

NOTE ON PERFORMANCE TESTING

Performance Profile Sheet(s) are included in a format that can be easily photocopied for each trainee. This examination is designed to measure competency in the tasks taught in each module.

Please note the number of tasks to be tested while teaching each module. Each trainee should be tested on all the tasks listed on the Performance Profile Sheet(s). Before performance testing, the instructor should brief the trainees on:

- Test objectives and criteria
- Safety precautions
- Procedures for each task to be tested

The instructor administering the performance testing should also do the following:

- Ensure that all of the needed equipment is available and operating properly.
- Set up the testing stations.
- Organize and administer the test in a way that allows for optimal performance.
- Complete the Performance Profile Sheet(s) for each trainee by assigning a pass/fail score for each listed task. Also, include the testing date, and start and end times for each task in the rating boxes.
- Monitor adherence to all safety regulations and precautions.
- Provide adequate supervision to prevent injuries.
- Take immediate and effective action to remedy any emergency.

Performance Testing

If Performance Testing is done as part of the NCCER Standardized Craft Training Program, the following conditions must be met:

1. The Craft Instructor must hold valid NCCER instructor certification.
2. The training must be delivered through an Accredited Training Sponsor recognized by NCCER.
3. The specific performance testing must be completed successfully.
4. The results of the testing must be recorded on the Registration of Training Modules Form. This form must be provided to the local Accredited Training Sponsor to be forwarded to the NCCER Registry.

Certified Plus Credential

Provided the sponsor is working through an NCCER-Accredited Assessment Center, candidates who successfully pass performance testing may be eligible for a Certified Plus credential. A number of NCCER's Performance Profiles cross over to NCCER's Assessment Performance Verifications and may be completed simultaneously. Go to **www.nccer.org** and select the Assessments tab to locate the Performance Verifications associated with this craft. Note that two other important conditions are required for the Certified Plus credential:

1. Candidates must first pass the associated written assessment.
2. An NCCER-Accredited Assessment Administrator must sign off on the Performance Verification before it is submitted to NCCER.

Craft: Power Generation Maintenance Electrician

Module Number: 26206-08

Module Title: Conductor Installations



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: The Performance Profile sheet must be completed for each trainee. To obtain credentials for performance test completions, submit results to your NCCER-Accredited Organization. Check with your local representative for instructions.

Objective	TASK	RATING
2, 5	1. Prepare multiple conductors for pulling in a raceway system.	
2	2. Prepare multiple conductors for pulling using a wire-pulling basket.	

Copyright © 2008 NCCER. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 26207-08

Module Title: Cable Tray



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: The Performance Profile sheet must be completed for each trainee. To obtain credentials for performance test completions, submit results to your NCCER-Accredited Organization. Check with your local representative for instructions.

Objective	TASK	RATING
1, 6	1. Prepare a list of materials for a cable tray layout. List all the components required, including the fasteners required to complete the system.	
6	2. Join two straight, ladder-type cable tray sections together.	

Copyright © 2008 NCCER. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 26209-08

Module Title: Grounding and Bonding



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
 Also, list the date the testing for each task was completed.

Recognition: The Performance Profile sheet must be completed for each trainee. To obtain credentials for performance test completions, submit results to your NCCER-Accredited Organization. Check with your local representative for instructions.

Objective	TASK	RATING
3, 6	1. Using the proper fittings, connect one end of a No. 4 AWG bare copper grounding wire to a length of ¾" galvanized water pipe and the other end to the correct terminal in a main panelboard.	

continued

Copyright © 2008 NCCER. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 26209-08

Module Title: Grounding and Bonding



Contren® Learning Series

Objective	TASK	RATING
3, 6	2. Install two lengths of Type NM cable in a switch box using Type NM cable clamps:	
	<ul style="list-style-type: none"> Strip the ends of the cable to conform with <i>NEC</i>® requirements. 	
	<ul style="list-style-type: none"> Secure the cable in the switch box and tighten the cable clamps. 	
	<ul style="list-style-type: none"> Connect and secure the equipment grounding conductors according to <i>NEC</i>® requirements, and secure to the switch box with either a ground clip or a grounding screw. 5 3. Size the minimum required grounding electrode conductor for a 200A service fed by 3/0 copper. 	
8	4. Size the minimum required equipment grounding conductor in each conduit for a 400A feeder gap using two parallel runs of 3/0 copper.	
9	5. Size the minimum required bonding jumper for a copper water pipe near a separately derived system (transformer) where the secondary conductors are 500 kcmil copper.	

Craft: Power Generation Maintenance Electrician

Module Number: 40208-08

Module Title: Hand Bending



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
3	1. Make 90-degree bends, back-to-back bends, offsets, kicks, and saddle bends using a hand bender.	
4	2. Cut, ream, and thread conduit.	

Craft: Power Generation Maintenance Electrician

Module Number: 40310-09

Module Title: Machine Bending of Conduit



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
3, 5	1. Use an electric or hydraulic bender to bend a conduit stub-up to an exact distance of 15¼" above the deck.	
3, 5	2. Make an offset in a length of conduit to miss a 10" high obstruction with a clearance between the obstruction and the conduit of not less than 1" and no more than 1½".	
3, 5	3. Make a saddle in a length of conduit to cross an 8" pipe with 1" clearance between the pipe and the conduit.	

Copyright © 2009 National Center for Construction Education and Research. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 26203-08

Module Title: Electric Lighting



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
 Also, list the date the testing for each task was completed.

Recognition: The Performance Profile sheet must be completed for each trainee.
 To obtain credentials for performance test completions, submit results to your
 NCCER-Accredited Organization. Check with your local representative for
 instructions.

Objective	TASK	RATING
2	1. Read and interpret information given in lamp manufacturers' catalogs for one or more selected lamps.	
3	2. Properly select and install lamps into lighting fixtures.	

continued

Copyright © 2008 NCCER. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 26203-08

Module Title: Electric Lighting



Contren® Learning Series

Objective	TASK	RATING
3, 4	3. Install one or more of the following lighting fixtures and their associated lamps:	
	<ul style="list-style-type: none"> • Surface-mounted 	
	<ul style="list-style-type: none"> • Recessed 	
	<ul style="list-style-type: none"> • Suspended 	
	<ul style="list-style-type: none"> • Track-mounted 	

Craft: Power Generation Maintenance Electrician

Module Number: 26303-08

Module Title: Practical Applications of Lighting



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

Objective	TASK	RATING
6	1. Using manufacturers' catalogs, select the appropriate lighting fixtures for specific lighting situations.	
2	2. While touring selected structures to observe their lighting systems:	
	<ul style="list-style-type: none"> • Identify the various types of lighting fixtures used. 	
	<ul style="list-style-type: none"> • Explain the specific purpose(s) served by the different fixtures. 	
	<ul style="list-style-type: none"> • Identify the lighting system class of service 	

Copyright © 2008 National Center for Construction Education and Research. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 40301-09

Module Title: Hazardous Locations



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
3, 5	1. Using two rigid metal conduit nipples, a sealing fitting, three pieces of No. 12 THHN conductors, and a packing fiber/sealing kit, perform the following operations:	
	<ul style="list-style-type: none"> • Secure one conduit nipple in each end of the seal. 	
	<ul style="list-style-type: none"> • Make sure the required number of threads are engaged. 	

continued

Copyright © 2009 National Center for Construction Education and Research. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 26210-08

Module Title: Circuit Breakers and Fuses



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: The Performance Profile sheet must be completed for each trainee. To obtain credentials for performance test completions, submit results to your NCCER-Accredited Organization. Check with your local representative for instructions.

Objective	TASK	RATING
2	1. Identify the following on one or more circuit breaker(s) and fuse(s):	
	• Number of poles	
	• Load rating	
	• Voltage rating	
	• Amperage interrupting rating	

Copyright © 2008 NCCER. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 40306-09

Module Title: Transformer Applications



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
2	1. Identify various specialty transformers.	
4	2. Using a clamp-on ammeter, demonstrate the principles of a current transformer. Identify the primary winding, then calculate and measure the effects of increasing the number of turns (loops) in the primary winding.	
3	3. Connect a buck-and-boost transformer to a single-phase circuit so that it will first be in the boost mode, and then in the buck mode. Record the voltage increase and decrease for each configuration.	

Copyright © 2009 National Center for Construction Education and Research. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 40305-09

Module Title: Distribution Equipment



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
4	1. Identify the following on a molded case circuit breaker:	
	<ul style="list-style-type: none"> • Frame size 	
	<ul style="list-style-type: none"> • Trip unit rating 	
	<ul style="list-style-type: none"> • Pick up values 	

Craft: Power Generation Maintenance Electrician

Module Number: 50301-11

Module Title: Power Plant Electrical Systems



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Training Report Form 200, and submit the results to the Training Program Sponsor.

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
4	1. Locate and identify the feeds for a power station.	

Copyright © 2011 National Center for Construction Education and Research. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician
Module Number: 40307-09
Module Title: Conductor Selection and Calculations



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
 Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
1	1. From a selection of conductors, identify the applications for which they can be used.	
1	2. Given an application, identify the conductors that can be used for it.	

Craft: Power Generation Maintenance Electrician

Module Number: 26202-08

Module Title: Motors: Theory and Application



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: The Performance Profile sheet must be completed for each trainee. To obtain credentials for performance test completions, submit results to your NCCER-Accredited Organization. Check with your local representative for instructions.

Objective	TASK	RATING
1	1. Collect data from a motor nameplate.	
6, 7, 8	2. Identify various types of motors and their application(s).	
9	3. Connect the terminals for a dual-voltage motor.	

Copyright © 2008 NCCER. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 40313-09

Module Title: Motor-Operated Valves



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
4	1. Set up a MOV.	
5	2. Remove and replace a limit switch.	

Craft: Power Generation Maintenance Electrician

Module Number: 26211-08

Module Title: Control Systems and Fundamental Concepts



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: The Performance Profile sheet must be completed for each trainee. To obtain credentials for performance test completions, submit results to your NCCER-Accredited Organization. Check with your local representative for instructions.

Objective	TASK	RATING
5, 9	1. Mount and connect a 120V lighting contactor with a three-wire pushbutton control.	

Copyright © 2008 NCCER. Permission is granted to reproduce this page provided that copies are for local use only and that each copy contains this notice.

Craft: Power Generation Maintenance Electrician

Module Number: 40308-09

Module Title: Temporary Grounding



Contren® Learning Series

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
Also, list the date the testing for each task was completed.

Recognition: When testing for the NCCER Standardized Craft Training Program, be sure to record Performance testing results on Craft Training Report Form 200, and submit the results to the Training Program Sponsor.

Certified Plus Credential: Trainees who successfully complete these performance tasks may be eligible for a Certified Plus Credential. Refer to the Note on Performance Testing of this Performance Profile for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
4	1. Apply temporary grounding for a given application using the correct PPE, tools, and parts.	
4	2. Demonstrate inspection and storage of temporary grounding components.	