

ELECTRIC RULE 2

CHARACTER OF ELECTRIC SERVICE

A. GENERAL

The character of service available at a premises must be ascertained by inquiry at the Public Utilities Engineering Section, 3900 Main Street, 4th Floor, City Hall, telephone 826-5421. All standard voltages and phases may not be available at all premises.

B. FREQUENCY, PHASE AND VOLTAGE

1. Service supplied will be alternating current at a frequency of 60 hertz and either single-phase or three-phase.

2. Customer Service Voltages

a. Single-Phase

(1) Standard single-phase service voltages are 120, 120/240, 120/208, 240 and 480 volts.

Two-wire 120, 240 or 480 volts services are supplied only for street lighting, irrigation controllers or similar services and are limited to two 20-ampere circuits.

(2) All domestic services shall be single-phase, although exceptions may be made for service to apartment buildings, condominiums and other concentrated residential loads.

(3) Single-phase services shall generally not exceed 600 amperes capacity. Where the service capacity exceeds 600, the Utility's engineers will specify the number and size of service entrances and related metering facilities.

(4) Loads must be reasonably balanced between the phases of the service with respect to the neutral conductor.

b. Three-Phase

(1) Standard three-phase secondary service voltages are 120/208, and 277/480 volts. 120/240 and 2400/4160 volt service may be available at the Utility's discretion. Load connected to

three-phase services shall be reasonably balanced between phases and in respect to the neutral for 120/240 volt services.

- (2) The maximum demand allowed is 1,000 kVA for 120/208 or 120/240, 3,000 kVA for 277/480 and 6,000 kVA for 2400/4160 volts.
- (3) Three-phase service is generally not available in single family residential areas.
- (4) Three-phase primary service at 6930/12000 volts will be provided only when the size or special character of the load, or the location warrants furnishing such service as determined by the Utility.

C. UNDERGROUND SERVICE MANDATORY

Installation of electrical distribution service facilities for all new, relocated or rebuilt residential, commercial and industrial services shall be underground unless otherwise determined by the Utility.

D. MOTOR PROTECTION AND EQUIPMENT

1. The Customer is responsible for the protection of motors and other equipment against both momentary and sustained outages and loss of 1 or 2 phases.
2. Three-phase motors driving elevators, hoists, tramways, cranes, conveyors, or other equipment, which would create a hazard to life in the event of uncontrolled reversal of motor rotation, shall be provided with reverse phase and open phase protection to disconnect completely the motors from the line in the event of phase reversal or loss of one phase.
3. Wind machines thermostatically controlled with automatic reclosing switches must be equipped with time-delay devices at the Customer's expense, to permit the required adjustment of the time of reclosure after interruption of service. The time-delay device must be a relay or other type of equipment that can be set to delay with various time intervals the reclosing of the automatic switches so as to stagger the reconnection of the load on the Utility's system. The device must permit a variable overall time interval of not less than five minutes with adjustable time increments of not greater than ten seconds. The particular setting to be utilized for each separate installation is to be determined by the Utility from time to time in accordance with its operating requirements, and the Customer is to obtain from the Utility the setting for each installation.

E. FLUCTUATING POWER LOADS

Any Customer whose load is unusually intermittent or subject to rapid fluctuations as in the case of hoists, welders, large motors, x-ray equipment or furnaces, which may affect the service to other Customers, shall install at their own expense suitable equipment to reasonably limit the voltage fluctuations caused by the equipment involved.

F. WAVE FORM AND POWER FACTOR

The Utility may require that the wave form and power factor of current drawn by a Customer's equipment of any kind be in conformity with good engineering practice.

G. CHANGE OF CONNECTED LOAD

If a Customer plans to make any significant change either in the amount or character of the electrical load connected to their service, the Customer shall give the Utility written notice in sufficient time for the Utility to modify its service facilities, if necessary, before the Customer makes the changes. The cost of modifying the Utility's facilities will be charged to the Customer in accordance with Rule No. 11.