

## Stand-By Generators for Whole House Power by KI5HHI Lee County, Texas ARES

Tonight's training concerns whole home stand-by generators. These are not the portable type you throw in the vehicle for a weekend camping trip, these are the fixed location, big engine natural gas or propane machines that are capable of running your entire house, or substantial portions of it, during a public power outage.

There are several critical items to consider when thinking about or planning to purchase a whole house stand-by generator: How much power do you need to run the electrical appliances you wish to continue operating? Can you sequence their usage so that you do not overload the power capacity of the stand-by system?

I have a Kohler 20 KW stand-by generator installed at my home. It will power one central air unit, the refrigerator, the freezer, the electrical outlets and lighting for almost all of my home, all at the same time. If I sequenced the usage out I could cool (or heat) most of my home during the day or night.

There are charts easily accessible on the web that disclose the power usage of various appliances in your home. Consider this: a refrigerator needs 1200 watts to run. A well pump typically uses 1,000 watts, same as a microwave oven. Lighting circuits, particularly if you have LED light bulbs, do not use much wattage. You can power 10 lighting circuits with only 1,000 watts of power, so this is a particularly good feature of stand-by power.

Central HVAC units, on the other hand, are power hogs. A typical 4-ton HVAC units needs over 10,000 watts to start and about 8,500 watts to start and run. An electric oven needs 2,000 watts, an electric dryer 2,000 watts.

You will want to size your stand-by generator according to the maximum number of watts required by all the appliances you want to be able to run at once. As always, bigger is better.

Prices to acquire a stand-by generator have not changed much in the 10 years since I had mine installed, surprisingly. You can still buy a Kohler or Generac 20KW stand-by generator for under \$6,000, which is what I paid in 2010. Installation of the generator and the required Automatic Transfer Switch will add to this total. When all is said and done, you will spend \$10,000 to install a system that guarantees you will have power when no one around you does.

Two main suppliers of large stand-by generators are Electric Generators Direct and Norwall Power Systems. You can find both easily on the web. Small systems of 10 KW can handle small homes, especially if you are careful to not overload the system at one time, but I recommend 20KW as the minimum size if you are going to invest this kind of money. Looking at today's pricing I might even consider going to a 30,000 watt Generac system priced at about \$8,000 from Electric Generators Direct.

The two most popular, and most easily installed and maintained, brands are Generac and Kohler. Stay away from off brands, especially Chinese knock-off stuff, in my humble opinion.

In my next training session in a few weeks we will discuss the various types of inverters and battery systems that will allow you to greatly extend the length of time you can expect your stand-by generator to provide power on a given amount of fuel capacity.

This concludes tonight's training, this is KI5HHI back to net control