

## Battery Backup System

Written by Administrator

Friday, 16 April 2010 07:40 - Last Updated Sunday, 13 June 2010 17:30

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The winter of 97-98 was a tough one here in Maine. Ice storms ravaged the state and most Mainers were without power from several days to several weeks. Not to be out done, the mid-December ice storm of 2008 barreled in with half an inch of ice that took down tree limbs which in turn took down the power lines.



**Inverter & 12 Batteries** After the first great ice storm, we added a separate inverter/battery system as backup for the times the grid power is down. Since our main intertie inverter system depends on grid power to work, we have a second system to handle those few but critical times when the power is out.

This is the standard Trace backup system installed by Talmage Solar Engineering in Kennebunkport, Maine. I've taken off two of the three front panels to show the inverter and charge controller in the top 'box' and the six batteries in the middle 'box.' There are another six batteries in the lower section.

Here's what happens when the grid power goes out:

1. The main inverters shut down so that no power goes out on the grid (safety issue plus it really is an electric appliance).

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2. Before the lights can go off, the backup inverter senses the loss of power and switches itself on, powering a small number of necessary loads (specific lights, communication, solar pumps, heating system, refrigerator and well pump).

3. I can then recharge the batteries with the solar panels (when we have grid power, the house current keeps the batteries topped off). This means that we can be independent almost indefinitely as long as there's sun to recharge the system.

4. When the grid power returns, the backup inverter shuts down and the main inverter starts up - all seamlessly.

It's certainly paid for itself.