

Water Conservation Measures for Commercial Food Service

Cooking Appliances

1. **Countertop Steamers: Specify Energy Star and PG&E rebate qualified boilerless steamers**

Boiler based or steam generator type countertop steamers are tremendous water and energy users as well maintenance intensive. Replacing these water guzzlers with water and energy efficient boilerless steamers can potentially reduce annual operating and maintenance costs by thousands of dollars in a typical casual dining restaurant.

2. **Chinese Ranges (Woks): Rigorously control appliance water use**

Not only are Chinese ranges extremely energy intensive, they use massive amounts of water as well. Water used to cool the deck around the burner wells can have a flow rate of five gallons per minute or more. Add to this the faucet water used to fill containers for dipping ladles and the annual water costs for a Chinese range can easily exceed \$6,000 per year.

Refrigeration

1. **Ice Machines: Specify air cooled machines only**

Once through, water cooled ice machines may be just as energy efficient as air cooled machines, but their water use makes them far more expensive to operate. A 500 lb per day water cooled machine can use nearly 100,000 gallons of water more per year than a air cooled equivalent. In terms of operating cost, the air cooled machine saves \$700 per year!

Sanitation

1. **Dish machine: Specify Energy Star qualified machines**

In busy dish rooms, an Energy Star rated dish machine can significantly reduce hot water usage in comparison to a non-Energy Star machine. Modern Energy Star dish machines can use up to half the water of their non-Energy Star predecessors, delivering significant operating cost savings. For instance, an Energy Star rated high temperature conveyor dish machine can reduce annual energy and water costs by \$3,000 in a typical full service casual dining restaurant.

2. **Dish machine: Maintain the dish machine and operate properly**

A drip here, a worn rinse nozzle there and underutilized wash racks needlessly add to the operating cost of a dish machine. Implement a regular maintenance program for the dish machine to ensure that dollars aren't going down the drain. Key points of inspection are: rinse pressure gauge, rinse nozzles, gaskets, manual or automated solenoid valves, rinse bypass slats and wash tank and booster heater temperature set points. Further, train staff to fill each rack – you pay for every load!

3. **Pre-rinse spray nozzles: Install high performance, low flow nozzles**

One of the lowest hanging fruits in a commercial food service establishment, pre-rinse spray nozzles can potentially be one of the most expensive pieces of equipment to operate depending on its flow rate. Some nozzles can consume five gallons per minute (gpm), which translates to an annual operating cost of \$1,500 if used for only one hour per day. Fortunately, operators can select high performance, low-flow nozzles with flow rates as low as 0.65 gpm. Cleaning just as well as the high flow units, these water efficient models can reduce annual energy and water costs by well over \$1,000.

Resources

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4. Hand sink aerators: Install 0.5 gpm aerators

Typically, hand sinks are equipped with 2.2 gpm aerators or none at all. Installation of 0.5 gpm aerators is an easy and inexpensive way to conserve water and reduce energy use. Costing only a few dollars, a single hand sink retrofitted with a 0.5 gpm aerator can reduce annual energy and water costs by \$100.

Ventilation

1. Evaporative Make-Up Air Units (Swamp Cooler): Regularly inspect and maintain

While evaporative cooling is an effective and inexpensive way to condition kitchen make-up air, these systems require regular inspection and proper maintenance. Neglected, evaporative coolers can become significant water wasters. A maintenance checklist should cover the float valve, water reservoir pan, water re-circulation pump, filter pads and fan belt. During cool weather months, further reduce water usage and prolong the life of the unit by turning off the water supply and draining the water reservoir pan.

Water heater

1. Temperature pressure relief (TPR): Regularly inspect

Water heaters are most commonly hidden away in mechanical rooms allowing them to fly under the radar screen when implementing a water conservation program. TPR valves are the safety mechanism that keeps modern water heaters from exploding when they become over heated. However, this device can fail over time, allowing hot water to leak unnoticed. Lastly, the water storage tank will rust out eventually - regular inspection will catch the initial signs of failure before a major leak occurs. Periodically draining the tank of a few gallons of water will prevent sediment buildup and ultimately extend the life of the storage tank.

General

1. Water brooms: Use instead of nozzles

The garden hose nozzles or industrial wash down sprayers used for surface wash down can have flow rates as high as 7.0 gpm. An excellent alternative to these water guzzlers is the water broom, especially for large areas like garbage bin storage areas. With a maximum flow rate 2.0 gpm, the water broom not only saves water but its wide spray arm with multiple water jets cleans far more efficiently than a single stream spray nozzle or industrial sprayer.

2. Fix all leaks

Even the seemingly innocent drip from a hand sink faucet can add up to hundreds of dollars wasted each year in water and energy. Regularly inspect all water use point sources.

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