POLK COUNTY RURAL PUBLIC POWER DISTRICT

'The Livewire'

"Committed to enhancing the lives of our customers by providing safe, reliable and economical energy through excellence in customer service and innovation"

August 2021

Solar Experience From Customer

By Wade Rahn

This year we have been having higher than usual inquiries about adding a solar system to our customer properties. While we can provide some advice, we felt the story might be better told by one of the customers who has had a solar system up and running on his property for almost 4 years.

Just to the northwest of Highway 92 and River Road by Clarks, you can find Brian Buller's farmyard, where he raises his family and produces the lion's share of the electricity they use from a 15 kW solar array. The following is a conversation I recently had with Brian about his solar system, experience with it, and I asked him for some advice for customers considering installing a system.

Brian Buller stands next to his 15 kW solar system that was installed in 2017 in rural Clarks.

WR: What initially prompted you to look into putting in a solar array?

BB: For the most part, I was working with a company that sold solar products. A lot of people had questions, but we had nothing to show them. I figured we could use it as a showcase. Also, I really wanted to have a zero power bill at the end of the day.

WR: Were you able to get to not having a power bill?

BB: The system produces more energy than we use in a given year, but it doesn't quite financially zero out the other charges on our bill.

WR: How is your system performing as compared to what you estimated and projected?

BB: First of all, many people don't realize that you can have a considerable production variance from one year to the next. One year there is more sun than another. Temperature also plays a huge role in how much the system will produce. Through the company I worked with, we ran monthly projections. We tried to match it to my energy use as solar doesn't produce as much in the winter as compared to the summer. Overall I feel it's performing as I expected.

WR: Where did you start once you decided you wanted to do a project?

BB: Once it appeared we wanted to move forward, my next phone call was to you guys (PCRPPD). I would highly recommend starting with the District first since it ties directly into your electric system. You can then take all the information there and turn it over to the contractor, so they know what is expected and required. The contractor will then be able to figure out what a turn-key project is going to look like.

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A TIME TO CHARGE AND A TIME TO UNPLUG

FOUR PLACES NOT TO USE A PLUGGED-IN DEVICE

We use our cell phones, tablets and other devices so often that they are often an extension of our hands. There are a few places where using a device that is plugged into an outlet can be hazardous, however.

DO NOT USE A CELL PHONE OR OTHER DEVICE WHEN IT IS PLUGGED INTO AN OUTLET WHEN YOU:

ARE IN OR NEAR A POOL OR HOT TUB

Water and electricity are a deadly combination. Electrical current running through water can cause shock or electrocution.

ARE IN THE TUB OR BY THE SINK

Never extend your cell phone or device so that you can reach it while bathing; also, do not plug it in near standing or running water.

ARE IN BED OR OTHER SOFT PLACES

A device can overheat when placed on or under a pillow or soft bedding. Also, charging cubes and cords can malfunction, causing burns, shock or other serious injuries.

HEAR THUNDER OR LIGHTNING

Lightning can cause power surges that are not only harmful to electrical (charging) devices but also to you.

LEARN MORE AT: SafeElectricity.org®

Solar Experience *(Continued from Page 1)*

WR: What are your thoughts on your system since installation?

BB: Based on the projections I was estimating for a payback, it is taking a a couple of years longer than expected. I wish I maybe would have gone a touch bigger to achieve my goal.

WR: Is there anything you wish you had known when you planned the system that you know now?

BB: Not really, for the most part, I knew what we were going into. I feel like I had done my research going into it.

WR: Have you thought about putting batteries on your system?

BB: I have. I feel the technology will get better. Look at what has happened in the last five years with your Milwaukee drills and cell phones batteries. As of now, there isn't much benefit to install them. The day the Power District changes to "Time of Use" rates, I will most likely install them on my system.

WR: If you get multiple quotes, is there any advice on how to pick the best system?

BB: Price is one thing, of course, but another is to look at the projections for generation. Similarly sized systems should produce about the same. Granted, there are differences in equipment that can play a minor factor, but it shouldn't be wildly different. If it is, I would recommend investigating deeper to make sure they aren't over-promising.

WR: Any advice for people considering solar?

BB: Do your research. I have worked in the electrical business for 20 years, and I felt like I had a good idea of what was going on, and I did more research before we pulled the trigger. I would recommend you do your research and not decide on a whim as there are many factors that can impact the output and payback. These are not a one size fits all system. Also, concerning the inverters, make sure they have a way you can log in and get alerts. Having this has been very helpful to know what is going on with my system.

If you are interested in installing solar at your property, please reach out to the district. We'd be happy to discuss what is needed to interconnect to our system and work with you to see what your avoided cost would look like on your power bill.

DIY: Sealing & Insulating Rim Joists

Considering a sealing and insulating project for your basement or crawlspace?

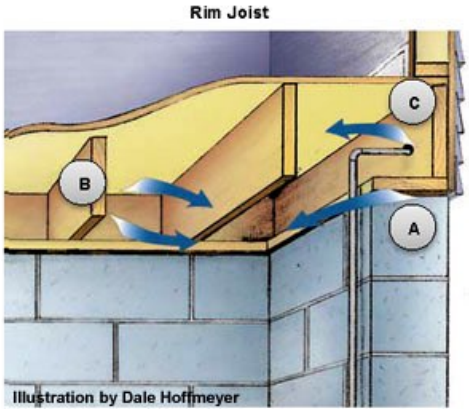
Sealing air leaks and adding insulation in the basement are generally considered moderate to difficult do-it-yourself (DIY) projects, but the benefits can be substantial. If you are doing a major home renovation project, now may be a great time to tackle this project too.

The good news is that even if you're not comfortable taking on this project yourself, there are many qualified contractors who can help you get the work done.

Sealing Your Basement or Crawlspace

Look for common locations of air leaks in basements and crawlspaces:

- Between rim joists and under the sill plate
- Around windows
- At wiring holes
- Around plumbing pipes
- Around the door to crawlspace, if attached to outside of house
- Around foundation at the sill plate, if not sealed properly



A Along the gap between the sill plate and the foundation

B At the bottom and top of the rim joist on each end of the house

C All electrical, water or gas line penetrations and any venting ducts that pass to the outside

Step 1: Seal any gaps or cracks in basement wall, ceiling or floor. It is best to seal up the top and bottom of the inside of the rim joist cavity. This is especially important at areas such as bay windows that hang off the foundation. Use caulk for any gaps or cracks ¼ inch or less and spray foam for anything larger. It is also very important to seal any holes for wires, pipes or other service areas that may lead to other floors of your home.

Step 2: Cut insulation and insert accordingly. Insert and secure all insulation between holes in rim joists. If using batts, cut the insulation to fit and place against the rim joist. If using rigid foam insulation, foam around the edges to hold the insulation in place. After installing the rigid foam insulation or fitting batts into rim joists, seal any remaining holes and cracks to make your basement airtight.

Article Source: EnergyStar.gov

Understanding Power Surges and Blinks

By Abby Berry

Have you ever noticed your lights blink during a thunderstorm? Or perhaps you've noticed a blinking microwave clock when you arrive home. When this happens, you've likely experienced a brief disruption to your electric service, which could result from a power surge or blink. While the symptoms of surges and blinks can appear similar, what's happening behind the scenes can be quite different.

What's a power surge?

Power surges are brief over-voltage spikes or disturbances of a power waveform that can damage, degrade or destroy electronic equipment within your home or business. Most electronics are designed to handle small variations in voltage; however, power surges can reach amplitudes of tens of thousands of volts—this can be extremely damaging to your electronic equipment.

Lightning strikes can cause faults (short circuits) on power lines, which can cause your power to blink. ***Photo Credit: Pat Gaines***

Surges can be caused by internal sources, like HVAC systems with variable frequency drives, or external sources, like lightning and damage to power lines and transformers.

PCRPPD encourages all members to install surge protective devices (such as surge protector power strips) to safeguard your sensitive electronics. If you're experiencing frequent surges in your home or business and you believe the cause is internal, contact a qualified electrician to inspect your electrical system.

What's a power blink?

Power blinks are also brief service interruptions, but they're typically caused by a fault (short circuit) on a power line or a protective device that's working in reaction to the fault. Faults can occur through a variety of instances, like squirrels, birds or other small animals contacting an energized power line; tree branches touching a power line; or lightning and other similar events. In fact, when it comes to power disruptions caused by critters, squirrels reign supreme. In 2019 alone, squirrels were responsible for more than 1,200 outages.

In 2019 alone, squirrels were responsible for more than 1,200 power outages nationwide. Photo Source: Carina Hofmeister

Any of the events noted before can cause your power to blink, but you may also experience a brief interruption when protective devices that act like circuit breakers are working to detect the fault. Believe it or not, these brief power blinks caused by protective devices are actually good because that means the equipment is working as it should to prevent a prolonged outage.

Regardless of the cause, PCRPPD crews will be on their way to inspect the damage and make necessary repairs after a power outage. And you can help too! Any time you experience repeated disruptions to your electric service, please let us know by calling (402) 764-4381.

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