

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. 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 and submitted to the local Accredited Training Sponsor for approval through NCCER's Registry system.

Certified Plus Credential

If 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. 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: Industrial Maintenance E & I Technician

Module Number: 40201-08

Module Title: Industrial Safety for E & I Technicians



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
1	1. Perform a visual inspection and an air test on rubber gloves.	
4	2. Develop a task plan and deliver a task briefing:	
	<ul style="list-style-type: none"> • Discuss the work to be performed and the hazards involved. 	
	<ul style="list-style-type: none"> • Locate the closest phone to the work site and ensure that the local emergency telephone numbers are either posted at the phone or known by you and your partner(s). 	
	<ul style="list-style-type: none"> • Plan an escape route from the location in the event of an accident. 	
3	3. Identify and describe the electrical hazards in your work site.	

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Craft: Electrical

Module Number: 26501-09

Module Title: Managing Electrical Hazards



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
5	1. Given a specific electrical task and circumstances, complete an energized electrical work permit request.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40202-08

Module Title: Introduction to the *National Electrical Code*®



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
3	1. Find the definition of the term <i>feeder</i> in the <i>NEC</i> ®.	
3	2. Look up the <i>NEC</i> ® specifications that you would need to follow if you were installing a receptacle in a cooling tower.	
3	3. Find the minimum wire bending space required for two 1/0 AWG conductors installed in a junction box or cabinet and entering opposite the terminal.	

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Craft: Industrial Maintenance E & I Technician

Module Number: 40203-08

Module Title: Electrical Theory



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
8	1. Use the formula for Ohm's law to calculate voltage, current, and resistance.	
3	2. Given different resistors, identify the correct resistance value and tolerance using the color code.	
3, 5	3. Use the power formula to calculate the amount of power used by a circuit.	

continued

Craft: Industrial Maintenance E & I Technician

Module Number: 40203-08

Module Title: Electrical Theory



Contren® Learning Series

Objective	TASK	RATING
3, 5	4. Use a variation of the power formula to calculate the main current a resistor can carry based on the resistor's value and power rating.	
3, 5	5. Calculate the total resistance for selected series, parallel, and series-parallel circuits.	
6	6. Use Kirchhoff's current law to calculate the total and unknown currents in parallel and series-parallel circuits.	
7	7. Use Kirchhoff's voltage law to calculate voltage drops in series, parallel, and series-parallel circuits.	

Craft: Industrial Maintenance E&I Technician

Module Number: 40204-08

Module Title: Alternating Current



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
1	1. Given the parameters of an inductive circuit with a low power factor, calculate the true and apparent power and identify methods that could be used to improve the efficiency of the circuit.	
2	2. Solve for two values of a power triangle provided by your instructor.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40303-09

Module Title: E & I Drawings



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
2	1. Trace the circuit flow on a one-line diagram.	
3	2. Read and interpret an electrical raceway drawing.	
3	3. Read and interpret a piping and instrumentation drawing (P&ID).	
3	4. Read and interpret a loop sheet.	
1	5. Interpret component symbols on an electronic schematic diagram.	

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Craft: Industrial Maintenance E & I Technician

Module Number: 40205-08

Module Title: E & I Test 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.

Objective	TASK	RATING
1	1. Under instructor supervision, measure the voltage in your classroom (hot to neutral and neutral to ground).	
1	2. Under instructor supervision, use an ohmmeter to measure the values of various resistors.	
1	3. Use a continuity tester to verify whether a lamp is burned out.	
1	4. Using a pressure source, measure pressure with the appropriate device.	

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Craft: Industrial Maintenance E & I Technician

Module Number: 40205-08

Module Title: E & I Test Equipment



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Objective	TASK	RATING
1	5. Use a field communicator.	
1	6. Use a manometer or a deadweight tester.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40212-08

Module Title: Conductors and Cables



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
4	1. Install conductors in a raceway system.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40213-08

Module Title: Conductor Terminations and Splices



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
2, 3, 5	1. Terminate conductors using selected crimp-type and mechanical-type terminals and connectors.	
2, 3, 5	2. Terminate conductors on a terminal strip.	
2, 3, 5	3. Insulate selected types of wire splices and/or install a motor connection kit.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40304-09

Module Title: Motor Controls



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. Make all connections for a magnetic motor controller controlled by two pushbutton stations, including the connections for the holding circuit interlock.	
6	2. Disassemble, inspect, and reassemble a motor starter.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40311-09

Module Title: Hydraulic Controls



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
3, 4	1. Repair a solenoid valve.	
3, 4	2. Bleed down a system.	
3, 4	3. Clean and inspect a pressure regulator.	

**Module 40312-09 has no Performance Profile Sheet;
no performance testing is required for this module.**

Craft: Industrial Maintenance E & I Technician

Module Number: 40409-09

Module Title: Programmable Logic Controllers



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 front of this test booklet for eligibility requirements, or contact NCCER for more information.

Objective	TASK	RATING
4	1. Locate the specific I/O point associated with a given software address.	
10	2. Connect to a PLC and turn on an output device.	