

**Module 40401-09 has no Performance Profile Sheet;
no performance testing is required for this module.**

Craft: Industrial Maintenance E & I Technician

Module Number: 40402-09

**Module Title: Basic Process Control Elements,
Transducers, and Transmitters**



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
7	1. Draw a one-line diagram including a measuring element, transducer, and transmitter.	
6	2. Install an electronic transmitter.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40403-09

Module Title: Instrument Calibration and Configuration



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. Calibrate a pneumatic pressure switch using the proper equipment.	
3, 4	2. For a given level application, determine the calibration range for a DP transmitter.	
5	3. Calibrate a 4–20mA temperature transmitter using the proper calibration equipment.	
8	4. Calibrate a smart transmitter using a HART® communicator.	
3, 4	5. Check a transducer for proper operation.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40404-09

**Module Title: Pneumatic Control Valves,
Actuators, and Positioners**



TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
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Objective	TASK	RATING
1, 2, 3	1. Disassemble and reassemble one or more control valves.	
4	2. Bench set an actuator and mount on a control valve.	
5	3. Install and set up a positioner on a control valve.	
9, 10, 11	4. Interpret valve markings and nameplate information.	
10	5. Identify valve components from specific drawings.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40405-09

Module Title: Performing Loop Checks



TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
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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.

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Objective	TASK	RATING
3	1. Perform a continuity check on a pneumatic system.	
3	2. Perform a continuity check on an electrical system.	
4	3. Prove a loop.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40406-09

Module Title: Troubleshooting and Commissioning a Loop

TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
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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.

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Objective	TASK	RATING
2	1. Troubleshoot an oscillating process.	
3	2. Troubleshoot a newly installed control loop.	
5	3. Commission a loop.	

Craft: Instrumentation

Module Number: 12204-03

Module Title: Process Control Theory



TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

- Rating Levels:**
1. Passed: performed task.
 2. Failed: did not perform task.

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

Objective	TASK	RATING
3	1. Draw and accurately label a block diagram for a basic process control loop.	
4	2. From a piping and instrumentation drawing (P&ID), identify the major components of each of these process control loops:	
	• Feedforward	
	• Feedback	
	• Cascade	
	• Ratio	

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Craft: Industrial Maintenance E & I Technician

Module Number: 40407-09

Module Title: Process Control Loops and Tuning



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.

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Objective	TASK	RATING
6	1. Perform closed-loop tuning.	
7	2. Perform open-loop tuning.	
8	3. Perform visual loop tuning.	
5	4. Set up and use a pneumatic controller in a loop.	

Craft: Industrial Maintenance E & I Technician

Module Number: 40408-09

Module Title: Data Networks



TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
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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.

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Objective	TASK	RATING
6	1. Properly run and terminate CAT 6 and coaxial cables.	

Craft: Power Generation I & C Maintenance Technician

Module Number: 51401-10

Module Title: Calibrate Supervisory Instrumentation Elements



TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
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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.

Objective	TASK	RATING
1	1. From a collection of sensing devices, select ones suitable for measuring vibration, shaft eccentricity, rotor and shell position, shaft speed, shaft position, and thrust bearing wear.	
2	2. From a collection of test equipment, select a portable shaker (or Wobulator [®]), a frequency generator, an oscilloscope, a micrometer, and a digital multimeter.	
3	3. Demonstrate how to set up and calibrate a proximity transducer using the so-called electrical method (requiring a voltmeter and a power supply), based on the probe manufacturer's recommendations.	

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Craft: Power Generation I & C Maintenance Technician

Module Number: 51402-10

Module Title: Boiler/HRSG Control



TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
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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.

Objective	TASK	RATING
1	1. Identify the devices and connections shown on a boiler control loop that uses either ISA or SAMA symbols.	
2	2. Sketch a single-element steam drum level control loop using SAMA symbology.	
4	3. Sketch a SAMA digital logic diagram that represents the boiler purge permissives for a selected boiler.	

**Module 32401-09 has no Performance Profile Sheet;
no performance testing is required for this module.**

Craft: Industrial Maintenance E & I Technician

Module Number: 40410-09

Module Title: Distributed Control Systems



TRAINEE NAME: _____

TRAINEE SOCIAL SECURITY NUMBER: _____

CLASS: _____

TRAINING PROGRAM SPONSOR: _____

INSTRUCTOR: _____

Rating Levels: (1) Passed: performed task (2) Failed: did not perform task
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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
2, 3	1. Develop a diagram of the basic system architecture of a DCS, including the components and information flow.	
8	2. Use a DCS interface to obtain process data.	