

The Wrench's Wife

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Why is it that things always go wrong when my spouse Bob-O is gone? Could this be some sort of cosmic test? Must I prove that I am no longer “marginally mountain,” as Bob-O claimed my first year here?

Home Alone

It has been a busy year for our renewable energy installation business, and Bob-O is rarely home during daylight hours. One particular job took him away for three days a week, for several weeks in a row.

One morning, just after Bob-O left for his three days away, I began to prepare myself for the day. Once I get Bob-O out the door, I can concentrate on myself. I finished my coffee, and went to the bathroom to brush and braid my hair.

Kathleen, Inverter Ace—Note the floral-handled multi-tool on the worktable. Bob-O never borrows this one.



As I stood at the mirror, I heard a funny noise. I listened to the faucet. I listened to the toilet and to the shower. The sound seemed to be coming from the floor. I went downstairs into our half basement and dragged a chair over to my Sun Frost F10 freezer. I climbed onto the chair, removed the crawl-space hatch door, and set it on top of the F10. Then I crawled on top of the freezer to check out the crawl space.

That's Not Funny

Water was spraying everywhere. It took me a second to find the source—a valve in the bathroom plumbing. Obviously, it had been leaking for a long time. The dirt under the house was an adobe mire. I found a piece of cardboard, threw it on the mud, and climbed in. I tried turning the valve handle, and the water spray lessened a little. I went upstairs and got an adjustable wrench. I crawled back under the house and tried to tighten the valve.

The water spray intensified, and I was instantly drenched. I felt like Lucille Ball (from TV's *I Love Lucy*). I crawled out and found the shut-off valve for the house, turning off the water as much as I could. I got a garden hose, and putting it on the lowest hose bib in the system, turned it on and let the water run downhill towards the creek.

Friend In Deed

This stopped the water from spraying under the house. I came upstairs and called Friend. You remember Friend; he put the roof on the Chicken House of Mystery (*HP101*). Friend arrived about 35 minutes later. Friend knows plumbing. He can solder and sweat pipes, and do all kinds of things I would not ever attempt.

We rummaged around in Bob-O's shop. Between what we found there and what he had thought to bring, we were able to repair the leak. Apparently the valve had frozen last winter, which weakened it. I don't know how long it had been quietly leaking, but we surmise it was a long time.

Now What?

While Bob-O was still gone on this big job, out of cell phone range, the next thing that happened was that the power shut off. I rushed down to the warehouse and grabbed an OutBack Mate control meter so I could check on the status of the inverters. Back at the house, I went to the basement and plugged the Mate into our OutBack system. Then I called

OutBack on the portable phone. (Not before I automatically flipped on the light switch so I could see to dial. No lights, of course.) I got engineer bob Gudgel on the phone. He ran me through the program to start the inverter again. He asked me to call if it happened again so we could find the error message.

A couple of weeks later (yes, Bob-O was gone), it happened again. I called OutBack again and bob gave me directions to run a diagnostic test, during which we found an “overtemp” error on the slave. With our two stacked FX2024s, one is designated as the master and the other one is the slave.

The upshot is we discovered that our inverters were older beta models that Bob-O had field-tested (I found the very early serial number of FX00018 on one), and our firmware revisions were also old. I was given the choice of sending the slave in for a board change or doing it myself.

Kathleen, Inverter Ace

“Send me instructions to follow and I will do it,” I said confidently. Didn’t I change out a dented MX60 controller cover with complete success? This, I felt, was well within my purview.

Bob-O came home. “Great,” he said, “But I’ll have to take it off the wall for you.” I began to lose my feeling of autonomy. Then as I explained the diagnostic procedures and findings, Bob-O revealed to me that the master was really the slave and the slave was really the master.

Bob-O reprogrammed the FXs so that the master was on top. We figured out that the power went off whenever the slave inverter had to come on—like when I was using the dishwasher, the washing machine, or the dryer, and also microwaving some leftovers for lunch. That shut everything down, all right. By then, I had been schooled on how to turn the inverters back on, so I wasn’t without power for long that time.

We decided I would change out the boards on the FX that had the oldest firmware. OutBack sent the boards, but it took several weekends before Bob-O and I were both free to work on this project. I set up a worktable in the basement. Bob-O took the slave off the wall and put it on my worktable. I got out the printed instructions and the boards. I am grateful there were pictures. It was all very straightforward.

No Static, Please

The directions contained dire warnings about the possibility of a static charge buildup in your clothes destroying the boards. That gave me pause. Apparently the safest way to work on the unit was to stand naked in a mud puddle. This is straight from the instructions. The other method, and the one I chose, was to wear all-cotton clothes and touch a water pipe to drain my static buildup. As I worked on the unit, I would occasionally walk over to the sink by the washer and touch the faucet.

Bob-O came to see how I was doing. He had on a fleece shirt. “Don’t touch that,” I said, “You’re all static-ee.” He said not to worry; he had touched a ground. I told him what I had been doing. Apparently this was wrong because

I could build up static on my walk back from touching the faucet. So I stayed where I was after that.

Up Against the Walls

Everything went very smoothly until we tried to heave the revamped inverter up onto the wall mount. It is very heavy. Being the slave, it was a close fit underneath the master FX.

We had tested the unit before reattaching it to the wall. When it was back on the wall, the error light would not go off, and we couldn’t find an error code using the Mate. Back off the wall it came. I took it apart, a lot quicker this time, and checked to make sure I hadn’t pinched a wire, left the fan unplugged, or some other obvious thing. I had not. We bench-tested again. The error light came on, but then went off.

We wrangled it back onto the wall again. Bob-O programmed it to be the slave of the duo. We watched and waited—no red error light. I was victorious!

Techno Kathleen

What I have realized out of this experience is that I can’t be nontechnical any longer. Sure, I know how to live with renewable energy, but I need to get past my less than rudimentary knowledge of electricity. I’ve been threatening to take Solar Energy International’s Women’s PV class this spring. Now that would be high adventure! But, what will happen to Bob-O while I’m gone?

Access

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