

**SERVICE
POLICIES AND
REQUIREMENTS**

ARTICLE 2. SERVICE POLICIES AND REQUIREMENTS

SEC. 2.1 GENERAL

- A.** IPL will provide only one point of delivery at one voltage type of electric service to new services or Customer initiated upgrades.
- B.** In serving any Customer, IPL will, at its discretion:
 - 1. Determine the attachment point, voltage and service characteristics that it will provide,
 - 2. Approve the location of the Customer's entrance, equipment, and routing of its electric system from IPL's service connection point to the service entrance,
 - 3. Develop a detailed plan to modify IPL's Facilities to suit the Customer's desires, if applicable. The Customer may be required to provide a Contribution to Aid Construction for excess cost, and
 - 4. Determine whether a Customer's load is of such size and character and is so located, providing more than one service connection is advisable.
- C.** Contractors and others installing electrical work are to balance the load on three-wire and four-wire systems. This is required for the Customer as well as IPL's benefit. It will provide the Customer with better voltage regulation and maximize use of the service entrance equipment.
- D.** Electric Facilities installed at IPL's expense on a Customer's property for the purpose of serving that Customer, will remain the responsibility of IPL. Electric Facilities installed at Customer's expense (i.e. metering sockets, current transformers, meter conduit for IPL use, etc.) shall remain the responsibility of the Customer.

SEC. 2.2 INSPECTION/APPROVAL OF CUSTOMER'S WIRING

- A.** New wiring and alterations in wiring are required to be approved by the City's electrical inspector prior to being served by IPL. IPL cannot provide service until this approval has been received from the City's electrical inspector.
- B.** The use of electric service supplied by IPL is the sole responsibility of the Customer. IPL shall not be held liable for any inspections or recommendations which are made as a courtesy to the Customer.

- C. IPL reserves the right, but not the responsibility, to inspect the Customer's service installation. **IPL personnel only inspect the Customer's outside service attachment, metering, equipment, conductors, and other facilities installed to provide electric service to assure compliance with IPL's standards.**

SEC. 2.3 METERING

- A. Self-contained metering equipment is intended for single-phase residential service up to 400 Ampere and three-phase commercial service up to 200 Ampere. For larger services, current transformers (CT's) are required which are located remote from the meter.
- B. Under no circumstances shall meters be removed or relocated, whether temporarily or permanently, except by IPL employees or electricians authorized by IPL to do such work.**
- C. IPL is willing to relocate its metering equipment and service attachment when required for modification to the Customer's building or service entrance. However, there may be a cost to the Customer for such a relocation.
- D. IPL owns and maintains all IPL billing meters and related metering devices. IPL may permit the use of Customer owned metering devices when they are an integral part of the Customer's equipment.
- E. To obtain a general service electric space heating rate, a separate meter is usually required which will need to be located at the service entrance. Only permanently installed heating and cooling devices are allowed to be connected to a separately metered circuit. IPL offers a special rate for residential space heating.
- F. To obtain an all-electric rate, electricity must be the only energy source connected to the building through one meter.

SEC. 2.4 OVERHEAD SERVICE

- A. Normally the Customer will be served through a meter attached to the outside of the building. Service entrance conductors shall be installed in accordance with the latest edition of the NEC.
- B. The length of a service drop from an IPL pole attachment point to the Customer's premises will be limited by the ground clearance attainable at tensions appropriate to the strength of the wire and its supports.

- C. The Customer is to provide, in the construction of their building, a suitable service attachment (point of attachment) of sufficient strength to withstand the stress of IPL's service drop under NESC heavy loading conditions.
- D. The point of attachment of IPL's service drop to the Customer's building or mast must be of proper height and location to provide at all points in the span the minimum clearances above ground and from other wires and obstructions required by the NESC and other applicable rules.
- E. In general, the clearances shown in **Table 1** are to be maintained with the wires at their maximum operating temperature and also when covered with ½ inch of ice. NEC states that service conductors up to 600 volts attached to buildings shall have a clearance of not less than 3 feet from windows, doors, porches, fire escapes or similar locations, and that "Conductors run above the top level of a window shall be considered out of reach from that window."

Minimum Ground Clearances Applicable to Standard IPL Service Drops up to 480 Volts	
<u>Nature of ground under the cable</u>	<u>Required vertical clearance</u>
Track rails of railroads	24 feet
Streets, alleys, roads, parking areas subject to vehicles higher than 8 ft. and farm and other land traversed by vehicles up to 14 ft. high.....	18 feet
Residential driveways and commercial areas not subject to vehicles higher than 8 ft. and spaces or ways accessible only to pedestrians:	
120/240 volts, single phase.....	12 feet
120/208 volts, three phase.....	12 feet
240 volts, three phase.....	12 feet
277/480 volts, three phase.....	12 feet
480 volts, three phase.....	15 feet
Swimming Pool	Page 4

Table 1

SEC. 2.5 UNDERGROUND SERVICE

When underground service conductors are installed by IPL, they will be terminated by IPL at the first point of connection with the Customer at a point on the exterior of the building. This point will be the dividing line of responsibility between the Customer and IPL. Wherever underground service conductors are installed by the Customer, they will be terminated by IPL at the first point of connection with IPL's system and this point will be the dividing line of responsibility between the Customer and IPL.

A. Residential (see Article 3)

B. Commercial (see Article 4)

SEC. 2.6 TEMPORARY SERVICE

A. Temporary service equipment will be provided, installed and maintained by IPL for residential and small commercial construction projects, for an appropriate fee, unless otherwise agreed to by IPL.

B. Temporary service may be provided to the Customer's disconnecting apparatus for all other situations, including larger Commercial Customers, traveling shows, public events displays, etc., upon receipt of application and approval by IPL.

C. In cases where existing system is not available or of sufficient capacity, the Customer will be required to pay IPL, in advance of construction, an amount equal to the estimated cost of installation and removal of Facilities required to provide temporary service power.

D. Connections shall not be provided until inspected and approved by IPL's inspector.

SEC. 2.7 EQUIPMENT UTILIZATION

A. In order to assure uniform customer service, it is important that the requirements for the Customer's electrical equipment identified herein be followed by the Customer. These requirements can be met by commercially available equipment. The Customer shall use the electric service supplied by IPL with due regard to the effect of such service on other IPL Customers and its Distribution System. IPL may refuse to supply electric service or may suspend electric service to a Customer without notice if the Customer's installation is considered to be unsafe or dangerous, or is installed or operated as to disturb the electric service supplied by IPL to other Customers. Equipment with excessive starting currents, or has intermittent or rapidly fluctuating load characteristics, shall not be connected to IPL's lines without prior arrangement with IPL. If the Customer's use of such

equipment requires the installation of separate or additional transformer capacity, IPL may, upon request from the Customer, furnish and maintain such separate or additional transformer capacity. The Customer shall pay to IPL, in addition to the bill for electric service under the applicable rate schedule, all costs for these changes.

- B.** IPL must be notified at least three (3) business days prior to the Customer installing any single-phase motors larger than 7½ horsepower, heating or cooking appliances greater than 10 kilowatts, or any special or unusual equipment so that IPL can confirm if existing power lines and equipment are adequate to handle the increased load.
- C.** Electric service is subject to occasional rapid voltage variations which may adversely affect the operations of sensitive controls on a Customer's electrical equipment. Devices are available for use with most electric equipment that will minimize the effect of such disturbances. Upon request, IPL will suggest appropriate devices for specific application and will advise on their correct adjustment and setting. IPL will not assume liability for damage to the Customer's equipment nor to disturbances in any Customer processes arising from such variations.
- D.** Computer installations may require special consideration and protection by the Customer. Upon request, IPL will assist the Customer with the planning of such special service protections.
- E.** When lightning arresters are installed by the Customer, they must be connected to the Customer's Facilities on the load side of their main entrance fuses or circuit breakers.
- F.** A fuse or circuit breaker shall not be installed in the neutral or grounding conductor of the service entrance.
- G.** It is recommended that the neutral grounding conductor be the same size as the current carrying conductors. If a reduced neutral is installed, it must be sized in accordance with the NEC and approved by the City's electrical inspector.

SEC. 2.8 MOTORS

A. Single-Phase, 120/240 Volts

1. Starting inrush current for single or multiple motors shall be limited at any instant to 50 amperes at 120 volts or 150 amperes at 240 volts. This also applies to air conditioning units. The running power factor of motors shall not be less than 0.85.

B. Three-Phase

1. The permissible starting inrush current for three-phase, 60 hertz motors operated from a 480 volt supply is limited by the effect on other motors and on the Distribution Systems of the Customer and IPL. The Customer must notify IPL of the maximum size and type of motor to be served, as well as the aggregate of all motor loads, so IPL can assure that proper service to all Customers on the affected segment of its Distribution System will be maintained.
2. The permissible starting inrush current for three-phase, 60 hertz motors operated from a 120/208 volt, four-wire supply is limited by the effect on lighting and other equipment connected at 120 volts and on the Distribution Systems of the Customer and IPL. The Customer must notify IPL of the maximum size and type of motor to be served, the aggregate of all motor loads and the type of lighting and other equipment to be served at 120 volts so IPL can assure that proper service to all Customers on the affected segment of its Distribution System will be maintained.
3. In both of the above cases, a limitation on the motor inrush current may be necessary which can be accomplished by using proper motor starting devices.

C. Motor Protection

1. IPL uses single-pole switches and single-phase fuses in its Distribution System. Accordingly, the Customer is expected to protect all of its three-phase motors and equipment from a single-phase operating condition. In addition, suitable protection must be provided by the Customer for all motors and related equipment in accordance with the NEC in order to protect the motor and equipment from improper or dangerous operation due to motor overloads or the failure to start.
 - a. All motors shall be protected against overload by the installation of adequate over-current, thermal protective devices in all phases.
 - b. Three-phase motors that operate apparatus that may be subjected to damage due to a reversal of rotation shall be protected with reverse-phase relays.
2. IPL shall not be held responsible for any damage to Customer's equipment due to failure to use, improper use, or malfunction of protective devices.

SEC 2.9 OTHER EQUIPMENT**A. Welding**

The Customer must notify IPL prior to installation of any welding equipment. The Customer will also need to provide information on all the characteristics of the welder, what it will be used for and the timing of welding operations so that IPL can assure availability of proper voltage at the welder and to minimize objectionable voltage fluctuations to other Customers.

B. Heating

Special one- or two-meter electric heating rates are available to all Customers who use electric comfort heating equipment (including add-on heat pumps) where the space heating equipment is permanently installed, thermostatically controlled and of a size and design sufficient to heat an entire building. IPL specialists are available to consult with Customers regarding the economics and metering of space heating systems. In order for these rates to become effective, IPL must be notified by the Customer. Special rates are subject to future change or discontinuance.

C. Special or Unusual Equipment

Power factor corrective equipment, flashing signs, high frequency equipment, spark discharge devices, radio transmitters, x-ray machines, experimental devices, or any other equipment which could cause abnormal voltage fluctuations shall be designed and operated so as not to adversely disturb IPL's electrical system. Customers must inform IPL of the characteristics of any such equipment prior to placing it in service. If a Customer uses its building wiring as a carrier system for communication or signaling purposes, the Customer shall install suitable electrical filtering equipment to keep IPL's Facilities free from carrier frequency currents.

SEC. 2.10 COGENERATION

- A.** Any Customer contemplating the operation of generating equipment in parallel with IPL Facilities shall contact IPL for information regarding terms, conditions and requirements for interconnection with IPL Facilities.
- B.** The Customer shall submit to IPL detailed plans, specifications, equipment description and other details pertinent to the proposed installation as may be required by IPL. These plans, specifications, etc., must be approved by IPL, in writing, before parallel operation will be allowed.