

REGULATION NO. 5

REQUIREMENTS AND
RESTRICTIONS ON CUSTOMER'S EQUIPMENT
AND SERVICE USAGE

A. RESALE OF ELECTRIC ENERGY:

No customer shall resell any of the energy received by him from the District to any other person, firm or corporation on the customer's premises or for use on any other premises, except that the owner or lessee of an apartment house, court group, mobile home park, RV park or similar multiple occupancy facility may resell to the tenants therein, provided that such energy is resold at rates not in excess of the rates of the District that would apply in the event that energy were supplied to the subcustomer directly by the District and shall be in accordance with Regulation No. 16. In the event that such energy is resold, otherwise than as provided in this paragraph, the District shall have the right, at its option, either to discontinue service to the customer or to furnish electric energy directly to the subcustomer. This regulation is not intended to apply to public utilities or municipalities purchasing energy under wholesale-power schedules for resale purposes.

B. CONNECTED LOAD DEFINED:

1. General:

The customer's "connected load" shall signify the rated capacity of the maximum load that can be energized and operated directly and simultaneously from the District's lines.

For the purpose of determining rates and minimum charges, "connected loads" shall be determined as follows:

Each horsepower of rated capacity of standard motors, each kilowatt of rated capacity of stationary apparatus, other than standard distribution transformers, and each kilovolt-ampere of standard distribution transformer capacity and kilovolt-ampere of output capacity of frequency changers shall be considered as equivalent to one kilowatt of "connected load." In cases of hoists, elevators, welding machines, furnaces and other installations where the energy demand is intermittent or subject to violent fluctuation, or in the case of multiple-rated motors, or where "connected loads" are indeterminate or transient in nature, the District shall have and hereby reserves the right to establish the basis of determining "connected loads."

2. Transformer Banks:

Where standard distribution transformers are connected in banks for the purpose of securing distribution voltages other than that of the service supplied, either by three transformers in a bank forming a star or a closed delta connection or by two transformers in a bank forming an open delta or open wye connection, each such

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bank shall be considered as one unit of "connected load" with the capacity of the unit expressed in kilowatts as an amount equivalent to the sum of the kilovolt-ampere ratings of all transformers in the bank.

3. Loads That Are Intermittent or Subject to Violent Fluctuations:

Hoists and elevators, or any other installations where the energy demand is unusually intermittent, shall be considered by the District as "connected load" on the basis of a standard intermittent rating thereof.

Spot-welding and alternating-current arc-welding machines or furnaces, X-ray apparatus or any other installations where the energy demand is subject to violent fluctuations shall be considered by the District as "connected load" on the basis of one horsepower for each kilovolt-ampere of maximum instantaneous load.

4. Multiple-Rated Motors:

Motors with multiple rating shall be considered "connected load" on the basis of the high rating expressed in horsepower.

5. Indeterminate and Transient Loads:

When the rating on the nameplate of any unit of load is not correct for any reason, or the nameplate is missing, the District will establish a rating for such unit on the basis of ratings of similar standard equipment, or as provided in these regulations, and the "connected load" shall be determined on the basis of such ratings.

All testing panels or testing circuits shall be considered as "connected load" on the basis of the maximum capacity agreed upon between the District and the customer, and the circuit or panel shall be limited to such capacity by a suitable load-limiting device provided by the customer and acceptable to the District.

Portable loads for use on a customer's premises shall be counted as "connected load" in determining minimum charges on the basis of the sum of the ratings of all units of load that are simultaneously used as determined by the District.

6. Condensers, Regulators, Balancers, Et Cetera:

Where a condenser is used solely for the purpose of correcting power factor or where, as determined by the District, it is found that a regulator, balancer or any other device is installed by the customer solely for the purpose of maintaining favorable voltage or load characteristics, such equipment shall not be considered as "connected load."

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7. Autotransformers:

The load connected to an autotransformer shall be considered as energized directly from the District's lines, and such load and not the autotransformer itself shall be considered as "connected load."

8. Circuit Breakers, Et Cetera:

Circuit breakers, switches, fuses and similar load-limiting devices rated in amperes shall not be considered as a basis of "connected load," except when loads connected thereto are indeterminate or transient in character, in which case the maximum kilovolt-ampere of capacity shall be agreed upon between the District and the customer; and the load shall be limited to such capacity by a suitable load limiting device installed by the customer and acceptable to the District; and each kilovolt-ampere of such capacity shall be considered equivalent to one horsepower of "connected load."

9. Control Apparatus:

Control apparatus such as overload or under-voltage relays, pilot lights, magnetic brake releases and control panels on freight and passenger elevators, automatic printing press controls and any device acting in an auxiliary way to control motor-operated machines shall not be considered as "connected load."

C. SPECIAL VOLTAGE REGULATION:

When special voltage regulation, surge protection, voltage spike filtration, noise filtration and/or isolation are required to operate computers and/or other electronic equipment, it is the responsibility of the customer to provide, install and maintain such power conditioning devices.

D. MOTOR-SIZE LIMITATIONS:

The District may and hereby does reserve the right to limit the size of the largest motor that may be operated on any part of its system.

E. MOTOR PROTECTION REQUIRED:

1. General:

All installations shall be made in conformity with the rules and regulations of the National Board of Fire Underwriters and of the Division of Industrial Safety of the state of California. Each customer shall install and maintain, in good working order, adequate motor protective devices as specified below. The District shall not be liable for any inconvenience, loss or damage caused by failure on the part of the customer to install and properly maintain such protective devices.

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2. Overload Protection:

All motors whose rated voltage does not exceed 480 volts and whose capacity is not in excess of 100 horsepower shall be provided with approved fuses of proper rating. Where the voltage exceeds 480 volts or the capacity of a motor exceeds 100 horsepower, overload relay coils or automatic oil switches shall be provided. The installation of overload relays or automatic oil switches and no-voltage releases is recommended on all motors, not only as an additional protection but as means of reducing the cost of refusing.

3. No-Voltage Release:

Motors using rheostat, split-phase starting boxes, compensators, or any motors that cannot be subjected to full line voltage at starting, with safety to the customer's and also the District's equipment, must be provided with a device to ensure that on failure of voltage, the motors will be disconnected from the line, or the starter, if one is used, will be returned to the starting position.

4. Phase Reversal:

Reverse-phase relays and circuit breakers or equivalent devices are recommended on all polyphase elevator installations, cranes and similar service to protect the installation in case of phase reversal or loss of one phase.

F. MOTOR STARTING CURRENT LIMITATION:

For infrequently started motors, the instantaneous current as determined by tests or based on values guaranteed by the manufacturers drawn from the line by any motor, must not exceed the value for the rated horsepower of such motor as obtained from the following tables:

ALTERNATING CURRENT-SINGLE PHASE-LOCKED
ROTOR VALUES AT 240 VOLTS

<u>Size of Motor</u>	<u>Allowable Starting Current</u>
1/2 horsepower and less	20 amperes
3/4 and 1 horsepower	27 amperes
1-1/2 horsepower	30 amperes
2 horsepower	40 amperes
3 horsepower	60 amperes
5 horsepower	100 amperes
7-1/2 horsepower	110 amperes
10 horsepower	147 amperes

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ALTERNATING CURRENT-THREE PHASE-LOCKED
ROTOR VALUES

<u>Size of Motor</u>	<u>Amperes per Phase</u>	
	<u>240 Volt</u>	<u>480 Volt</u>
3 horsepower	60	30
5 horsepower	86.6	43.3
7-1/2 horsepower	115	58
10 horsepower	141	70.5
15 horsepower	197	98.5
20 horsepower	251	125
25 horsepower	304	152
30 horsepower	360	180
35 horsepower	370	185
40 horsepower	380	190

1. All motors 50 horsepower and above and all frequently started motors should be reviewed and the amount of voltage flicker calculated to prevent problems.
2. Motors 15 horsepower and above that are started frequently (more than one start per hour) may require a starter or other means employed to limit excessive voltage fluctuations. Motors larger than those listed in the tables must be reviewed by the District prior to purchase or installation.
3. All three-phase motors above 75 horsepower should be required to have starters. The type of starter will have to be determined by the Distribution Unit based upon the voltage flicker calculations.
4. Multiple motors shall not be started simultaneously.
5. The starting voltage on motors shall not exceed a 3-percent voltage drop.

The values given in the above tables are the "locked rotor values" that may be obtained from the manufacturer or by test. "Free rotor" current values are those indicated by a suitable well-damped ammeter located in the motor circuit on the line side of the starting device, if one is used, with the motor connected to its rated load and the starter in the starting position. In case the "free rotor" value is known or determined by test, such value shall not exceed 75 percent of the "locked rotor" value indicated above.

G. POWER FACTOR CORRECTION:

Where the customer has installed neon lamps, mercury vapor lamps, fluorescent lights, welding transformers or any other electrical equipment or devices of low power factor, and

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is being served on general service schedules, the District may require the customer to provide, at his own expense, power factor corrective equipment to increase the power factor of any such devices to not less than 90 percent (lagging or leading).

H. IMPAIRMENT OF SERVICE TO OTHER CUSTOMERS:

The District reserves the right to refuse to supply loads of a character that may, in its judgement, seriously impair service to any other customer. In case of joists, elevator motors, welding machines, furnaces and other installations of like character where the use of electric energy is intermittent or subject to violent fluctuations, the District may require to limit reasonably such fluctuations.

The District shall not be required to furnish electric energy for the operation of any apparatus or appliances, the operation of which will, in the opinion of the District, be detrimental to the service of other customers in the immediate neighborhood or supplied from the same distribution lines; and the District shall have the right to discontinue electric service to any customer who shall continue to use appliances or apparatus detrimental to the service after being notified by the District of such detriment to the service.