

## ***Is it Time to Go Off Grid?***

Wow, what a couple of weeks it's been. The extreme sub-zero cold weather during this polar vortex thingy has made a lot of us open our eyes and realize that things could get very uncomfortable if the power went out. Can we rely on our respective governments to keep us safe and out of the cold or the organizations that power us? I think all we have to do is look at the experience of Texas and how they have handled it down there. People over the past week have frozen to death and millions were without electricity and gas for nearly a week. Now they are enduring thawing and the inevitable flooding and frozen pipes and lack of potable water. People have resorted to filling gasoline containers and pots from faucets that are still operating in some towns. It quite simply was a s\*\*t storm and people are suffering. The most ridiculous thing is that the authorities are telling people to boil water. How do you do that when there is no power or gas because the gas facilities have frozen up too. Add to that the restrictions they have to keep up in terms of the Covid 19 pandemic and no food on the shelves, it isn't going to get better anytime soon. After all most Texans don't have the luxury of flying off to Cancun to avoid it just because their daughters wanted to. Insane nonsense, isn't it? Ok so that's my rant for this morning.

So, what about this off grid thing? I have wanted to make my station completely self reliant on its own energy for some time now. Not only is it a great way to have an emergency station but you also get to check into the nets early without having to invent some cockamamy story as to why you want to check in early. I went out yesterday and bought a generator at a good price from Lowes and will be testing it out on the net Saturday morning to see how it runs. There was impetus to do that after I read a notice from our energy supplier that from 9:00 to 12:00 AM tomorrow morning they are shutting the power off to Coaldale to do some much needed upgrading to our grid out here. The cheek of them not taking into consideration that I am running a net from 9:00 to 10:00. How thoughtless of them. Being generally a positive person and looking for the silver lining in everything I do, I thought to myself, what a great time to test my noise floor on the radios and antennas and then it dawned on me that I run the net at that time and should have some backup power to do that too. So, we will see how it goes.

Lots of people run solar systems and that is something I have wanted to do for some time too. I have a solar panel and need a controller and a marine battery to get it to work and that should provide me with power enough to run a low power station. Thinking of low power reminds me of my old friend Ed VA7BN south of Creston and the amazing results he gets with his off-grid system and low, end fed antenna. Ed has promised to write about his system in the next week or so and to send us pictures. Speaking of Ed, reminds me of when he built a log cabin in a little place called Errington B.C. on Vancouver Island northwest of Parksville, back in the 70's. He wanted to go off grid too for that venture and setup 10-12V batteries in series to provide 120VDC to run all his equipment. There were no such things as solar panels in those days, so he used a trickle charger to keep the batteries up and I'm not going to mention where the power to run the trickle charger came from. One thing he mentioned was that the Skill saw that he used to build his cabin had a huge increase in power when connected to the 120VDC circuit and

worked really well, however, the switch was a problem because it would arc over when he released it after making a cut. Back to basics to understand what back EMF is all about on an inductive load. We'll look forward to Ed's story soon.



So what do you really need to run when the power goes out? In my case the furnace, a refrigerator, a microwave and of course some radio equipment. All the rest of that stuff is just fluff so we don't need to worry about that. Who needs light? It might be an idea to run some power to your internet router too if you are in need of entertainment. In my case I added up the amount of power I would likely need for the radio, about 300 watts, the furnace, 600 watts, The refrigerator about 800 watts, the shack computer 200 watts and the internet, 100 watts. We will need something to charge laptops and provide some lighting, and that might be another 100 watts. Remember that that is all

intermittent power except for the computers and the internet. A microwave would be nice and so would something to heat beverages like coffee. A microwave draws 1100 watts, and the coffee pot intermittently runs 1000 watts. I figured a 3500-watt generator would do nicely so that is what I got. It will do 4500 watts for a few minutes, so I think I'm covered. It should be an interesting experiment to run the shack tomorrow morning on generator power only. The proof is in the pudding, I guess.

So, what's next? As I mentioned I want to put an emergency solar station together much like some of our other hams in the area have done and I am going to start working on that project now. I have been looking at what others have done and with a few modifications it can be done quite reasonably. The costs are not horrendous, thank goodness, and I have the room and ability to build my own solar panel bank. I also have lots of south facing roof to work with too. I thought I would build a controller from



scratch but then when I looked at what is available on the market, it is hardly worth it. So now the project begins at my station. I will share what I have done to complete it and make my station capable of emergency operations. By the way here is a YouTube video by Dave Casler KE0OG. This is a worthwhile video to watch if you are interested in putting something together.... <https://www.youtube.com/watch?v=g-hqt6pvGxo>. Wish me luck.

73

Tom VE6ARG

### ***Is it Time to Go Off Grid? A Report on Last Weeks Tests:***

So, I did my tests last Saturday and ran off the grid for the net and it all worked perfectly. The power to all of Coaldale was off so it was a perfect opportunity to see what my noise floor was in this area. Unfortunately, we were being bombarded by an overactive solar wind and the noise floor was about -100 dBm at my station off the delta loop antenna. When I disconnected the antenna, it dropped to -127 dBm so I would say things were a bit noisy atmospherically. I didn't notice any noise present from my house when I compared the generator to battery power and then regular power, however there were still some interfering signals on 80M that I can only attribute to something being transmitted from outside the immediate area because the power to the town was off all around. I checked to see if there was any noise coming from the generator and didn't see anything, so it was clean. When I ran off the battery pack the noise situation was still the same. Now maybe not a scientific test by any stretch of the imagination, but it told me that my house was clean when the power came back on and I didn't see anything causing interference. It was an interesting experiment and one I had wanted to do for some time. I can stop looking for noise being generated by anything in my own house now. You can do the same thing at you own QTH by hooking up a battery pack and running your receiver off of it and then turn off the power to the house. You might be surprised by the results as was I. Now I need to find out what that noise on 80M is from and how to eliminate it. I have contacted Fortis and they are going to look into it.

73

Tom VE6ARG