



National Craft Assessment and Certification Program
S P E C I F I C A T I O N S

POWER LINE WORKER DISTRIBUTION

PLWDIS80

Released December 2016

Focus Statement

A Power Line Distribution Worker has a basic understanding of electricity, transmission and distribution systems, and feeder drawings. He/she must comply with proper safety standards, procedures, work practices, and be able to work as part of a team. A Power Line Distribution Worker repairs energized electrical distribution systems, interprets verbal and written communication, performs hand signals, and basic rigging.

A Power Line Distribution Worker climbs at heights over 32 feet and over obstructions, can operate basic hand tools and distribution work-specific tools, and associated heavy equipment (such as bucket trucks, digger derricks, trenchers, backhoes), as well as various meters and test equipment, and install and maintain poles, power lines, and assorted devices (such as transformers, breakers, fuses and switches).

Overview

- Two-hour closed-book examination
- May use a basic function, non-printing calculator
- No extra papers, books, notes or study materials are allowed
- The minimum passing score is 75
- A Performance Verification is available

Written Assessment Contents:

Content Domain	Number of Questions
Power Line Worker Safety [49102-11]	11
Introductory Skills [49101-10, 49103-11, 49107-11]	10
Electrical Theory [49104-11, 80201-11]	5
Climbing [49105-11, 49106-11]	7
Aerial Framing [49108-11]	5
Heavy Equipment [49109-11, 49111-11, 49112-11]	9
Rigging [49110-11]	5
Electrical Test Equipment [49113-11]	4
Aerial Distribution Equipment [80202-11]	4
Cable and Conductor Removal [80203-11]	4
URDs [80204-11, 80302-12]	5
Distribution Line Maintenance [80206-11]	7
Advanced Skills [80301-12, 80303-12, 80304-12, 82201-12]	14
Total Number of Questions	90

NCCER

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Study Materials

All NCCER written assessments are referenced to NCCER's curriculum listed in the content. You may order modules from Pearson (800.922.0579) or from NCCER's Online Catalog at www.nccer.org.

Assessment Development

All questions are developed and approved by subject matter experts under the direction of NCCER and Prov™, NCCER's testing partner.

Credentials

NCCER will send appropriate credentials to the assessment center for successful completions.

Training Prescription Reports

Each candidate will have access to individual results of the written assessment from Prov's website at www.provexam.com.

National Registry

Assessment results will be maintained in NCCER's National Registry and become a portable record of the candidate's training and assessment achievements.



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Learning Objectives related to Assessment:

	Power Line Worker Safety
Registry ID Number:	Module Title and Objectives:
49102-11	Power Line Worker Safety
	Identify, inspect, maintain, and use craft-specific PPE and identify its limitations.
	Describe the safety practices associated with high-voltage work.
	Explain work zone safety requirements.
	Identify the signs and causes of unstable trenches and describe the safety practices associated with trench work.
	Introductory Skills
Registry ID Number:	Module Title and Objectives:
49101-10	Introduction to the Power Industry
	Explain how electricity is transmitted and distributed.
49103-11	Introduction to Electrical Circuits
	Define voltage and identify the ways in which it can be produced.
49107-11	Tools of the Trade
	Identify and explain the use of common insulated hand tools.
	Electrical Theory
Registry ID Number:	Module Title and Objectives:
49104-11	Introduction to Electrical Theory
	Explain the purpose of grounding and bonding.
80201-11	Alternating Current and Three-Phase Systems
	Explain the principles and functions of transformers.
	Explain the operating principles and functions of capacitors.
	Climbing
Registry ID Number:	Module Title and Objectives:
49105-11	Climbing Wooden Poles
	Demonstrate the knowledge and proper use of required climbing equipment.
	Demonstrate the ability to inspect a wooden pole for defects and hazards prior to climbing.
49106-11	Climbing Structures Other Than Wood
	Identify the required safety equipment for proper climbing.
	Aerial Framing
Registry ID Number:	Module Title and Objectives:
49108-11	Aerial Framing
	Explain how to install a transformer and connect conductors.
	Describe the difference between single-phase and three-phase construction.
	Identify materials, assorted pole hardware, and support arms needed to perform aerial framing.

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Mobile Equipment	
Registry ID Number:	Module Title and Objectives:
49109-11	Utility Service Equipment
	Identify the operator safety requirements that must be followed when operating a bucket truck or digger derrick.
	Describe ways that a crew can prepare for and react to a bucket truck or digger derrick-related emergency.
	Describe the safety considerations associated with setting up a service vehicle at a job site.
49111-11	Setting and Pulling Poles
	Describe and demonstrate how to set a wood utility pole using a digger derrick.
49112-11	Trenching, Excavating, and Boring Equipment
	Identify the trenching, excavating, and boring safety guidelines.
Electrical Test Equipment	
Registry ID Number:	Module Title and Objectives:
49113-11	Introduction to Electrical Test Equipment
	Describe the following pieces of test equipment and explain their purpose: voltmeter, ohmmeter, clamp-on ammeter, multimeter, megohmmeter, hi-pot tester (dielectric strength tester), motor and phase rotation testers, recording instruments, high-voltage detector, and phasing sticks.
	Identify the safety hazards associated with various types of test equipment.
Rigging	
Registry ID Number:	Module Title and Objectives:
49110-11	Rigging
	Describe safety hazards and safety practices associated with rigging work.
	Identify safety procedures associated with the use of cranes in rigging work.
Aerial Distribution Equipment	
Registry ID Number:	Module Title and Objectives:
80202-11	Introduction to Aerial Distribution Equipment
	Describe the functions of aerial load management devices including: regulators, reclosers, capacitors, fault indicators, fuses and cutouts, and switches.
	Describe how to energize or de-energize a single-phase transformer using a proper hot stick.
Cables and Conductors	
Registry ID Number:	Module Title and Objectives:
80203-11	Cable and Conductor Installation and Removal
	Install cables and conductors.
	Explain how to splice and terminate cables and conductors.
URDs	
Registry ID Number:	Module Title and Objectives:
80204-11	Underground Residential Distribution Systems (URDs)
	Identify and describe pad-mounted switchgear and transformers used in URD systems.
	Select the proper types of conductors and termination methods for specific URD applications.

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80302-12	Three-Phase URD
	Identify safety practices associated with three-phase URD.
	Describe phasing identification procedures.
	Distribution Line Maintenance
Registry ID Number:	Module Title and Objectives:
80206-11	Distribution Line Maintenance
	State the safety precautions associated with power line maintenance.
	Explain how to replace cross arms, arrestors, switches, insulators, and associated hardware.
	Explain how to replace an aerial transformer.
	Describe the methods used to locate and correct faults in URD cabling systems.
	Advanced Skills
Registry ID Number:	Module Title and Objectives:
80301-12	Live Line Work
	Identify safety practices associated with live line work.
	Describe the procedures for performing live line tasks.
80303-12	System Protection and Monitoring
	Read and interpret feeder diagrams.
	Identify types of reclosers used in distribution automation.
80304-12	Troubleshooting
	Describe basic troubleshooting practices.
82201-12	Introduction to Substations
	Interpret a one-line substation diagram.
	Describe the safe work practices used with substations, including clearance zones and lockout/tag out requirements.