Sheet 1

RULE 2

DESCRIPTION OF SERVICE

A. General

1. The character of service available at any particular location should be ascertained by inquiry at the Utility's office.

2. The Utility's rate schedules are applicable for service where the customer purchases his entire electrical requirements from the Utility, except when such schedules specifically provide otherwise.

3. Alternating current service of approximately 60-cycle frequency will be supplied.

4. Voltages referred to in the tariff schedules are nominal voltages.

B. Phase and Voltage Specifications

1. Standard voltages of the Utility are as follows:

a. Distribution voltages -- 120, 120/208, 120/240, 240, 480, 277/480, 2400, 4160, 6930 and 12,000 volts, where available and applicable.

b. Voltages of 69,000 volts and above are transmission voltages.
For its operating convenience, the Utility may elect to supply a customer from lines of transmission voltage.

2. Customer Service Voltages

a. Under all normal load conditions, distribution circuits will be operated so as to maintain secondary service voltage levels to customers within the voltage ranges specified below:

Nominal Two-Wire And Multi-Wire Service Voltage	Minimum Voltage To All Services	Maximum Service Voltage On Residential And Commercial Distribution Circuits	Maximum Service Voltage On Agricultural And Industrial Distribution Circuits
120	114	120	126
208	197	208	218
240	228	240	252
277	263	277	291
480	456	480	504

(Continued)

RULE 2

DESCRIPTION OF SERVICE

B. Phase and Voltage Specifications (Continued)

2. Customer Service Voltages (Continued)

b. Exceptions to Voltage Limits. Voltage may be outside the limits specified when the variations: L

(1) Arise from the temporary action of the elements.

(2) Are infrequent momentary fluctuations of a short duration.

(3) Arise from service interruptions.

(4) Arise from temporary separation of parts of the system from the main system.

(5) Are from causes beyond the control of the Utility.

3. Customer Utilization Voltages

a. All customer-owned utilization equipment must be designed and rated in accordance with the following utilization voltages specified by the American National Standard C84.1 if customer equipment is to give fully satisfactory performance: L

Nominal Utilization Voltage	Minimum Utilization Voltage	Maximum Utilization Voltage
120	110	125
208	191	216
240	220	250
277	254	289
480	440	500

b. The difference between service and utilization voltages are allowances for voltage drop in customer wiring. The maximum allowance is 4 volts (120 volt base) for secondary service.

c. Minimum utilization voltages from American National Standard C84.1 are shown for customer information only as the Utility has no control over voltage drop in customer's wiring.

d. The minimum utilization voltages shown in 3.a. above, apply for circuits supplying lighting loads. The minimum secondary utilization voltages specified by American National Standard C84.1 for circuits not supplying lighting loads are 90 percent of nominal voltages (108 volts on 120 volt base) for normal service. L

(Continued)

RULE 2

DESCRIPTION OF SERVICE

B. Phase and Voltage Specifications (Continued)

3. Customer Utilization Voltages (Continued)

e. Motors used on 208 volt systems should be rated 200 volts or (for small single-phase motors) 115 volts. Motors rated 230 volts will not perform satisfactorily on these systems and should not be used. Motors rated 220 volts are no longer standard, but many of them were installed on existing 208 volt systems on the assumption that the utilization voltage would not be less than 187 volts (90 percent of 208 volts).

4. Single-phase Service L

a. General

Volts	Minimum Connected Load Required	Maximum Connected Load Allowed
120	None	1-15 amp & 1-20 amp branch circuit
120/240 or 240	None	400 amp main switch
480	15 kva	Varies with location
2400 or or over	Varies with location	Varies with location

b. Where the Utility maintains a 4-wire wye-connected 120/208 volt transformer, single-phase service is supplied at 120/208 volts, 3-wire, for which the maximum size main switch allowed is 200-ampere capacity. Loads on single-phase service must be balanced between phases in accordance with good engineering practice, as determined by the utility; however, in no case will the load on any one phase exceed twice that on any other phase. Loads requiring in excess of a 200-ampere main switch will be supplied at 120/208 volts, 3-phase, 4-wire. T T T N N T

c. The maximum size 120 volt single-phase motor allowed is 1 1/2 hp. The maximum size single-phase motor permitted is 10 hp.

d. Single-phase service may be supplied to installations having a proposed main switch in excess of the limits or switch capacities specified above, provided approval of the Utility has been first obtained as to the number and size of switches, circuits and related facilities. 120/240 volt installations may be supplied from two or three separate 120/240 volt service connections to one meter. The connected load on any service connection shall not be greater than twice that on any other connection. L

L

(Continued)

RULE 2

DESCRIPTION OF SERVICE

B. Phase and Voltage Specifications (Continued)

5. Three-phase Service

a. The minimum connected load requirement for 3-phase service is dependent on the nature and availability of the Utility's facilities at any specific location.

Volts	Maximum Demand Allowed	Maximum Main Switch Capacity Allowed
208	1,000 kva	4,000 amperes
240	1,000 kva	4,000 amperes
480	3,000 kva	4,000 amperes
4,160	Varies with location	Varies with location
12,000	Varies with location	Varies with location

b. Loads on 3-phase service must be balanced between phases in accordance with good engineering practice, as determined by the Utility; however, in no case will the load on any one phase exceed twice that on any other phase.

c. Three-phase service may be supplied to installations having a proposed main service switch in excess of the switch capacities specified above, provided approval of the Utility has first been obtained as to the number and size of switches, circuits and related facilities. Such service may be supplied from two or three separate service connections to one meter. The connected load on any service connection shall not be greater than twice that on any other service connection.

6. Three-phase, 4-wire Service

a. Service may be supplied at 120/208 volts 4-wire wye-connected where the Utility does not maintain 4-wire secondary 3-phase mains, provided: (1) written application is made for such service by the customer; (2) the customer's load is of such a size as to require an individual transformer installation of not less than 75 kva of transformer capacity; and (3) the customer provides space acceptable to the Utility on his premises to accommodate the installation of the Utility's facilities.

b. In underground areas where the Utility maintains 120/208 volt or 240 volt 3-phase mains, service may be supplied at 277/480 volts, 4-wire wye provided: (1) written application is made for such service by the customer; and (2) the customer's load is of such a size as to require an individual transformer installation of not less than 75 kva, and (3) the customer provides space acceptable to the Utility on his premises to accommodate installation of the Utility's facilities.

(Continued)

RULE 2

DESCRIPTION OF SERVICE

B. Phase and Voltage Specifications (Continued)

6. Three-phase, 4-wire Service (Continued)

c. Service may be supplied at 120/240 volts 4-wire delta-connected where the Utility does not maintain 4-wire secondary 3-phase mains, provided: (1) written application is made for such service by the customer; (2) the customer's load is of such a size and characteristic as to require in the opinion of the Utility an individual transformer installation; (3) the unbalance between phases is acceptable to the Utility; and (4) the customer provides space acceptable to the Utility on his premises for installation of the Utility's facilities when, in the opinion of the Utility, such space is necessary.

7. At the option of the Utility, the above voltage and phase specifications may be modified because of service conditions at the location involved.

8. The Utility may limit the size of the largest motor that may be operated on any part of its system.

9. Existing customers receiving electric service at 480-volts, or less shall provide written notification to the Utility a minimum of 30 days in advance of connecting all new electric loads with a rating of 20kW, or greater, or smaller loads added over a 12-month period of time with aggregate ratings totaling 20kW, or greater.

10. Existing customers receiving electric service at over 480-volts shall provide written notification to the Utility a minimum of 30 days in advance of connecting all new electric loads with a rating of 200kW, or greater; or smaller loads added over a 12-month period of time with aggregate ratings totaling 200kW, or greater.

C. Motor Protection and Equipment

Customer's motor equipment must conform with the following requirements:

1. Motors that cannot be safely subjected to full rated voltage on starting, or that drive machinery of such a nature that the machinery itself or the product it handles will not permit the motor to resume normal speed upon restoration of normal supply voltage, shall be equipped with devices that will disconnect them from the line on failure of supply voltage and that will prevent automatic reconnection of the motors on restoration of normal supply voltage.

2. All motors of 1 hp or larger shall be equipped with thermal relays, fuses, or other automatic overcurrent interrupting devices to disconnect completely such motors from the line as a protection against damage due to overheating.

3. All three-phase motors shall be provided with reverse-phase and open-phase protection to completely disconnect the motors from the line in the event of phase reversal or loss of one phase. The Utility assumes no liability for equipment damaged by a loss of phase or a phase reversal condition.

(Continued)

RULE 2

DESCRIPTION OF SERVICE

C. Motor Protection and Equipment (Continued)

4. Multiple installations of wind machines thermostatically controlled with automatic reclosing switches must be equipped, at the customer's expense, with suitable time-delay devices as hereinafter specified to permit the required adjustment of the time of reclosure after interruption of service.

A suitable time-delay device, within the meaning of this rule, is a relay or other type of equipment that can be preset to delay with various time intervals the reclosing of automatic switches (and the consequent starting up of electric motors on the wind machines) and to stagger the reconnection of the load on the Utility's system. Such device must be constructed so as effectively to permit a variable over-all 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 must obtain from the Utility, the setting for each installation as thus determined.

D. Allowable Motor Starting Currents

1. The starting current drawn from the Utility's lines shall be considered the nameplate locked rotor current, or that guaranteed by the manufacturer. At its option, the Utility may determine the starting current by test, using a stop ammeter with not more than 15% overswing; or an oscillograph disregarding the value shown for the first 10 cycles subsequent to energizing the motor.

If the starting current for a single motor exceeds the value stated in the following tables, reduced voltage starting or other suitable means must be employed, at the customer's expense, to limit the current to the value specified, except where specific exemptions are provided in Section D.2 or 3.

TABLE 1
Alternating Current - - Single-Phase Motors
Allowable Locked Rotor Currents

Rated Size	120 Volts	208 Volts	240 Volts
1 hp & less	46 amperes	32 amperes	27 amperes
11/2 hp		40 amperes	34 amperes
2 hp		53 amperes	46 amperes
3 hp		79 amperes	69 amperes
5 hp		133 amperes	115 amperes
7 1/2 hp		187 amperes	163 amperes
10 hp		250 amperes	218 amperes

(Continued)

RULE 2

DESCRIPTION OF SERVICE

D. Allowable Motor Starting Currents (Continued)

TABLE 2
Alternating Current - - Three-Phase Motors
Allowable Locked Rotor Currents

Rated Size	208 Volts	240 Volts	480 Volts
3 hp	69 amperes	60 amperes	30 amperes
5 hp	100 amperes	87 amperes	43 amperes
7 1/2 hp	131 amperes	115 amperes	58 amperes
10 hp	161 amperes	141 amperes	71 amperes
15 hp	230 amperes	201 amperes	100 amperes
20 hp	308 amperes	268 amperes	134 amperes
25 hp	380 amperes	335 amperes	168 amperes
30 hp	456 amperes	402 amperes	201 amperes
40 hp	608 amperes	536 amperes	268 amperes
50 hp	770 amperes	670 amperes	335 amperes
over 50 hp --	The Utility should be consulted for allowable locked rotor currents.		

2. Where service conditions permit, subject to the Utility's approval, reduced-voltage starters may be omitted in the original installation until such time as the Utility may require the installation of a reduced-voltage starter to be made. Similarly, the Utility may at any time require starting current values lower than set forth herein, where conditions at any point on its system require such reductions to avoid interference with service to the customer or any other customer.

3. Reduced-voltage starters may be omitted on any motor of a group installation, provided its starting current without starter does not exceed the allowable starting current of the largest motor of the group.

E. Interference With Service

1. Customers who operate equipment that causes detrimental voltage fluctuations (such as, but not limited to, hoists, welders, radio transmitters, X-ray apparatus, elevator motors, compressors, and furnaces) must reasonably limit such fluctuations upon request by the Utility or discontinue service at the request of the Utility. The customer will be required to provide whatever corrective measures are necessary.

2. Arc furnace service installations are subject to the Utility's approval.

3. Any customer who superimposes a current of any frequency upon any part of his electrical system, other than the current supplied by the Utility, shall, at his expense, prevent the transmission of such current beyond his electrical system.

(Continued)

RULE 2

DESCRIPTION OF SERVICE

F. Welder Service

1. **Rating of Welders**: Electric welders will be rated for billing purposes as follows:

a. **Motor Generator Arc Welders**.
The horsepower rating of the motor driving a motor generator type arc welder will be taken as the horsepower rating of the welder.

b. **Transformer Arc Welders**.
Nameplate maximum kva input (at rated output amperes) will be taken as the rating of transformer type arc welders.

c. **Resistance Welders**.
Resistance welder ratings will be determined by multiplying the welder transformer nameplate rating (at 50% duty cycle) by the appropriate factor listed below:

Type of Welder	Transformer Nameplate Rating @ 50% Duty Cycle	Factor: Utility-Owned Distribution Transformers	Factor: Customer-Owned Distribution Transformers
Rocker Arm, Press or Projection Spot	20 kva or less	.60	.50
Rocker Arm or Press Spot	Over 20 kva	.80	.60
Projection Spot	21 to 75 kva, incl.	.80	.60
Flash or Butt	100 kva or over	.80	.60
Seam or Portable Gun	All sizes	.80	.60
Flash or Butt	67 to 100 kva, incl	*	*
Projection Spot	Over 75 kva	1.20	.90
Flash or Butt	66 kva or less	1.20	.90

* Each flash or butt welder in this group will be rated at 80 kva where distribution transformer is owned by the Utility or 60 kva where distribtuion transformer is owned by the customer.

(Continued)

RULE 2

Sheet 9

DESCRIPTION OF SERVICE

F. Welder Service (Continued) L

1. **Ratings of Welders**. (Continued)

d. Ratings prescribed by a., b., and c., above normally will be determined from nameplate data or from data supplied by the manufacturer. If such data are not available or are believed by either the Utility or customer to be unreliable, the rating will be determined by test.

e. If established by seals approved by the Utility, the welder rating may be limited by the sealing of taps which provide capacity greater than the selected tap and/or by the inter-locking lockout of one or more welders with other welders.

f. When conversion of units is required for tariff application, one welder kva will be taken as one horsepower for tariffs stated on a horsepower basis and one welder kva will be taken as one kilowatt for tariffs stated on a kilowatt basis.

2. **Billing of Welders**. Welders will be billed at the regular rates and conditions of the tariffs on which they are served, subject to the following provisions:

a. Connected Load Type of Schedule.

Welder load will be included as part of the connected load with ratings as determined under Section 1. above, based on maximum load that can be connected at any one time, and no allowance will be made for diversity between welders.

b. Demand Metered Type of Schedule.

Where resistance welders are served on these schedules the computation of diversified resistance welder load shall be made as follows:

Multiply the individual resistance welder ratings, as prescribed in Sections F.1.c. to F.1.f. inclusive, above, by the following factors and add the results thus obtained:

1.0 times the rating of the largest welder
0.8 times the rating of the next largest welder
0.6 times the rating of the next largest welder
0.4 times the rating of the next largest welder
0.2 times the rating of all additional welders

If this computed diversified resistance welder load is greater than the metered demand, the diversified resistance welder load will be used in lieu of the metered demand for rate computation purposes. L

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(Continued)

RULE 2

DESCRIPTION OF SERVICE

G. Power Factor. The Utility may require the customer to provide, at the customer's expense, equipment to increase the operating power factor at the Utility's service connection point to the customer to not less than 90%, lagging or leading. L

H. Wave Form. The Utility may require that the wave form of current drawn by equipment of any kind be in conformity with good engineering practice (such as the Institute of Electrical and Electronics Engineer's (IEEE) Recommended Practice 519).

I. Special Facilities and Maintenance

1. Special facilities are considered to be existing, enlarged or new facilities installed, used and/or maintained by the Utility at the applicants request in addition to, as enlargements of, as alternate to, or in substitution for, the standard facilities which the Utility would normally install, maintain or use and which represent additional costs to the Utility over normally installed facilities. These facilities can include but are not limited to power quality conditioning equipment, peaking equipment, customer connection costs, installation and/or maintenance of facilities downstream of the meter, facilities where the cost is in excess of the standard extension allowances, and alternate service equipment. Except where provided by rate schedule, installation and/or maintenance of special facilities will be made at the Utility's option, provided the type of special facilities requested is acceptable to the Utility and the Utility agrees to the installation and/or maintenance of the special facilities, under the following conditions:

   a. The applicant for special facilities is also an applicant for permanent electric service or is a customer for permanent electric service at the same location.

   b. The Utility will install/maintain the requested facility so long as the facility does not pose, in the opinion of the Utility, a hardship on the Utility.

   c. The applicant will execute a contract covering the installation and/or maintenance of special facilities. In addition to providing for the payment of charges as determined under a regularly filed rate schedule, the contract will provide for the following:

      (1) an estimate of the cost of the special facility that the applicant is requesting the Utility to install and/or maintain;
      (2) the one-time payment amount, if applicable, equal to the portion of the total estimated cost to be paid through a one-time payment adjusted by the factors in section d;
      (3) a calculation of any remaining balance of the total estimated cost that the Utility will incur that will be paid by the applicant through a monthly charge;
      (4) the cost to operate and maintain the special facility will be paid by the applicant through a monthly charge;
      (5) the term mutually agreed upon by the applicant and Utility, over which the applicant will make payments identified in paragraph 3 and 4 above. L

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(Continued)

RULE 2

DESCRIPTION OF SERVICE

I. Special Facilities and Maintenance (Continued) L

1. (Continued)

d. Financing Options:

At its sole option, the Utility may require the applicant to pay for all costs associated with the special facility through a one-time payment. The applicant will, if acceptable to the Utility, make monthly payments using the amounts determined in subsection c.3 and c.4 above against the factors set forth below.

Transmission	**One-Time**	**1 Year**	**2 Year**	**3 Year**	**5 Year**	**10 Year**	**20 Year**
Substation							
Capital	1.539	.1394	.0732	.0513	.0338	.0211	.0155
O&M	.2216	.0195	.0103	.0072	.0047	.0030	.0022
Overhead							
Capital	1.516	.1379	.0724	.0507	.0335	.0209	.0154
O&M	.2580	.0227	.0119	.0084	.0055	.0034	.0025
Underground							
Capital	1.552	.1361	.0715	.0501	.0330	.0206	.0152
O&M	.1343	.0118	.0062	.0043	.0029	.0018	.0013

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(Continued)

RULE 2

Sheet 12

DESCRIPTION OF SERVICE

I. Special Facilities and Maintenance (Continued) L

1. d. Financing Options: (Continued)

Distribution	One-Time	1 Year	2 Year	3 Year	5 Year	10 Year	20 Year
Substation							
Capital	1.474	.1331	.0699	.0489	.0323	.0202	.0148
O&M	.5605	.0493	.0259	.0182	.0120	.0075	.0055
Overhead							
Capital	1.523	.1375	.0722	.0506	.0334	.0209	.0153
O&M	.6314	.0556	.0292	.0204	.0135	.0084	.0062
Underground							
Capital	1.581	.1434	.0754	.0528	.0348	.0218	.0160
O&M	.1611	.0142	.0074	.0052	.0034	.0021	.0016
Transformers							
Capital	1.616	.1451	.0763	.0534	.0352	.0220	.0162
O&M	.1326	.0117	.0061	.0043	.0028	.0018	.0013
Service-Over							
Capital	1.721	.1694	.0890	.0623	.0411	.0257	.0189
O&M	.5391	.0475	.0249	.0175	.0115	.0072	.0053
Service-Under							
Capital	1.516	.1363	.0716	.0502	.0331	.0207	.0152
O&M	.1691	.0149	.0078	.0055	.0036	.0023	.0017
Meters							
Capital	1.541	.1377	.0724	.0507	.0334	.0209	.0154
O&M	.9281	.0817	.0429	.0301	.0198	.0124	.0091
Street Light							
Capital	1.868	.1774	.0932	.0653	.0431	.0269	.0198
O&M	.3323	.0293	.0154	.0108	.0071	.0044	.0033

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(Continued)

RULE 2

DESCRIPTION OF SERVICE

I. Special Facilities and Maintenance (Continued) L

1. (Continued)

e. Contracts for special facilities executed by applicants prior to the Commission approval of this replacement for Rule 2, shall remain in effect until terminated under the terms of said contracts, or by order of the California Public Utilities Commission, or as mutually agreed between the applicant and the Utility.

f. Where the annual consumption estimated for purposes of deriving the extension allowance to be provided new applicants is in dispute by the applicant and the Utility, the new applicant may pay 100% of the cost of the facilities to connect to the Utility's system. For up to a 10-year term, but not to exceed the amount paid by the applicant, refunds will be equal to 20% of the base rate revenues or such other amount deemed appropriate by the Utility.

g. If the applicant terminates the contract prior to the end of the contract term or if mutually agreed between the Utility and the applicant at anytime during the contract term, applicant shall execute a Buyout Agreement with Utility and make a one-time payment toward the applicant's outstanding balance remaining under the original contract between Utility and applicant for the requested special facility. To determine applicant's outstanding balance, the Utility will calculate a present value of the applicant's total remaining payments for the balance of the term of the original contract.

h. If it becomes necessary for the Utility to alter or rearrange the special facilities including but not limited to the conversion of overhead facilities to underground, applicant shall be notified of such necessity and shall be responsible for all costs the Utility incurs in converting this service or shall terminate service under this agreement. In order to terminate service under this agreement, applicant shall provide written notice of its intent to the Utility at least thirty (30) days in advance. applicant shall also execute a Buyout Agreement with Utility as set forth in subsection g. above.

i. Applicant understands that Utility does not guarantee electric service to be free from outages, interruptions, or curtailments and that the charges represent the additional cost associated with providing the special facilities rather than a guaranteed level of service or reliability. The applicant also understands that the installation of a special facility, unless the facility is expressly for the purpose of enhancing power quality, does not provide any enhanced power quality over the service the applicant would otherwise receive from the Utility.

j. Installation and/or maintenance of a Utility-owned special facility shall at all times be and remain the property of Utility.

k. In the event that Utility is prevented from completing the installation of the special facilities for reasons beyond its control of within twelve (12) months following the date of this Agreement, Utility shall have the right to terminate this Agreement upon thirty (30) days written notice to applicant. L

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(Continued)

RULE 2

Sheet 14

DESCRIPTION OF SERVICE

I. Special Facilities and Maintenance (Continued)

1. (Continued)

l. A monthly perpetuity charge shall be paid by applicant for Utility financed special facilities: T

Type of Facility	Monthly Charge
Transmission	1.45 percent
Distribution	1.61 percent
General Lighting	1.86 percent

D

J. Streetlight Energizing Charge for Customer-Owned Lights

1. Energizing Charge

Customers receiving service under Schedule LS-2 will be charged $30 per underground connection and $60 per overhead connection for energizing the facilities.

2. Periodic Update

The amount of the energizing charge will be updated based on the Wholesale Price Index. The Utility will prepare a contemplated rule revision for the above charge when the Wholesale Price Index has changed by more than 10% since the last revision of the charge.