

## DESCRIPTION OF UTILITY SERVICES

### RULE AND REGULATION 3

#### **A. GENERAL**

Rule and Regulation 3 describes Services that are offered within the jurisdictional boundaries of the City of Palo Alto. For Rules specific to each type of Service, please refer to the City's complete Utility Rules and Regulations which are published on the City's website.

#### **B. ELECTRIC SERVICE**

##### **1. BASIS OF SERVICE**

- a. Unless otherwise provided in a Rate Schedule or contract, CPAU's Electric rates are based upon the furnishing of Electric Service to Customer Premises at a single Point of Delivery at a single voltage and phase classification. Unless specified otherwise, each Point of Delivery will be metered and billed separately under the appropriate Rate Schedule. Any additional Service supplied to the same Customer at other Points of Delivery or at a different voltage or phase classification will be separately metered and billed.
- b. The type of distribution Service (voltage, Secondary, Primary) available at any particular location may be determined by inquiry to a CPAU Engineering representative.
- c. CPAU assumes no duty, responsibility or liability for inspecting, validating or approving the safe operating condition of the Customer's Service, appliances, or equipment downstream of the Utility Meter.

##### **2. LOCATION OF POINT OF SERVICE**

###### **a. SECONDARY SERVICE**

###### **1. OVERHEAD SERVICE AT SECONDARY VOLTAGES**

The Point of Service for Overhead Service at secondary voltages will normally be located at a power pole on the perimeter of the parcel to be served, which is, in CPAU's judgment, most conveniently located and in compliance with CPAU standards and specifications and applicable building and electrical codes.

###### **2. UNDERGROUND SERVICE AT SECONDARY VOLTAGE**

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The Point of Service for Underground Service at secondary voltages will normally be located at the Secondary connectors of the transformer serving the Customer's Load, or in the Secondary hand hole or utility box, if available.

#### **b. PRIMARY SERVICE**

The Point of Service for Primary Service will normally be at the point near the property line of the premises to be served which is, in CPAU's judgment, most conveniently located with respect to CPAU's transmission or distribution facilities.

#### **c. ALTERNATE DELIVERY POINTS**

1. Customers may request Secondary or Primary Services at an alternate Point of Delivery other than CPAU's normal Point of Delivery. If approved by CPAU, the Customer will be responsible for all costs of providing Secondary or Primary Services at the alternate location and may be subject to Special Facilities Charges.
2. If several buildings are occupied and used by one Customer in a single business or other activity, CPAU may, at its discretion, furnish Service for the entire group of buildings through one Service connection at one Point of Service.

### **3. EQUIPMENT REQUIREMENTS**

#### **a. PAD-MOUNTED EQUIPMENT**

All new equipment in underground areas required to provide Electric Service to a Customer will be pad-mounted. In addition, any three-phase Electric Service connection and any Electric Service connection rated greater than 400 Amps which is located either in an underground or overhead area must be served by underground cables and pad-mounted equipment.

The Utilities Director, or his/her designee, may authorize an exception to the pad-mounted requirements above when, in his/her opinion a pad-mounted equipment installation in any particular instance would not be feasible or practical, such as in locations with limited access or a lack of suitable space for utility equipment. Such installations will be considered "Special Facilities" as defined in Rule and Regulation 20, and the Applicant will be responsible for all costs as further described in Rule and Regulation 20.

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#### **b. ALTERNATE POINT OF DELIVERY LOCATIONS**

Alternate Point of Delivery locations cause delays in repairs or Service restoration during emergencies. If the Applicant wants a Point of Delivery at a location other than that determined by CPAU, CPAU will work with the Applicant to assist in the selection of, and must approve, the alternate Point of Delivery location for the Electric Service equipment within the boundaries of the Applicant's property. Alternate Point of Delivery locations will be considered "Special Facilities" as defined in Rule and Regulation 20, and the Applicant will be responsible for the initial cost of installation of such Electric Service equipment, as well as any future additional labor, equipment, and material costs incurred by CPAU to facilitate replacement, removal, or relocation of any Electric Service equipment which has been installed in an alternate Point of Delivery location at the Applicant's request.

#### **c. SCREENING**

Any installation intended to assist in visual screening of Electric Service equipment by landscaping or structures must be constructed in a manner which meets all of CPAU's clearance standards. CPAU will assist Customers/Applicants in identifying acceptable screening alternatives to minimize aesthetic impacts of Electric Service equipment. The plans for such screening must be approved by the CPAU prior to beginning work on the screening installation.

#### **4. EMERGENCY AND STANDBY SERVICES**

CPAU may provide back-up, Emergency, and other Standby Service to Customers, at its sole option and discretion, as Special Facilities. See Rule and Regulation 20 "Special Electric Utility Regulations" regarding special Service Facilities requirements.

#### **5. SERVICE DELIVERY VOLTAGE**

The following are the standard Service voltages normally available. Not all standard Service voltages are available at each Point of Delivery. These Service voltages are available in locations that already have this Service voltage and have sufficient capacity, as determined by CPAU, to serve the new Load. Any equipment installed on 120/240V, 3-wire or 240/120V, 4-wire Services must have the capability of converting to a 120/208V, 3-wire or 208Y/120V, 4-Wire Service.

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#### **a. DISTRIBUTION OF VOLTAGE**

Alternating-current Service will be regularly supplied at a nominal frequency of approximately 60-Hertz (cycles per second).

| <u>Single-Phase<br/>Secondary</u> | <u>Three-Phase<br/>Secondary</u> | <u>Three-Phase<br/>Primary</u> |
|-----------------------------------|----------------------------------|--------------------------------|
| 120/240V, 3-wire                  | 240/120V, 4-wire*                | 12,470, 3-wire                 |
| 120/208V, 3-wire                  | 208Y/120V, 4-wire                |                                |
|                                   | 480Y/277V, 4-wire                |                                |

\*Only available in special conditions as determined by the Electric Engineering Manager.

- b.** All voltages referred to in this Rule and appearing in some Rate Schedules are nominal Service voltages at the Point of Delivery. CPAU's facilities are designed and operated to provide sustained Service voltage at the Point of Delivery, but the voltage at a particular Point of Delivery will vary within satisfactory operating range limits.
- c.** In areas where a certain standard Secondary voltage is being delivered to one or more Customers, CPAU may require an Applicant for new Service in such areas to receive the same standard voltage supplied to existing Customers.
- d.** CPAU may change the voltage at which Service is delivered, including converting existing 4,160 volt Primary Service to 12,470 volt Service. If CPAU notifies the Customer that a Service voltage change is necessary, the Customer will be required to provide Service equipment capable of accepting the new voltage and meeting other CPAU requirements. The Customer will bear all costs of providing suitable Service equipment to receive Service at the new voltage.

#### **6. VOLTAGE AND FREQUENCY CONTROL**

- a.** Under normal Load conditions, CPAU's distribution circuits will be operated so as to maintain Service voltage levels to Customers within plus or minus 5 percent of the nominal Service voltage at the Point of Delivery. Subject to the limitations above, CPAU will maintain the voltage balance between phases as close as practicable to 2.5% maximum deviation from the average voltage between the three phases.

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- b. Voltages may be outside the limits specified above when the variations:
  - 1. arise from Service interruptions;
  - 2. arise from temporary separation of parts of the system from the main system;
  - 3. are minor momentary fluctuations and transient voltage excursions of short duration which may occur in the normal operation of CPAU system;
  - 4. are beyond CPAU's control.
- c. Due to conditions beyond the control of CPAU, the Customer, or both, there will be infrequent and limited periods when voltages will occur outside of the nominal Service voltage ranges. Utilization equipment may not operate satisfactorily under these conditions, and protective devices in the equipment may operate to protect the equipment.
- d. Where the operation of the Customer's equipment requires stable voltage regulation or other stringent voltage control beyond that supplied by CPAU in the normal operation of its system, the Customer, at its own expense, is responsible for installing, owning, operating, and maintaining any special or auxiliary equipment on the Load side of the Service Point of Delivery as deemed necessary by the Customer.
- e. The Customer will be responsible for designing and operating its Service facilities between the Point of Delivery and the utilization equipment to maintain proper utilization voltage at the line terminals of the utilization equipment.
- f. The Customer may not impose a Load on CPAU's system that will cause the voltage limits in this section to be exceeded for an adjacent Service delivery point.
- g. When there is reasonable indication of a problem, CPAU will test for excessive fluctuations at its own expense. Voltage checks requested by the Customer more than once in any twelve-month period will be paid by the Customer, unless CPAU determines that excessive voltage fluctuation exists that does not originate from the Customer's equipment.
- h. CPAU may institute measures to prevent the continuous operation of equipment detrimental to Service to other Customers or may discontinue Electric Service to the offending Customer. (See Rule and Regulation 20, Special Electric Utility

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Regulations).

- i. Customers are responsible for protecting their connected Loads, audio, video, and electronic equipment, including computers, from sudden voltage or frequency fluctuations outside nominal Service and frequency ranges. Such protection may include, but is not limited to, surge protectors.

## 7. GENERAL LOAD LIMITATIONS

### a. SINGLE-PHASE SERVICE

1. Single-phase Service normally will be 3-wire, 120/240 volts (or 3-wire, 120/208 volts at certain locations as now or hereafter established by CPAU) where the size of any single motor does not exceed 7-1/2 horsepower (10 horsepower at the option of CPAU). For any single-phase Service, the maximum Service size will be 400 amperes, unless approved by the Utilities Director or his/her designee. If the Load exceeds the capability of a 400-ampere single phase Service, then the Service will be three-phase.
2. In locations where CPAU maintains a 120/208 volt secondary system, 3-wire single-phase Service normally will be limited to that which can be supplied by a main switch or Service entrance rating of 200 amperes. Single-phase Loads in these locations in excess of that which can be supplied by a 200-ampere main switch or Service entrance rating normally will be supplied with a 208Y/120 volt, three-phase, 4-wire Service.

### b. THREE-PHASE SERVICE (480 VOLTS OR LESS)

| <u>Normal Voltage</u> | <u>Minimum Load Requirements</u> | <u>Maximum Demand Load Permitted</u> |
|-----------------------|----------------------------------|--------------------------------------|
| 240/120               | 5 hp, 3-phase connected          | 300kVA                               |
| 208Y/120              | Demand Load 75 kVA               | 500 kVA                              |
| 480Y/277              | Demand Load 75 kVA               | 2,500 kVA(See Note 1)                |

*Note 1.* Applicants or existing Customers with a planned or existing single or multiple building development having a maximum Demand in excess of 2500 kVA, as determined by CPAU, may be required to take delivery at the available primary voltage and are required to provide their own primary switchgear and transformer(s). Determination of maximum Demand and Service voltage will be made by CPAU and the decision of the Electric Engineering Manager will be final.

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1. Where three-phase Service is supplied, CPAU reserves the right to use single-phase transformers, connected open-delta or closed-delta, or three-phase transformers.
2. Three-phase Service will be supplied for installations meeting the requirements of section 7(b). If three-phase Service is not readily available, Service will be provided in accordance with Rule and Regulation 20, Special Electric Utility Requirements.
3. Residential Applicants or Customers whose load justifies a three-phase Service will be responsible for all labor and material costs required to provide Service, including the cost of the transformer. These installations are not considered "Special Facilities" as described in Rule and Regulation 20.
4. An Applicant or existing Customer requiring Service with a maximum Demand in excess of 75 kVA, as determined by CPAU, will be served by a pad-mount transformer. No submersible or vault-installed transformers in excess of 750 kVA will be installed by CPAU. Where an existing underground Service must be upgraded, the Customer will be required to provide adequate space for installation of the pad-mount transformer and associated equipment.

#### c. **THREE-PHASE SERVICE (OVER 480 VOLTS)**

The following three-phase primary voltage may be available as an isolated Service for a single Applicant, where that Applicant's peak demand justifies such voltage, as determined by CPAU in its sole discretion.

| <u>Nominal Voltage</u> | <u>Minimum Demand</u> | <u>Maximum Demand</u> |
|------------------------|-----------------------|-----------------------|
| 12,470                 | 1,000 kVA             | 10,000 kVA            |

#### 8. **TEMPORARY SERVICE**

Temporary Service is Electric Service which, as determined by CPAU in its sole discretion, is of an indefinite or impermanent duration at a single location, or any other Service which CPAU estimates will last less than one year. CPAU will furnish Temporary Service if the furnishing of such Service will not create undue

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hardship for CPAU, or its Customers, and if all of the following conditions are met:

- a. The Customer is solely responsible for any and all costs of CPAU's provision and/or removal of Temporary Service, including any Temporary Service and/or Connection Charges.
- b. The Applicant for such Temporary Service can apply for Service on an Application form provided by CPAU Engineering and must pay CPAU in advance the cost of installing and removing any facilities necessary in connection with the furnishing of Temporary Service by CPAU.
- d. If the Temporary Service connection time exceeds one year, the Customer must apply for an extension of the Temporary Service and pay applicable Charges. The Engineering Manager will determine if the Service should be reclassified as a permanent Service. If the Applicant fails to seek an extension for Temporary Service that exceeds one year, CPAU may disconnect the Service.

#### **9. SERVICE DOWNSTREAM OF METER**

CPAU assumes no duty or liability for inspecting, validating or approving the safe operating condition of the Customer's Service, appliances, or equipment downstream of the Utility Meter.

### **C. DARK FIBER OPTIC SERVICE**

Dark Fiber Optic Service includes the custom construction and licensing of single mode Fiber routes between points within the City of Palo Alto. It is the Customer's responsibility to establish all electronic devices and networks required to pass data over their licensed CPAU Dark Fiber routes.

#### **1. LICENSING SERVICES**

All Dark Fiber routes are licensed in accordance with the currently approved Dark Fiber Rate Schedules, and in compliance with the Utilities Rules and Regulations. See Rule and Regulation 26, "Special Fiber Optic Utility Regulations," regarding special Service requirements. All CPAU fibers terminate within the jurisdictional boundaries of the City of Palo Alto.



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#### 2. OTHER SERVICES

CPAU offers custom Dark Fiber construction and ancillary Services such as Fiber Optic cable splicing, engineering feasibility studies, and when specifically requested by the Customer, multimode Fiber Optic cable installations.

#### 3. QUALITY

Dark Fiber routes in the City of Palo Alto are comprised of single mode Fiber Optic cable that complies with generally accepted industrial standards and specifications. All construction is done using industry accepted techniques and procedures. All constructed routes are performance tested to assure quality standards are met.

### D. WATER SERVICE

#### 1. SOURCE OF SUPPLY

CPAU's primary source of Water is the Hetch Hetchy aqueduct system, managed by the San Francisco Public Utilities Commission (SFPUC). CPAU wells also provide Emergency supply. See Rule and Regulation 21, "Special Water Utility Regulations" regarding special Service requirements.

#### 2. QUALITY

Water quality information is available in the Annual Water Quality Report published by CPAU.

#### 3. CROSS CONNECTION CONTROL AND BACKFLOW PREVENTION ASSEMBLIES

As part of the City of Palo Alto's Water Service, the Utility maintains a Cross-Connection Control Program (CCCP) to safeguard the public drinking water system from pollutants and contamination. Cross-connections—any actual or potential connection between potable water and a non-potable source—can pose a risk to water quality. Backflow, the reversal of water flow from a Customer's Premise into the public water system, can introduce contaminants and compromise the safety of the water supply.

To prevent this, the City requires Backflow Prevention Assemblies at Service connections where a cross-connection hazard has been identified. Customers are responsible for ensuring that required Backflow Prevention Assemblies are installed, tested annually, and

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properly maintained in accordance with the California Health and Safety Code (HSC) Section 116555 (a)(2), and the latest Cross-Connection Control Policy Handbook adopted by the State Water Resources Control Board. The City provides annual notifications to Customers with testing requirements and maintains a list of certified backflow testers. Customers failing to meet the Cross Connection Control and Backflow Prevention Assembly requirements may experience Service interruptions, fees, or other enforcement actions necessary to protect the integrity of the public water system.

#### **4. PRESSURE**

Water pressure varies from 30 to 125 pounds per square inch. CPAU maintains an average of 50 pounds per square inch, with the maximum and minimum pressures being experienced at the lower and higher elevations of the Distribution System. CPAU assumes no responsibility for loss or damage due to lack of Water pressure but agrees to furnish such pressures, upon request, as are available in its general Distribution System. If low Water pressure occurs due to additional on-site development, it will be the responsibility of the Customer to replace the existing Water Service with a new Water Service designed for the current site. All costs of the required new Service upgrade will be borne by the Customer.

#### **5. TREATMENT**

CPAU does not treat Water supplied by the SFPUC. The pH of the Water supplied is adjusted by the SFPUC to reduce its corrosive action.

#### **6. SERVICE DOWNSTREAM OF METER**

CPAU assumes no duty or liability for inspecting, validating or approving the safe operating condition of the Customer's Service, appliances, or equipment downstream of the Utility Meter.

### **E. GAS**

#### **1. TYPES OF SERVICES**

CPAU provides Gas supply, transportation, and Distribution Services.

#### **2. KIND AND HEATING VALUE**

CPAU purchases Gas from multiple Gas suppliers. The heating value of Gas supplied

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varies. The average monthly heating value in British Thermal Units (Btu)-dry basis per cubic foot of the Gas served may vary within the limits of 750 to 1150 Btu. This average heating value is converted to a Therm factor for use as one of the factors used in calculating a composite multiplier for billing purposes. The Therm factor will be based upon the heat factor used by CPAU's supplier of Gas for the preceding month.

Gas is supplied by CPAU either at standard "low pressure" or at "medium pressure". Low pressure Service is available at all points where Gas is supplied. Where available from existing high pressure mains, at the option of CPAU, high pressure Service may be supplied. However, CPAU reserves the right to lower the pressure or to discontinue the delivery of Gas at high pressure.

The standard pressure for low pressure is seven inches of Water Column (WC), which is approximately 1/4 pound per square inch (psi) above atmospheric pressure. In limited circumstances, increased pressure may be provided for domestic use at 14" Water Column. This increased pressure will only be provided for domestic use if the houseline size required is greater than 2" diameter, or CPAU determines, based upon satisfactory information from the manufacturer, provided by the Customer, that an appliance to be located in the Customer's residence requires increased pressure at the inlet that cannot be obtained by resizing or relocating the houseline. Increased pressure may be provided for commercial uses only if the use of the houseline size required is greater than 4" diameter, or evidence as described above establishes that equipment on the site requires increased pressure at the inlet that cannot be obtained by resizing or relocating the houseline. For commercial uses, the available pressures are 7" WC, 14" WC (approximately 1/2 psi), 1 psi, 2 psi and 5 psi.

All increased pressure above 7" WC requires review and approval of the Engineering Manager, a plumbing permit, and testing of the existing Gas piping with a building Inspector present in accordance with the latest adopted version of the California Plumbing Code.

See Rule and Regulation 22, "Special Gas Utility Regulations" regarding special Service requirements.

### **3. DETERMINATION OF THERMS TO BE BILLED**

The unit of measure for billing is the Therm. Gas Meters measure the volume of Gas in cubic feet of gas (cf) at ambient temperature and pressure conditions. Therms are derived from the metered data by subtracting the Meter reading for the previous reading cycle from the current reading. The difference (uncorrected cf) is multiplied by the pressure factor

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required to convert the measured consumption volume to a standard volume (at standard temperature and pressure conditions). This standard volume, in pressure-corrected cf, is then multiplied by the Therm factor (a variable determined by periodic analysis of CPAU's Gas supply) to produce the final number of Therms billed. The composite correction factor (the product of the Therm factor and the pressure correction factor) is shown on bills under the heading "multiplier."

#### **4. SERVICE DOWNSTREAM OF METER**

CPAU assumes no duty or liability for inspecting, validating or approving the safe operating condition of the Customer's Service, appliances, or equipment downstream of the Utility Meter.

### **F. WASTEWATER COLLECTION AND TREATMENT**

#### **1. COLLECTION**

CPAU operates and maintains a Wastewater Collection System separate from the Storm and Surface Water Collection System. A connection to the Wastewater Collection System is required for all Water users where Wastewater Service is available.

For the disposal of Wastewater from basements and floors below ground level, pumps or ejectors are required for satisfactory drainage, as approved by the Water, Gas, and Wastewater Engineering Manager. If the elevation of the basement floor is above the rim elevation of the next upstream manhole, Applicant must provide a survey by a licensed Civil Engineer indicating the elevations of the basement floor and the rim elevation of the next upstream manhole. Submission of this survey and approval by the Engineering Manager is required for exemption from the pump/ejector requirement.

#### **2. REGULATION**

Chapter 16.09 of the Municipal Code regulates the discharge into the Wastewater Collection System of substances other than domestic Wastewater. See Rule and Regulation 23, "Special Wastewater Utility Regulations" regarding special Service requirements.

#### **3. TREATMENT**

The collection system transports the Wastewater to the Palo Alto Regional Water Quality Control Plant (RWQCP) for treatment. At this treatment plant, the City of Palo Alto processes the Wastewater from Mountain View, Los Altos, Los Alto Hills, Stanford

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University, and East Palo Alto Sanitary District, as well as its own. The treatment is performed in accordance with the National Pollution Discharge Elimination System Permit issued by the San Francisco Bay Area Regional Water Quality Control Board before the treated water is discharged into the San Francisco Bay Estuary.

#### **4. LIMITATION OF SERVICE**

CPAU reserves the right to limit the size of connection and the quantity of wastes disposed and to prohibit the use of the sewer system for disposal of toxic or hazardous wastes detrimental to the Wastewater system or treatment plant.

### **G. REFUSE SERVICE**

#### **1. REGULATION**

All Refuse Services are governed by Chapter 5.20 of the Palo Alto Municipal Code, regulations promulgated by the City Manager pursuant to Chapter 5.20, these Rules and Regulations, and the contract between the City and the City's contracted refuse collector. See Rule and Regulation 24, "Special Refuse Service Regulations" regarding special Service requirements.

#### **2. REFUSE COLLECTION**

Refuse Service is provided to all Customers by the City's contracted refuse collector. Customers must subscribe to and pay for Refuse Service and for a number of Containers to hold all Solid Waste created, produced or accumulated at or on their Premises during a one-week period, unless a different frequency for a collection schedule has been approved or directed by Public Works. Each Customer will receive collection Services on a specified day of each week and use the City contracted refuse collector's provided Containers for Service. Customers wanting to supply their own container must check with the City contracted refuse collector to ensure compatibility with the collection vehicles. The automatic standard Service for Solid Waste Service Charge is one 32-gallon Container for Residential Service and one 64-gallon Container for Commercial Service. All Customers may change Service levels to meet their refuse needs as specified above.

Solid Waste in excess of the Service Charge subscribed by the Customer will be removed by the City's contracted refuse collector for an additional Charge upon Customer request or notification. Customers exceeding their subscribed Service are required to subscribe to additional collection Services at the City-established rates.

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#### **H. STORM AND SURFACE WATER DRAINAGE**

##### **1. RESPONSIBILITY AND PURPOSE**

The City of Palo Alto Public Works Department is responsible for all Drainage Facilities in the street and public right of way that collect Storm and Surface Water and convey it to the major channels and creeks within the jurisdictional boundaries of the City of Palo Alto. Examples include curbs and gutters, catch basins, pipelines, culverts, street, channels and pumping stations. The purpose of the Storm and Surface Water control facilities is to improve the quality of control, or protect life or property from any storm, flood or surplus waters. See Rule and Regulation 25, “Special Storm and Surface Water Drainage Regulations,” regarding special Service requirements.

##### **2. STORM DRAINAGE FEE**

A Storm Drainage fee will be payable to the City monthly by the owner or occupier of each and every developed parcel in accordance with Rule and Regulation 25.

***(END)***