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# GUIDE TO COOLING TOWER LEGIONELLA REGULATIONS: NEW YORK CITY AND NEW YORK STATE

## NEW YORK STATE REGULATIONS

New York Public Health and Health Planning Council (PHHPC) adopted a new Part 4 of the State Sanitary Code (SSC), found in 10 NYCRR Chapter 1.

Scope: 4.1 All owners of cooling towers shall comply with this Subpart.

**Effective:** July 7, 2016

## NEW YORK CITY REGULATIONS

Chapter 8 (Cooling Towers) of Title 24 of the Rules of New York City. Cooling towers in NYC must meet state regulations.

§8-01 Scope and applicability: This Chapter applies to owners of New York City buildings or other premises in the City that are equipped with a cooling tower system.

**Effective:** May 9, 2016

Registration and Certification Requirements		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Registration Deadlines	4-1.3 New towers must be registered prior to operation	§ 28-317.3. New towers must be registered prior to operation.
Recordkeeping Websites	Go to New York DOH website at <a href="http://ct.doh.ny.gov">http://ct.doh.ny.gov</a> for registration and documentation of required maintenance activities.	Go to NYC DOB website at <a href="http://www.nyc.gov/dob/coolingtower">www.nyc.gov/dob/coolingtower</a> for registration and documentation of required maintenance activities. Cooling towers located in NYC must also be registered with NY State and meet all state regulations.
Registration Requirements	<p>4-1.3 Following information is required:</p> <ul style="list-style-type: none"> <li>• Address where located.</li> <li>• Intended use of the cooling tower</li> <li>• Contact information for owners</li> <li>• Cooling tower manufacturer</li> <li>• Cooling tower model number</li> <li>• Specific cooling tower serial number</li> <li>• Cooling tower capacity (tonnage)</li> <li>• Cooling tower system volume (gallons)</li> <li>• Whether biocide addition is manual, through timed injection, or through continuous delivery.</li> <li>• Contractor/employee for inspection and certification</li> <li>• Cooling tower commissioning date</li> </ul>	<p>§ 28-317.3 Following information is required:</p> <ul style="list-style-type: none"> <li>• Address where located</li> <li>• Intended use of the cooling tower</li> <li>• Contact information for owners</li> <li>• Cooling tower manufacturer</li> <li>• Cooling tower model number</li> <li>• Specific cooling tower serial number</li> <li>• Cooling tower capacity (tonnage)</li> <li>• Cooling tower basin volume (gallons)</li> <li>• Cooling tower commissioning date</li> </ul>
Discontinued Use	4-1.3 Owners must notify department after removing or permanently discontinuing use of a cooling tower.	<p>§ 28-317.3.1 Owners must notify department within 30 days after removing or permanently discontinuing use of a cooling tower. Notice must include statement that tower drained and sanitized in accordance with DOHMH requirements.</p> <p>§8-06 (d) Removal or permanently discontinuing use of cooling towers. The owner of a cooling tower must notify the Department of Buildings electronically within 30 days after removing or permanently discontinuing use of a cooling tower in accordance with § 28-317.3.1 of the Administrative Code. Such notice must include a statement that the cooling tower has been drained and sanitized in accordance with this section.</p>

Registration and Certification Requirements (cont.)

Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Annual Certification	<p>4-1.8 (b) Owner or operator shall obtain a certification each year from a person identified in subdivision (a). that the cooling tower has a maintenance program and plan, and that all activities with the plan or required by this Subpart were implemented. Certification shall be obtained by November 1, 2016, and by November 1 each year thereafter.</p>	<p>§ 28-317.5 Owner or operator shall file a certification each year that (i) each cooling tower was inspected, tested, cleaned and disinfected in compliance with section 17-194.1 of the code and DOHMH rules, and (ii) a maintenance program and plan has been developed and implemented as required. Certification shall be submitted by November 1, 2016 and by November 1 each year thereafter.</p> <p>§8-07 Records. (b)Certification. The owner of a cooling tower must file an annual certification each year as specified by the Department of Buildings, indicating that such tower was inspected, tested, cleaned and disinfected in accordance with the maintenance program and plan, as required by§ 28-317.5 of the Administrative Code. <b>The certification must document any deviations from compliance with the maintenance program and plan and the corrective actions taken to address any deficiencies.</b></p>

Cooling Tower Maintenance Program and Plan Requirements		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Cooling Tower Maintenance Program and Plan	4-1.4 (a) By September 1, 2016, and thereafter prior to initial operation, owners shall obtain and implement a [cooling tower] maintenance program and plan developed in accordance with section 7.2 of the ASHRAE Standard 188-2015.	<p>§ 28-317.2 (c) By March 1, 2016, owners shall develop and implement a cooling tower maintenance program and plan in accordance with sections 5, 6, and 7.2 of the ASHRAE Standard 188-2015 <b>and the manufacturer's instructions.</b> Such program and plan shall be developed by a qualified person.</p> <p>§8-03 Maintenance program and plan. For each cooling tower system, the owner must have a maintenance program and plan prepared by a qualified person in accordance with sections 5, 6 and 7.2 of /ASHRAE 188-2015, <b>manufacturer's instructions, and these requirements.</b></p>
Qualifications		<p>§8-02 Definition: "Qualified person" means a New York State licensed and registered PE; a certified industrial hygienist; a certified water technologist with training and experience developing management plans and performing inspections in accordance with current standard industry protocols including, but not limited to ASHRAE 188-2015; or an environmental consultant who has at least two (2) years of operational experience in water management planning and operation.</p>
Responsibility		<p>§8-03 The plan must be kept current and amended by a responsible or qualified person as needed to reflect any changes in the management and maintenance team, system design, operation or system control requirements for the cooling tower system.</p>
Document Maintenance	4.9 (c) Owner shall maintain a copy of the maintenance program and plan required by this Subpart on the premises where a cooling tower is located. Such records and plan shall be made available to the department or local health department immediately upon request.	<p>§8-03 The plan must be kept in the building where the cooling tower or cooling tower system is located, or in an adjacent building or structure on the same campus, complex, lot, mall or on-site central engineering division, and be made available to the Department for inspection upon request.</p>

Cooling Tower Maintenance Program and Plan Requirements (cont.)		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Description of Cooling Tower Systems		<p>§8-03 Cooling tower system. Identification, specifications and description of each cooling tower system and components located at a specific address, including:</p> <ol style="list-style-type: none"> <li>The number of cooling towers in the cooling tower system.</li> <li>The location of towers in relation to building, address, block and lot number.</li> <li>The dimensions and characteristics of the cooling tower system including total water recirculating volume, cooling tower tonnage, biocide delivery method, flow rate and other key characteristics.</li> <li>Purpose of cooling tower system and seasonal or year-round operation including start/end date. For multiple tower systems, conditional operation, such as cycling or scaling related to cooling demand, must also be noted.</li> <li>The NYC DOB registration number for each cooling tower.</li> <li>The cooling tower manufacturer, model number and serial number, if applicable</li> <li>A flow diagram or schematic of the cooling tower system, identifying all of principal components and accessories including makeup water and waste stream plumbing locations.</li> </ol>
Assessment		<p>§8-03 Risk management assessment. Assessment must identify risk factors for Legionella proliferation and specify risk management procedures for all or parts of each cooling tower system, and anticipated conditions including:</p> <ol style="list-style-type: none"> <li>Any dead legs or stagnant water in the recirculation system.</li> <li>Operating configurations and conditions that may occur after periods of extended inactivity lasting more than three (3) days, including idling or low circulation while not being fully drained.</li> <li>System parts that require continual operation throughout the year making regular, periodic offline cleaning and disinfection difficult.</li> <li>Any components that may add additional risk factors for organic material buildup and microbial growth such as strainers and out-of-use filters.</li> <li>Sources of elevated organic contamination, including, but not limited to windblown debris, bird waste and plant material.</li> <li>Design configurations that present risk of direct sun exposure on basin, deck or fill.</li> <li>Ventilation intakes or other routes for human exposure to cooling tower aerosols.</li> <li>System components adversely affecting water quality management procedures.</li> <li>Other risk or limiting factors or constraints in the cooling tower system's design and functioning.</li> </ol>

Cooling Tower Maintenance Program and Plan Requirements (cont.)		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Documentation of Compliant Control Program		§8-03 (d) Cooling tower operation: Control measures, corrective actions, documentation, including a written checklist for routine monitoring, and reporting that comply with sections 8-04 through 8-08, of this Chapter and any <b>routine maintenance activities recommended by the manufacturer's instructions</b> , where there is a conflict, the most stringent requirements must be followed.
Documentation of Compliant Shutdown/Start-up Procedures	<p>4-1.4 A shutdown and disinfection plan for removing or permanently discontinuing use of a cooling tower</p> <p>4-1.4 Provisions requiring cleaning and disinfection prior to startup of a stagnant cooling tower that has been shut down without treatment and recirculation for more than five consecutive days</p>	§8-03(d) Cooling tower operation: Specific, detailed seasonal and temporary shutdown and start-up procedures
Documentation Process for Communicating Corrective Actions		Notification and communication strategies among management and maintenance team members regarding the required corrective actions in response to process control activities, monitoring, sampling results and other actions taken to maintain the cooling tower system.

Site Monitoring, Maintenance, Repair Requirements		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Routine Monitoring		<p>§8-04 (a) Routine system monitoring. An owner must designate a responsible person to monitor each cooling tower system at least weekly while such system is in use.</p> <p>a) Responsible person must enter on a written or electronic checklist provided and maintained by the owner all visual observations of the cooling tower system and associated equipment.</p> <p>b) The responsible person must possess the skills and have the knowledge necessary to be able to monitor the system under the supervision of a qualified person.</p> <p><b>c) All wetted surfaces without shutting down the system, tower basins and drift eliminators must be observed during monitoring and the presence of organic material, biofilm, algae, scale, sediment and silt/dust deposits, organics, and other visible contaminants must be noted</b></p> <p>d) The responsible person must observe and note the condition of chemical dosing and control equipment and the bleed-off system, and determine if there is sufficient storage and delivery of treatment chemicals.</p> <p>e) Any system anomalies or problems must be recorded on the checklist and reported to the management and maintenance team for immediate corrective action.</p>
Definition of Responsible Person		<p>§8-02 "Responsible person" means a person employed or whose services are retained by an owner, who understands and is capable of performing the required water quality measurements (3x weekly), weekly system monitoring and operation and maintenance of a cooling tower system, and making recommendations for diagnosing anomalous conditions that require corrective actions, under the guidance of a qualified person.</p>
Site Water Testing		<p>§8-05 (f) Water quality monitoring: Water quality parameters, including but not limited to pH, temperature, conductivity and biocidal indicators, must be measured and recorded at least three times each week, provided that no more than two days pass without such measurement when the cooling tower system is operating.</p>
Site Bacteria Testing	4-1.4 Routine bacteriological culture sampling and analysis to assess microbiological activity at intervals not to exceed 30 days	<p>§8-05 (f) Water quality monitoring: Minimum weekly biological process control indicators. A bacteriological water test must be performed and interpreted at least once each week while the system is operating.</p>
Routine Maintenance and Repair Activities		<p>§8-04 (c) Maintenance: Routine maintenance. Cooling tower systems must be maintained and operated in accordance with MPP. Routine maintenance must address all components and operations, including, but not limited to, general system cleanliness, drift eliminator and fill material condition, overall distribution operation, water treatment system, basin/remote sump cleaning, and purging of stagnant and low-flow zones. Replacement in kind. <b>Any part or equipment used in a cooling tower system must comply with the manufacturer's design and performance specifications and NYC Codes. As applicable, replacement materials must be corrosion resistant and effectively prevent the penetration of sunlight.</b></p>

Site Monitoring, Maintenance, Repair Requirements (cont.)		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Control of Aerosol and Mists		<p>§8-04 (e) Aerosol and mist control. The cooling tower system must be operated at all times to minimize the formation and release of aerosols and mist. <b>Owners must install and maintain drift eliminators in accordance with the manufacturer's specifications and the NYC Construction Codes. The calculated drift loss at maximum design water circulation must not exceed the manufacturer's tested value for maximum drift loss.</b> Counter-flow cooling towers must achieve a reduction of drift loss to no more than 0.002% percent of the recirculated water volume; cross-flow cooling towers must achieve a reduction of drift loss to no more than 0.005% of the recirculated water volume.</p>



Bacteria and Legionella Testing Requirements		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Routine Bacteria and Legionella Testing	<p>4-1.4 (b-1) Bacteriological analysis of tower water must be obtained at intervals not exceeding 30 days while the tower is in use. Owners must take immediate action in response to bacteriological test results</p> <p>4-1.4 (b-1 and b-2) A schedule for routine Legionella sampling and culture analysis. Routine Legionella culture sampling and analysis is required within 14 days of start-up and thereafter, at intervals not exceeding 90 days while the cooling tower is in use.</p> <p>4-1.5 All Legionella culture analyses must be performed by a laboratory that is approved to perform such analyses by the New York State Environmental Laboratory Approval Program (ELAP).</p>	<p>§ 28-317.2 (e-2) Each inspection must include a test for the presence of microbes in the cooling tower water. Department will establish (i) the targets and acceptable methods of microbial testing, (ii) the levels requiring mitigation measures, and (iii) the levels that present a serious health threat and require immediate action and reporting.</p> <p>§8-05 (f) Water quality monitoring: Minimum weekly biological process control indicators. A bacteriological indicator to estimate microbial content of recirculating water must be collected and interpreted at least once each week while the cooling tower system is operating. Indicators must be takes at times and from water sampling points, as detailed in the maintenance program and plan, that will be representative of water microbial content. Indicators may be taken at any time from constant chemical treatment systems. Indicators from systems that use intermittent biocide applications must be taken before biocide application and reflect normal cooling tower operating conditions.</p> <p>Legionella samples. Legionella culture testing must be conducted no less frequently than every 90 days during cooling tower system operation. <b>A Legionella sample must be analyzed by a US CDC and Prevention Elite Certified Lab, by the New York State Department or approved alternative.</b> All results of all Legionella species at or above the magnitude of level 4 as indicated in Table 1 of this section of the regulation must be reported to the Department within 24 hours of receiving the test results.</p>
Legionella Testing – Non-Routine	<p>4.4 (b-3) Procedures for emergency sample collection and Legionella culture testing in the case of events including to:</p> <ul style="list-style-type: none"> <li>• power failure of sufficient duration to allow for the growth of bacteria;</li> <li>• loss of biocide treatment sufficient to allow for the growth of bacteria;</li> <li>• failure of conductivity control to maintain proper cycles of concentration;</li> <li>• one or more cases of Legionellosis may be associated with cooling tower</li> <li>• any other conditions specified by the department or local health department</li> </ul>	<p>§8-05 (f) Water quality monitoring: Additional emergency Legionella sampling must be conducted if any of the following occur:</p> <ol style="list-style-type: none"> <li>a) Power failure of sufficient duration to allow for growth of bacteria;</li> <li>b) Loss of biocide treatment sufficient to allow for growth of bacteria;</li> <li>c) Failure of conductivity controls to maintain proper cycles of concentration;</li> <li>d) At the request of the Department upon a determination that one or more cases of Legionellosis is or may be associated with the cooling tower, based on epidemiological data or laboratory testing</li> <li>e) Any time two consecutive bacteriological indicator sample results are above Level 4 as indicated in Table 8-2; or</li> <li>f) Any other conditions specified by the Department.</li> </ol> <p><i>Note: Legionella testing specified if two consecutive bacteriological indicator bacteria tests shows &gt; 1,000,000 CFU/ml</i></p>

Bacteria and Legionella Testing Requirements (cont.)		
Bacteria and Legionella Testing – Sampling Protocol		§8-05 (f) Water quality monitoring. Monitoring and sampling locations. System monitoring and sampling locations must be representative of the entire cooling tower system. The system must be operating with water circulating in the system for at least one hour prior to water quality measurements or the collection of samples
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Bacteria and Legionella Testing – Corrective Measures	4.6 (b-4) Immediate actions in response to Legionella culture testing as specified in Appendix 4-A of this regulation. If the owner is a general hospital or residential health care facility, the provisions shall also require contacting the local health department within 24 hours	§ 28-317.2 (e-2-a) If test results indicate maintenance deficiencies requiring mitigation measures, owner shall within 48 hours of knowing or reasonably should know the results, clean and disinfect cooling tower according to department rules. §8-05 (f) Water quality monitoring: Water quality corrective actions. The maintenance program and plan must identify procedures, responsible parties, required response time(s) and notification protocol for corrective actions and include, at minimum, corrective actions that must be implemented according to the result levels in Table 8-1 and Table 8-2.

Chemical Treatment Requirements		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Biocide Program		§8-05 (a) Daily automatic treatment while in operation. Water in a cooling tower must be treated at least once a day when the system is in operation and such treatment must be automated, unless the maintenance program and plan explicitly states how manual or less frequent biocide additions will provide effective control of Legionella growth.
Program Objectives		§8-05 (c) Chemicals and biocides must be used in quantities and combinations sufficient to control the presence of Legionella, minimize biofilms, and prevent scaling and corrosion that may facilitate microbial growth.
Biocide Applicator Licensing	4-1.7 Any person who disinfects a cooling tower shall be a commercial pesticide applicator or pesticide technician who is qualified to apply biocide in a cooling tower and certified in accordance with the requirements of Article 33 of the Environmental Conservation Law and 6 NYCRR Part 325, or a pesticide apprentice under the supervision of a certified applicator.	§8-05 (c) Any person who cleans, disinfects, or applies biocides to a cooling tower system must have appropriate pesticide applicator license or a pesticide apprentice under the supervision of a certified applicator.
Biocide Registration		§8-05 (c) Only New York State Department of Environmental Conservation approved oxidizing chemicals may be used as the primary biocide control. If oxidizing chemicals cannot be used, owners must submit an alternative plan for approval by the department.
Data on All Chemicals Used		Water treatment records must be kept for all chemicals and biocides added, noting the purpose of their use, manufacturer’s name, brand name, safety data sheet, date/time of each addition, and the amount added each week.
Add Chemicals as Specified		Chemicals and biocides must be added in accordance with this section and the procedures described in the maintenance program and plan addressing, as applicable, feeding mechanism, feeding location, frequency, set timer, duration, triggering events, control procedures, and target biocide residuals. <b>Water treatment chemicals and biocides must be used in accordance with the product label and manufacturer’s instructions.</b>

Chemical Treatment Requirements (cont.)		
Continuously Circulate Water Regardless of Cooling Load		§8-05 (b) Cooling tower system must be operated and programmed to continually recirculate the water irrespective of the building's cooling demand of the system, unless the program specifies in detail how the intended water treatment schedule will be carried out, and how effective biofilm and microorganism control will be achieved when the whole or a part of the system is idle during the scheduled chemical injection
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Changes to Program		§8-05 Prior to changing an existing chemical treatment system or introducing a new chemical product, cooling tower design, installation, operation, and maintenance must be evaluated by a qualified person to ensure compatibility between the chemicals and system materials, and to minimize microbial growth and release of aerosols. The evaluation must describe the optimum level of chemicals to achieve the desired result in a manner which can be used as a system performance measure. Any time a water treatment plan is changed, it should be confirmed by the water treatment provider.
Non-Chemical Devices		§8-05 (d) Non-chemical water treatment devices prohibited in lieu of biocides unless approved by the Department. Non-chemical water treatment devices may be installed as part of a cooling tower water system as specified in the management program and plan, provided that the required chemical water treatment also being used adequately controls for Legionella.
Rainwater or Reclaim Water as Makeup		§8-05 (e) Owners using rainwater or recycling water systems as cooling tower makeup water must install a drift eliminator and test and treat water in accordance with a specific alternative source water plan in addition to the required Program. The alternative water sources plan must be approved by the Department and include provisions for adequate design of the treatment and control components and on-going evaluation to eliminate and risk to public health.

Inspection Requirements		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Routine Inspection by Qualified Person	<p>4-1.8 (a-1) Owners shall inspect cooling towers prior to start up and at intervals not exceeding every 90 days while in use.</p> <p>4-1.8 (a-3) Each inspection to evaluate:</p> <ol style="list-style-type: none"> <li>i. cooling tower and associated equipment for presence of organic material, biofilm, algae, and other visible contaminants;</li> <li>ii. general condition of cooling tower basin, remote sump, packing material, and drift eliminators;</li> <li>iii. water makeup connections/controls;</li> <li>iv. proper functioning of conductivity control</li> <li>v. Proper functioning of water treatment equipment</li> </ol> <p>4-1.8 (a-4) Any deficiencies will be reported to the owner for immediate corrective action. A person qualified to inspect pursuant to 4-1.8 (a) shall document all deficiencies, and all completed corrective actions.</p>	<p>§ 28-317.2 (e) Cooling Towers shall be inspected and tested at intervals not exceeding every 90 days during periods of the year they are in use.</p> <p>§ 28-317.2 (e-1) Each inspection shall include an evaluation of the cooling tower and associated equipment for the presence of organic material, biofilm, algae and other visible contaminants.</p> <p>§8-04 (b) Compliance inspections. An owner must retain a qualified person to conduct a compliance inspection at least once every ninety (90) days while a cooling tower system is in operation. The qualified person must complete and the owner must maintain a written or electronic checklist containing observations and findings with respect to any of the following:</p> <ol style="list-style-type: none"> <li>(1) Presence of organic material, biofilm, algae, and other visible contaminants.</li> <li>(2) General condition of the tower, the basin, packing material and drift eliminator.</li> <li>(3) Quality of water makeup connections and control.</li> <li>(4) Proper functioning of the conductivity control.</li> <li>(5) Proper functioning of all dosing equipment (pumps, strain gauges).</li> <li>(6) Review of routine maintenance records to ensure proper implementation of required activities and corrective actions as needed.</li> </ol>
Qualification of Person Performing Routine Inspections	<p>4-1.8 (a-2) All inspections shall be performed by a: NY State licensed professional engineer; certified industrial hygienist; certified water technologist; or environmental consultant or water treatment professional with training and experience performing inspections in accordance with current standard industry protocols including, but not limited to ASHRAE 188–2015, as incorporated by section 4-1.4.</p>	<p>§ 28-317.2 (f) All inspections, cleaning and disinfection required by this section shall be performed by or under the supervision of a qualified person.</p> <p>§8-05 Definitions: "Qualified person" means a New York State licensed and registered professional engineer; a certified industrial hygienist; a certified water technologist with training and experience developing management plans and performing inspections in accordance with current standard industry protocols including, but not limited to ANSI/ASHRAE 188-2015; or an environmental consultant who has at least two (2) years of operational experience in water management planning and operation.</p>

Cooling Tower Cleaning and Disinfection Requirements		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Cooling Tower Cleaning	4-1.4 Provisions requiring treatment and manual or automated flushing of any piping, basin, sump, or wetted surface during idle conditions and provision requiring cleaning and disinfection prior to startup of a stagnant cooling tower that has been shut down without treatment and recirculation for more than five consecutive days.	§8-04 (d) Cleaning. The cooling tower system must be cleaned whenever routine monitoring indicates a need for cleaning, but no less than twice a year, as specified in the maintenance program and plan. <b>Cleaning protocol indicated by the manufacturer's instructions</b> or industry standards, and worker protective measures, as required by applicable law must be specified in the maintenance program and plan. <b>Water contact areas such as the basin, sump, fill, spray nozzles and fittings, drift, eliminators and air intake louvres must be properly accessed or removed to facilitate cleaning.</b>
Qualifications for Cleaning & Disinfection Work	4-1.7 Any person who disinfects a cooling tower shall be a commercial pesticide applicator or pesticide technician who is qualified to apply biocide in a cooling tower and certified in accordance with the requirements of Article 33 of the Environmental Conservation Law and 6 NYCRR Part 325, or a pesticide apprentice under the supervision of a certified applicator.	§ 28-317.2 (f) All inspections, cleaning and disinfection required by this section shall be performed by or under the supervision of a qualified person.
Cooling Tower Testing, Cleaning, and Disinfection		§ 28-317.4 All cooling towers must be inspected, tested, cleaned and disinfected in accordance with section 17-194.1 of the administrative code and the rules of DOHMH.
Biocides Used for Disinfection	4-1.7 (c) Only biocide products registered by the New York State Department of Environmental Conservation for use in cooling towers of pesticidal devices produced in the USEPA registered establishment may be used in disinfection.	8-05 (c) Only New York State Department of Environmental Conservation approved oxidizing chemicals may be used as the primary biocide control. If oxidizing chemicals cannot be used, owners must submit an alternative plan for approval by the department.

Cooling Tower Cleaning and Disinfection Requirements (cont.)		
Shutdown Cleaning and Disinfection	<p>4-1.4 A shutdown and disinfection plan for removing or permanently discontinuing use of a cooling tower</p> <p>Provisions requiring treatment and manual or automated flushing of any piping, basin, sump, or wetted surface during idle conditions.</p>	<p>§ 28-317.2 (d) Cooling towers must be cleaned and disinfected when shut down more than five days. Cleaning and disinfection must within 15 days before use.</p> <p>§8-06 System shutdown and start-up; commissioning and decommissioning cooling towers. Full system shutdown: <b>Procedures to shut a cooling tower system must conform to the manufacturers' recommendations. When shut down, the system must be completely drained and protected from offline contamination.</b></p>
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Start-Up	<p>4-1.4 Provision requiring cleaning and disinfection prior to startup of a stagnant cooling tower that has been shut down without treatment and recirculation for more than five consecutive days</p>	<p>§8-06 System shutdown and start-up; commissioning and decommissioning cooling towers: Full system startup. At a minimum, before cooling tower system start-up, an owner must clean and disinfect a cooling tower that has been shut down or idle for more than five days according to §17-194.1 of the Administrative Code. Cleaning and disinfection must be done no later than 15 days before the first seasonal use of such tower. The maintenance program and plan must include detailed seasonal and idle period startup procedures that include, at a minimum:</p> <p>(a) Either fully clean and disinfect, drain to waste and disinfect, or sufficiently hyperhalogenate the recirculated water before startup</p> <p><b>Before seasonal startup of a system that has been fully shut down, perform a pre-startup inspection by a qualified person</b></p>
Legionella Testing Before Start-Up		<p>§8-06 (b) Full System Startup: Before the startup of a cooling tower system after an extended shutdown of five or more days, collect samples for Legionella culture and take actions required by Table 8-1 when results are received; and</p>
Commissioning New Systems		<p>§8-06 System shutdown and start-up; commissioning and decommissioning cooling towers: Commissioning new cooling towers. Newly installed cooling tower systems must be cleaned and disinfected prior to operation according to this section and the maintenance program and plan, and be registered with the Department of Buildings cooling tower registration system in accordance with §28-317.3. of the Administrative Code.</p>

Recordkeeping Requirements		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Maintain Records 3 Years	4-1.9 Owner shall keep and maintain records of all sampling and analyses; disinfection schedules and applications; inspection findings, deficiencies, and corrective actions; and certifications for at least three years.	§ 28-317.2 (h) Owner must keep and maintain records of all inspections and tests for at least three years. §8-07 Records. Records: An owner must keep for at least three (3) years in the building where a cooling tower is located or in an adjacent building or structure on the same campus, complex, lot, mall or on-site central engineering division a record of maintenance, inspection, deficiency, corrective action, water treatment, test result, cleaning or disinfection performed on the tower;
Keep Records On Site	4-1.9 Owner shall maintain a copy of maintenance program and plan on the premises where cooling tower is located	§ 28-317.2 (h) Owner must maintain a copy of the required maintenance program and plan on the premises where a cooling tower is located.
Records Available On Request	4-1.9 Records and plan shall be available to the department or local health department immediately upon request.	§ 28-317.2 (h) Records and plan shall be made available immediately upon request. §8-07 Records and plan shall be made available immediately upon request.
Failure to Document Activities	4-1.10 A violation of any provision of this Subpart is subject to all civil and criminal penalties as provided for by law. Each day that an owner remains in violation shall constitute a separate and distinct violation.	§8-09 Penalties: Penalties shall be imposed for sustained initial and repeat violations. All penalties, except for those alleging a violation of the State Sanitary Code, must be doubled if the respondent fails to appear to answer such violation and is found in default.
Post Registration Number		§8-07 Records. Posting: The owner must post the Department of Buildings Cooling Tower Registration Number that has been assigned each cooling tower. The Registration Number must be posted on a sign or plate that is securely fastened to the cooling tower in a location that is conspicuously visible and must be constructed of a durable, weather resistant material.
Electronic Reporting Requirements	4-1.3 Owners shall electronically input at intervals of no more than 90 days the following information in the statewide electronic system designated by the commissioner: a) Date of last biological sample collection, sample results, and date of any required remedial action b) Date of any Legionella sample collection, sample results, and date of any required remedial action c) Date of last inspection, cleaning and disinfection d) Dates of start and end of shutdown for more than five days e) Date of last certification and date when it was due f) Date of last inspection and date when it was due g) Date of discontinued use	



Enforcement		
Program Elements	New York State Regulations – Subpart 4-1	New York City Regulations
Enforcement	<p>4-2.6 (a) The department may conduct an assessment and/or Legionella culture sampling and analysis of the potable water system at any time.</p> <p>4-2.7 (b) A violation of any provision of this regulation is subject to all civil and criminal penalties as provided for by law. Each day that an owner remains in violation of any provision shall constitute a separate and distinct violation of such provision.</p>	<p>§ 28-317.7 Failure to register a cooling tower or submit a certification or statement required by this article shall be classified as a major violation. Building owners subject to escalating civil penalties.</p> <p>§8-09 Penalties: Penalties shall be imposed for sustained initial and repeat violations. All penalties, except for those alleging a violation of the State Sanitary Code, must be doubled if the respondent fails to appear to answer such violation and is found in default.</p>

Health Care Facilities		
Program Elements	New York State Regulations – Subpart 4-2	New York City Regulations
Health Care Facilities	<p>4-2.1 All general hospitals and residential health care facilities as defined in Article 28 or the Public Health Law (collectively, “covered facilities”) shall comply with this Subpart (4-2)</p>	Health Care Facilities are not specifically addressed.