



SAFE COOLING TOWER OPERATION DURING HEAT WAVES

ANTICIPATE **T**REAT **I**NSPECT **P**ROTECT **S**AVE

Use “A few TIPS” checklist to protect your cooling tower system

Summer tests the limits of your cooling tower system (CTS): air temperatures peak, condenser water temperatures rise, hours of operation increase, evaporation loss soars, and efficiency diminishes. During this time of year, the benefits of preventive maintenance and routine upkeep are most important.

Preparation is key to reduce the negative impact of hot and humid weather that may cause disruptions from elevated condenser water temperatures, microbiological fouling and rapid *Legionella* growth.

ANTICIPATE: Keep an eye on the weather. Be prepared for hot weather in the forecast.

TREAT: Check your chemical inventory. Contact your water treatment company to prepare and enhance your treatment program in anticipation of the approaching challenges.

INSPECT: Make sure the CTS and its mechanical equipment (e.g., chillers, heat exchangers, circulation pumps) are ready. Have your facility personnel or mechanical contractor inspect your equipment.

PROTECT: Safeguard your assets by enhanced monitoring and immediate response to issues. Consider an additional or larger biocide dose during a heat wave to minimize bacterial growth. Increased bacterial growth may result in expensive interventions, equipment damage, prolonged interruptions in service, severe operational consequences, and potentially significant liability.

SAVE: Save energy and money by raising your thermostat and decreasing power demand where you can during periods of extreme hot weather.

As a building owner or manager, you don't need to be an expert on every technical detail to manage the increased risks associated with these challenges. Go over the A few TIPS checklist with your water management team.

Keep NYC cool and safe with effective cooling tower management

For additional information, see [Cooling Tower Registration and Maintenance – NYC Health](#)

A Few TIPS

for Cooling Tower Operation and Maintenance During Heat Waves

ANTICIPATE

Prepare for Greater Frequency, Intensity and Duration of Hot Temperatures

- Actively monitor weather forecasts
- Enlist your water management team including facility personnel (responsible person), water treatment vendor, and mechanical contractor to carry out this checklist

TREAT

Water Quality Monitoring (24RCNY8-05(f))

- Adjust biocide dose in anticipation of faster depletion of residuals during hot weather
- Adapt biocide dosing for increases in water volume and demand when backup pumps, chillers, and cooling tower cells come online during peak usage
- Perform more frequent manual checks of biocide residuals during extreme weather
- Check inventory of treatment chemicals and schedule delivery with your water treatment vendor
- Check chemical feeds are working as scheduled and that there are no missed doses
- Regularly review local and remote monitoring records. Variation from target ranges may indicate malfunction or the need for feed rate adjustment
- Diligently maintain chemical application logs and records

INSPECT

Routine System Monitoring (24RCNY8-04(a)) and Routine CTS Maintenance (24RCNY8-04(c)(1))

- Check circulating pump function and clean strainers
- Monitor condenser water temperatures and cycles of concentration
- Check spray system distribution and correct clogged or broken nozzles
- Check drift eliminators and fill for damage or short-circuiting of water or air
- Check the fan's blades, cylinder, hub, bolts, belt, and speed
- Check makeup water supply and level controls
- Inspect tower for leaks, splashes, or blockages that obstruct water flow
- Confirm accessible CTS wetted surfaces are free of contaminants, deposits, biofilm, algae, and corrosion
- Confirm bleed monitor is calibrated and operating properly and that bleed capacity is sufficient
- Maintain clean heat exchange surfaces (condensers, plate heat exchangers etc.)
- Check operational efficiency of heat exchangers and chillers and schedule servicing or cleaning, if needed

PROTECT

Enhance Your Diligence to Reduce Risks

- Diligently identify issues, report them to the water management team. Investigate any system anomalies or changes and adjust water treatment immediately
- Perform summertime hyperhalogenation between July 1 and August 31 and collect required *Legionella* sample
- Consider an additional or larger dose of biocide during periods of extreme weather
- Perform additional bacteriological testing (e.g., dip slides and/or *Legionella* testing) to validate treatment

SAVE

Reduce the Cost and Impact on Your CTS

- Decrease heat load and energy use by raising thermostat setpoints and reducing cooling in areas not in use
- Reduce hours of cooling system operation when possible
- Review setpoints and triggers for any automated operations of your cooling tower system