



## Home Standby Generators

An Essential Element In Home Emergency Preparedness

July 2006

The subject of emergency preparedness seems to be on everyone's mind these days. Images of the destruction and suffering caused by last year's spring and fall tornadoes, summer hurricanes, heat waves, and winter ice storms are indelibly branded in our memories. With the current weather trend towards global warming, scientists predict that storms like these will happen more often in the near future.

And if those dire predictions involving natural disasters aren't enough, now we're hearing more about our nation's aging electrical power grid and the blackouts and brownouts that will become more frequent as our infrastructure struggles to meet our growing demands for electricity. It all adds up to the likelihood of trouble, and it's not a question of "if" one of these emergency situations will affect vulnerable areas of the country – but "when."

Emergencies happen fast, so of course it's important to have an emergency preparedness plan that includes a stock of food, water, clothing, blankets, flashlights, candles, and other essential items. Many problems can occur during an emergency situation, but one of the most common issues is failure of utility-supplied electrical power. This can happen because of storms, equipment failures, or even traffic accidents, and the loss of electrical power can be more than just an inconvenience, it can mean a real financial loss as well.



### Industry Leading the Way, But Change is on the Way.

In an August 10, 2004 article\* (“Blackouts Are Inevitable; Coping, Not Prevention, Should Be the Primary Goal”) by Jay Apt and Lester B. Lave in the Washington Post; they discuss the Blackout of 2003, most notably affecting New York City and parts of the Upper Midwest. The article explains that “roughly every four months, the United States experiences a blackout large enough to darken a half-million homes.” Many of the blackout situations occur “when hurricanes, tornadoes, ice storms or other problems black out the system, backup generators at hospitals, airports and other critical institutions prevent their missions from being interrupted.” These “natural hazards produce many local and regional blackouts, and society has learned to cope with them. In fact, August 2003 revealed that many private institutions are far ahead of the public sector in defining their critical missions and taking steps to fulfill them when the lights go out... In the public sector, we need to set priorities among the missions that depend on electricity.”

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A trend is definitely emerging here. “Industry sectors like hospitals and airports, who operate 24/7 with mission critical needs, rely on standby generators during power supply disruptions,” said Jon Wehrli Eaton Product Line Manager, “The same standby generators, only smaller versions, are beginning to evolve into consumer homes. This trend has growing implications for the future as the demand for energy on the power grid increases particularly with more telecommuters and in-home reliance on electronics.”

### No Power Equals Trouble.

Today’s homes depend more and more on electricity to keep them running. Electricity refrigerates and cooks food, lights, heats, and air conditions homes, and powers TVs, DVD players, and computers. Unfortunately, much of this equipment can be damaged or even destroyed by power outages and the problems that accompany them. Many people today also operate businesses out of home offices, so the loss of electrical power – especially for an

extended period -- can be devastating and expensive. But if, as part of an emergency preparedness plan, a home has been equipped with a standby electrical generator, it is possible to minimize these problems or even eliminate them entirely.

**THE CURRENT ANNUAL U.S. MARKET FOR GENERATORS IS ESTIMATED AT BETWEEN \$225-\$250 MILLION. STEADY GROWTH IS EXPECTED IN THE FORESEEABLE FUTURE...**

### A Growing Trend In New Homes And Old.

Until recently, having the ability to generate your own electrical power in an emergency was something that most people didn’t consider seriously. Relatively few homes had standby generators, and most of those that did tended to be upscale houses. In a time of cheap and reliable utility-supplied electrical power, few homeowners worried about the effects of power outages. However, as we entered the 1990s, higher energy prices, a greater number of damaging seasonal and regional storms, and growing problems with the nation’s electrical power grid in meeting demand began to change that attitude. Also, as more sensitive electronic devices found their way into homes and more people began to work from home offices, the need to maintain a continuous supply of electric power became important to a greater number of homeowners.

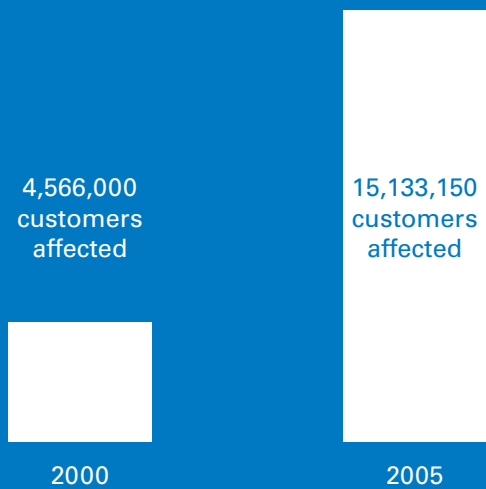
Much like the growth of cell phone use and personal high-speed Internet access, the number of permanently-installed residential home standby generators has grown dramatically in recent years. What was once seen as a “luxury” has now evolved into more and more of a necessity. There are good reasons for this. The summer hurricanes that caused widespread devastation in the American south and the winter snow and ice storms that shut down large parts of the northeast awakened many people to the perils of long-term electrical outages. A growing dependence upon electrical appliances and the skyrocketing use of sophisticated home computers and electronics has made the need for a continuous supply of electricity more important than ever before. Trends show consumers understand this. The current annual U.S. market for generators is estimated at between \$225-\$250 million. Steady growth is expected in the foreseeable future, as more homeowners have standby generator systems installed or purchase new homes that include standby generators as part of their infrastructure.

\*Apt, Jay and Lave, Lester B. *Blackouts Are Inevitable Coping, Not Prevention, Should Be the Primary Goal.* Washington Post, August 10, 2004.

### A Range of Options.

Consumers typically have two options with generators: portable and standby. Portable generators are designed for smaller applications than supplying power to a home – like running power tools outdoors or supplying limited lighting. Though portable generators can be used to power circuits in the home, the complexity of setup and limited fuel source limit the ease of use. Many different types and sizes of home standby generators are available to suit a wide range of homeowner's needs, from small-footprint 7 kW units that can light and heat a small house, to robust systems of 75 kW or more that can power everything, including security systems, microwaves, computers, and heating and air conditioning for homes 20,000 ft<sup>2</sup> or more. Units used to provide backup electrical power are permanently installed systems, and most include all the equipment necessary for automatic, hands-off switching between utility – and generator – supplied power and back again. When a home standby generator is installed, it becomes more than just an expense – it's an investment that will add value to a home while paying dividends in convenience, safety, and peace of mind.

### CUSTOMERS AFFECTED BY A MAJOR POWER DISTURBANCE 2000 vs. 2005



In the event of a disruption of utility-supplied electricity, which happens on average of 3-4 times each year for most families, the standby generator system's automatic transfer switch senses the loss of power and starts the standby generator immediately, providing quiet, reliable, efficient electrical power to selected circuits (or all circuits, with a correctly-sized

generator) during the outage. When utility power is restored, the unit automatically senses it, shuts off the generator, and transfers the power supply back to utility-supplied electricity. It's fast, convenient, and operates even when no one is at home.

### Getting The Most Out Of The Investment.

Most home standby generators are powered by natural gas or liquid propane (LP), providing them with a safe, secure, efficient fuel source for emergency use. The engines that drive the generators are engineered to provide many years of quiet, efficient, dependable operation with minimal service requirements. And while most generator manufacturers require professional installation of the systems for safety and warranty purposes, the units are reasonably simple to install. Some even have their engines broken-in at the factory, so they don't require hours of on-site engine break-in, saving installation costs, especially in retrofit applications.

The best home standby generators offer user-friendly controls that are simple to understand and operate. Their control panels include an hour meter that logs run time on the generator to help maintain proper service intervals and optimize performance. Some systems are also designed to protect not only the generator itself, but to monitor and protect the voltage entering the home it supplies. And because the systems are installed outside a home, they can even be equipped with external indicator lights that let homeowners monitor the ready status of their generator at a glance – even from inside their homes.

Consumers should expect reliable installation and service of their home standby generators through networks of service providers who can offer information and expertise on subjects from sizing a home generator system and picking the right unit, to installing and servicing it throughout its operational lifetime.

In today's uncertain world, every family should have an emergency preparedness plan, and as part of that plan, it is well worth a homeowner's time to research available home standby generators that can provide homes with reliable electricity during an emergency power outage. A home standby generator could mean the difference between sitting hungry in the cold and dark – or going on with life in as normal a manner as possible.

### A New Concept For A New Age.

Home standby generators also represent one important step in Eaton's effort to introduce the concept of \*\*PowerChain Management™ to the consumer marketplace. PowerChain Management™, while virtually unheard of among homeowners, is widely used in industrial and commercial applications to control the use, quality, and costs of electrical power by managing its usage throughout a facility. Controlling the source of electrical power is the first step in PowerChain Management™, and home standby generators give homeowners exactly this capability. In the near future, as this concept is acknowledged and embraced by electrical distributors, installers, and consumers, a growing number of PowerChain Management™ products will be introduced to the consumer marketplace, helping homeowners take true control of their electrical usage.

### About Eaton.

Eaton Corporation is at the cutting edge of the rapidly-growing standby generator market. Eaton's electrical business is a global leader in electrical control, power distribution, uninterruptible power supply and industrial automation products and services. Through Eaton's innovation, advanced product development, Eaton's electrical business provides customer-driven \*\*PowerChain Management™ solutions to serve the power needs of consumers and industry. With its state-of-the-art manufacturing process, customer support service, and vast distributor network, Eaton's standby generators offer unmatched quality and reliability. For more information, visit [www.EatonElectrical.com](http://www.EatonElectrical.com).

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