

Currents

Your Link to Sussex Rural Electric Cooperative



High Voltage . . .



Surge Protection, a Holistic Approach

Surge protection. Now here's a topic that won't often pop up at cocktail parties or in other polite conversation. Certainly isn't one of the better icebreaking lines. Picture this, a young man approaches a young woman at a social gathering and says, "Say baby, what's your surge protection like?" Too Seinfeld-ian? Probably. Still, protecting the investment you have made in your home's electrically powered content deserves consideration. So let me dive in.

Surges are just what they sound like, large intrushes of current that enter your home through any of several avenues. Most folks assume all surges enter the house via the electric lines. However, if your Mom was on the top of her game she told you to stay off the phone or not take a shower in a lightning storm.

continued on page 2

Commentary by the President & CEO



The Cooperative Difference - Looking Out For You

by Jim Siglin
President & CEO

Cooperatives are not like other utilities. We are member owned with each member being an equal stakeholder to every other. Unlike public corporations where the largest shareholder wields the most influence, and typically drives actions to increase profits, our objective is to provide the most reliable power at the lowest possible cost. Without the short-term drive of a profit goal, we are able to do things on your behalf. We look for systems to automate processes and reduce expenses. We investigate technologies and techniques so we can advise you on new ways to save energy. In addition, we offer high efficiency alternatives to traditional equipment in areas like water heating to save money and energy.

A new challenge is looming for all American consumers, the challenge of climate change legislation. Fortunately, the cooperatives are well positioned to make sure your voice is heard in the debate. America's electric co-ops are working with public officials at all levels to identify and adopt achievable and balanced solutions to climate change. Our commitment to our members in this effort consists of the following:

- To help our members use energy wisely through efficiency and conservation programs.
- To share the responsibility on behalf of our members to find the right energy and climate change solutions.
- To build on the proud record of cooperative member service and environmental stewardship.
- To share our knowledge of what works in clean coal, energy efficiency, renewables and other energy technologies.

May 2008 • Vol. XI, Issue V

What is load control?	Page 2
Remote control thermostats?	Page 3
USB Thumb Drives - Say hello to my little friend	
Sample Conservation Checklist	Page 4

One of quickest remedies involves embracing the duo *conservation and efficiency* and making them part of our daily routine. Although energy consumption will continue to increase, by using electricity more efficiently, we can slow the overall growth in demand. And you can help immediately.

Conservation occurs when we reduce total consumption of electricity, often achieved by simply turning off anything that consumes electricity when not needed. Some sources consider conservation a short-term approach that lacks the "persistence" of energy efficiency. I happen to disagree because repetition leads to permanent life style changes. One of the best examples of this approach can be found in none other than Benjamin Franklin. Benjamin Franklin kept a list of 13 virtues he felt were an important guide to living. He carried a small book with these virtues listed with him every day for most of his life. At the end of each day, he would check his performance against each to see how he had done that day. As you can guess, he was not perfect but his checking made it a habit to attempt perfection every day.

Let me suggest a 21st century adaptation of Benjamin Franklin's methodology. Create a conservation checklist and either carry it with you or post it by the door in your home. Check it each day and record how you did. On the first day you do this you will be reducing carbon emissions. No special tools or appliances needed. Need some ideas for your list? Go to our website, call us for ideas or start with the list at the end of this newsletter.

Conservation will not do the whole job in front of us. Other steps will be necessary and your cooperative will be working in concert with cooperatives across America to make a significant contribution. In the meantime, we need your help to make conservation work here in Sussex County.

Be sure to attend our annual meeting on June 2 at the High Point Regional High School to learn more about how your cooperative is different and is looking out for you.

ANNUAL MEETING

Make plans for the 71st
Sussex REC Annual
Meeting

June 2, 2008
**High Point High
School**

Pidgeon Hill Road
Registration & Refreshments **6:00 PM**
Meeting **7:00 PM**

**Enjoy live entertainment,
prize drawing, a \$10 bill
credit and more.**

**SEE OUR SAMPLE
CONSERVATION CHECKLIST
ON PAGE 4**

WHAT IS LOAD CONTROL?

Load control is a concept where the utility customer agrees to allow the utility to **control** specific **loads** within their home or business. A couple of terminology clarifications should help with my definition. First, anything that uses electricity is considered a **load**. **Control** from the utility standpoint means being able to determine when that "load" uses electricity, generally by cutting off power to the load for a predetermined length of time.

Why do utilities want to do this? The original purpose behind load control is to save money. Utilities forecast the amount of electricity they need on an hour-by-hour basis. When especially hot or cold weather drives the demand for electricity higher than the forecast, the utilities face a dilemma. To meet the higher demand, utilities must buy additional power. Since this is unplanned, the power generally comes from very expensive generation sources driving utility expenses higher. Eventually, these costs flow back to the customer.

Utilities developed the load control approach to avoid buying higher priced electricity. When it looks like demand is going to exceed forecast, the utility sends a signal

over the power lines to devices attached to the loads and turns them off. Turn off enough loads and the utility can reduce the amount of electricity they need to match their forecast. Very nice - for the utility and us poor customers.

Today, an unanticipated consequence of load control happens to be quite green. When a load is turned off, it does not consume electricity. Not using electricity reduces carbon emissions. To the extent that the controlled load does not run after power is restored to make up for when it was turned off, this environmental benefit stays in place. Here is an example. Sussex REC offers load control for water heaters. The typical control period might be 2 - 3 hours between noon and 7:00 PM. If no hot water is used while the heater is being controlled, there is nothing for it to make up when power is restored.

What can be controlled? Anything can be controlled that is not critical to the home or business. As a rule, utilities try to control things that will not be noticed by the home or business owner. For example, controlling the lights would be an issue in an office building but controlling the air conditioning might not be if the control schedule is appropriate. For homes, 15 minutes on and 15 minutes off mirrors regular AC operation and isn't noticeable.

Currently, Sussex REC controls 50-gallon and larger water heaters. We are expanding the program through the sale of the Marathon water heater. We install the devices on the tanks (see the picture to the right) when a member agrees to participate in the

program. We will also be replacing the existing devices in the future to make sure each is functioning properly and delivering the economic and environmental benefits we are seeking.

When our power supplier calls for reducing consumption, we send a signal to each device and turn it off. Our system will send another signal to restore power based on a formula that uses tank capacity and family size into consideration. If you recall I mentioned the 50-gallon cut off above? Experience shows smaller tanks have a higher likelihood of running out of hot water. Since our goal is to make control unnoticeable, lack of hot water fails this test. Over the coming months, Sussex REC plans to look for additional control opportunities as we upgrade and expand our system.

As we all face the challenge of controlling the price of electricity while meeting the demands of environmental pressures, load control seems certain to be a major player. We all will benefit from lower prices and better environmental conditions.

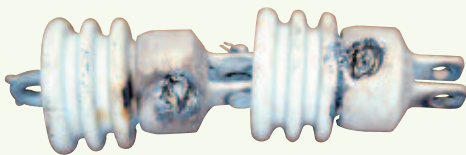


Surge

continued from page 1

Why? Because surges can enter the home via the telephone lines and the water pipes. Nowadays, other entrances include cable TV connections and satellite dishes.

Surges come from a number of sources. Lightning is one of the most common. A lightning strike anywhere near your home can flow through the ground and into your home through pipes and wires. Accidents involving our facilities can also generate surges if the accident causes wires to contact each other. Trees falling into lines can also generate surges. The good news is that our system is designed to defuse the effects of surges using grounding, fuses, reclosers and other devices. Check out the results of our protection device operating below.



Sometimes, though, a surge is of such magnitude that nothing in the utility world slows it down and it hits your home. At this point, surge suppression is a great secondary line of defense. We recommend a three-pronged solution. A suppressor installed at the electric meter is a perfect starting point. These devices provide primary protection. However, sensitive electronics should have additional protection.

This brings us to the second prong, point of use suppression. These are the strip devices you see just about everywhere electrical products are sold. Don't skimp here though. A cheap surge protector may actually make things worse. Surges look for the best ground in the house. Surge protectors often are the best available ground and draw the surge to themselves. A cheapo device draws the surge, then fails to stop it leading to damage. Ouch. \$7.99 doesn't look like such a good deal anymore. We can recommend excellent solutions in the strip department or talk to your favorite pur-

veyor of electronics. Names you can trust include Panamax, TrippLite and Monster. Expect to pay around \$40.00 for a quality device and look for one with a connected equipment warranty.

The third prong is good grounding of your home and utility connections. Have a licensed electrician check that your earth ground is adequate. At the same time, make sure there are proper grounds on CATV, telephone, water, and sewer connections to your home.

Let me close with one last point that is especially pertinent to our area of the world. Wells present special challenges for surge protection. This makes perfect sense when you think about the fact that they consist of long metal pipes full of water connected to a power supply - a natural surge attractant. None of the three preceding steps will protect the pump. If you are experiencing problems there, consider a dedicated surge device for the well. Special devices with the proper weather- and water-proofing are available.

Remote Control Thermostats?

A member inquired about the availability of thermostats that could be accessed and controlled from two locations within his home. Always eager to address a member's inquiry, especially when some form of gadgetry is involved, I dug in to see what marvels the Internet might hold. As you might suspect, I was not disappointed. There are, indeed, remote controlled thermostats available and I will go into some detail about them momentarily.

First, though, I want to provide some rationale for this application. Many folks will see the article and cogitate about the advantages of remote control over a programmable thermostat. Why a remote control? Sure, the programmable stats work well under a set schedule (see Currents February 2008) but what if you need to

change that schedule and cannot get to the thermostat due to a broken leg from a skiing or biking mishap? How about if you have a nasty cold and simply don't have the energy to crawl out from under the covers and drag your aching carcass to the thermostat? Naturally, if you have your laptop at your bedside connected to your wireless home network, you simply go online, access your IP enabled thermostat and do everything from the browser. However, if you aren't so geeky as to have installed this system, there is a terrific alternative.

Using a Google search, I discovered several distinct approaches for remote controlled thermostats. As I had hoped, my old standby source, www.smarthome.com, didn't let me down, offering something for just about everyone. **Option 1**, you can go the IP enabled thermo-



stat route mentioned above <http://www.smarthome.com/30532.html> for maximum geekiness. Very satisfying if not quite as practical as other options.

Option 2, you can go with an infrared remote (and integrate it with your all-in-one TV remote if desired) <http://www.smarthome.com/30414.html> but be aware that this requires line of sight to function. Besides, frenzied button pressing to control your TV might result in unexpected temperature changes.

Alternatively, with **Option 3**, you can use the X-10 power line carrier technology, <http://www.smarthome.com/3045B.html>. Here, you use the existing wiring of your home with addressable modules to enable a bedside controller to control your thermostat. A competing technology is Insteon <http://www.smarthome.com/2491T7.html> that allows the use of a wall mounted control or a wireless device <http://www.smarthome.com/2440BK.html>.

Option 4, involves using a telephone to access the thermostat <http://www.thermostatshop.com/>. Probably not the most practical for in-home control but calling your thermostat from your cell phone has a certain panache.

You know what, if all of these seem a tad too complicated for most situations, the one that seems the easiest to implement is the Totaline, <http://www.smarthome.com/30403a-wireless-thermostat.html>. With this system, you can have up to four thermostats per receiver and you can have multiple receivers. You can even carry a thermostat with you from room to room so the temperature is perfect wherever you are. Ta-da! Mission accomplished.



A word of caution, though. Having multiple thermostats vying for control of a traditional heating system might just cause it to have a nervous breakdown. My recommendation is to have one receiver and one thermostat just so your furnace doesn't get mixed signals from you. I suspect counseling for conflicted furnaces is pricey. Having to call in the thermostat whisperer is just too much.

Make the wise choice

When it's time to buy a new water heater, there are a number of choices you can make. You can purchase a heater warranted for six or eight years, one that will be cheap to buy, but expensive to operate. Or you can invest in a Marathon and save money in operating costs...for a lifetime. Marathon - super efficient and warranted not to leak for as long as you own your home.



- **Seamless Polybutylene Tank** will never rust, corrode or leak.
- **Environfoam® Insulation** completely surrounds the tank. Superior efficiency with no Ozone-depleting chemicals.
- **Heating Elements** designed to maintain water temperatures and perform in the harshest water environments (just like ours here in NJ).
- **Bowl-Shaped Tank Bottom** developed to allow more complete tank draining.

Contact us today for model availability, pricing and complete information. 973.875.5101 x117 or go to our website: <http://www.sussexrec.com/brochures/Marathon.html>

Marathon WATER HEATERS *Simply the wisest choice in water heaters.*

USB Thumb Drives -

Say hello to my little friend

Okay, corny “Scarface” reference now out of the way, your gadget guru wants to delve into the world of USB thumb drives. In the early days of personal computers, just after transistors replaced vacuum tubes, if you needed to move a file from one computer to another you relied on floppy disks and sneaker net. In other words, you saved your file(s) to a floppy and carried it personally to the other computer for use.

Through several technology generations, things evolved and sneaker net faded from the scene. Today, most people can transfer files via a network or email thereby reducing the need for removable storage media. This said, USB drives have had a remarkable persistence even as floppy and zip disks have faded. They have survived for several reasons. Their capacity has ballooned while their price has plummeted. They are easy to carry and they are not that susceptible to damage. For example, a 4 gigabyte USB drive can be had for a paltry \$18.99 and is smaller than a pack of chewing gum!!

Uses of the thumb drives are heavily skewed to sneaker net. If you have a desktop PC at the office and want to take work home to finish on your own PC, the thumb drive is the perfect choice. Take your presentation to the conference in the palm of your hand. Carry your taxes to the taxman to process your returns. I have used my thumb drives to take trouble-shooting software to the PCs of friends and family to help resuscitate ailing computers. All very pedestrian and not especially interesting to the hardened geek or gadgeteer.

The current batch of thumb drives are upping the wow factor. Many now include biometric access where the user must swipe their finger over a port to read their fingerprint. No match, no data access. Many are coming with sophisticated data encryption in either software or hardware form, or both. Drives are coming with hardened cases a tank can drive over. Why the sudden uptick and

interest in security? Losing a thumb drive is common and without proper protection, sensitive data is at the beck and call of whoever finds it. I look at my two current favorites below.

IronKey is ranked at the top with respect to encryption and durability. This beauty has a sleek, machined case that is waterproof and almost indestructible. Crack it open and you’ll encounter a tar-like potting substance designed to prevent access to the electronics by evil doers. It features both software and hardware encryption. Forget your password and you are out of luck as too many failed attempts causes the key to self-destruct. The Mission Impossible guys must love this. Such sophistication comes at a price. Their least expensive model is the 1-gigabyte version weighing in at \$79.00. Find out more at www.ironkey.com or Google IronKey for other sources.

The second is IDVault by Guard ID Systems. This drive comes programmed with the information for more than 7,000 financial sites and 500 top shopping sites to ensure that you’re signing in to a legitimate site-not a fraudulent copy. It stores all your passwords and account information on a chip where online malefactors cannot access it. The concept is that all your data remains on the drive under high-powered encryption. When you want to go online to shop or bank, you plug in the drive, enter your password and log into the website of interest. The drive checks the website to be sure it is legitimate and warns you off scam sites. Since the data necessary for the transaction is transferred between the drive and the site, you do not type anything that keystroke loggers can capture. Very secure. Travel anywhere in the world, sit down at a PC and conduct your business without fear of identity theft. Find out more here:

http://www.guardid.com/save10/?source=google_id&gclid=CNz0-sWcu51CFQIGxgodMTRRrBA. Interested? A modest \$39.99 brings it home.

I happen to be very conflicted as to which I prefer. The IronKey has that James Bond panache and a machined elegance that I like. The IDVault has some serious chops in terms of functionality and is ruggedly handsome in its own right...dang, choices, choices. Okay, I’ll buy both! Look for my further hands-on review later.

Oh, one last thing to the manufacturers. If I am spending serious money for your capabilities, can you make the drive so I don’t lose the little cap protecting the USB connector?



Conservation *continued from page 1*

Use Our Sample Conservation Checklist
Conserve Energy and Save Big!!!

Conservation Checklist							
M	Tu	W	Th	F	SA	Su	DAILY
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Set back thermostat
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Turn off lights
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use timers on outside lights
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unplug AC power adapters when not in use
PERIODIC							
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clean refrigerator coils
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clean / replace filters
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Perform an energy audit on your home
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use CFLs
SP	SM	FA	WN	SEASONAL			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Check & replace weatherstripping
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Check & replace caulk
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Fix storm windows, regular windows
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Clean vents, louvers on heating & cooling systems
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Use fans rather than air conditioning
ONE TIME							
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Reduce temperature on water heater
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Replace appliances with Energy Star models
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Install storm doors

Currents *is published monthly by*



**Sussex Rural
Electric Cooperative**

Your Touchstone Energy® Cooperative
The power of human connections

64 Route 639 • P.O. Box 346
Sussex, NJ 07461

Hours: 8:00 a.m. - 4:30 p.m.,
Monday through Friday

973.875.5101
Fax: 973.875.4114

Website: www.sussexrec.com
E-mail: info@sussexrec.com

James M. Siglin *President & CEO*

Board of Directors

Jack S. Haggerty Jr.Chairman
William KovachVice Chairman
Raymond CordtsSec./Treasurer.

Thomas Madsen Barbara Miller
Arthur Smith Thomas Webb
Stephen Zsenai

SREC
RESOURCES, Inc.
NJ Lic. ELECTRICAL CONTRACTOR # 6622A
973-875-1365

**After Hours:
877.504.6463**