

HYGIENE MANAGEMENT

PREVENTIVE MAINTENANCE OF EQUIPMENTS AND ESTABLISHMENTS

Preventive maintenance program

The manufacturers must have an effective written preventive maintenance programme, to ensure that equipments and buildings that may affect food, are mantained in proper working order

Preventive maintenance program

EQUIPMENT

Equipment should be maintained to ensure the absence or any potential physical or chemical hazard (inappropriate repairs, flaking paint and rust, excessive lubrication, use of food grade lubricantes)

Preventive maintenance program

The preventive maintenance program of the equipment, should specify the:

- list of equipment requiring regular maintenance
- responsability for particular task
- procedure and frequencies of maintenance (equipment inspection, adjustments and part replacements). They are based on the equipment manufacturers's manual or equivalent or on operating conditions that could affect the condition of the equipment.

Preventive maintenance program

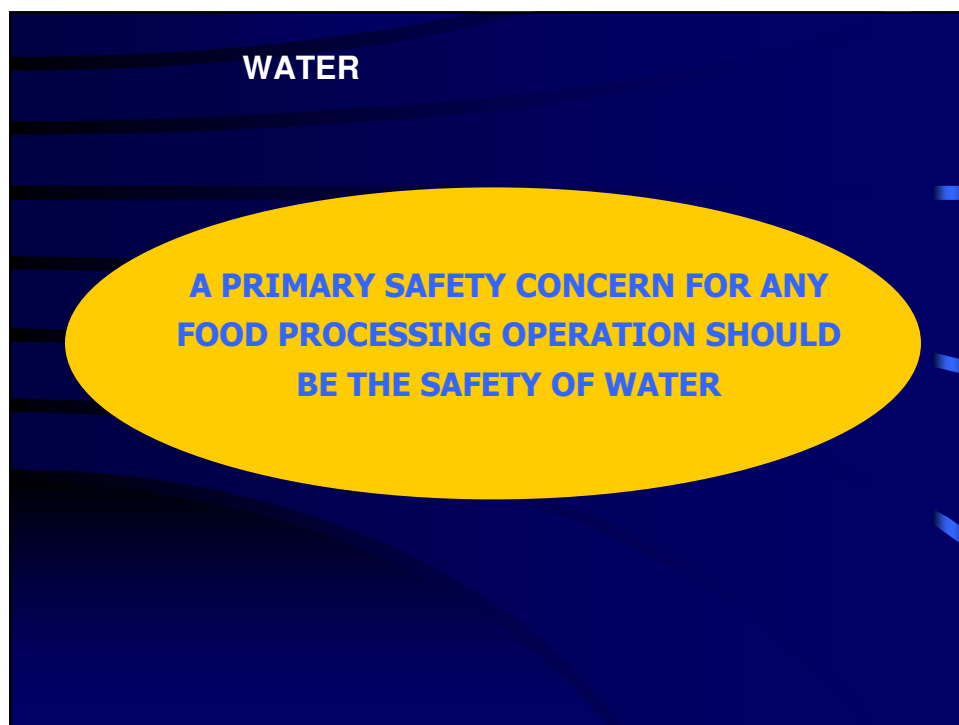
FACILITIES:

The preventive maintenance program of establishment, consist of a regular visual inspection for evidence the adequate maintenance and if it's not adequate then the responsible must to act as soon as posible to correct them.

The food industry must design a chek list to record the result of the visual inspection. It wil be the same check liste about C&D.

Some aspect to consider in the check list:

- Review the doors and windows are closed and sealed properly
- review of the condition of sreen
- review of the state of soils, roofs, walls and insulating material
- review of the condition of lamps
- to check the possible corrosion of the equipment
- to check the condition of transport.
- ...



WATER

An adequate supply of potable water with appropriate facilities for its storage, distribution and temperature control should be available whenever necessary to ensure the safety and suitability of food.

Potable water should be as specified in the latest edition of WHO Guidelines for Drinking Water Quality, or water of higher standard. Non potable water shall have a separate system. Non potable water systems shall be identified and shall not connect with, or allow reflux into, potable water systems.

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WATER

Water is of major importance because of its broad use and application in food processing:

- It's used as an ingredient in some food products
- to convey or transport products
- to wash food
- to clean and sanitize facilities, utensils, containers and equipment
- to make ice and glazed products
- for drinking....

WATER

Non potable water, can be used for:

- * steam production
- * fire control
- * refrigeration
- * and other purposes no connected with food

NON POTABLE WATER SHOULD OPERATE THROUGH A SEPARATE SYSTEM

WATER

water sources

WATER SOURCES:

1. PUBLIC OR MUNICIPAL SOURCE
2. PRIVATE WELL
2. THE SEA (usually limited to fish processors)

WATER *water sources*

Food manufacturers should maintain consistent control over the water sources they use, and must be monitored with sufficient frequency to assure that the water is safe for use in foods and food contact surfaces

WATER *water sources*

Public water:

- are the most common source of water for processing food products
- it's often the most expensive source, but cost must be weighed against safety, quality and availability
- typically maintains high quality standards for both chemical and microbiological content. It usually has been purified or treated, and its is generally tested o a predetermined schedule.

WATER *water sources*

Public water:

- a copy of water bill will usually be sufficient documentation of an approved water supply
- food processors should perform monitoring analyses to confirm the quality of the water and store the results in their periodic control. (free chlorine determination)

WATER *water sources*

Private well

- Private water can come from a variety of surfaces, but it is most often obtained
- Wells are drilled by food plants to provide less costly, more reliable or higher quality water than might be available locally
- Properly maintained, wells can provide clean water that assures high quality and food safety, but they are often **more subject to contamination** than most municipal sources

WATER *water sources*

PRIVATE WATER: SOURCES OF CONTAMINATION:

- + **Sewage:** when the wells are located too close to cesspools, septic tanks, associated drainage fields
- + **Ground water:** which may enter the well without sufficient natural filtration and percolation to remove impurities
- + **Chemical pollution:**
the application of agricultural chemicals on farms, home gardens;
industrial discharges

WATER *water sources*

Private water:

private water sources, should be monitored to determine if the water meets approved standards

This requires laboratory analysis which at minimum should include:

- * testing for indicator bacteria such as coliforms
- * chemical analysis: free from heavy metal, pesticides and fertilizers.

Frequency for sampling: will be specified by local or state requirements (always before start up for use in processing)

WATER *In contact with food & as an ingredient*

Only potable water should come into contact with food, or food contact surfaces, or as an ingredient to avoid food contamination

Recirculated water should be treated and maintained in such a manner that no risk to the safety and suitability of food results from its use

Pipe line or non potable water must be clearly distinguishable from potable water.

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WATER *Ice & steam*

Ice used as an ingredient or in direct contact with food should be made from potable water and protected from contamination

Steam used in direct contact with food or food contact surfaces should not constitute a threat to the safety and suitability of food.

WATER

plumbing

Plumbing should be of adequate size and design and be properly intalled and maintained to carry sufficient quantities of water to required locations throughout the plant

It should properly convey and liquid disposable waste from the plant and avoid constituting a source of contamination

WATER

plumbing

Cross-connections

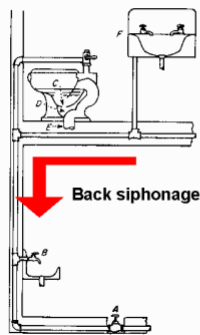


- a physical connection between a potable (drinkable) water supply and a source of contamination

WATER

plumbing

Cross-connections



- Stoppage in toilet or sink may allow contaminated water to reach water line and exit lower faucet

(from Katsuyama, 1993)

Water

records

Control records are necessary to document that the processor is consistently conforming to sanitary conditions and practices.

- the processor will keep a copy of each month's public water bill
- If a private water source were used in the operations, the results of the water testing should also be recorded
- If any contamination is found, corrections and retesting results should be recorded and stored

WATER

When monitoring detects a problem with the water source in processing, the processor must evaluate the situation and, if necessary, discontinue use of water from that source until the problem is solved and retesting confirms that it no longer exists. The need to take action regarding any and all products produced under adverse conditions must be assessed.

AIR QUALITY

AIR QUALITY

Adequate means of natural or mechanical ventilation should be provided , in particular to:

- minimize air-borne contamination of food, for example, from aerosols and condensation droplets
- control ambient temperatures
- control odours which might affect the suitability of food:
- control humidity, where necessary, to ensure the safety and suitability of food

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AIR QUALITY

Ventilation systems should be designed and constructed so that air does not flow from contaminated areas to clean areas and, where necessary, they can be adequately maintained and cleaned

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