

A. Introduction

1. Given the appropriate equipment, tools, references and procedures the trainee will calibrate a pneumatic PID controller in accordance with the Core Work Practice Standards, applicable procedure, specification, or performance checklist in a lab setting.
2. During the conduct of training instructors:
 - a. Incorporate management expectations
 - b. Model management expectations with respect to nuclear, industrial, operational, and radiological safety
 - c. Apply and identify for trainees those discipline-specific fundamentals applicable to the task or activity being trained or evaluated
3. On completion of the performance of the activity described in this exercise, the trainee will be able to independently: calibrate a pneumatic PID controller without error.
4. The evaluation method for this objective is a practical demonstration with procedural guidance provided by the specified procedure, specification, or plant reference document.
5. Documentation of satisfactory performance of the exercise, evolution, or activity will be accomplished using the Qualification Checklist attachment if this evaluation is intended to result in the award of a qualification to perform work independently.
6. The instructor should ensure that the lab is properly equipped and that trainees are provided with appropriate safety equipment prior to any activity in the lab setting. Conditions in the LAB setting including equipment readiness, stowage, and setup must reproduce, to the greatest extent possible, those conditions found in the field.

7. During the performance of evaluations for the purpose of qualification or to satisfy the requirement to verify trainee knowledge, the trainee is required to perform the demonstrated activity independently.
 - a. If the trainee is unable to perform the activity or the instructor is required to intervene, the evaluation is terminated.
 - 1) If the evaluation is terminated due to trainee failure, the trainee record is annotated to indicate the reason for the failure and the intended corrective action.
 - 2) If the evaluation is terminated for any other reason, the instructor annotates the trainee record with the reason for termination and the required (or intended) corrective action.
 - b. Each item on the Core Work Practices must be indicated as PASS, FAIL, or NA (if not applicable).
 - c. Items considered not applicable should be noted on the Qualification Record and associated Training Record.
 - d. The instructor conducting training is expected to verify trainee readiness to perform tasks and demonstrate proper behaviors prior to qualification evaluation.
 - e. During performance of evaluations, either post-training session or for task qualification (TPE), the evaluator is required to intervene or stop the evaluation if:
 - 1) An actual plant emergency occurs.
 - 2) The system, component, equipment, or procedure used for conducting the evaluation is found to be deficient (including inoperable or unsafe).
 - 3) The trainee's actions may result in injury, damage to equipment, or jeopardizing plant operation (this is considered a FAILURE).

- 4) The trainee states he/she cannot complete task (this is considered a FAILURE unless due to equipment failure or procedure deficiency).
 - 5) The trainee demonstrates inadequate knowledge / skill (this is considered a FAILURE).
 - 6) The trainee demonstrates inadequate Core Work Practices (this is considered a FAILURE).
- f. If the evaluation is stopped, NOTIFY the trainee that the evaluation is over and continue in a training mode, if appropriate.

B. Main Idea

1. Performance Instructions

- a. The trainee will calibrate a pneumatic controller in accordance with applicable vendor manual.
- b. Prerequisites:
 - 1) Fully qualified level 100 technician
 - 2) Successfully completed course on control theory
- c. General Standards
 - 1) Obtain the appropriate procedures and specifications, from the instructor to perform exercise
 - 2) Explain events that have resulted in equipment or system damage and procedural steps or precautions that prevent these events from occurring at NMPNS.
 - 3) Demonstrate the appropriate work practices used to perform the task in accordance with the applicable work document and procedure.
 - 4) Calibrate a pneumatic PID controller. Explain the purpose of the action(s) being performed.

5) Principles of a Strong Safety Culture

- a) Everyone is personally responsible for nuclear safety.
- b) Leaders demonstrate commitment to safety.
- c) Trust permeates the organization.
- d) Decision-making reflects safety first.
- e) Nuclear technology is recognized as special and unique.
- f) A questioning attitude is cultivated.
- g) Organizational learning embraced.
- h) Nuclear safety undergoes constant examination.
- i) Clearly communicate work plans and status during briefings, work turnover, and handoffs.
- j) Provide feedback during post-job debriefs (if used) or following work performance to improve procedures, instructions, and processes.

d. Attachments:

- 1) None

2. Laboratory Practice / Training

- a. Using the laboratory or mock up setting required the instructor will demonstrate the activity as a training event. Evaluation of the activity is a separate and unique event and shall be performed in accordance with the requirements of NMP-TR-1.01-1, Conduct of Training.
 - 1) Connect test equipment
 - 2) Configure test equipment and controller for calibration.
 - 3) Perform calibration per vendor manual
 - 4) Disconnect test equipment

3. Trainees shall use all applicable human performance tools and verification practices found in procedure CNG-HU-1.01-1001. The tools to consider are:
 - a. Self Check
 - b. Verification Practices
 - c. Three-way communication
 - d. Procedure Use and Adherence / Placekeeping
 - e. Questioning Attitude
 - f. Flagging / Robust Operational Barriers
 - g. Stop When Unsure
4. Pre-job briefs and post-job critiques shall be performed in accordance with CNG-HU-1.01-1002
 - a. IF a pre-job brief is required in the field prior to performance of the activity, THEN the instructor / evaluator should conduct the brief as it would be conducted in the field as part of the evaluation.
 - b. IF a pre-job brief is NOT required in the field prior to performance of the activity, THEN the evaluator indicates that the brief is "NA" on the Qualification Record.
5. Task Elements
 - a. Connect equipment
 - b. Configure equipment for controller calibration
 - c. Calibrate controller
 - d. Disconnect equipment

C. Practice

1. The instructor will provide the following:
 - a. Pneumatic calibrator or individual M&Te necessary to calibrate a pneumatic PID controller

- b. Pneumatic PID controller in need of calibration
 - c. Compressed air supply
 - d. Miscellaneous flexible tubing and fittings necessary to perform pneumatic PID controller calibration

 - e. The instructor may evaluate more than one trainee at a time however; each trainee must perform the task independently.
 - f. Specific checkpoints have been identified where technical performance is evaluated for each trainee.
 - g. The evaluator shall maintain general group oversight to ensure core work practice requirements are met.
 - 1) If at any time the evaluation must be stopped due to the need to address a safety or other violation, the evaluation is terminated and may not recommence until the plant or evaluation setting is in a safe condition, the inappropriate behaviors identified, and cause(s) corrected.
2. Trainee performance is considered SATISFACTORY if:
- a. 100% of performance steps successfully completed.
 - b. 100% of work practices evaluated as Satisfactory (SAT) or Not Applicable (N/A).
 - c. 100% of knowledge questions answered correctly (if used).

3. Performance Requirements

a. Training Method:

Perform Simulate

Check off method used to evaluate trainee. If both Perform and Simulate are used (i.e., due to plant conditions, certain steps must be simulated) Simulate shall be checked here.

b. Training Location:

Laboratory
 Other (Record Location) _____

c. Duration: _____

d. Initial Conditions:

1) Material / Equipment available

- [List here in bullets]
- [List here in bullets]

4. Trainee: _____

Date: _____

Employee Number: _____

Instructor/Evaluator: _____

5. Performance Steps:

- All steps shall be performed in the sequence given unless specified otherwise in the procedure.
- The instructor will provide guidance to the trainee regarding plant conditions to be assumed prior to beginning evaluation. Trainees are required to successfully demonstrate their ability to independently perform the active task of the procedure(s) identified for evaluation. The

selected procedure must be documented on the Qualification Record attachment and on any Training Record submitted for database entry.

- c. Pre-job briefing may be provided by the instructor / evaluator or waived if not required. If the pre-job brief is not performed, indicate the reason on the Training Record used to record participation in the session.
 - 1) Pre-job briefings are conducted in accordance with CG-HU-1.01-1002.
 - 2) Participation in the pre-job brief includes demonstration of proper communications, a questioning attitude, and other attributes as listed in the referenced procedure.

ITEM	PERFORMANCE	ACTION CODE Perform / Simulate / Not Applicable	EVALUATOR SAT / UNSAT / NA <u>Initial</u>
1.	Pre-job briefing. Std: IAW written department expectations.	P / S / NA	SAT / UNSAT / NA _____

Performance Steps:

NOTE: The instructor will provide guidance to the trainee regarding plant conditions to be assumed prior to beginning evaluation. Trainees are required to successfully demonstrate their ability to independently perform the active task of the procedure(s) identified for evaluation. The selected procedure must be documented on the Qualification Record attachment and on any Training Record submitted for database entry.

1	ASSURE that a safe work area has been established.	P / S	SAT UNSAT
NOTE: Out of calibration M&TE may be used for Training only			
2	INSPECT the tubing and connectors for evidence of wear or damage.	P / S	SAT UNSAT

3	PERFORM pre-use checks recommended by the appropriate vender manual(s).	P / S	SAT UNSAT
4	CONFIGURE the test equipment and controller for calibration.	P / S	SAT UNSAT
5	CONNECT the M&TE to the controller.	P / S	SAT UNSAT
6	CALIBRATE proportional mechanism in accordance with vendor manual.	P / S	SAT UNSAT
7	CALIBRATE reset (integral) mechanism in accordance with vendor manual	P / S	SAT UNSAT
8	CALIBRATE derivative mechanism in accordance with vendor manual	P / S	SAT UNSAT
9	CALIBRATE output indicator in accordance with vendor manual	P / S	SAT UNSAT
10	CALIBRATE process indicator in accordance with vendor manual	P / S	SAT UNSAT
11	CALIBRATE setpoint indicator in accordance with vendor manual	P / S	SAT UNSAT
12	DISCONNECT and store the decade box.	P / S	SAT UNSAT

The Qualification Record for this activity is included in the General Test Equipment Training.