

3 Services

3.1 Types of Service Furnished

Available electric service includes 60-hertz, alternating current, single-phase or three-phase (See [Section 3.10, Load Requirements](#)). The nominal secondary voltages are given below:

Underground Service:

The following underground service may be provided:

- Single-phase, 120/240-volt, three-wire, grounded.
- Single-phase, 240/480-volt, three-wire, grounded.
- Single-phase, 120/208-volt, three-wire, grounded
- Three-phase, 208Y/120-volt, four-wire, grounded, wye.
- Three-phase, 480Y/277-volt, four-wire, grounded, wye.
- Three-phase, 240/120-volt, four-wire, grounded, open-delta*
- Three-phase, 480/240-volt, four-wire, grounded, open-delta*

*PGE must approve open-delta services for motors larger than 40HP.

Overhead Service:

The following overhead service may be provided:

- Single-phase, 120/240-volt, three-wire, grounded.
- Three-phase, 208Y/120-volt, four-wire, grounded, wye.
- Three-phase, 240/120-volt, four-wire, grounded, delta.
- Three-phase, 480Y/277-volt, four-wire, grounded, wye.
- Three-phase, 480/240-volt, four-wire, grounded, open-delta (motor loads limited to 40HP or less)
- Three-phase, 480/240-volt, four-wire, grounded, delta (for motor loads of 40HP or greater, served from overhead primary lines only)

If other service voltages are required, the Customer must request and PGE must approve these voltages before services can be provided.

3.2 Permanent Service Connection

Only authorized PGE employees shall make the permanent connection or disconnection of PGE's electric service. Services shall not be jumpered prior to local inspection and permanent connection by PGE. Services shall not be energized without NEC approved covers properly secured.

3.3 Point of Delivery

The *point of delivery* for commercial and industrial Customers refers to that location where PGE's circuit connects to the Customer's system. Where the point of delivery is located at the Customer's building, PGE will only install service connections to customers metering equipment at the main or entry floor level. Only with prior

approval granted by PGE, may this equipment be located in a dedicated Electric Room meeting NEC requirements and shall have either a door to the outside of the building or a door that accesses a hallway that leads straight to the outside of the building. **The preferred meter location is on the outside of the building nearest this room.** The door shall be keyed for a PGE lock or a door key shall be provided and stored in a PGE approved lock box. **Doors must open outward and be equipped with a “panic bar” (see Electric or Meter Room Checklist on page 26).**

The point of delivery for residential customers must be ten feet maximum from corner of house closest to PGE lines. When this condition cannot be met, the Customer must contact PGE to determine an appropriate location of the Customer's metering equipment.

For residential overhead services, the home siding must be installed prior to energizing the service.

3.4 General Meter Installations

PGE's tariff and rate schedules require the delivery of each class and type of electrical service through one meter to one Customer at one location. (Note: Except where a separate service is used to minimize voltage fluctuations on secondary voltage circuits, see Section 1.16). Meters must be accessible during normal work hours for meter reading and testing.

Meter location is subject to PGE approval. Metering equipment (e.g., meter base, CT cabinet, etc.) **shall not** be installed on drive-through service entrance side of commercial buildings.

Customers are not authorized to relocate any meter belonging to PGE or interfere in any way with the meter or its connection. The person responsible for the electrical work must contact PGE for any work that involves relocation, rewire, or new installation of a meter.

CAUTION: With some types of meter sockets, removal of the meter does NOT de-energize the service.

The Customer must promptly notify PGE upon completion of repairs or modifications so PGE can inspect, reinstall, and reseal the meter (See the [Section 3.4.2, Sealing Provisions](#) below and [Section 1.6](#) concerning Customer Responsibility for Safety.)

3.4.1 Acceptable Meter Sockets

Acceptable meter sockets are manufactured in accordance with the current EUSERC requirements, standards for Safety Meter Sockets, as well as ANSI-C12 and UL/ANSI-414. 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. Consult PGE for meter socket types. **Ringless style meter sockets are not approved.**

3.4.2 Sealing Provisions

PGE uses seals placed on meter rings, and associated service equipment to prevent injury and/or tampering. Sealing provisions for associated

service equipment shall mean using a stud/wing-nut assembly or a clip suitable for use with a seal.

All cabinets and gutters containing unmetered conductors (other than mainline switches required by applicable codes) must have sealing provisions. Removable sections of conduit may only be installed when approved by PGE and must be sealed by PGE. Unmetered conductors passing through a service disconnect compartment for a mobile home service pedestal must be in conduit and arrangements must be made for sealing.

3.4.3 Mounting of Meter Sockets

Verify that clearances for meter sockets meet the requirements shown in [Figure 5-1](#) and [Figure 5-2](#). Plumb sockets in all directions and securely mount them to a rigid surface. Securely fasten conductors to their respective terminals and arrange them in a manner which will not interfere with the installation of PGE conductors, the meter or cover, or with the operation of manual link bypasses.

If the meter cabinet is to be recessed into the building wall, install a flush-type box or meter cabinet designed specifically for that purpose so the face of the meter cabinet projects outward beyond the building surface as approved by PGE.

The National Electric Safety Code requires 36 inches of clear working space in front of live parts and 78 inches of clear head room. No barrier shall be installed that will be within 36 inches of the front of the meter panel when a meter is removed and energized parts are exposed. Locate meter sockets and other metering equipment at least 36 inches horizontally from a gas meter, gas valve, or nearest gas component (outlet elbow or flange) of the meter set. (See [Figure 5.3](#) and [Figure 5.6](#).)

The unmetered service conductor and the metered service conductor will not be run in the same conduit, raceway, or gutter. This does not apply to minor repair jobs if coordinated with PGE before repair.

Be sure adequate protection exists for meters subject to physical damage. Barrier posts are required when metering equipment is exposed to vehicle traffic. (See [Figure 6-4](#) and [Figure 6-5](#))

3.4.4 Access to Meter Bases

The meter base shall be mounted in such a way as to not hinder removing the meter and/or cover from the base. The meter base panel, ring, and/or lid shall not be sealed or obstructed in any way other than those methods allowed under the NEC and PGE Electric Service Requirements. Any hinderance, including but not limited to siding, caulking, enclosures, and landscaping shall be removed by the property owner so as to allow unrestricted access to the meter base.

3.4.5 Corrosive Areas

Meter sockets and other metering cabinets installed in highly corrosive areas (e.g., dairy farms, fertilizer or chemical plants, etc.) shall be constructed of stainless steel.

3.4.6 Meter Socket Adapters

With exception of the GenerLink™ transfer switch, installed with permit and inspected by PGE, customer owned meter socket adapters or “meter collars” used for purposes such as providing a power source are not allowed on PGE services.

3.5 Connection and Disconnection of Service

Connection and disconnection of any service will be done by PGE. The Customer will be billed a charge according to the fee schedule in effect. A permit and inspection by the local code enforcing agency, and approval by PGE, is required before reconnection for the following:

- **All services** that have been disconnected longer than six months.
- Any service that has had customer electrical equipment modified in any way.

All work must be coordinated with PGE for connection and disconnection of service.

No permit or inspection is required if an overhead drop is disconnected temporarily to allow falling of a tree or to provide safe working clearances for roofing, painting, or similar work.

3.6 Theft of Service or Unmetered Electric Service

Any unauthorized connections or wiring attached ahead of the meter, allowing for unmetered electric service, whether intentional or unintentional, should be immediately reported to PGE’s Energy Recovery Unit. All calls will be treated in the strictest confidence and callers will remain anonymous.

Energy Theft Hotline: 1-800-962-8184 (24 hours, 7 days a week)

3.7 Relocation of Services and Facilities

A fee may be charged if the Customer requests or requires relocation of existing PGE facilities.

3.8 Customer Equipment on PGE poles

Customer-owned metering equipment, switching devices, conduits, conductors, luminaires, etc., *shall not* be mounted on a PGE pole.

3.9 Customer Owned Poles and Guying

All customer owned and installed poles for overhead mobile home service, farm-yard, or irrigation service shall meet PGE’s requirements for height, depth of setting, pole class, and guying.

All poles shall be 25-foot minimum length, set no less than 5-feet below ground level, with gravel backfill. Size of the pole is to be Class 6 (6-inch minimum top

diameter, 7-inch diameter 6-feet from the butt) or better, full-length commercially treated. A 6" x 6" treated post can also be used.

For pole lengths greater than 25-feet consult PGE for proper setting depth.

All customer owned poles shall be guyed and anchored unless prior permission is obtained from PGE. Guys are to be minimum 5/16-inch galvanized steel cable, having a lead-to-height ratio of 1:2.

3.10 Load Requirements

3.10.1 Single-phase Service

Equipment having a capacity of 2 kilowatts or more shall be operated at 208 volts or higher.

Customers connecting any individual motor larger than five horsepower must obtain prior approval in writing from PGE. In addition, air conditioners and heat pumps larger than five tons require prior PGE approval. Single-phase motors larger than three horsepower may cause voltage dips objectionable to some Customers.

Space or water heating must be designed and controlled so that no more than 48 amperes of load at 240 volts switches on or off at any one time.

PGE will limit the maximum single-phase 120/240-volt load served through one point of termination to the capacity of a 167 kva single-phase transformer.

PGE will require the Customer to use three-phase service in lieu of single-phase service, if in PGE's judgment, the Customer's connected load is excessive for single-phase service.

Single-Phase service over 320 amps requires current transformer metering as described in [Section 10.6, Current Transformer Metering – 800 Amps Maximum](#).

3.10.2 Three-phase Service

Three-phase service will be provided upon request to residential and nonresidential Customers in accordance with PGE's present tariff.

Three-phase service over 200 amps requires current transformer metering as described in [Section 10.6, Current Transformer Metering – 800 Amps Maximum](#), or [Section 10.7, Switchboard Metering](#).

The Customer's connection of single-phase loads to three-phase services should follow the guidelines shown below in order to reduce the likelihood, or eliminate a common cause, of overloading or single-phasing condition which could damage the Customer's three-phase equipment:

- On 208Y/120-volt or 480Y/277-volt three-phase services, all single-phase loads should be split evenly among the three phases.
- On 240/120-volt delta three-phase service, all single-phase loads (both 120 and 240 volt) shall not utilize the power or wild leg, except resis-

tance heating equipment which should be balanced across all three phases.

The power or wild leg four-wire deltas must be identified with the color orange and be on the right side of the meter base or CT cabinet.

PGE will choose the voltage supplied to the Customer depending upon the characteristics of PGE's distribution system in the area and the Customer's electrical needs. PGE limits service at 208Y/120 volts to a maximum demand of 500 kVA and 480Y/277 volts to 2000 kVA. The Customer must obtain a prior agreement from PGE for service to three-phase loads larger than 500 kVA at 208Y/120 volts and 2000 kVA at 480Y/277 volts.

Three-phase, 480 volt service may not be supplied where the total load to be served is less than 50 kilowatts except where the load consists of a single motor such as irrigation pumping, with nameplate rating of at least 20 horsepower, or an existing 480 volt transformer bank has capacity for the additional load.

Typically, three-phase, four-wire, closed-delta service will not be supplied from underground primary systems.

Three-phase, 3-wire service is not available for new service or rewires.

3.11 Customer-Owned Transformers Beyond the Point of Delivery (POD)

Transformers furnished and owned by the customer beyond the POD, normally used for step-up or step-down of delivery voltages (e.g., 208V stepped up to 480V), must conform to the types for transformers acceptable to PGE. In particular, uses of grounded wye-delta transformers installed with the grounded wye towards the POD are not allowed without protection and relaying acceptable to PGE. A fault on the grounded wye side of the customer's transformer may result in damage to the transformer and/or electrical equipment; improper operation of PGE's protection equipment; and pose a safety hazard for customer employees, PGE personnel, and the public.