



Preparing for a Power Outage of 4 or More Hours

During a power outage, the primary concern is food requiring **Time and Temperature Control for Safety**, commonly called TCS food. At improper temperatures, TCS food could become unsafe and lead to **foodborne illness**. In general, if the power is out for less than four hours, food kept in a refrigerator or freezer should be safe as long as the food temperatures were at or below 41°F to begin with and the appliance doors remain closed as much as possible.

The following information will assist you in completing the [Preparation for Power Outages](#) section in the application for a BCHS-accepted Emergency Preparedness Plan.

PLAN AND ACT NOW

List and Prioritize Equipment

- List the equipment that will be impacted by a power outage (refrigeration systems, ice makers, food/beverage dispensing systems, cooking/heating equipment, dishwashing machines, sensor handwashing sinks, hand dryers, heating and air conditioning, water heaters, security systems, computers, cash registers, lighting, etc.).
- Prioritize the equipment to be powered by an alternate power source (generators, battery operated fixtures).
- Develop alternatives to equipment that will not be powered by a generator or batteries.

Plan for Adequate Refrigeration

- Examine all refrigerator and freezer door gaskets and any display window seals and replace/repair as needed.
- Ensure all refrigerators and freezers have a working thermometer.
- Consider installing thermometers and alarms on refrigeration equipment to notify designated staff when the temperature has reached an unsafe level and to help the staff monitor how long the food has been exposed to those temperatures.
- Arrange to monitor unit temperatures a minimum of every four hours during a power outage and determine where the data will be stored. *Record time the power went out.*
- Arrange for one or more alternate means of refrigeration or preserving refrigeration to keep food at $\leq 41^{\circ}\text{F}$:
 - Generator and fuel
 - A refrigerated truck that can be delivered in an emergency (Provide totes for storing food.)
 - A refrigerated warehouse that has a backup generator (Keep food cold during transfer.)
 - Dry ice blocks placed in refrigerators/freezers

Generators

CAUTION: Only use generators outdoors and keep away from windows, doors, and air vents. Individuals must be specifically trained to operate the generators as large amounts of carbon monoxide can build up to dangerous levels in minutes.

Houston Public Works, (832) 394-8810/8820, must give approval to connect the generator to the establishment's power supply.

- Determine equipment to be operated by a generator. Take into account the capacity of the generator as it may not be able to operate all critical equipment such as refrigeration and freezer units, cooking equipment, etc. Consider additional generators that can be transported to the facility in an emergency.
- Make a plan to refuel generators during long term power outages

Dry Ice

CAUTION: Dry ice can cause serious injury if not handled properly. Dry ice should be handled only by trained workers. Refer to the Safety Data Sheet (SDS) for dry ice for personal protective equipment requirements, ventilation, exposure controls, and handling practices.

- Use tongs or insulated gloves when handling dry ice to avoid tissue damage.
- Allow 2 to 2 ½ pounds of dry ice per cubic foot of freezer space.
- Do not lock freezer or cover air vents.
- Place boards or heavy cardboard on top of packages then place dry ice on top of the boards. In an upright freezer, place dry ice on each shelf.
- Pack food tightly with dry ice to keep food frozen longer. Use blankets or crumpled newspaper to fill empty spaces.

Refrigeration Units Not Operated by a Generator

- Monitor and record refrigeration temperatures and times in the warmest part of the unit. Use thermometers mounted outside the unit when possible to minimize opening doors.
- Use tape and signs to keep refrigerator and freezer doors closed as much as possible.
- Transfer food from upright and display cases to the walk-in cooler and freezer keeping products close together to hold cold temperatures longer.
- Cover food with plastic or canvas tarps, blankets, quilts, and/or newspapers.
- Freeze any refrigerated foods that will not be needed immediately (meats, dairy products, leftovers, etc.). This can extend the time these foods remain below 41° F.
- Use ice or ice baths to rapidly cool small batches of food for refrigeration. Do not place hot foods in refrigerators or freezers as this will rapidly raise the temperature inside these units to unsafe levels.
- Organize the freezer compartment to minimize contamination from meat and poultry juices in the event of a thaw.
- Add extra ice and frozen containers of water to freezers and coolers to keep cold temperatures longer.
- Turn freezers and refrigerators to lowest temperature setting. Full freezers will keep cold temperatures longer.

Don't Forget Ventilation

- Do not cook if mechanical ventilation is not available to remove smoke, steam, or grease.

OR

Limit menu items to those that do not cause grease buildup and condensation on walls, ceilings, and ventilation equipment.

Anticipate Lighting Needs

Sufficient lighting is required to properly perform food safety-related tasks such as food preparation, food handling, warewashing, and cleaning the premises.

- Install additional emergency lighting that will remain on during a power outage.
- Artificial light may be available if using a generator or other lighting source such as battery-operated fixtures.
- Restrict operations to procedures that can be safely conducted using alternative lighting.
- Operations may be conducted during daylight hours without artificial light if sufficient natural light is available.

Plan for Dishwashing

- If the power outage affects the hot water heater:
 - Cease washing of all multi-use tableware and use single-service articles.
 - Cease food preparation. Only previously prepared ready-to-eat and prepackaged food may be served or sold.

OR

Heat water on gas stove for cleaning food preparation equipment and utensils, if feasible.

WHEN THE POWER GOES OUT

- Document date and time the power went out. The “food safety time clock” starts ticking when the power goes out.
- If the power is out for more than four hours:
 - Implement the establishment’s Emergency Preparedness Plan accepted by the Houston Health Department Bureau of Consumer Health Services (BCHS) using an alternate power source(s) **if and only if** no imminent health hazard exists with the implementation and operation of the plan.
 - If unable to implement your establishment’s accepted Emergency Preparedness Plan, **CLOSE THE ESTABLISHMENT** and discontinue food preparation, food handling, warewashing, and cleaning operations. Discard food products that were in the process of being cooked but had not yet reached final temperature.
- Notify** the **Houston Health Department Bureau of Consumer Health Services (BCHS)** if your establishment is operating under its accepted Emergency Preparedness Plan or if your establishment has ceased operations due to an imminent health hazard at www.houstonconsumer.org, chs@houstontx.gov or 832-393-5100.

WHEN THE POWER COMES BACK ON

First Steps

- Note date and time power is restored.

- Reset circuit breakers.
- Verify that:
 - All refrigeration equipment can consistently maintain cold holding temperatures of $\leq 41^{\circ}\text{F}$ or is in a frozen state before food is placed in the units.
 - Cooking equipment can heat to 165°F for raw animal foods.
 - Hot holding units can maintain $\geq 135^{\circ}\text{F}$.
 - Ventilation for cooking equipment is operating properly.
 - Water and booster heaters are heating adequately for manual warewashing (110°F) and mechanical warewashing with a hot water sanitizing rinse (180°F).

Assess All TCS Food

- Examine all TCS food for time and temperature abuse using your time and temperature logs and temperature logs and a calibrated thermometer.
- Cold Holding:
 - **Discard** refrigerated food if the temperature exceeded 41°F for more than four hours.
 - **Discard** frozen food that thawed and exceeded 41°F for more than four hours.
 - **Refrigerate** previously frozen food that has not exceeded 41°F for more than four hours or cook immediately.
 - **Cool** foods within one hour to $\leq 41^{\circ}\text{F}$ if the temperature exceeded 41°F for less than four hours or cook immediately.
 - **Discard** any refrigerated or frozen food that has deteriorated in quality or has an unusual color, appearance, or odor
- Hot Holding:
 - **Discard** foods held at $\leq 135^{\circ}\text{F}$ for more than four hours.
 - If held at $\leq 135^{\circ}\text{F}$ for less than two hours, **rapidly reheat** the following foods within two hours:
 - commercially pre-cooked foods to 135°F
 - all other TCS food to 165°F

When in doubt, throw it out! Temperature-abused food may cause foodborne illness.

Clean Up

- Clean and sanitize equipment and utensils, including ice bins where ice melted during the power outage and refrigerators/freezers that contained spoiled food.

PREPARE TO REOPEN

Meet the Requirements for Resuming Operations***

- Refer to the Requirements to Resume Normal Operations.

Contact BCHS at www.houstonconsumer.org or chs@houstontx.gov

- For approval to open if your establishment did not follow a BCHS-accepted plan for a loss of power
OR
If your establishment closed due to another imminent health hazard.

THE BUREAU OF CONSUMER HEALTH SERVICES MUST GRANT APPROVAL FOR YOUR ESTABLISHMENT TO RESUME FOOD OPERATIONS

- If and only if** your establishment followed a BCHS-accepted plan for a power outage :
 - Normal operations may be resumed once the requirements are met.
 - Notify BCHS that normal operations are being resumed.

Please contact the Bureau of Consumer Health Services (BCHS) with any questions or concerns.

4/26/21



HOUSTON HEALTH DEPARTMENT
8000 North Stadium Drive, Houston TX 77054
832-393-5100
CHS@houstontx.gov
HOUSTONCONSUMER.ORG

