

STANDBY GENERATORS

SAFELY USING YOUR STANDBY GENERATOR

Take special care with portable electric generators, which can provide a good source of power, but if improperly installed or operated, can become deadly. Do not connect generators directly to household wiring. Power from generators can backfeed along power lines and electrocute anyone coming in contact with them, including lineworkers making repairs.

A licensed electrician should install permanent, high-powered generators to ensure that they meet local electrical codes. Other tips include:

- Make sure your generator is properly grounded.
- Keep the generator dry.
- Plug appliances directly into the generator.
- Make sure extension cords used with generators are rated for the load, and are free of cuts, worn insulation, and have three-pronged plugs.
- Do not overload the generator.
- Do not operate the generator in enclosed or partially enclosed spaces. Generators can produce high levels of carbon monoxide very quickly, which can be deadly.
- Use a ground fault circuit interrupter (GFCI) to help prevent electrocutions and electrical shock injuries. Portable GFCIs require no tools to install.



Please notify TCEC when you purchase a standby generator so that we can be aware of your location, call 618-244-5151.



TRI-COUNTY ELECTRIC COOPERATIVE, INC.

Your Touchstone Energy® Cooperative 

www.TriCountyCoop.com

DOUBLE THROW SWITCH

Adding a standby generator to the electrical system of a home, farm or business requires a suitable transfer switch to disconnect the electric loads from the power supplier's utility grid. This is a requirement of the National Electrical Code and all-electric power suppliers, for two very good reasons: (1) it prevents the backflow of current into the utility's lines during an outage, which could electrocute linemen working to restore power; and (2) it prevents damage to the generator when regular electric service has been restored, which can destroy the generator.

For single-phase, 120/240 volt power, the transfer switch should be a double-pole, double-throw type. A double pole means that there are two pairs of wire lugs available for the connection of hot conductors. The third wire (neutral wire) is continuous through the transfer enclosure and is typically not switched. The ground wire also passes through the switch enclosure to provide a safe and continuous ground connection.

The term double-throw means that the operator can place or "throw" the switch into two different positions. One position feeds power from the utility system to the load. The other position feeds power from the standby generator to the load. Such a switch will prevent electricity, generated by the standby unit, to flow simultaneously to both the customer's home or farmstead, and to the utility's system. This is essential to protect utility personnel and to prevent generator equipment damage.

A three-phase generator would require a three pole, double-throw switch. Some electric services use current transformer (CT) metering. This may require the use of a pole top transfer switch. The operation of these switches is essentially the same, except that an extended manual switch lever is needed to allow the user to operate the switch from ground level.

For small portable generators that serve a single freezer, well pump, or other appliance that plugs directly into the generator, a transfer switch is not necessary. But any time a generator serves loads through the permanent wiring system of the home, farm, or business, a suitable transfer switch must be used.

Typically, the transfer switch is located between the utility meter and the loads to be served. It should be within 25 feet or less of the generating unit for convenience and safety. If the location of critical loads are scattered among several outbuildings, the central meter pole may be the best location for the transfer switch and the generator.

Due to the complexity and safety requirements of generators and transfer switches, TCEC strongly recommends that all work be performed by a licensed electrical contractor. Installations that do not meet safety codes will not be connected to TCEC's electric service.

A separate riser conduit and wires must be used to connect the transfer switch to the consumer's overhead load wires. The consumer must provide the transfer switch, riser conduit, weatherhead, wire, and other materials for proper installation. To avoid personal injury or property damage, the ampere rating of the switch, wire, and other equipment must be suitable for the intended application and should be determined by a qualified person.

TCEC line personnel must perform all pole-top connections. Be sure to leave enough toil in the wire out of the generator riser to connect to the service. Please call TCEC at least two working days before the pole-top connections are needed at 618-244-5151.