Fact Sheet

FOOD SAFETY IN AN EMERGENCY – FOOD BUSINESSES

Introduction

Food businesses need to be aware that different emergency situations can affect food safety in various ways.

Emergency situations can include:

- Power failure
- Flood
- Fire

While food businesses may want to resume operation as quickly as possible, it is important that all food preparation and service is discontinued until the appropriate steps have been taken to protect the public's health.

It is the responsibility of the business to ensure that all food sold after the emergency has not been compromised in any way, penalties under the Food Act 2001 may apply.

Offences under the Food Act 2001

If food is sold that has been stored or handled in a way that could make it unsafe, then the business could be found to be in breach of the Food Act 2001. Penalties apply

Part 2—Offences relating to food Division 1—Serious offences relating to food

13—Handling of food in unsafe manner

(1) A person must not handle food intended for sale in a manner that the person knows will render, or is likely to render, the food unsafe.

Maximum penalty:

(a) If the offender is a body corporate—$500 000.

(b) If the offender is a natural person—$100 000 or imprisonment for four years.

(2) A person must not handle food intended for sale in a manner that the person ought reasonably to know is likely to render the food unsafe.

Maximum penalty:

(a) If the offender is a body corporate—$375 000.

(b) If the offender is a natural person—$75 000.

14—Sale of unsafe food

(1) A person must not sell food that the person knows is unsafe.

Maximum penalty:

(a) If the offender is a body corporate—$500 000.

(b) If the offender is a natural person—$100 000 or imprisonment for four years.

(2) A person must not sell food that the person ought reasonably to know is unsafe.

Maximum penalty:

(a) If the offender is a body corporate—$375 000.

(b) If the offender is a natural person—$75 000.

Government of South Australia
SA Health

Preparing for the worst

Know your area and the emergencies most likely to occur and consider what you can do ahead of time to store your food safely in an emergency.

Be aware that there are emergency situations where there will be no opportunity for preparation and your safety must come first.

Personal safety

Emergency situations can be dangerous, so it is critical to use care and observe all safety precautions. Food business operators should have appropriate professionals examine the facility prior to employees or customers re-entering the building after an incident.

Immediate health hazards

If an immediate health hazard exists due to an emergency situation, SA Health or local government may require that the food business immediately stop operating.

Immediate health hazards may include:

- Extended power outage
- Flood
- Fire
- The extended loss of potable water supply
- A sewage backup into a food establishment or onto the grounds of a food establishment
- A natural disaster

After the event

Regardless of the emergency, the appearance and smell of food is not a good indicator of safety, so when in doubt, throw it out!

Where possible, keep good records of all food products detained, destroyed, or salvaged.

Consider the amount of food to be disposed of and where required hire larger bins. When disposing of food, ensure discarded food is appropriately secured and cannot be collected by passers-by/consumers.

REMEMBER!

- Never taste food to determine its safety
- Food unfit for human consumption is also unfit for pets
- When in doubt, throw it out.

The business will need to contact Local Government prior to reopening to arrange for an Environmental Health Officer (EHO) to assess that food safety issues have been addressed.

Definitions

Potentially hazardous food means food that has to be kept at certain temperatures to minimise the growth of any pathogenic microorganisms that may be present in the food or to prevent the formation of toxins in the food.

Perishable food refers to foods that are subject to deterioration in quality or food safety when kept under normal storage conditions.

Examples include:

- Potentially hazardous foods (must be kept refrigerated and used within specified use by date).
- Uncut fruit and vegetables that can be stored unrefrigerated eg apples, bananas, potatoes etc.
- Shell eggs (recommended below 14°C but best stored below 5°C).
- Low risk bakery products e.g. bread.
- Some foods that require refrigerated storage.

Shelf stable food means a food that can be safely stored and sold at room temperature. Preservation methods used include canning, ultra-heat treatment, reduced water activity, increased acidity and some modified atmosphere packaging. These non-perishable products include canned and bottled foods, rice, pasta, flour, sugar, spices, oils, and foods processed in aseptic or retort packages and other products that do not require refrigeration until after opening.

Power outages

Power failures may occur for many reasons and may last for as little as a few minutes to as long as a few days.

Prepare

If there are adverse conditions that may lead to a power failure, consider what preparations can be made ahead of time. This will depend on the business capabilities and resources, but some examples may include:

- If your freezer is not full, keep items close together—this helps the food stay cold longer
- keep ice packs
- Dry ice (Be aware of Worker Health and Safety issues of using dry ice)
- Generators
- Cancel incoming food deliveries
- Transfer food to off-site cold storage facilities
- The installation of a fixed thermometer before a power outage situation will allow for monitoring temperatures quickly.

During the outage

If the power supply is out for more than 4 hours, food in fridges will start to spoil, and pathogens will begin to grow once the temperature of the food rises above 5°C. In the event the power failure lasts more than a few minutes, the 'food safety time clock' has started, so:

- Document the time the power went out
- Quickly move potentially hazardous food from the refrigerator to the freezer
- Meat, poultry and fish should be stored in the coldest part of the refrigerator or moved to the freezer & stored closely together to conserve temperature
- Avoid adding hot foods to refrigerators
- Keep your refrigerator and freezer doors closed except while checking temperatures every two hours - this will keep the air temperature colder for longer
- Digital, dial, or instant-read food thermometers will help you monitor refrigerator and freezer temperatures. Consider having a thermometer (fixed or other) in the refrigerator and freezer at all times
- If you're not sure a particular food is cold enough, take its temperature with a probe thermometer.

When power is restored

Document the time the power was restored and the temperature of the potentially hazardous food in your refrigerator to see if the temperature is 5°C or below.

Refer to Table: 'Keeping food safe during an emergency' for more detail, but as a quick guide for potentially hazardous foods that have been out of temperature control:

Cold food

Time - Less than 2 hours

If it potentially hazardous food is above 5°C and the power has been off for less than 2 hours you can re-refrigerate the food or use it immediately.

Time - between 2 – 4 hours

Potentially hazardous food above 5°C can be consumed.

Time - More than 4 hours

If potentially hazardous food temperature is above 5°C and has been for more than 4 hours, some foods may be unsuitable to consume. This includes food in freezers that has defrosted and risen above 5°C.

Food in the freezer

Freezers will usually not defrost for at least 24 hours, provided the door has been kept shut. If frozen foods have thawed, some foods should not be refrozen but be kept below 5°C and eaten as soon as possible. Other foods may be refrozen, but will lose quality.

Hot food

For foods being cooked during the power outage

- Do not serve any partially cooked food
- If power outage is brief (under 1 hour), rapidly finish cooking/reheat without interruption to 75°C (or equivalent)
- If power is out for more than 2 hours, discard all partially cooked food.

Foods being hot held during the power outage

- If food can be maintained above 60°C for duration of the power outage, it will remain safe to eat
- Hot held food can be served for up to 4 hours after the temperature is below 60°C
- It must be discarded if below 60°C for more than 4 hours*
- If the food was below 60°C for less than 2 hours, it can be rapidly re-heated without interruption to 75°C (or equivalent), or chilled rapidly to below 5°C in 4 hours.

***NOTE: Cooking or reheating foods that have been out of temperature control longer than 4 hours will not eliminate the risk of food borne illness as some bacteria produce a toxin, which is not destroyed at the temperature used to cook or reheat food.**

Safe foods

Certain refrigerated perishable foods can still be considered safe even if they have been above 5°C for longer than four hours. Refer to table 'Keeping food safe during an emergency' for more detail.

Shelf stable foods are not affected by power outages.

Floods and fire

Floods and fire can cause extensive damage, therefore food businesses may not be able to open until structural/ electrical/ utility provider/ insurance assessors have inspected and all required works have been completed.

When considering salvage and disposal:

- Salvaging canned food for resale is not recommended for food businesses
- Food businesses must not re-label packaged foods unless permission is obtained from the SA Health
- Ensure that discarded food cannot be collected by consumers. Councils may offer special collection

Where a food business has had to close due to flooding or fire, an Environmental Health Officer (EHO) may need to inspect prior to reopening to ensure all food safety measures have been taken.

It is the responsibility of the food business that has been damaged by flood or fire to assess its own food safety risks, however local government may be able to help with this assessment.

Floods

Floodwater can be contaminated with sewage, agricultural and industrial waste, and other substances that can cause illness. There is a danger that any food, surfaces and cooking utensils that have come into contact with floodwater might be contaminated.

Prepare

If your business is in a location that could be affected by a flood or a flood warning has been issued:

- Plan your food storage on shelves that will be safely out of the way of contaminated water
- Cancel incoming deliveries

Food & packaging

The organisms present in floodwater may invade food, including packaged foods, therefore certain food and packaging will need to be discarded.

Discard:

- Any food exposed to flood waters within the premises. This includes food stored in sealed cans or bottles, packaged goods and unsealed containers.
- All foods in refrigerators or freezers that have come into contact with flood waters as the seals are not watertight.
- All packaging that has come into contact with the flood water or is punctured, torn, swollen, rusted or had its security seal removed or damaged.
- All items that have been affected by vermin, insects or any other pests.

Ensure these products do not reappear as damaged or salvaged merchandise for human consumption.

NOTE: Undamaged, commercially prepared foods in all-metal cans or retort pouches can be saved if they have not come into contact with flood water or debris i.e. above the highest point of the flood mark and not damaged in any other way.

Water Issues

- Contaminated water cannot be used to wash dishes, wash and prepare food, wash hands, make ice, or make baby formula.

Refrigerated and/or Frozen Foods

Typically, electricity will go out during a flood. If the refrigerator or freezer has not been exposed to flood waters, food may still need to be discarded.

- Refer to 'Food Safety in a Power Outage' section.

Reminder: Cooking food will not eliminate the risk of food borne illness as some bacteria produce a toxin, which is not destroyed at the temperature used to cook or reheat food.

Building and equipment integrity

It is the businesses responsibility to ensure the structure of the building and equipment has been assessed to determine whether it will meet the requirements of the Food Act 2001. Areas that must be considered:

- The impact of flood waters on the buildings structure. Food storage areas need to be protected from outside elements such as rain, water, dust, pests, animals and any other condition that may adversely affect the safety of the product.
- Have damage assessed by an appropriately qualified person and obtain a report (electrical, structural), considering:
    - Cavities behind walls, kick boards and other structural voids that have been inundated by the flood must be drained and cleaned. In the case of wall cavities, holes drilled near the base to check for water inundation, can indicate whether further action is required.
    - The integrity of laminated surfaces must be checked. Water permeation of the timber may cause buckling or separation, which means the laminated material, cannot be disinfected properly.
    - Wall cavities of cool/freezer rooms must also be checked for water inundation. Holes drilled into the wall, can indicate the extent of water inundation. Approval for reuse may be given if certification is granted by a qualified refrigeration contractor that the integrity of the structure is sound and the walls are fully sealed.
    - The integrity of equipment such as fridges, ovens etc must be checked to determine whether it is suitable for the safe storage or production of food. To ensure safe operation, a qualified electrical contractor should check all electrical equipment that has been inundated by flooding.
    - Foundations, walls, doors and windows may be damaged and need repair. Repairing any damage immediately will help prevent further damage and wear in the future.
    - Special attention should be given to lighting, drainage areas, ventilation vents, corners, cracks and crevices, door handles and door gaskets.

- Replace or repair damaged surfaces (floors, walls and ceilings) as per recommendations.
- Scrub and sanitise all floors, walls and ceilings with a 100 to 200ppm chlorine solution or designated sanitiser.
- Water damaged ventilation systems that cannot be thoroughly cleaned and sanitised should be removed and replaced. In all cases, replace all ventilation air filters.

Cleaning and Sanitising: Premise, Equipment and Utensils

Cleaning and sanitising must be conducted prior to reopening.

- A professional cleaning service or restoration company may be the best option depending on the scale of the flood. The businesses insurance agent may have recommendations, but the business must confirm that the cleaning service is familiar with food service operations.
- Refrigerated display and storage cases and other refrigerator equipment used to store food should be cleared of all contaminated products prior to cleaning and sanitising. Special attention should be given to lighting, drainage areas, ventilation vents, corners, cracks and crevices, door handles and door gaskets.
- Carefully check dishes, pots, pans, cutlery and kitchen equipment that might have been in contact with floodwater. Throw away damaged or cracked items, items made from porous material such as wood, plastic or rubber including wooden chopping boards as they cannot be adequately sanitised.
- All sinks should be thoroughly cleaned and sanitised before resuming use.
- Wash utensils and surfaces in hot, soapy, drinking-quality water. Take apart and clean the non-electrical pieces of any kitchen equipment that can be safety taken apart and then rinse in clean, hot water.
- Clean cupboards and counters with hot soapy water then rinse with a chlorine bleach solution before storing dishes or food.
- Heat Sanitation: Sanitise silverware, metal utensils, pots, pans and kitchen equipment in pieces by boiling in water for 10 minutes.
- Commercial and most domestic dishwashers are capable of sanitising all eating and cooking utensils as part of their normal cycle.
- Chemical Sanitation: Refer to Dilution Tables:
    - Wash all items, equipment and structures with detergent and hot water, then rinse thoroughly.
    - Apply bleach as needed according to the tables below. Do not be dilute chlorine in hot water.
    - Leave bleach or chlorine on for 10 minutes* and then rinse again.
- Air dry items because towels might have been splashed with contaminated water.
- Safety Precautions when using bleach to sanitise the food business
    - Wear protective equipment such as safety glasses, face mask, disposable gloves and enclosed shoes.

Bleach for Food Contact Surfaces, Equipment (200ppm)

Water	4% Chlorine (household bleach)	12.5% Chlorine	65% Chlorine (hypochlorite granules)
5L	25mL	10mL	0.8g
10L	50mL	20mL	1.6g
50L	250mL	100mL	8g

Bleach for Walls, Floors, Ceilings (1000ppm)**

Water	4% Chlorine (household bleach)	12.5% Chlorine	65% Chlorine (hypochlorite granules)
5L	125mL	50mL	4g
10L	250mL	100mL	8g
50L	1250mL (1.25L)	500mL	40g

*The contact time recommended after a flood event is higher than the standard sanitising procedure as the bacterial load from the flood water contamination will be higher than what would occur during daily business operations.

**Different sanitiser strengths are recommended for food contact surfaces, equipment and floors walls and ceilings because of the different hazards presented within the facility.

An excellent resource for calculating dilution rates can be found here:

http://www.publichealthontario.ca/en/ServicesAndTools/Tools/Pages/Dilution-Calculator.aspx

Note: mould may become an issue very quickly after a flood and professional mould removalist advice may be required.

Food Safety after a Fire

Fires can effect one business (a single premise fire), or it may affect numerous food businesses (bushfire, shopping centre, food court).

Fires are unfortunate and often terrifying but once the fire has been put out, it is important to understand that fire damage can jeopardize the safety of food.

It is the responsibility of the food business that has been damaged by a fire to assess its own food safety risks; however Local Government may be able to help with this assessment.

How does a fire make food unsafe?

Food exposed to fire can be contaminated by toxic chemicals, and can be spoiled or made more prone to spoilage by bacteria. There are three aspects of fire situations that can make food unsafe:

1. Smoke and fumes

Toxic fumes released from burning materials are the most dangerous elements of a fire. Fumes and smoke released from the fire can contaminate food and drink, making it unsafe to eat or drink.

2. Heat from the fire

Heat from the fire may activate food spoilage bacteria in jars or cans of food, and can partially or fully cook fresh foods. This can make previously safe food, such as that in cans and jars, unsafe. If the heat is high enough, cans or jars can split or rupture, making the food unsafe.

3. Chemicals used to fight fire

This will depend on the situation as retardants used to fight fires should not present a risk to health, but may affect the taste. Where retardant has been used and food has been compromised with smoke and/or fumes, dispose of it.

Food is not safe after being in a fire or after the extinguishing system has discharged as:

- Heat can cause jars and cans to split and crack allowing contaminants to enter.
- Even if cans and jars appear undamaged, heat can cause the food to spoil.
- Smoke and chemicals from the fire and extinguishing system can penetrate plastic packaging, plastic wraps of all kinds, and get under bottle caps or screw tops.
- Firefighting chemicals can taint food and beverages, and packaged products.

Food and beverages that were in or near a fire that must be disposed of:

- All foods and beverages stored in screw top jars or bottles, permeable packaging such as cardboard, foil, paper or plastic wrap.
- All unwrapped fruits and vegetables.
- Foods stored outside the refrigerator and which were exposed to smoke and fumes.
- Foods from the refrigerator or freezer if there are any signs of smoke damage as refrigerators or freezers seals are not airtight.
- Ice, in both serving bins and machines.
- All foods that were touched by firefighting chemicals. These chemicals are very poisonous and cannot be safely washed off foods. If you are not sure if the food was touched by firefighting chemicals, throw it away.
- All single-service utensils (plastic plates, cups etc.), and all packaging that were exposed to smoke and firefighting chemicals.

Refrigerated and/or Freezer Foods

If the refrigerator or freezer has not been exposed to heat, smoke, fumes or fire-fighting chemicals but there has been a power outage because of a power outage, food may or may not be salvageable:

Refer to 'Food Safety in a Power Outage' section.

Reminder: Cooking food will not eliminate the risk of food borne illness as some bacteria produce a toxin, which is not destroyed at the temperature used to cook or reheat food.

Cleaning and Sanitising: Premise, Equipment and Utensils

Cleaning and sanitising must be conducted prior to reopening. Surfaces may look clean, chemicals from extinguishers and fine particles may be on surfaces of equipment and utensils.

- A professional cleaning service or restoration company may be the best option depending on the scale of the fire. The businesses insurance agent may have recommendations, but the business must confirm that the cleaning service is familiar with food service operations.
- Remove and discard from the premises all damaged equipment, utensils, linens and single service items.
- Refrigerated display and storage cases and other refrigerator equipment used to store food should be cleared of all contaminated products prior to cleaning and sanitising. Special attention should be given to lighting, drainage areas, ventilation vents, corners, cracks and crevices, door handles and door gaskets.
- Carefully check dishes, pots, pans, cutlery and kitchen equipment that might have been in contact with smoke or firefighting chemicals. Throw away damaged or cracked items, items made from porous material such as wood, plastic or rubber including wooden chopping boards as they cannot be adequately cleaned and sanitised.
- Wash utensils and surfaces in hot, soapy, drinking-quality water. Take apart and clean the non-electrical pieces of any kitchen equipment that can be safety taken apart and then rinse in clean, hot water.

- Heat Sanitation: Sanitise silverware, metal utensils, pots, pans and kitchen equipment in pieces by boiling in water for 10 minutes.

Chemical Sanitation: Refer to Dilution Table:

  - Wash all items, equipment and structures with detergent and hot water, then rinse thoroughly.
  - Apply bleach as needed according to the tables below. Do not be dilute chlorine in hot water.
  - Leave bleach or chlorine on as per the manufacturers recommendation and then rinse again.

- Air dry items because towels might have been splashed with contaminated water.
- Commercial and most domestic dishwashers are capable of sanitising all eating and cooking utensils as part of their normal cycle.
- Safety Precautions when using bleach to sanitise the food business
  - Wear protective equipment such as safety glasses, face mask, disposable gloves and enclosed shoes.

Bleach for Food Contact Surfaces, Equipment and Premise (200ppm)

Water	4% Chlorine (household bleach)	12.5% Chlorine	65% Chlorine (hypochlorite granules)
5L	25mL	10mL	0.8g
10L	50mL	20mL	1.6g
50L	250mL	100mL	8g

Sanitising the equipment and premise after a fire does not require the same high level of contact time and dilution as after a flood as the risk of exposure to pathogens is lower.

An excellent resource for calculating dilution rates can be found here:

http://www.publichealthontario.ca/en/ServicesAndTools/Tools/Pages/Dilution-Calculator.aspx

For more information

SA Health

Health Protection and Licensing Services

Food and Controlled Drugs

Telephone: 82267100

www.sahealth.sa.gov.au