

## **A really “cool” idea**

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We are fortunate in our area to have a reliable supply of electrical energy. Power outages of any major duration are reasonably rare. There was one such interruption back in August 2003 and a few since then that have served to remind us just how incredibly dependent we are on electricity.

Whenever the power goes out, my first thoughts turn to the pain it will be to reset all the clocks in the house. Then, I begin to worry about the safety of the food in our refrigerator and freezer. Your refrigerator will stay cold longer if it is relatively full since its contents will hold the cold better than the air in an empty refrigerator. Generally, things in your freezer will stay frozen for about 24 hours, providing you keep the door closed at all times.

The real risk comes when you are away from your residence for a prolonged period of time and don't know if a lengthy power failure has occurred. This is particularly troublesome for people who own cottages and may only be there on the weekends for much of the season. Consider what might happen if the power was interrupted early in the week for several days. As the contents of your freezer gradually thawed, any microorganisms present in the previously frozen foods would have the opportunity to proliferate in numbers, even if just on the surface.

After the power was restored, chances are very good that the food would have re-frozen before you returned to the cottage the following weekend. Potentially what you could have in your freezer would be re-frozen contaminated food. You would have no way of knowing that the food had thawed (or partially thawed) while you were away for the week, unless you were informed by a neighbour or a local newspaper story. The flashing of electric clocks is not a good indicator, since even a very short power disruption can cause this to happen.

What is really needed is an easy and reliable way to monitor the contents of your freezer to detect any unexpected thawing. This is where the “cool” idea comes into play.

You can make your own thawing “detector” by freezing some water in a plastic cup and placing a coin on top of it. Leave the cup in your freezer and check it on a regular basis. If there has been any thawing, the coin will sink into the melted ice or go to the bottom of the cup and be re-frozen below the surface when the refrigeration capacity returns.

You will need to check if the frost-free feature of your freezer has any impact on the

behaviour of this device. If you open the freezer door a lot, this may also have some impact on it as well. The beauty lies in its simplicity and low cost - a penny and a cup of water are all you need. However, if you would like to build a “deluxe” model, you can use a loonie or a toonie instead of a penny.

Speaking of ice, try using hot or boiled water to make the ice, but allow it to cool before putting it in the freezer. It will be clearer than if you use cold water. Dissolved air in the cold water creates tiny bubbles in the ice which give it a degree of opacity. Heating the water reduces the dissolved air content creating clearer ice cubes.

Hopefully you will not experience any lengthy power outages this summer; but if you do, this simple device may be just what you need.



**A simple device for detecting thawing in your freezer**