



Resident Reporter

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Electricity: Don't let it shock you

■ In order to understand the various causes of electrical problems inside a home, it helps to understand how that system works. There are two types of electrical systems that provide service for residents.

Power Company System

In a power company system, the local power company provides service up to and including the electric meter at every space, (e.g., you receive your bill directly from the power company). In such cases, the community is only able to furnish and maintain the site service pedestal, housing the meter, circuit breakers and response receptacle. The power company is responsible for providing electrical service for the site service pedestal.

Because the community is responsible for the pedestal and the power company is responsible for the voltage to the pedestal, a “gray area” of service responsibility exists. If the home’s electric service is interrupted or becomes abnormal, unless the power company is already aware of an overall problem, there is no way to be certain who’s equipment is causing the problem. It is generally recommended that the resident first contact the power company and advise them of the problem. If there appears to be a serious danger to life or property, the resident should turn off the circuit breaker servicing the home’s lifeline electric cord and also contact community management for assistance. Normal circumstances would require that the resident await inspection by a power company representative. If it is determined that the problem appears to be with the site pedestal, community management should be advised of the circumstances and request to assist. A qualified, knowledgeable community contractor can then be dispatched to restore service. Residents should never call an electrician to work on the community’s site service pedestal. Operation of the pedestal is the community’s responsibility as is the cost to repair the pedestal. Repair by unqualified electricians can cause damage and problems.

Master Meter System

The second type of electrical system is a *master meter system*, whereby the power company provides service to one main switchboard and meter, and the community provides service to each individual homesite (and you receive your electric bill directly, from the community). With this system the community is responsible for providing service to the point where the home’s lifeline is connected to the service pedestal. The home lifeline can be an insulated cord and plug cap or directly wired to a circuit breaker in the pedestal. Since the community is responsible for providing voltage to this service point, community management should be contacted if and when electrical service is interrupted or abnormal. A resident should never call an electrician to work on a site service pedestal as it is the community’s responsibility. Regardless of which system is in use, when electrical service is disrupted, we must consider that the problem may be inside the home’s electrical system and not with the community or power company system. If this is the case, calling the power company or community management will probably not solve the problem and then you would need to call an electrician to work on the system inside of your home.

When your home is connected to the community service point, the cord or cable-conduit is protected by a service point circuit breaker, compatible with the cord or cable capacity and the rating of the home’s service panel. If a short or overload occurs in this “lifeline,” the protective circuit breaker should trip, turning off service voltage to the home.

The home electric panel can be located inside the home or in an outer wall access rate circuit in the home. The main circuit breaker should be compatible with the home’s rating and capacity of the panel. The secondary individual circuit breakers should be compatible with the wire size and intended use of each separate circuit. The main breaker protects the home’s entire panel from an overall overload, while the individual circuit breakers protect the individual circuits within the house from circuit overloads. Thus, coupled with the service point protection, the home’s electrical service has three points of protection.

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Seven common electrical problems

1. *Total loss of electrical service*

This may be traced to the main circuit breaker in the home's electrical panel or to the site service pedestal. If both are in the "on" position, check with your neighbors to determine if they have power. Call the power company and/or the community management and report the problem and your inspection results. If either of the main circuit breakers is tripped off, then try to determine why they tripped and if it is safe to reset the breaker. If the home's breaker trips, call your local electrician even if you can reset the breaker. If the site service pedestal breaker trips "off", then call community management for assistance. Regardless of which breaker trips, the problem may be inside the house system. A qualified electrician should always inspect tripped circuit breakers. Tripped circuit breakers should always be inspected.

2. *Partial loss of service*

This may be traced to an individual circuit breaker in the home's panel, the main breaker in the home panel, the home cross over junction box where one exists, a lifeline junction box where one exists, a plug-cap for 50 Amp rated homes, the site service pedestal main breaker or the serving utility company. The resident should inspect the house system to the point it connects to the site service pedestal and then call the power company and/or the community management for assistance. Always call a qualified electrician if the problem is inside the home's own electric system.

3. *Flickering lights*

This may be an indication that a loose connection exists or a component part of the equipment or system is failing. This occurrence should always be reported to the power company or to the community management.

4. *Dimming of light*

This may be an indication of low voltage that could be caused by a number of things. This occurrence should always be reported to the community management.

5. *Tripping breakers*

If the site service pedestal has a separate circuit breaker servicing a 240-volt air conditioning unit, then a malfunctioning air conditioner or a problem in the service pedestal could cause this breaker to trip. Once again we have a "gray area," this time between the resident-owned equipment and community-owned equipment. Until an air conditioner service person checks the unit or a qualified electrician checks the service pedestal, there is no sure way of knowing what is at fault. Our experience indicates that, in the majority of cases, the problem is found in the pedestal. Therefore, when an air conditioner circuit breaker in the pedestal trips, the resident should contact community management for assistance.

6. *Home internal wiring*

The internal wiring in the home is probably the most important area of the home's electrical system. A short caused by a pinched wire, a nail driven into the wall and into a wire, a poorly installed receptacle, switch or fixture; or a broken wire can cause a fire. A home that has been internally wired, with single strand aluminum wire is especially susceptible to a wire breaking at the connection point. To reduce the risk of fire, the Electrical Code now requires that all single strand aluminum wires have a short length of flexible copper wire attached too. Inside the house, single strand aluminum wire is especially susceptible to problems and should be inspected ASAP with copper wire used for any connection points. Residents should have a qualified electrician inspect the wiring in their home and if it is aluminum without copper pigtails, it is imperative that residents have a qualified electrician correct the problem.

7. *Improper use of systems*

Some electrical problems within the home system are caused by improper use of systems, appliances and cords. Plugging more than two appliances into a duplex receptacle is an "accident waiting to happen."

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