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## 3. Services and Meter Installations

### 3.1 Types of Secondary Service Furnished

Available electric services include 60-hertz, alternating current, single-phase or three-phase. Nominal secondary voltages are listed below:

**Table I—Types of Secondary Service**

| Configuration               | Available Voltage | Service Conductor Configuration                   | Loading Limitations   |
|-----------------------------|-------------------|---|---|
| Single-phase                | 120 V             | two-wire, grounded                                | ≤ 2 kW  |
| Single-phase/<br>poly-phase | 120/208 V         | three-wire, grounded<br>network metered;<br>5-jaw | ≤ 500 kVA (1400 amps [A] total load) and distributed evenly on phases |
| Single-phase                | 120/240 V         | three-wire,<br>grounded                           | ≤ 167 kVA per service, or ≤ 700 A per single meter                    |
| Three-phase                 | 120 V/208 Y       | four-wire,<br>wye grounded                        | ≤ 500 kVA (1400 A)  |
| Three-phase                 | 277 V/480 Y       | four-wire,<br>wye grounded                        | ≤ 2500 kVA (3000 A)   |

Consult with the Power Company to determine if three-phase, 120/240 volt, four-wire, delta grounded is available at the desired location. Some state tariff rules do not include this type of service.

Primary voltage service is available for qualified requests.

### 3.2 Maximum Transformer Size

The Power Company will determine the size of the transformer based on load or generation information received from the customer. Table 2 lists the largest available standard transformers. These transformers may not be available in all areas.



**Table 2—Largest Available Standard Transformer**

| <b>Pad-Mounted Transformers—Standard</b>  | <b>Secondary Voltage (V)</b> | <b>Size (kVA)</b> |
|---|------------------------------|-------------------|
| Largest single-phase, pad-mounted transformers                                  | 120/240                      | 167               |
| Largest three-phase, pad-mounted transformers                                   | 120/208Y                     | 500               |
|   | 277/480Y                     | 2500              |
| <b>Overhead Transformers—Standard</b>   | <b>Secondary Voltage (V)</b> | <b>Size (kVA)</b> |
| Largest single-phase, overhead transformers                                     | 120/240                      | 167               |
| Largest three-phase, overhead transformers<br>(three single-phase transformers) | 120/208Y                     | 500               |
|   | 277/480Y                     | 1500              |

### 3.3 Load Requirements

#### 3.3.1 Single-Phase Service

Large single-phase loads may have operational problems or may cause objectionable voltage dips to other customers. To minimize these impacts, the requirements in Table 3 apply to single-phase services.

**Table 3—Load Requirements and Limitations for Single-Phase Service**

| <b>Equipment or Load</b>            | <b>Requirements and Limitations</b>  |
|-------------------------------------|--|
| Loads > 2 kW                        | shall be supplied at 240 V   |
| Single-phase motors                 | ≤ 3 horsepower (hp); > 3 hp requires Power Company review  |
| Any single air conditioner          | ≤ 5 tons   |
| Any single heat pump                | ≤ 5 tons   |
| Electric heating, indoor or outdoor | No more than 48 A of load at 240 V when switched<br>No more than 24 A of load at 120 V when switched |
| Electric tank style water heaters   | No more than 48 A of load at 240 V when switched<br>No more than 24 A of load at 120 V when switched |
| Electric tankless water heater      | Consult the Power Company  |
| Service rated > 400 A               | CT metering required   |



### 3.3.2 Three-Phase Service

The requirements and limitations in Table 4 apply to three-phase services.

**Table 4—Load Requirements and Limitations for Three-Phase Service**

| <b>Equipment or Load</b>   | <b>Requirements and Limitations</b>   |
|--|---|
| Three-phase service  | Must meet requirements identified in Section 9  |
| Three-phase service > 200 A<br>but ≤ 800 A                             | Current transformer (CT) metering required  |
| Three-phase service > 800 A  | Switchboard metering required   |
| Motors > 3 hp  | Should be supplied with three-phase service, unless reviewed and approved for single-phase service by the Power Company |
| Continuous duty motors > 60 hp at<br>120 V/208 Y or 120 V/240 V        | CT metering required  |
| Continuous duty motors > 125 hp at<br>277 V/480 Y                      | CT metering required  |
| Total expected load (as determined by<br>the Power Company) ≥ 1000 kVA | Study required by the Power Company   |
| Three-phase-service with<br>single-phase load                          | Single-phase load shall be distributed evenly on all phases   |

### 3.4 Permanent Service Connection

Only authorized Power Company employees shall make a permanent connection or disconnection of the Power Company's electric service. Services shall not be jumpered prior to local inspection and permanent connection by the Power Company. Services will not be energized without properly secured, ANSI-approved covers.

### 3.5 General Meter Installations

The Power Company's tariff and rate schedules require the delivery of each voltage class and type (single-phase or three-phase) of electrical service through one meter to the customer at one location.

Meter location is subject to Power Company approval.

The customer is responsible for providing, installing, and maintaining all service equipment (including overhead service entrance conductors, conduit, enclosures, and meter sockets). Service equipment shall be installed and maintained to accommodate rights-of-way and provide space for the installation and maintenance of Power Company facilities.

Meters shall be accessible by the Power Company at all times for reading, maintenance, and emergencies.



The customer must consult the Power Company prior to any work that involves relocation, rewiring, removal, or installation of a meter. Customers are not authorized to perform any work on any Power Company meter, including removing or interfering in any way with the meter or its connection.

The customer shall notify the Power Company promptly upon completion of repairs or modifications, so the Power Company can inspect, reinstall, and re-seal the meter.

### 3.5.1 Acceptable Meter Sockets

Acceptable meter sockets are those manufactured in accordance with current EUSERC, ANSI-C12, and UL/ANSI-414 requirements. The customer must provide and install the meter socket, complete with terminal lugs, meter jaws, manual link bypasses or safety sockets (when required), and sealing means for all sections. All sockets shall be ring-type. The meter socket and service equipment shall be NEMA type 3R (rainproof), in good condition with no holes, dents or damage, and plumb in all directions. The installation shall be made with sufficient materials and installed such that it remains plumb for the duration of the service.

Consult the Power Company for approved meter socket types, or refer to the lists of acceptable meter sockets online at [www.pacificpower.net/metersockets](http://www.pacificpower.net/metersockets) and [www.rockymountainpower.net/metersockets](http://www.rockymountainpower.net/metersockets).

Stainless steel meter enclosures are recommended for coastal areas and corrosive atmospheres. This will prevent early failure due to corrosion.

### 3.5.2 Sealing Provisions to Deter Unauthorized Access

1. The Power Company uses screw-type meter ring seals and associated service equipment.
2. Sealing provisions for service equipment require a stud/wing-nut assembly or a clip suitable for use with a seal.
3. Cabinets and gutters containing unmetered conductors shall be sealable.
4. If vacant meter positions are not securely sealed, or the meter is not in position, the Power Company may decline to energize the panel.
5. All removable panels and covers to compartments used for metering shall be sealable.

### 3.5.3 Meter Socket Mounting

Meter socket mounts must meet the following requirements.

#### Requirements:

1. Sockets must be plumb in all directions and securely mounted to a rigid surface.
2. Conductors must be securely fastened to their respective terminals and arranged in a manner that will not interfere with the installation of Power Company conductors, the meter or cover, or with the operation of manual link bypasses.
3. Meter clearances shall comply with Section 4 of this manual.
4. The unmetered service conductor and the metered service conductor shall not be run in the same conduit, raceway, or gutter.



5. The customer must obtain the Power Company's prior approval for installation of meters in enclosures. When such installations are permitted, the meter must be accessible for meter reading or resealing without requiring the use of tools or removal of the enclosure. The enclosure shall be hinged on one side. Permission to enclose the meter will remain in effect as long as the customer maintains the enclosure in good working condition and in accordance with this paragraph.
6. Adequate protection for meters subject to physical damage must be provided.
7. To ensure that the meter socket is mounted securely, and will remain so for the duration of the service, specialized anchors, such as stainless steel anchors, are required when mounting meter sockets to concrete, brick, or cinder block. Stucco or sheet metal mounting surfaces also require specialized anchoring methods. The customer shall consult the authority having jurisdiction for approved mounting and anchoring practices.

### 3.5.4 Flush Mount

If the meter socket is recessed into a building's exterior wall, a flush-type box or meter socket designed specifically for that purpose shall be installed such that the face of the meter socket projects beyond the building's exterior surface.

### 3.5.5 Location of Service Equipment

In areas where protective devices (and associated disconnects) are not required to be adjacent to the metering point:

1. Breakers or fuses shall be within 15 feet (15') of the metering point when the customer's service equipment panel is inside the building and the metering point is on the exterior.
2. Exterior service equipment shall be visible and not more than 30 feet (30') from the metering point in any direction.

### 3.5.6 Additional Fixtures on Meter Installations

The meter socket, cabinet, and enclosure are provided by the customer for the exclusive use of the Power Company. The customer shall not make or allow the attachment of any device or fixture on any meter socket, cabinet, or enclosure, except as indicated below.

Where permitted by the authority having jurisdiction, one inter-set device may be installed between the meter socket and the meter. The customer must obtain approval from the authority having jurisdiction for the device and its listed and intended application. The company reserves the right to remove the device and return it to the customer if it adversely affects its ability to deliver power to any customer. Contact the Power Company at 1-888-221-7070 to request the specific requirements for installing an inter-set device.



### 3.6 Connection, Disconnection, and Re-Establishment of Service

Connection and disconnection of any service shall be coordinated with the Power Company. The customer will be billed according to the fee schedule in effect.

If a service drop or lateral has been removed at the customer's request, or the facility is "unused," the installation must be upgraded to current Power Company requirements if it is re-established. A re-established service requires a new application for service and will require inspection prior to reconnection. The length of time that defines a facility as unused differs by state; see Table 5.

**Table 5—Durations Defining Unused Facilities, by State**

| <b>California</b> | <b>Idaho</b> | <b>Oregon</b> | <b>Utah</b> | <b>Washington</b> | <b>Wyoming</b> |
|-------------------|--------------|---------------|-------------|-------------------|----------------|
| 15 Months         | 12 Months    | 15 Months     | 12 Months   | 15 Months         | 12 Months      |

Services not using power are not considered unused if the facility remains in place and the customer is registered for service and paying applicable rate fees. If the Power Company finds the facility unsafe, the Power Company shall have the right to disconnect the service, and the service will be subject to re-establishment requirements.

### 3.7 Relocation of Services and Facilities

A fee will be charged if the customer requests or requires relocation of existing Power Company facilities, according to the applicable tariff.

