

PP&L Competitive Metering Specifications Rider**Meter Worker Qualification Requirements for Advanced Metering Services**

INTRODUCTION

Three levels of meter worker qualifications are set forth as criteria for meter workers to perform the installation, removal, testing, and maintenance of physical meters within an EDC's service territory. Advanced metering services may be performed, by an electric distribution company (EDC), or an electric generation supplier (EGS), if certified to perform such services. EDC's and EGS's may perform these services through agreements with certified subcontractors.

GENERAL

If the EDC is subcontracting the meter services, then the EDC will ensure the Advanced Meter Services Provider issues to each meter worker or employee, who performs metering work, appropriate identification, indicating the worker's employer and the level of meter work the worker is qualified to perform. This identification must be carried by each meter worker during the performance of work.

If the EGS is subcontracting the meter services then, the EGS will ensure that the Advanced Meter Services Provider issues to each meter worker or employee, who performs metering work, appropriate uniforms and identification, indicating the worker's employer and the Level of meter work the worker is qualified to perform. This identification must be carried by each meter worker during the performance of work.

All meter workers sub-contracted to perform meter services pursuant to this Agreement must have sufficient training to exercise due care for the tasks performed.

LEVEL DESCRIPTIONS AND REQUIREMENTS

Level 1

1. Metering Types and Voltages

This level includes single phase, socket-based meters, and A-Based meters, 300 volts phase-to-phase maximum and does not include transformer rated meters. Communication wiring must be outside of energized meter panels.

2. Work to be Performed

Level 1 Meter Workers can install, remove and replace single-phase, 120/240 volt or 120/208 volt, self-contained meters in standard meter socket's, A-Based configurations in residential-commercial type metering equipment. Connections of communication conductors must be outside the energized meter panels.

3. Safety Skills

- a) Job performance in accordance with employing Advanced Meter Services Provider's procedures and safety rules.
- b) Knowledge of hazards of electricity and ability to perform work to avoid electrical hazards.
- c) Ability to comply with OSHA requirements and safety codes if applicable.
- d) On-site use of personal protective equipment.
- e) Ability to comply with ANSI-C2 (National Electric Safety Code).

4. Essential Technical Skills

- a) Understanding of single phase electrical metering.
- b) Understanding of electric distribution safety procedures.
- c) Ability to identify energy diversion or tampering related to this Level of meter work.
- d) Ability to install and remove damaged and un-damaged electric meters in this level of meter work.
- e) Understanding of meter panel's, socket layouts and configuration of A-Base connections for the metering conditions related to this Level of meter work.
- f) Ability to read meters used in this class.
- g) Ability to properly use tools appropriate to the work in this class.
- h) Ability to connect meter communications external to the meter panel.
- i) Ability to initialize meter communication modules - not utilizing Type 2 optical ports and meter configuration software.

5. How Essential Technical and Safety Skills Are Determined

- a) Advanced Meter Services Providers will develop and implement a program to train their workers to perform Level 1 meter work safely and properly.
- b) Employees will be certified by their employers, based on prior experience or, the successful completion of the Advanced Meter Services Provider's training program.
- c) To facilitate agreements for performing meter work in this level, EGSs and EDCs may decide to share training programs, however, it is with the understanding that the appropriate non-disclosure agreements are executed.
- d) EGS and Advanced Meter Services Provider employees currently employed in classifications performing these functions, or within the last three (3) years were previous employed in classifications performing these functions, are considered qualified.
- e) Advanced Meter Services Providers will develop and implement a class room training program (16 hrs.) to train their workers to perform Level 1 meter work safely and properly, including a minimum of forty (40) hours of on the job training (OJT) working alongside a meter worker with at least 6 months experience at Level 1, 2, or 3.

Level 2

1. Metering Types and Voltages

This Level includes all meter types in Level 1. Level 2, includes single-phase, two-phase, poly-phase, safety socket, standard socket-based meters, A-base, K-base, and transformer rated meters with internal diagnostics up to 600 volts phase to phase. Communication wiring may be routed inside the panel, and work can be in and around energized circuits.

2. Work to be Performed

In addition to Level 1 Meter Work, Level 2 Meter Workers can install, remove and replace single-phase, network, and poly-phase meters, 600-volt phase to phase maximum. Operate test-bypass facilities in self-contained safety sockets. Communication wiring may be installed inside the panel, and work can be performed in and around energized circuits. On panels without test-bypass facilities, poly-phase meters will not be removed or installed without first disconnecting the customer load.

Further, Level 2 Meter Workers can install, remove and replace all meters consistent with the above, including transformer-rated meters with internal diagnostics (if detected, metering problems with test switches, panel wiring or transformers and transformer wiring will be corrected by a Level 3 Meter Worker). Level 2 Meter Workers may operate test switches, but may not install, alter, maintain or replace wiring between the meter, test switch, test block and associated equipment.

3. Safety Skills

- a) Cumulative including all skills and safety knowledge for Level 1.
- b) Electrical safety knowledge and work skills appropriate for three-phase metering up to 600V phase-to-

phase, including the ability to identify and refer to a Level 3 or higher meter installer services above 600V phase-to-phase prior to performing work in the service equipment, or if voltage rating is not labeled, at the time of initial voltage check.

- c) Ability to perform phase rotation assessments and wiring verification.
- d) Ability to operate test-bypass facilities or test blocks in a self-contained safety socket.
- e) Ability to perform work required to route communication wiring to accommodate meter communications.
- f) Additionally must have the knowledge needed for up to 600 volts, poly-phase, (two-phase and three phase) services and the forms and voltages applicable to Level 2 Meter Work.
- g) Ability to understand, interpret and take appropriate action based on built-in diagnostics of solid state meters.
- h) Ability to work with transformer rated meters and operate test switches of 600 volts or less.
- i) Awareness of instrument transformer operating characteristics including ability of potential transformer to back feed to primary system.

4. Essential Technical Skills

- a) Cumulative of all Technical skills for Levels 1.
- b) Ability to perform work required to route communication wiring to accommodate meter communications.
- c) Ability to understand, interpret, identify and take appropriate actions based upon built-in diagnostics of solid state meters.
- d) Ability to perform meter accuracy tests in locations other than in the meter socket using semi-automatic meter test equipment at the customer site or in truck mounted equipment.

5. How Essential Technical and Safety Skills Are Determined

- a) Advanced Meter Services Providers will develop and implement a class room training program (16 hrs.) to train their workers to perform Level 2 meter work safely and properly, including a minimum of forty (40) hours of on the job training ("OJT") working alongside a meter worker with at least 6 months experience at Level 2, or 3.
- b) Employees will be certified by their employers, based on successfully completing the MSP's training program.
- c) To facilitate agreements for performing meter work in this level, EGSs and EDCs may decide to share training programs, however, it is with the understanding that the appropriate non-disclosure agreements are executed.
- d) Advanced Meter Services Providers work can be reviewed by the EDC's.

6. Experience Requirements

Minimum experience requirements that must be demonstrated prior to qualification for individuals wanting to become a Level 2 Meter Worker.

- a) After 12 months OJT working with a Level 2 or Level 3 meter worker who has at least 6 months experience and upon successfully completing the Advance Meter Services Provider training program a worker may be certified as a Level 2 Meter Worker,

or

- b) If an employee has a two or four year degree in a related subject, then after four (4) months OJT working alongside a Level 2 or Level 3 meter worker with at least six months of experience and upon successful completion of the Advanced Meter Services Provider training program (16 hrs.) a worker may be certified as a Level 2 Meter Worker,

or

- c) If entry level experience of any employee is that of a journeyman 16 hr OJT level electrician, journeyman level electric metering worker, or journeyman level line worker (e.g., lineman, troubleman), then upon successful completion of the advance meter services provider training program (16 hrs.) the

worker may be certified as a Level 2 Meter Worker.

Level 3

1. Metering Types and Voltages

This Level includes all meter types in Levels 1 and 2. Level 3 work includes all metering up to 600V, including transformer rated meters with primary and secondary voltages less than 600V plus the additional skills needed to perform work on metering systems with instrument transformer primary side voltages over 600V. Communication wiring may be behind the panel, and work can be in and around energized circuits.

2. Work to be Performed

In addition to Level 1 and 2 Meter Work, Level 3 Meter Workers can install, remove and replace all meters consistent with the above including transformer-rated meters. Complete understanding of operating characteristics of metering transformers and operates test switches. May perform in-field meter accuracy tests, burden test, calibrations and perform all types of meter maintenance and troubleshooting on all meters. Programs and verifies internal programs and software in solid state meters.

3. Safety Skills

- a) Cumulative of all safety skills for Levels 1 and 2.
- b) Ability to recognize and understand electrical hazards and complexities associated with metering switchboards, instrument transformers, testing meters and maintaining meters.
- c) Awareness of instrument transformer operating characteristics including ability of potential transformer to back feed to primary system.

4. Essential Technical Skills

- a) Cumulative of Levels 1 and 2.
- b) Ability to perform work on metering panels.
- c) Ability to understand the operating characteristics of metering transformers and how to operate test switches.
- d) Ability to perform calibration, repair, retrofit, troubleshooting, data collection of electric meters and install, maintain and program advanced metering technologies, including time of use, interval data, real time pricing, remote meter communication, and load control devices.

5. How Essential Technical and Safety Skills Are Determined

- a) Advanced Meter Services Provider's will develop and implement a class room training program (40 hrs.) to train their workers to perform Level 3 meter work safely and properly, including a minimum of 6 months of on the job training ("OJT") working alongside a meter worker with at least 6 months experience at Level 3.
- b) All workers will be certified by the test process outlined below.
- c) Advanced Meter Services Provider's work can be reviewed by the EDC's.

6. Experience Requirements

- a) All individuals seeking to perform advanced metering services as a Level 3 Meter Worker must successfully pass written and practical (demonstrative) tests. These tests will be administered by the Advanced Meter Services Provider.
- b) Prerequisites for taking the written and practical tests include demonstrated knowledge or certificate of a state certified apprenticeship training program or a degree in electrical / electronic technology from an accredited institution of higher education and demonstrated experience in at least one of the following areas:
 - 1) Minimum of one year experience as a Level 2 Meter Worker, including 6 months OJT with a Level 3 Meter Worker, with at least 6 months experience,

or

2) in the event a standardized test program created by a professional organization is created and is approved or authorized by the Pennsylvania Public Utility Commission or other appropriate regulatory authority, for certifying Level 3 Meter Worker (or equivalent level) then, any person who passes such test shall be qualified as a Level 3 Meter Worker,

or

3) employment as a journeyman metering employee.

7. Testing and Re-Certification Requirements

a) Once an individual takes and passes the Level 3 Meter Worker Test and is otherwise qualified as a Level 3 Meter Worker they are qualified to perform that level of advanced metering work anywhere in Pennsylvania.

b) If after being qualified a meter worker does not perform metering work for three (3) years or more, re-certification will be required prior to performing that Level of meter work.

Continuing Education

As part of a Level 3 Meter Worker's ongoing ability to remain qualified the individual must participate in at least twelve (12) hours annually of the Advanced Meter Services Provider's training program regarding technical metering standards, safety related issues, and up-dating of meter software programs and PC skills.