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Technical Articles & Hot Topics

Cooling Tower Maintenance

Technical Article CWT-18



Your **Cooling Tower System** is a vital and usually expensive capital investment of your cooling and process systems. They require regular maintenance to ensure optimal operation and efficiency, as well as, prolonging the life span of the equipment. Performing regularly scheduled maintenance can result in lower energy and water costs, and prevent system downtime and costly repairs.

Some of the Ways a Regularly-Maintained Cooling Tower Reduces Overall Operating Costs

- Reduces costly repairs.
- Reduces the chance of system downtime.
- An efficiently running cooling system keeps tenants comfortable and reduces tenant turn-over.
- Prevents costly production loss due to downtime for manufacturing facilities.

- Can reduce energy and water usage, and keep water treatment program costs in-line.
- Prevents pump cavitation and damage.
- Reduces drift from tower causing damage to surrounding structures, vehicles, etc.

How Maintenance Can Affect a Water Treatment Program

A properly maintained cooling tower system can reap big benefits for your water treatment program. Here are some of the benefits that consistent tower maintenance can provide for your water treatment program.

Benefits of Maintaining Water Levels and Float Adjustments

- Reduced system overflow, allowing for more consistent balance of the systems cycles of concentrations and treatment levels.

Clear Water Technologies™ is a Southern California-based industrial water treatment company. For more information, visit www.ClearWaterTech.com.

- Reduced water and chemical waste, resulting in lower water and costs and chemical use.
- Improved the overall results of your water treatment program through consistent system balance.
- Reduced Corrosion Rates by maintaining consistent solids and alkalinity levels.

Regularly Cleaning Cooling Tower Basin, aka Tower Sump Can:

- Reduce MIC (microbiological induced corrosion) that can cause damage to metal surfaces.
- Reduce biocide demand by minimizing dirt and debris.
- Allows for better biocide control of bacteria and algae.
- Reduce risk of legionella. (for more on that topic, see ASHRAE's paper on legionella)
- Help reduce the chance of system plugging and fouling.
- Help treatment scale and corrosion inhibitors yield expected results.
- Prevent poor and inaccurate corrosion coupon results.
- Prevent fouling of Water treatment sensors, which can result in system fouling.

*When using high pressure washers, always use caution and do not spray one area for extended time to prevent metal damage.

Cleaning System Drift Eliminators, Spray Heads and Tower Fill Can:

- Prevent system hot spots caused by plugged fill.
- Reduce chances of scale due to poor water coverage.
- Help reduce system spray drift.
- Reduce flash scale on interior and exterior walls of towers.
- Keep system's operating temperatures at peak efficiency.
- Minimize system fouling from lack of flow.

Adjusting Cooling Tower Fan belts and Lubricating Fan and Pump Motors Can:

- Prevent costly fan and pump motor damage and failure.
- Minimize chances of excessive temperatures due to fan or pump not working properly.
- Reduce risk of abnormal compressor wear and tear and damage from higher than temperatures.
- Reduce system downtime and equipment costly repairs.

*Safety First! Always use the proper Personal Protective Gear and follow all recommended safety procedures to reduce chances of accidents and injuries.

It is recommended to refer to your Cooling Tower Manufacturer, Mechanical Contractor, and Water Treatment experts for maintenance recommendations to ensure that your system can operate at the optimal efficiency and last for the life span for which it was designed.