

Food Safety in Power Outages

A power outage may occur during a seasonal storm such as a hurricane, tornado or flood, or may simply be caused by work being done on electric lines. Whatever the cause, the following recommendations apply to food safety in power outages.

Safety Recommendations

Use a Thermometer: Keep an appliance thermometer in the refrigerator and freezer at all times to see if food is being stored at safe temperatures (34 to 40 °F for the refrigerator; 0 °F or below for the freezer). The key to determining the safety of foods in the refrigerator and freezer is how cold they are. Most foodborne illnesses are caused by bacteria that multiply rapidly at temperatures above 40 °F.

Leave the Freezer Door Closed: A full freezer should keep food safe about two days; a half-full freezer, about a day. If freezer is not full, group packages together quickly. Group meat and poultry to one side or on separate trays so their juices will not contaminate each other or other foods if the meat and poultry thaw. Then avoid opening the freezer door to prevent the cold air from escaping.

Add bags of ice or dry ice to the freezer if it appears the power will be off for an extended time. Use three pounds of dry ice per cubic foot of freezer space. Dry ice registers -216 °F, so rubber gloves or tongs must be used when handling it. Wrap the ice in brown paper for longer storage, and separate it with a piece of cardboard from direct food contact. Fill a partially empty freezer with crumpled newspaper to cut down on air currents, which cause the dry ice to dissipate. Provide adequate ventilation for carbon dioxide in areas where dry ice is used. Do not cover air vent openings of freezer.

Refrigerated Items: These foods should be safe as long as the power is out no more than about four to six hours. Discard any perishable food that has been above 40 °F for two hours or more and any food that has an unusual odor, color or texture. Leave the door closed; every time you open it, needed cold air escapes, causing the foods inside to reach unsafe temperatures. If it appears the power will be off more than six hours, transfer refrigerated perishable foods to an insulated cooler filled with ice or frozen gel packs. Keep a thermometer in the cooler to be sure the food stays at 40 °F or below.

Never Taste Food to Determine Its Safety: Some foods may look and smell fine, but if they've been at room temperature longer than two hours, bacteria able to cause foodborne illness can begin to multiply very rapidly. Some types will produce toxins, which are not destroyed by cooking and can possibly cause illness.

Power Out Chart

Use the following chart to decide which foods are safe to eat when the power is restored.

Discard: The following foods should be discarded if kept over two hours at above 40 °F.

Meat, poultry, fish, eggs and egg substitutes - raw or cooked.

- Milk, cream, yogurt and soft cheese
- Casseroles, stews or soups
- Lunch meats and hot dogs
- Creamy-based salad dressings
- Custard, chiffon or cheese pies
- Cream-filled pastries
- Refrigerator and cookie dough
- Discard open mayonnaise, tartar sauce and horseradish if above 50 °F for over eight hours.

Save: The following foods should keep at room temperature a few days. Still, discard anything that turns moldy or has an unusual odor.

- Butter or margarine
- Hard and processed cheeses
- Fresh fruits and vegetables
- Dried fruits and coconut
- Opened jars of vinegar-based salad dressings, jelly, relish, taco sauce, barbecue sauce, mustard, ketchup, olives and peanut butter
- Fruit juices
- Fresh herbs and spices
- Fruit pies, breads, rolls and muffins
- Cakes, except cream cheese-frosted or cream-filled
- Flour and nuts

Refreeze: Thawed foods that still contain ice crystals may be refrozen. Thawed foods that do not contain ice crystals, but have been kept at 40 °F or below for two days or less, may be cooked, then refrozen or canned.

Removing Odors

If food has spoiled in a refrigerator or freezer because of a power failure, undesirable odors can develop. To eliminate odors, remove the food and wash the inside of the freezer with one tablespoon of baking soda in a quart of tap water, or with one cup of vinegar in a gallon of tap water. Let the surface dry.

If the odor still persists, use activated charcoal. This type of charcoal is extra dry and absorbs odors more quickly than cooking-type charcoal. It can be purchased at a drug store or pet supply store. To use it, unplug the freezer. Put the charcoal in pans or on paper in the bottom of the freezer for several days. If the odor remains, put in new charcoal. When the odor is gone, rinse and dry the inside of the freezer. Turn on the freezer and it is ready for food.

When odor gets into the freezer's insulation, write the company for any suggestions it may have for solving the problem. However, sometimes, there is nothing that can be done.

Cooking When the Power is Off

Cooking meals when the power is off can be hazardous if a few basic rules are not followed.

Charcoal or gas grills are the most obvious alternative sources of heat for cooking. **NEVER USE THEM INDOORS.** In doing so you risk both asphyxiation from carbon monoxide and the chance of starting a fire that could destroy your home. Likewise, camp stoves that use gasoline or solid fuel should always be used outdoors.

Small electrical appliances can be used to prepare meals if you have access to an electrical generator.

Wood can be used for cooking in many situations. You can cook in a fireplace if the chimney is sound. Don't start a fire in a fireplace that has a broken chimney. Be sure the damper is open. If you're cooking on a wood stove, make sure the stovepipe has not been damaged. If you have to build a fire outside, build it away from buildings, never in a carport. Sparks can easily get into the ceiling and start a house fire.

Make sure any fire is well-contained. A metal drum or stones around the fire bed are good precautions. A charcoal grill is a good place in which to build a wood fire. Never use gasoline to get a wood or charcoal fire started. Be sure to put out any fire when you are through with it.

Sources:

1. North Dakota State University Extension Service. *How To Cook When The Power Goes Off*.
<http://www.ag.ndsu.edu/disaster/floods/poweroff.htm>
2. Univ. of Tennessee Agricultural Extension Services (1998, July). *National Recommendations for Disaster Food Handling*
3. USDA/FSIS (Sept. 2006). *Keeping Food Safe During an Emergency*.
http://www.fsis.usda.gov/Fact_Sheets/keeping_food_Safe_during_an_emergency/index.asp

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