CHAPTER 5

Types of Secondary Service

This chapter describes the types of electrical service available and the general requirements pertaining to overhead and underground services.

Some local jurisdictions regulate the type of services allowed within their boundaries (overhead vs. underground). The customer must contact the local authority to verify authorized types of service.

Phases of Service: Single Phase and Three Phase

Single-phase, three-wire and three-phase, four-wire service can be provided. Three-phase, three-wire service is not available at any voltages. A 120/208 volt single-phase service will not be allowed outside the Network.

Ordinarily, only single-phase service is available in residential areas, although three-phase service may be made available in certain residential areas at the customer’s expense.

Voltages Available

Primary service is service of more than 600 volts; secondary is less than or equal to 600 volts. Primary service is available at various voltages depending on the location of the project. The nominal voltages for secondary service are 120 volts, 208 volts, 240 volts, and 480 volts. Call your Electric Service Engineer or your Electric Service Representative for information about the voltages available in your area.

Service at the SCL's distribution voltage or at intermediate voltages above 600 volts may be available in some locations. The nominal voltages which SCL may supply for primary service are: 26,400Y/15,000 volts; 13,800Y/7,960 volts; 4,160Y/2,400 volts. Please contact the Electric Service Engineer for further information.

Service Sizes: Ampacity

Service Rating The service rating shall be determined by the nameplate ampere rating of the main service disconnect. In the absence of a single main service disconnect, SCL will determine the service rating by the nameplate rating of the main service bus or the rating of the main busing in the service entrance panel, whichever applies.

In buildings where multiple services are connected from one service drop or service lateral, the service rating for the building shall be the aggregate of the individual service ratings.

Table 5-1 lists the maximum service entrance ratings for each of the voltages that the Utility offers. These limits allow for customers to be served from transformers in the right-of-way instead of being served from a vault on their premises.
### TABLE 5-1: MAXIMUM SERVICE ENTRANCE RATINGS FOR SECONDARY SERVICE

<table>
<thead>
<tr>
<th>SINGLE PHASE SERVICE VOLTAGE</th>
<th>MAXIMUM SERVICE RATING (amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>120/240</td>
<td>600</td>
</tr>
<tr>
<td>240/480</td>
<td>300</td>
</tr>
<tr>
<td>120/208 (Network) (^1)</td>
<td>200</td>
</tr>
<tr>
<td>277/480 (Network) (^1)</td>
<td>100</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>THREE PHASE SERVICE VOLTAGE</th>
<th>MAXIMUM SERVICE RATING (amps)</th>
</tr>
</thead>
<tbody>
<tr>
<td>208Y/120 (^2)</td>
<td>1000</td>
</tr>
<tr>
<td>480Y/277</td>
<td>600</td>
</tr>
<tr>
<td>480/240 Delta (^3)</td>
<td>300</td>
</tr>
<tr>
<td>240/120 Delta (^3)</td>
<td>600</td>
</tr>
<tr>
<td>208Y/120 (overhead) (^4)</td>
<td>600</td>
</tr>
<tr>
<td>208Y/120 (underground non-network) (^2)</td>
<td>1000</td>
</tr>
</tbody>
</table>

1 Limitations indicated by the word “Network” in Table 5-1 apply only to the areas of the City served by the secondary network distribution systems.

2 If the service ampacity exceeds 600 amperes for secondary underground service, the customer may be required to provide one spare service conduit.

3 The maximum allowable service ampacities indicated here represent the total single-phase and three-phase loads combined. The customer will be required to connect all single-phase loads across the grounded phase, unless otherwise agreed to by SCL.

4 If service ampacity exceeds 600 amperes SCL may require an underground service. At Seattle City Light’s option, an exception to the maximum service amperes may be granted for 208/120 volt services in buildings which are used exclusively for residential occupancy. This exception will be in writing.

**LARGER SERVICES** For services exceeding the ampacities shown in Table 5-1, customers will be required to provide the necessary facilities for the installation of Utility transformers and associated equipment on their premises. Other arrangements are allowed only if they are satisfactory to SCL.

**MULTIPLE SERVICES** In instances where there are multiple services the combined total ampacity shall not exceed the maximum ratings listed in Table 5-1. If original and added ampacity exceeds limits, the customer will be responsible for installation of a transformer vault on the property.

**Transformation by Customer**

If the customer requires a voltage other than the standard voltages, the customer must supply the equipment required. All special transformation equipment must be installed on the load side of the meter, unless otherwise agreed to in writing.
Secondary Overhead Services

ATTACHMENTS The service must be located so no more than one point of attachment to the building will be necessary.

DIRECT PATH A direct path shall be provided that will avoid the necessity of setting an additional pole or of trespassing another property.

BRACKETS AND MASTS The customer must furnish and install approved service brackets and masts. Information on brackets and masts can be found in Chapter 6.

MAXIMUM DISTANCE The maximum distance from Seattle City Light’s (SCL’s) distribution pole to the customer’s point of attachment is 150 feet. For distances greater than 150 feet, a service pole may be required. For further information concerning additional poles, see Chapter 6.

UNIT SUBDIVISIONS SCL is not obligated to provide overhead service to unit subdivisions. The Utility will determine whether the site will have an overhead or underground service.

Location of Conductors and Service Equipment

Before the customer installs any equipment for overhead service, SCL needs to determine:

a. Point where service wires will be attached
b. Path for the service wire
c. Location of the meter
d. Location of service poles, including any poles that may be required for service drops longer than 150 feet.

Primary Overhead Service

New Primary Overhead Service is not available.

Single Service Rule

ONE SERVICE RULE Seattle City Light will provide only one service to a site or building (see City of Seattle Rate Ordinance). Additional services will be supplied only at SCL’s option and will be agreed to in writing.

If SCL needs to add equipment to the distribution system to provide a second service, the customer will be billed the full cost of that addition.

MOBILE HOME PARKS SCL will provide only one service to a mobile park.

BOAT MOORAGES SCL will provide only one service to a boat moorage.

UNIT LOT SUBDIVISIONS Any property that is granted a unit lot subdivision must combine meters in such a way that they can be served from one service strike directly from SCL’s distribution system. No bridled services will be allowed. An easement will be required up to the service termination point. This single service shall include any existing structures on the divided lot.

If the above conditions cannot be met with an overhead service, the service must go underground. The Utility will determine the route of the service from our distribution system. The customer needs to provide SCL with a copy of the recorded short plat including all the drawings.

FLAG LOTS Any property that is short platted in a single family zoning so that a new lot is created behind an existing lot must provide a minimum of a 12 foot access in order to serve the back lot with an overhead service. Otherwise the back lot must install an underground service conduit to the right of way closest to the distribution system.
Secondary Underground Services
When installing underground services, customers are required to perform the work on their property related to the new service. This includes digging trenches, installing conduit and installing handholes. The customer shall provide conduit from the meter socket, instrument transformer enclosure, terminal can, handhole, vault or pad. This conduit shall extend to the point of termination designated by the Utility either on the property line or in the right-of-way. See SCL’s Policy and Procedure 424 for trenching in the right-of-way.

Conduit Specifications
All permanent underground services shall be in conduit. The customer shall install a conduit that has been approved by SCL in regards to type and manufacturer. Once installed, the conduit must be clear and unobstructed so that SCL can pull conductors through it. The Utility will install the service conductors from the designated point of connection on the customer’s property to SCL’s facility in the right-of-way. The SCL charges for the work are outlined in the Utility’s Installation Charges Policy.

Process
Due to the complexity of underground installations, initial plans and specifications must be submitted to SCL well in advance for review.

Once the submitted plans are reviewed, SCL will provide the following information:

a. Service termination facility requirements
b. Size, location and arrangement of conduits entering the service termination facility
c. Meter location
d. Designation of the service pole, handhole, or vault
e. Location of the conduits on pole, or entering handhole or vault; location of conduit runs in right-of-way or easement area.
f. Length of customer’s excess wire at the termination facility
g. Routing of service conduit and trench
h. Depth of trench and backfill specifications.

During construction the electrical installations shall be inspected by SCL before they are backfilled or covered. This includes trenches, conduit, handholes, vaults, and pads. SCL will also inspect the service after it is completed and the permit is signed off by the jurisdictional electrical inspector.

Customer Responsibilities

CONSTRUCTION, EXCAVATION AND RESTORATION All vaults, pads, handholes, conduit work, ditching, backfilling and restoration on private property must be done by and at the expense of the customer.

OPENINGS IN BUILDINGS AND WALLS The customer is responsible for making any necessary openings through building walls and for sealing the openings after conduits have been installed. SCL is not responsible for any damage attributable to service conduit openings.
**WATER ENTRY PREVENTION** The customer is responsible for preventing the entry of water into buildings, service equipment and anywhere it would be a problem.

The customer is responsible for the following measures to avoid water entry:

a. System design that considers elevation differences and other factors that would cause a problem. The design should prevent water from entering the building or electrical equipment to prevent electrical hazard or property damage. SCL Electric Service Representative or Electric Service Engineers can advise the customer in this concern.

b. Watertight grouting of conduit where it enters the building, the vault, or the handhole.

c. Watertight conduit sealing for customer/contractor installed conductors to prevent water from entering the service conduits.

**Customer work in the right-of-way**

In the city of Seattle, customers may hire contractors to install conduit in the right-of-way. They will need to secure permits to do so from the Seattle Department of Transportation. In the cities outside of Seattle, right-of-way permits shall be obtained by the customer from their respective public works departments. This applies to Shoreline, Burien, Tukwila, SeaTac and Lake Forest Park.

In unincorporated King County, Seattle City Light is required to do all the work in the public right-of-way. SCL will acquire the permit and perform the work and bill the customer for its costs including labor, materials, permits and inspections.

**Temporary Underground Service**

Where temporary underground service is requested, the customer shall install a conduit riser at the temporary panel location. The customer will trench to the Utility-designated service stub, handhole, vault, service pole or to the property line. The customer must pay Seattle City Light fees before the service is connected. The temporary post requirements are shown in Diagram 4-2 in Chapter 4.

**Mobile Home Services**

**APPROVAL** The customer must submit electrical plans for mobile home installations to SCL for approval.

SCL will supply one service to a mobile home park. Installation and maintenance beyond the service connection point will be the owner’s responsibility. Each mobile home must be individually metered. Meter locations must be accessible and meters grouped.

**Individually Owned Mobile Home Sites**

**ONE SERVICE RULE** SCL will supply one service to a mobile home lot.

**LOCATION OF SERVICE EQUIPMENT** The National Electric Code, Article 550-32(a), requires a power supply to be located adjacent to the mobile home and not mounted in or on the mobile home. For overhead service SCL will set a service pole and/or anchor. The customer will be billed a service charge for labor and all materials furnished in accordance with the DPP 500 PIII-417, Schedule 102, “Service Poles and Anchors on Private Property.” Your Electric Service Representative can get you a copy of this policy.

Where metering and service equipment are to be installed by the customer on a service pole approved for such use, confer with your Electric Service Representative for specifications. See contact information on inside front cover.
Houseboat Installations

Approval
The customer must submit electrical plans for houseboat installations to SCL for approval.

Termination Point of SCL Equipment
SCL service for a single houseboat or houseboat pier will be terminated on shore in equipment acceptable to the City of Seattle Department of Planning and Development or the State Department of Labor and Industries. The termination equipment must also be approved by SCL.

Distribution of Power/Metering
The distribution of electric service on a houseboat pier is the responsibility of the owner of the pier. Each houseboat must be individually metered and the meters must be located on the pier or shore.

Maintenance
For existing overhead service on houseboat piers, the wire and line hardware will be maintained by SCL as long as the following standards are maintained:

a. Supports mounted on driven piling must be furnished, installed, and maintained by the customer. These supports may be A-frames or individual poles.
b. A-frame timber shall not be less than 6 inches x 5 inches or the equivalent.
c. Poles must not be less than 6 inches in diameter at the top.
d. Adequate guying facilities must be provided for terminal supports at the end of the pier and for changes in line direction.
e. Cross arms and A-frame cross members shall be no less than 14 feet above the pier.
f. Spacing along the dock between supports, A-frame or pole, should be approximately 30 feet.
g. The customer’s pier wiring for lighting must not be installed on the cross member or crossarm that supports SCL’s service conductors.

Upgrading Houseboat Pier Services
SCL will not upgrade existing overhead distribution on houseboat piers. If additional loads require upgrading of houseboat pier electrical distribution, it is the customer’s responsibility to do so. Service termination and metering shall be on the shore where SCL’s responsibility ends.

Where unsafe conditions exist, service will be disconnected on shore until corrective action has been taken by the owner.

Houseboat Removal Charges
If it is necessary for SCL to disconnect electrical service to other houseboats in order to remove a houseboat, the labor must be paid by the requesting customer.