perform inspections and maintenance on poles, towers, and guys; perform fault location; and prepare reports to document inspection results.

Objectives

Upon completion of this module, the trainee will be able to do the following:

1. State the safety guidelines for working on transmission lines.
2. State the requirements for performing inspection and maintenance on insulators.
3. State the requirements for performing inspection and maintenance on conductors and conductor hardware, including switching, tagging, and clearance procedures.
4. State the requirements for performing inspection and maintenance on transmission structures and guys.
5. Explain the environmental issues that affect transmission line maintenance.
6. Prepare reports to document inspection results.
7. Perform inspection and maintenance on poles, transmission structures, and guys.
8. Perform fault location on transmission lines.

Performance Tasks

Under the supervision of the instructor, the trainee should be able to do the following:

1. Prepare reports to document inspection results.
2. Perform inspection and maintenance on poles, structures, and guys.
3. Perform fault location on transmission lines.

Materials and Equipment

Multimedia projector and screen
Power Line Worker Level Two: Transmission
PowerPoint® Presentation Slides
(ISBN 978-0-13-274333-4)
Computer
Whiteboard/chalkboard
Markers/chalk
Pencils and paper

Appropriate personal protective equipment
Handheld advanced-function calculators
Example of a switching order
Transmission line inspection forms
Module Examinations*
Performance Profile Sheets*

* Single-module AIG purchases include the printed exam and performance task sheet. If you have purchased the perfect-bound version of this title, download these materials from the IRC using your access code.

Safety Considerations

Ensure that the trainees are equipped with appropriate personal protective equipment and know how to use it properly.

Additional Resources

This module presents thorough resources for task training. The following resource material is suggested for further study.

Electric Power Transmission Systems, 2nd Edition, Upper Saddle River, NJ: Prentice Hall.

Teaching Time for This Module

An outline for use in developing your lesson plan is presented below. Note that each Roman numeral in the outline equates to one session of instruction. Each session has a suggested time period of 2½ hours. This includes 10 minutes at the beginning of each session for administrative tasks and one 10-minute break during the session. Approximately 40 hours are suggested to cover *Transmission System Maintenance*. You will need to adjust the time required for hands-on activity and testing based on your class size and resources. Because laboratories often correspond to Performance Tasks, the proficiency of trainees may be noted during these exercises for Performance Testing purposes.

| Topic | Planned Time |
|--|--------------|
| Session I. Introduction; Safety | |
| A. Introduction | _____ |
| 1. Inspection and Maintenance | _____ |
| B. Safety | _____ |
| 1. Insulator Testing | _____ |
| 2. Voltage Surges | _____ |
| 3. Helicopter Safety | _____ |
| Sessions II and III. Insulator Inspection and Maintenance | |
| A. Insulator Inspection and Maintenance | _____ |
| 1. Inspection Guidelines | _____ |
| 2. Composite Insulators | _____ |
| 3. Insulator Testing | _____ |
| 4. Corona Discharge | _____ |
| 5. Insulator Contamination | _____ |
| 6. Washing Insulators | _____ |
| 7. Changing Insulators | _____ |
| Sessions IV and V. Conductor Inspection and Maintenance | |
| A. Conductor Inspection and Maintenance | _____ |
| 1. Conductor Inspections | _____ |
| 2. High Current/High Temperature | _____ |
| 3. Line Sag | _____ |
| 4. Overhead Ground Wires | _____ |
| 5. Connector Inspections | _____ |
| 6. Splices | _____ |
| 7. Spacers | _____ |
| 8. Vibration Dampers | _____ |
| 9. Conductor Cart | _____ |
| 10. Conductor Monitoring Equipment | _____ |

Sessions VI and VII. Tower and Pole Inspection

A. Tower and Pole Inspection

1. What Inspectors Look For
2. Wood Pole Inspection
3. Steel Tower Inspection
4. Other Pole Types
5. Guy Wires
6. Transmission Structure Lighting
7. Right-of-Way Inspection and Maintenance

Sessions VIII and IX. Switching, Tagging, and Clearance Procedures; Inspection Reports

A. Switching, Tagging, and Clearance Procedures

1. Application Process
2. Switching Order
3. Operating Switchgear
4. Verbal Instructions
5. Software-Driven Switch Orders

B. Inspection Reports

1. Inspection Forms
2. Computer Reporting

Session X. Environmental Concerns

A. Environmental Concerns

1. Compliance Management Plan (CMP)
2. Work Crew Concerns
3. Trash Disposal
4. Blasting

Sessions XI–XV. Laboratory

A. PT/Laboratory

1. Have trainees perform inspection and maintenance on poles, towers, and guys. This laboratory corresponds to Performance Task 2.
2. Have trainees prepare reports to document inspection results. This laboratory corresponds to Performance Task 1.
3. Have trainees perform fault location on transmission lines to locate damaged or defective conductors or components. This laboratory corresponds to Performance Task 3.

Session XVI. Review and Testing

A. Review

B. Module Examination

1. Trainees must score 70% or higher to receive recognition from NCCER.
2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.

C. Performance Testing

1. Trainees must perform each task to the satisfaction of the instructor to receive recognition from NCCER. If applicable, proficiency noted during laboratory exercises can be used to satisfy the Performance Testing requirements.
2. Record the testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.