

**APPLICATION FOR SERVICE**  
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## 200.0 REQUESTS FOR SERVICE

Customers contemplating new meter installations or relocations shall contact the APS business office in that city or area for an approved service and meter location prior to proceeding with any electrical installation. By following this procedure, the Customer will eliminate inconvenience and delays in obtaining service by having to make unnecessary service entrance relocations or pay the expense incurred by APS for additional facilities to serve unauthorized meter locations.

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### 200.1 REQUIRED INFORMATION

Each prospective customer desiring new service and/or a change in existing service must make application for the same with APS. Consult Page "B" and "C" (in front of book) for the address and telephone number of the APS office in your area. The customer must provide the following information.

1. Applicant's name.
2. Property owner's name.
3. Official street address and the complete legal description of the property to be served.
4. Type of structure or facilities to be served. Square footage of building.
5. Site plans and building plans showing desired meter location.
6. The estimated loads - voltage and phase desired.
7. Type of cooling/heat.
8. Credit information.

**It is suggested that the necessary information be submitted to APS as early in the development process as possible to assure meeting the customer's completion schedule.**

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### 200.2 NORMAL SEQUENCE OF EVENTS

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#### 200.2-1 NEW SERVICE

1. Customer provides sufficient notice of intent to build. Large projects tend to require longer lead times.
2. Customer provides preliminary information during planning stage.

3. Customer provides engineering design drawings to APS.

These drawings must include:

- a. Electrical load calculations.
- b. Electrical plan showing the meter panel location.
- c. Electrical service entrance section drawings (see section 300) with official street address on copies.
- d. Water, sewer, telephone, cable television and any other sub-grade obstruction.
- e. Curb, gutter and paving plans.
- f. Landscaping (including retention basins) and sprinkler plans.

4. APS to engineer the electrical system up to the customer's meter panel.
5. Customer obtains all necessary permits from the appropriate inspection authority.
6. Customer to provide acceptable easements.
7. Customer may need to pay a cash advance to aid APS construction. This may or may not be refundable.
8. Customer to sign the necessary agreements.
9. APS to review service entrance section drawings for approval.
10. APS to specify the trench and equipment locations.
11. Customer to provide property corners and grade stakes (Blue Tops).
12. APS to stake the trench and equipment locations.
13. Customer to provide the trench per APS design.
14. APS to inspect the trench. Approve if per APS design.
15. Customer to provide conduit and equipment pads as required.
16. APS to inspect conduit and equipment pads. Approve if per APS specs.
17. APS to schedule crew(s) for construction of its facilities.
18. Customer to provide credit or security information.
19. Customer to schedule for meter panel inspection. (Contact the assigned Customer Project Representative).
20. APS to inspect meter panel. Approve if per APS specifications.
21. Customer to obtain City or County electrical clearance (if applicable).
22. When APS receives a City or County clearance, APS will set a meter and energize the service. (If applicable).

**Adequate time must be provided in the customer's schedule to accomplish allocation of materials, scheduling APS crews and complete construction of APS facilities.**

**Only authorized APS employees shall energize a service.**

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#### 200.2-2 UPGRADE SERVICE

Prior to service being changed or relocated to supply new or existing load, contact APS. All service entrances being upgraded (increased main breaker ampacity), or relocated must be brought up to current code and specification requirements. See paragraph 200.2-1, "New Service" for information and requirements.

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### 200.2-3 TEMPORARY SERVICE

APS will provide temporary service to a customer providing the customer pays the installation and removal costs less the salvage value of such facilities in advance of installation. In addition to temporary load information, the customer should provide APS with a complete statement regarding the requirements for permanent service. (See Paragraph 200.2-1, New Service).

Customers requesting construction power may be delayed as a result of the APS construction backlog of customers that applied for permanent power. Normally these jobs consist of move-in or live-in customers.

When temporary service is provided on a customer's pole, the pole shall conform to the requirements set forth in Paragraph 402.0 in Section 400.

**The service entrance requirements for temporary service are the same as for permanent installations.**

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### 200.3 REMOVAL OF SERVICE/FACILITIES

Requests for the removal of facilities may be made to the local APS office (see Pages B and C in front of book for addresses and telephone numbers). Due to normal schedule times for APS construction crews, a minimum of two weeks' notice should be given to APS prior to the date the facilities are to be removed.

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### 201.0 CHARACTER OF SERVICE & LIMITATIONS.

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#### 201.1 SINGLE PHASE

120 volt, 2 wire	(for two circuits and/or motors of 1/2 hp or less)
7200 volt, 2 wire	(special applications)
12,500 volt, 2 wire	(special applications)
120/240 volt, 3 wire	(normally for residential including refrigeration compressors of 7 1/2 hp or less. Also for non-residential and industrial, but limited to 800 amp service entrance.)*
120/208 volt, 3 wire	(in some areas)
240/480 volt, 3 wire	(Unmetered ADOT highway/lighting services only)

\* If a customer has load requirements over 800 amps at 120/240 volt and three phase service is not readily available, customer may install 2 or more service entrance sections. Each section will be limited to 800 amps and must be located within 10 feet of each other. APS will install at no cost to the customer the necessary totalized metering: however the customer will be required to provide all metering conduits and instrument cabinets in accordance with APS specifications. (See Section 300, Metering Installation Requirements and Schedule 4).

Due to weight of conductor on the overhead transformer spades, maximum length of overhead conductor limited to 40' on 800 amp service entrance sections.

Refer to section 104.3 for additional details regarding the installation motors 7.5 hp or larger to a single phase system (i.e. 120/240V, 1p, 3W).

**201.2 THREE PHASE**

VOLTAGE CLASS	MAXIMUM SES SIZE		
	OH XFMR/ OH SERVICE	OH XFMR/ UG SERVICE	PADMOUNT UG XFMR/ UG SERVICE
	120/208V, 4W	600A	800A
277/480V,4W	600A	600A	3000A
120/240V,4W (See Note 2, 120/240V, 3W)	600A	800A	800A
2,400V/4,160V, 4W	Primary Meter Application SES 1000		
(7,200/12,470V, 4W) Primary Service	Primary Meter Application SES 1000		
Spot Network Service (277/480V, 4W)	See Section 500, (See Division Engineering for Requirements)		

**Notes:**

1. Any Customer having over the 3,000 amp at 277/480 volt 3 phase requirement must install 2 or more service entrance sections. Each section will be limited to 3,000 amps and must be within 10 feet of each other. APS will install at no cost to the customer, the necessary totalized combined metering. The Customer will provide the metering conduits and the instrument cabinet per APS specifications (See Section 300, Metering Installation Requirements).
2. When a non-residential, industrial, water pumping or irrigation customer requests 3 phase 3 wire 240 volt or 480 volt service, APS will furnish a 3 phase 4 wire 120/240 volt or 277/480 volt grounded neutral service to the service entrance. The Customer shall provide a bus or bar in the section for grounding and bonding as per NEC Articles and provisions for 3 element metering. (This 4 wire service will eliminate confusion in providing a safe installation by permitting the use of over current devices in all phase wires of APS feeder and branch circuits.)
3. For specifications regarding service entrance equipment, see Section 1100, Manufacturing Requirements.
4. Overhead service application for 600A SES size shall use a maximum of parallel 4/0AL conductors. Due to weight of conductor, maximum conductor length limited to 40'.
5. Any Customer requesting service requiring greater than 1,200 amps at primary voltage (greater than 600V) 3 phase must install 2 or more service entrance sections.

**201.3 GUIDELINES for SERVICE VOLTAGES for NON-RESIDENTIAL INSTALLATIONS**

Non-residential customers with single phase loads up to 100 KVA demand can be most economically served with 120/240 volt single phase 3 wire. Any distribution line unbalanced conditions can be corrected by proper engineering and field application. In open delta transformer connection the maximum three phase load should not exceed 50KVA on this type of installation. Also, the largest single-phase motor size is limited to 25 hp.

**201.4 MASTER METERING**

Residential apartment complexes, condominiums and other multiple residential buildings shall not have a master metering installation unless building(s) have centralized air conditioning, ventilation and/or heating systems and meet ACC rules and regulations. Master metering will not be installed on existing or new permanent residential mobile home parks.

**201.5 ONE METER PER HOME**

All new homes must be wired for one meter. Existing homes adding load requiring an upgrade of facilities must be wired to be served through one meter..

**201.6 PRIMARY SERVICE (601V - 15kV)**

See Section 1000 for Medium Voltage (601V - 15kV) Metering and Service Equipment Specification.



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**201.7 SERVICE VOLTAGE RANGES**

APS shall maintain voltage at the Point of Delivery (POD) in accordance with ANSI standard C84.1 as noted in A.A.C. R14-2-208F. Customer shall ensure its load does not cause the RMS voltage at the POD to vary outside ANSI standard C84.1 during normal loading/steady state conditions (i.e. after equipment / motor / process startup and/or shut down period). APS may require the Customer to remedy any voltage excursion caused by its load at the POD, any point along the APS System and/or a neighboring customer's POD outside of this ANSI range.

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**201.8 POWER QUALITY INVESTIGATION**

APS is available to assist Customers with evaluating/investigating Power Quality issues (including harmonics, flicker, imbalance, voltage sags/swells and/or faulty equipment/event analysis). APS will evaluate if the source of the Power Quality issue originates from the APS System, and will remedy as deemed appropriate. If Customer requires additional assistance, APS can aid with on-site investigation by performing an inspection of impacted electrical equipment. Customer is advised to proactively install utility-grade event recording metering that measures voltage, current, kVAR, kW, kVA, power factor and imbalance set at pre-determined intervals. Customer installed equipment must be located outside of utility sealed compartment. Customer can provide data in advance to APS to expedite the Power Quality investigation.

If Customer requests APS' assistance to identify/resolve/troubleshoot a Power Quality issue on the Customer side of the point of common coupling, Customer shall provide the following:

- A Qualified Electrical Worker to assist APS representatives.
- Electrical one-line diagrams of Customer's electrical system.
- Event recording/history of issues (data downloads from metering are preferred).
- Make/Model numbers of impacted equipment needing support.
- Copy of Customer safety program along with required PPE prior to initial site visit.

If available, APS may loan Customer a Recording Volt Meter (RVM) in order to capture the event/issue. APS will provide instructions on how to install the RVM; however, Customer must provide the resources/means to install. APS will loan the RVM for a reasonable time period (i.e. up to 2 weeks), and may allow for longer duration depending on availability and/or need. In the event an Immediate Hazard exists on-site, APS may (1) require the escort of an APS Qualified Worker to assist, or (2) refuse to enter the property/area until the area in question is established as a safe work environment free from potential electrical and other safety concerns (i.e. Electrically Safe Condition, tripping, slipping, etc.). If Customer suspects a Power Quality concern, they shall contact the APS call center at 602-371-7171 to initiate a Power Quality investigation.