

Food Safety for Food Establishments Prior to and During a Power Outage

Power outages can be costly in the food industry. Advanced planning and quick action can limit some of the financial and business impacts associated with power outages and emergencies. Quickly controlling food temperatures is important. An evaluation will need to be made to determine if foods have remained in safe temperature ranges during a power outage and whether or not cooking operations can safely continue. Safe food temperature ranges are less than or equal to 41°F and greater than or equal to 135°F.

Prior to an Emergency Situation

Facility Emergency Plan Considerations should include:

1. Who will be the primary decision maker or Person in Charge (PIC) during an emergency situation?
2. Who will contact the power company to determine expected duration of outage?
3. Where will the facility obtain equipment and supplies such as generators, alternate lighting (may need locality approval), refrigerated trucks, totes to store food, plastic to wrap food, dry ice, etc. to use during an emergency situation?
4. Does the facility have a first aid kit with necessary items?
5. How can the facility plan for safe operations during the outage, including:
 - a. identifying food departments that will remain open,
 - b. selling only shelf-stable foods, bottled water, non-food items, or
 - c. knowing when to close completely.
6. How can the facility maintain or minimize equipment temperature loss?
 - a. Identify which refrigerated cases to protect with insulated cardboard, covers, or tarps.
 - b. Identify which refrigerated product to transfer to refrigerated trailers, freezers, or offsite storage.
 - c. Assign extra employees to cover or move all food products.
 - d. Use dry ice.
7. How and when will the facility routinely monitor and record temperatures for refrigeration units, freezer units, and product during storage and transport?
8. How will the facility identify action levels for disposing of Time/Temperature Control for Safety (TCS) foods due to improper temperatures?
 - a. Does the facility have a dumpster or compactor for large disposal?
 - b. If not, who will be the contract company for disposal beyond current capacity?
9. Does the facility know who they can contact with additional food safety questions?

During an Emergency Situation

1. **Do two things immediately:**
 - a. Write down the time the power went off.
 - b. Check food temperatures with a thermometer and write them down.
2. **Keep temperature records while the power is out.**
 - a. Check cold food every 2 hours for each unit.
 - b. Write down the times and temperatures.

3. Foods being held cold (such as in a refrigerator at 41° F or below):

- a. Write down the time when food rises above 41° F.
- b. Discard all cold food that has been above 41° F for more than 4 hours.

4. Frozen foods that thaw out:

- a. If thawed food does not exceed 41° F for more than four hours, it may be refrozen. (However, re-freezing may make some foods watery or mushy.)

5. To keep cold food cold longer:

- b. Keep the refrigerator and freezer doors closed as much as possible to maintain the cold temperature (except while checking temperatures every two hours).
- c. Cover open units with a tarp.
- d. Do not add hot food to units.
- e. Group chilled foods together to reduce warming.
- f. A closed refrigerator can keep food cold for up to four hours, a closed freezer for up to two days. A half-filled freezer will warm up twice as fast as a full one.

6. Recovery when the power returns:

- a. Review temperature records.
- b. Discard food as required (see #7 below).
- c. Reset all breakers, equipment, etc.

7. When to discard versus when to salvage:

- a. Refrigerated or frozen food should be discarded if:
 - Above 41° F for four hours or more.
 - Frozen and then thawed for four or more hours.
 - Deteriorated in quality or has an unusual appearance, color, or odor.
- b. Temperature Controlled for Safety Foods (TCS) must be discarded if it has been in the "Temperature Danger Zone" (41° F-135° F) for more than 4 hours. TCS Foods include:
- c. Partially cooked food should be discarded if without power for *more than one hour*.
 - Animal food that is raw or heat-treated:
 - Ground beef, cooked roast beef, veal, lamb, poultry, fish, seafood, luncheon meats, hot dogs, hams, etc.
 - Plant foods that are heat-treated or consist of raw seed sprouts, cooked pasta, rice, peas, corn, beans, etc.
 - Cut melons: Watermelon, cantaloupe, musk or honeydew melons
 - Cut leafy greens: Cut, shredded, sliced, chopped or torn iceberg lettuce, romaine lettuce, leaf lettuce, escarole, endive, spring mix, spinach, cabbage, kale, arugula, etc.
 - Cut tomatoes or mixtures of cut tomatoes
 - Garlic-in-oil mixtures
 - Eggs and dairy products
 - Eggs or egg products, ice cream, yogurt
 - Milk, cream, buttermilk, cream-based foods or soups
 - Soft cheeses such as cream, ricotta, brie, etc.
 - Desserts: Pies, cakes, and custard or cheese pastries, chiffon, meringue or pumpkin
 - Soups, stews, casseroles or similar dishes containing meats, pasta, rice, eggs, or cheeses
- d. Frozen foods, if stored in a sealed walk-in or cabinet and where ambient temperature has remained below 41° F, may be salvaged.

- 8. Hot Food Holding:** If the time when the power outage began was noted, the following procedures may be used:
- If power returns within two hours, rapidly reheat food to 165°F within an additional two hours. If the time the food is between the temperatures of 41°F and 135°F exceeds two hours, discard.
 - If the power does not return within two hours, food must be discarded within four hours from the time of the power outage (unless it is kept above 135°F).
 - Use an alternate heat source such as “canned or propane heat” and monitor temperatures hourly to ensure product remains above 135°F.
 - Discard TCS foods that were in the cooking or reheating process but did not reach a safe final temperature.
 - Do not use gas or solid fuel cooking and heating equipment if the exhaust hood and make-up air systems stop working. Using this equipment without proper ventilation can lead to a dangerous build-up of toxic fumes that may cause injury or death.

9. Dishwashing

- Use the three compartment sink if hot water is available or if water can be heated to be used in the sink; or
- Discontinue operations that generate soiled utensils/kitchenware if they cannot be properly washed and sanitized; or
- Use single service tableware.

10. Remember:

- Cancel incoming food supply shipments.
- Never taste food to determine its safety.
- When in doubt, throw it out.

11. Alternative Resources:

a. Generators

- Determine which equipment will be operated by a generator. On-site generators may not have the capacity to operate critical equipment such as refrigeration and freezer units. Consider additional generators for maintaining refrigeration, including portable generators that can be transported to the facility during an emergency. A plan should be in place to refuel generators during long term power outages. Make certain that individuals are trained to safely operate the generator. Additional information on generator safety can be found here: https://www.osha.gov/OshDoc/data_Hurricane_Facts/portable_generator_safety.html

b. Refrigerated trucks

- Refrigerated trailers and trucks with insulated storage containers may be delivered to you in an emergency. Issues to consider include the time it will take for a trailer or truck to be delivered, damage to roads and infrastructure, source of fuel to maintain truck refrigeration systems, and secure storage of food.

c. Ice or frozen gel packs

- Consider storing frozen gel packs on-site to use during short term emergencies. Procedures for using ice and/or gel packs should include how to prevent cross-contamination of food.

d. Dry ice

- If dry ice is used, pack TCS food tightly together and place dry ice above foods to allow the cold CO₂ gas to sink and fall over the food items. Take precautions, such as wearing insulated gloves, to avoid burns when handling dry ice. Do not place dry ice into a sealed room, cooler, or container without a means for the gas to escape. Dry ice in a sealed space can be dangerous.