

## **INFORMATION FOR METER SERVICE PROVIDERS (MSP) FOR ARIZONA CERTIFICATION**

### **Meter Worker Qualification Requirements For Direct Access Metering in Arizona**

#### **I. Introduction**

Three classes of meter worker qualifications are set forth as criteria for a meter worker to perform direct access meter services within a Utility Distribution Company's (UDC's) service territory. These services may be performed by an electric service provider (ESP), which has been certificated as a Meter Service Provider (MSP).

#### **II. General**

Any meter worker performing meter services on behalf of a MSP must have sufficient training to exercise due care in performing these functions.

A MSP employee who performs direct access metering work is required to have appropriate identification, indicating the worker's employer and the class of meter work the worker is qualified to perform. This identification must be carried by the employee whenever doing meter work.

#### **III. Class Descriptions And Requirements**

##### **A. Class 1**

##### **1. Metering Types and Voltages**

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

##### **2. Work to be Performed**

Class 1 Meter Workers may install, remove and replace single-phase, 120/240 volt or 120/208 volt self-contained meters in standard socket based residential-type metering equipment. Connections of communication conductors must be outside the energized meter panels.

##### **3. Safety Skills**

- a. Knowledge of electricity hazards and ability to perform work while avoiding the hazards
- b. Performance of functions in compliance with MSP's procedures and safety rules
- c. Ability to comply with OSHA requirements
- d. Use of personal protective equipment while on site

##### **4. Essential Technical Skills**

- a. Knowledge of single phase electrical metering
- b. Knowledge of electric distribution safety procedures

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- c. Ability to identify energy diversion or tampering related to this class of meter work
- d. Ability to install and remove damaged and undamaged meters
- e. Knowledge of the meter panel and socket layout for the metering conditions of this class of meter work
- f. Ability to read meters used in this class
- g. Ability to properly use tools appropriate to this class of work
- 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. MSPs will develop and implement a program to train their workers to perform Class 1 meter work safely and properly, including a minimum of 40 hours of on the job training with a Class 1 or higher meter worker.
- b. Employees will be certified by their employers, based on prior experience or, the use of the training program referenced in (a).
- c. To facilitate a UDC/MSP meter work agreements and, if appropriate, an MSP's training program may be shared with UDCs. An MSP's work can be reviewed by the UDC.
- d. UDC employees in classifications performing these functions are deemed qualified.
- e. MSP employees who have worked in classifications performing these functions within the last 3 years are deemed qualified.
- f. A Class 1 Meter Worker who does not perform this class of work for 3 years or more must be recertified before performing Class 1 meter work.

## **B. Class 2**

### **1. Metering Types and Voltages**

This class includes all Class 1 meter types. It also includes poly-phase, safety socket and standard socket-based meters, 300V phase-to-phase maximum and up to 600V, poly-phase, safety socket or socket-based, A-base, K-base, and transformer rated meters with internal diagnostics. 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 performing the work of a Class 1 Meter Worker, a Class 2 Meter Worker can install, remove and replace single-phase and poly-phase, 120/240 volt or 120/208 volt, self-contained meters in safety socket and standard socket based metering equipment. A Class 2 worker can operate test-bypass facilities in self-contained safety sockets, install communication wiring inside the panel, and work in and around energized circuits. On panels without test-bypass facilities, a

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worker can not remove or install poly-phase meters without first disconnecting the customer load.

A Class 2 Meter Worker 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 Class 3 Meter Worker). A Class 2 Meter Worker 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. All the skills and safety knowledge required for Class 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 Class 3 or higher meter installer services above 600V phase-to-phase prior to performing work
- c. in the service equipment, or if voltage rating is not labeled, at the time of initial voltage check
- d. Ability to perform phase rotation assessments
- e. Ability to operate test-bypass facilities or test blocks in a self-contained safety socket
- f. Ability to route communication wiring to accommodate meter communications
- g. Knowledge needed for up to 600V poly-phase service and the forms and voltages applicable to Class 2 Meter Work
- h. Ability to understand, interpret and take appropriate action based on built-in diagnostics of solid state meters
- i. Ability to work with transformer rated meters and operate test switches and test blocks

### **4. Essential Technical Skills**

- a. All Technical skills required for Class 1
- b. Ability 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 test meters in locations other than in the meter socket using semi-automatic meter test equipment

### **5. How Essential Technical and Safety Skills Are Determined**

- a. MSPs will develop and implement a program to train their workers to perform Class 2 meter work safely and properly.
- b. Employees will be certified by their employers based on the use of that program.
- c. To facilitate a UDC/MSP agreement for performing meter work in this class, the MSP's training program may be shared with the UDC.
- d. The MSP's work can be reviewed by the UDCs.

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- e. UDC employees in classifications performing these functions are deemed qualified.
- f. MSP employees who have worked in classifications performing these functions within the last 3 years are deemed qualified.
- g. A Class 2 Meter Worker who does not perform metering work for 3 years or more, must be recertified prior to performing Class 2 meter work.

### **6. Experience Requirements**

Minimum experience requirements for certification as a Class 2 Meter Worker:

- a. 12 months on the job training working alongside a Class 2 or higher Meter Worker and successful completion of the MSP training program; or
- b. Two or four year degree in a related subject, 4 months on the job training working alongside a Class 2 or higher Meter Worker and successful completion of the MSP training program; or
- c. Attainment of journeyman level electrician, journeyman level electric metering worker, or journeyman level line worker and successful completion of the MSP training program.

### **C. Class 3**

#### **1. Metering Types and Voltages**

This class includes all meter types in Classes 1 and 2. Class 3 work also includes all metering up to 600V, including transformer rated meters with primary and secondary voltages less than 600V and 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 performing Class 1 and 2 Meter Work, Class 3 a Meter Worker can install, remove and replace all meters consistent with the above including transformer-rated meters. A worker can operate test switches and test blocks, perform in-field meter accuracy tests and calibrations and perform all types of meter maintenance and troubleshooting. A Class 3 Meter Worker can program and verify internal programs and software in solid state meters.

#### **3. Safety Skills**

- a. Includes those required for Classes 1 and 2
- b. Ability to conform processes to additional electricity hazards and complexities associated with metering switchboards, testing meters and maintaining meters

#### **4. Essential Technical Skills**

- a. Includes those required for Classes 1 and 2

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

### **5. How Essential Technical and Safety Skills Are Determined**

- a. MSPs may develop and implement a program to train workers to perform Class 3 meter work safely and properly.
- b. All workers will be certified by the test process outlined below.
- c. MSP's work can be reviewed by the UDCs.
- d. UDC employees in classifications performing these functions are deemed qualified.
- e. MSP employees employed in classifications performing these functions within the last 3 years are deemed qualified.

### **6. Experience Requirements**

- a. Individuals seeking to perform direct access meter services as a Class 3 Meter Worker must successfully pass written and or practical (demonstrative) tests. The test can be created by the MSP, or maybe a standardized test created by a professional association, state or federal government
- b. Prerequisites for the tests:
  - 1) Minimum of one year experience as a Class 2 Meter Worker, including 6 months on the job training with a Class 3 Meter Worker; or
  - 2) Successful completion of Class 3 Meter Worker test; or
  - 3) Employment as a journeyman metering employee.

### **7. Testing and Re-Certification Requirements**

- a. Successful completion of the Class 3 Meter Worker Test permits a Class 3 Meter Worker to perform that class of direct access meter work anywhere in Arizona
- b. A meter worker who does not perform metering work for 3 years or more must be re-certified prior to performing that class of meter work.

### **8. Continuing Education**

A Class 3 Meter Worker annually must participate in at least 12 hours of the MSP's training program regarding standards of practice and safety related issues.