2017

NEW YORK CITY

APARTMENT MANAGEMENT CHECKLIST

FREE COMPLIMENTARY CHAPTER

FREE ONLINE ACCESS TO BUILDING MANAGEMENT FORMS

VENDOME REAL ESTATE MEDIA

10

Cooling Tower Maintenance

WHO IS AFFECTED

Owners of all buildings that have cooling towers.

WHAT LAW REQUIRES

Local Law 77 of 2015, enacted after an outbreak of Legionnaires' Disease in New York City, requires the registration of all cooling towers, annual certification, quarterly inspection, and reporting of increased microbes to the Dept. of Health and Mental Hygiene (DOH). The law also mandates the disinfection of cooling towers with levels of microbes that pose potential health risks.

NYS Sanitary Code (SSC) Part 4 was added effective March 2, 2016. Statewide, including New York City, owners of all cooling towers must comply with SSC Part 4, which includes registration with and reporting to the NYS Dept. of Health.

Effective May 9, 2016, new Chapter 8 of Title 24 of the Rules of the City of New York established DOH rules for maintenance of cooling towers. The DOH rules set forth specific requirements for the operation and maintenance of cooling towers in NYC that comply with and further those of SSC Part 4. The DOH rules exceed SSC Part 4 to include specific routine maintenance tasks, identification of persons responsible for various functions, identification of system components, and establishment of a system risk management assessment to identify areas that may create problems and lead to proliferation of Legionella bacteria.

HOW TO COMPLY

A "cooling tower" is defined under city law to include a cooling tower, evaporative condenser, or fluid cooler that is part of a recirculated water system incorporated into a building's cooling, industrial process, refrigeration, or energy production system. If a building utilizes cooling towers, fluid coolers, and evaporative condensers to regulate the building temperatures, owners must register the equipment with the Dept. of Buildings (DOB).

Registration of new and existing equipment. Owners must register existing cooling towers with the DOB by Sept. 17, 2015. Visit *https://coolingtowers.cityofnewyork.us* to enroll in the cooling tower registration portal. Once enrolled, each registrant may report multiple towers or locations. Owners must register new cooling towers prior to initial operation. Registration must include the following information:

- Address of the building at which the cooling tower is located;
- Intended use of cooling tower;
- Name, address, telephone number, and email address of owner;
- Manufacturer of the cooling tower;
- Model number of the cooling tower;
- Specific unit serial number of the cooling tower;
- Cooling capacity (tonnage) of the cooling tower;
- Basin capacity of the cooling tower; and
- Commissioning date of the cooling tower.

The NYC DOB Cooling Tower Registration Number must be posted on a sign or plate that is securely fastened to each cooling tower. Owners also must register cooling towers with New York State. Visit *https://ct.doh.ny.gov* to register online.

Develop and implement a cooling tower maintenance program. Owners, using a qualified person, must develop a cooling tower maintenance program and plan by March 1, 2016. Owners may need to hire environmental consultants with demonstrated experience performing disinfection using current industry standard protocols, including the American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE) Standard 188P and Cooling Technology Institute Guidelines WTB-148.

The maintenance program and plan must include detailed seasonal and idle period startup procedures for either fully cleaning and disinfecting, draining to waste and disinfecting, or sufficiently hyperhalogenating the recirculated water before startup. Owners must keep the maintenance plan in the building where a cooling tower or cooling tower system is located, or in an adjacent building or structure on the same lot or complex, which must be made available to NYC inspectors for examination upon request.

Clean and disinfect cooling towers after extended shut-down. A cooling tower system must be cleaned whenever routine monitoring indicates a need for cleaning, but no less than twice year, in accordance with the cooling tower maintenance program and plan. At minimum, owners must clean and disinfect cooling towers that are shut down for more than five days and must do so within 15 days before re-use. Cleaning and disinfection must be done no later than 15 days before the first seasonal use of the tower.

Inspection and testing of equipment. Owners must have cooling towers inspected and tested at least every three months during periods of the year that the cooling towers are in use. Each inspection must include an evaluation for the presence of contaminants and microbes in the water of the tower. DOH plans to issue testing rules.

Effective May 9, 2016, testing is required at least three times each week, provided that no more than two days pass without such measurement when the cooling tower system is operating. Before seasonal startup of a system that has been fully shut down, owners must perform a pre-startup inspection by a qualified person.

Mitigation of health threat. If testing shows that disinfection is required, an owner must take action to mitigate the risk of infection within 48 hours. If testing of the cooling tower indicates levels of microbes presenting a serious health threat, the owner must within 24 hours notify DOH and clean and disinfect the equipment. If an owner does not clean and disinfect a cooling tower within the required time limits, DOH may order the owner to do so or do so itself at the owner's expense.

Recordkeeping. An owner must keep and maintain records of all inspections and tests performed on cooling towers for at least three years. An owner must maintain a copy of the maintenance program and plan on the premises where the cooling tower is located. These records must be made available to DOH immediately upon request.

Certification of existing equipment and discontinuance of use. Owners must annually certify to DOB that cooling towers have been inspected, tested, and remediated in accordance with the DOB regulations, and that a maintenance program and plan have been developed and implemented.

Notification of permanent shutdown. Owners also must notify DOB within 30 days of removing or permanently discontinuing cooling towers, fluid coolers, and evaporative condensers with a statement that the cooling tower was cleaned and sanitized in compliance with DOH requirements.

DEADLINE

Building owners must register existing cooling towers by Sept. 17, 2015. Thereafter, new cooling towers must be registered before initial operation. Building owners must develop a cooling tower maintenance program and plan by March 1, 2016.

PENALTY FOR FAILURE TO COMPLY

Violations of registry, certification, and inspection requirements are liable for civil penalties up to $10,000. Failure to disinfect towers with increased microbes is classified as a misdemeanor, punishable with fines up to $25,000.

Failure to abide by certain reporting requirements can result in DOB enforcement action including the issuance of violations and fines.

Failure to produce for examination the cooling tower maintenance plan that must be kept in the building where the cooling tower is located is punishable with fines that start at $1,000 per occurrence.

FORMS REQUIRED

None. Registration of cooling towers must be done electronically.

FOR FURTHER INFORMATION

For a list of qualified vendors, see Appendix C.

TEXT OF LAW

The following laws apply: 10 NYCRR §§4-1.1 through 4-1.12; NYC Administrative Code, §§17-194.1, 28-317.1 through 28-317.7; 24 RCNY §§8-01 through 8-09.

10 NYCRR, PART 4: Protection Against *Legionella* SUBPART 4-1 Cooling Towers

10 NYCRR, §4-1.1: Scope

All owners of cooling towers shall comply with this Subpart.

10 NYCRR, §4-1.2: Definitions

As used in this Subpart, the following terms shall have the following meanings:

(a) *Bacteriologic culture sampling and analysis.* The term *bacteriologic culture sampling and analysis* means the collection of a water sample for the measurement of live culture growth of the aerobic bacterial populations by heterotrophic plate count (HPC), dip slides, or similar method used by the industry and according to the manufacturer's directions.

(b) *Building.* The term *building* means any structure used or intended for supporting or sheltering any use or occupancy. The term shall be construed as if followed by the phrase "structure, premises, lot or part thereof" unless otherwise indicated by the text.

(c) *Cooling Tower.* The term *cooling tower* means a cooling tower, evaporative condenser, fluid cooler or other wet cooling device that is capable of aerosolizing water, and that is part of, or contains, a recirculated water system and is incorporated into a building's cooling process, an industrial process, a refrigeration system, or an energy production system.

(d) *Legionella culture sampling and analysis.* The term *Legionella culture sampling and analysis* means the collection of a water sample for the measurement of the live culture of *Legionella* involving the use of specialized media and laboratory methods for growth to determine the species and serogroup.

(e) *Owner.* The term *owner* means any person, agent, firm, partnership, corporation or other legal entity having a legal or equitable interest in, or control of, a cooling tower or the premises where the cooling tower is located. In all instances, the legal owner of the building shall be deemed an owner within the meaning of the Subpart. Further, where a tenant owns a cooling tower that services the tenant's leased premises, the tenant is an "owner" within the meaning of this Subpart. Additionally, if a tenant does not own the cooling tower but has a lease or contractual arrangement to maintain the cooling tower, the tenant shall be deemed an agent having control of the cooling tower, and thus an "owner," for purposes of this Subpart.

10 NYCRR, §4-1.3: Electronic registration and reporting

(a) Registration. All owners of cooling towers shall register such towers with the department, using a statewide electronic system designated by the department, prior to initial operation, and whenever any owner of the cooling tower changes. Such registration shall include, at a minimum, the following information:

(1) street address of the building at which the cooling tower is located, with building identification number, if any;

(2) name(s), addresses(es), telephone number(s), and email address(es) of the owner(s) of the cooling tower;
(3) name of the manufacturer of the cooling tower;
(4) model number of the cooling tower;
(5) specific unit serial number of the cooling tower, if available;
(6) cooling capacity of the cooling tower;
(7) cooling tower system volume, inclusive of all piping, basin(s), and sump;
(8) intended use of the cooling tower;
(9) whether the cooling tower operates year-round or seasonally and, if seasonally, start and end date of operation;
(10) whether systematic disinfection in accordance with section 4-1.7 of this Subpart is maintained manually, through timed injection, or through continuous delivery;
(11) whether maintenance is performed by in-house personnel, by a contractor, or by other parties; and
(12) year the cooling tower was placed into service.

(b) Reporting. Effective upon adoption of the regulation, at intervals of no more than 90 days while a cooling tower is in use, the owner of the cooling tower shall report to the department using the statewide electronic system:
(1) date of last bacteriological culture sample collection, the analysis result(s), and date of any required remedial action, pursuant to §4-1.4(b)(1) of this Subpart;
(2) date of last Legionella culture sample collection, the analysis result(s), and date of any required remedial action, pursuant to §4-1.4(b)(2)–(4) of this Subpart;
(3) date of last inspection, pursuant to section 4-1.8 of this Subpart;
(4) date of last certification, pursuant to section 4-1.8 of this Subpart;
(5) date of removal or permanent discontinued use of the cooling tower, if applicable; and
(6) such other information as shall be determined by the department.

(c) The department shall make data in the statewide electronic system publicly available, as appropriate. The statewide electronic system shall be made fully accessible and searchable to any local health department. Nothing in this Subpart shall preclude a local health department from requiring registration and reporting with a local system or collecting fees associated with the administration of such system.

(d) Where both a landlord and a tenant are considered "owners" of a cooling tower pursuant to §4-1.2 of this Subpart, either the owner or the tenant shall register the cooling tower. However, both parties are obligated to ensure that registration and reporting are completed as required by this Subpart.

10 NYCRR, § 4-1.4: Maintenance program and plan

(a) By September 1, 2016, and thereafter prior to initial start-up of a newly installed cooling tower, the owner shall obtain or update a maintenance program and plan for each cooling tower, developed in accordance with §7.2 of Legionellosis: Risk Management for Building Water Systems (ANSI/ASHRAE 188-2015), 2015 edition with final approval date of June 26, 2015, at pages 7–8, incorporated herein by reference. The latest edition of ASHRAE 188-2015 may be purchased from the ASHRAE website (www.ashrae.org) or from ASHRAE Customer Service, 1791 Tullie Circle NE, Atlanta, GA 30329-2305. E-mail: orders@ashrae.org. Fax: 678-539- 2129. Tel.: 404-636-8400, or toll free 1-800-527-4723. Copies are available for inspection and copying at: Center for Environmental Health, Corning Tower Room 1619, Empire State Plaza, Albany, NY 12237.

(b) In addition, the maintenance program and plan shall include the following elements:
(1) a schedule for routine bacteriological culture sampling and analysis to assess microbiological activity at intervals not to exceed 30 days while the cooling tower is in use, and that requires additional bacteriological culture sampling and analysis, as needed, to validate process adjustments;
(2) a schedule for routine Legionella culture sampling and analysis within 14 days of seasonal start-up and, thereafter, at intervals not to exceed 90 days while the cooling tower is in use. Cooling towers in use year-round must sample at intervals not to exceed 90 days, and within two weeks after start-up following maintenance;
(3) in addition to the routine Legionella culture sampling and analysis required by paragraph (2) of this subdivision, conditions that require immediate Legionella culture sampling and analysis, which shall include, but are not limited to:
(i) power failure of sufficient duration to allow for the growth of bacteria;
(ii) loss of biocide treatment of sufficient duration to allow for the growth of bacteria;
(iii) failure of conductivity control, or any other control methods, to maintain proper cycles of concentration;

(iv) a determination by the department or local health department that one or more cases of legionellosis is or may be associated with the cooling tower, based upon epidemiologic data or laboratory testing; and

(v) any other conditions specified by the department or local health department.

(4) provisions requiring immediate and appropriate action, including remedial action, in response to bacteriological and Legionella culture analyses. For Legionella culture analyses, such provisions shall include, but not be limited to, taking all responsive actions required by Appendix 4-A, including contacting the local health department within 24 hours pursuant to the conditions specified in §4-1.6 of this Subpart;

(5) provisions requiring that any and all Legionella culture analyses must be performed in accordance with §4-1.5 of this Subpart;

(6) a shutdown and disinfection plan for removing or permanently discontinuing use of a cooling tower;

(7) provisions requiring treatment and manual or automated flushing of any piping, basin, sump, or wetted surface during idle conditions; and

(8) 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.

10 NYCRR, §4-1.5: Legionella culture analysis

All Legionella culture analyses must be performed by a laboratory that is approved to perform such analysis by the New York State Environmental Laboratory Approval Program (ELAP).

10 NYCRR, §4-1.6: Notification

(a) The owner of a cooling tower shall notify the local health department within 24 hours of receipt of a Legionella culture sample result that exceeds 1,000 colony forming units per milliliter (CFU/mL). The local health department shall notify the state department of health with 24 hours of receipt of such a report.

(b) The owner shall notify the public of such test results in a manner determined by the local health department or, in the event that the department elects to determine the manner of public notification, by the department.

10 NYCRR, §4-1.7: Disinfection

(a) 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.

(b) The name and certification number of the applicator or the business name and registration number of the company providing the disinfection shall be maintained on-site in accordance with §4-1.9 of this subpart.

(c) Only biocide products registered by the New York State Department of Environmental Conservation for use in cooling towers or pesticidal devices produced in a USEPA registered establishment may be used in disinfection.

(d) The terms "disinfect" and "disinfection" in this Part means the control of microorganisms or microbial growth. The term "disinfection" shall not include the cleaning of a cooling tower through application of detergents, penetrants, brushes or other tools, high-powered water, or any other method that does not involve the use of a pesticide, as defined in 6 NYCRR Part 325.

10 NYCRR, §4-1.8: Inspection and certification

(a) Inspection.

(1) All owners of cooling towers shall ensure that such towers are inspected prior to seasonal start-up and at intervals not exceeding every 90 days while in use. Year- round towers shall be inspected at intervals not exceeding every 90 days and prior to start-up, following maintenance.

(2) All inspections shall be performed by a: New York State licensed professional engineer; certified industrial hygienist; certified water technologist; 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 §4-1.4 of this Subpart.

(3) Each inspection shall include an evaluation of the:

(i) cooling tower and associated equipment for the presence of organic material, biofilm, algae, debris and other visible contaminants;

(ii) general condition of the cooling tower basin, remote sump, packing material, and drift eliminators;
(iii) water make-up connections and control, including backflow protection and/or airgaps as needed;
(iv) proper functioning of the conductivity control; and
(v) proper functioning of all water treatment equipment, including, but not limited to, pumps, timers, valves, and strain gauges.

(4) Any deficiencies found during inspection shall be reported to the owner for immediate corrective action. A person qualified to inspect pursuant to subdivision (a) of this section shall document all deficiencies, and all completed corrective actions.

(b) Certification. By November 1, 2016, and by November 1st of each year thereafter, the owner of a cooling tower shall obtain a certification from a person identified in subdivision (a) of this section, that such cooling tower has a maintenance program and plan, and that all activities within that plan or required by this Subpart were implemented, including but not limited to:
(1) all bacteriological culture sampling and analysis;
(2) all Legionella culture sampling and analysis, including any immediate Legionella culture sampling and analysis performed pursuant to paragraphs (b)(3) and (b)(4) of §4-1.4 of this Subpart;
(3) any disinfection performed pursuant to §4-1.7 of this Subpart; and
(4) all inspections performed pursuant subdivision (a) of this section.

(c) Reporting. All inspection findings, deficiencies, and corrective actions, and all certifications, shall be reported to the owner, who shall retain such information, in accordance with §4-1.9 of this Subpart.

10 NYCRR, §4-1.9: Recordkeeping

The owner of a cooling tower shall maintain records for at least three years of all sampling and analyses; disinfection schedules and applications; inspection findings, deficiencies, and corrective actions; and certifications. An 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.

10 NYCRR, §4-1.10: Enforcement

(a) The department or local health department may require any owner to conduct Legionella culture sampling and analysis, following a determination, based upon epidemiologic data or laboratory testing, that one or more cases of legionellosis are or may be associated with a cooling tower.

(b) An officer or employee of the department or local health department may enter onto any property to inspect a cooling tower for compliance with the requirements of this Subpart, in accordance with applicable law, and may take water samples as part of such inspections.

(c) Where an owner does not register, have a maintenance program and plan, obtain certification, disinfect, perform or obtain culture sampling and analysis, or inspect a cooling tower within the time and manner set forth in this Subpart, the department or local health department may determine that such condition constitutes a nuisance and may take such action as authorized by law. The department or local health department may also take any other action authorized by law.

(d) 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 of any provision of this Subpart shall constitute a separate and distinct violation of each such provision.

10 NYCRR, §4-1.11: Variances and waivers

(a) Variances. In order to allow time for compliance with this Subpart, an owner may submit a written application to a local health department for a variance from any provision of this Subpart, for a period not exceeding 90 days, accompanied by an explanation of why such variance will not present a danger to public health. With the approval of the department, the local health department may approve such application for a variance in writing, subject to any conditions that the department or local health department may deem appropriate to protect public health. The local health department or department may revoke such variance upon a determination that the variance may present a danger to public health.

(b) Waivers. The department may issue a written general or specific waiver with respect to any provision of this Subpart, subject to any conditions the department may deem appropriate, where the department is satisfied that such waiver will not present a danger to public health. The department may revoke such waiver upon a determination that the waiver may present a danger to public health.

10 NYCRR, §4-1.12: Severability

If any provisions of this Subpart or the application thereof to any person or entity or circumstance is adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or impair the validity of the other provisions of this Subpart or the application thereof to other persons, entities, and circumstances.

Admin. Code, §17-194.1:

a. Definitions. For the purposes of this section, the following terms have the following meanings:

BUILDING. The term "building" has the same meaning as in §28-101.5 of this code.

COOLING TOWER. The term "cooling tower" has the same meaning as in §28-317.2 of this code.

OWNER. The term "owner" has the same meaning as in §28-101.5 of this code.

b. Registration. An owner of a building that has a cooling tower shall register the cooling tower with the department of buildings in accordance with article 317 of chapter 3 of title 28 of this code.

c. Maintenance program and plan. An owner of a building that has a cooling tower shall develop and implement a maintenance program and plan for such cooling tower that is in accordance with §§5, 6, and 7.2 of the American Society of Heating, Refrigeration and Air-conditioning Engineers standard 188 for the year 2015 (ASHRAE 188-2015) and with the manufacturer's instructions. Such program and plan shall be developed by a qualified person. [Effective March 1, 2016]

d. Cleaning and disinfection after extended shutdown. At a minimum, an owner shall clean and disinfect cooling towers that are shut-down for more than five days. Cleaning and disinfection shall occur within 15 days before the use of such tower.

e. Minimum requirements for inspections and testing. At a minimum, cooling towers, other than cooling towers whose use has been permanently discontinued and for which a notice of such discontinuation has been sent to the department of buildings, shall be inspected and tested at least as frequently as every three months during periods of the year such cooling towers are in use.

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.
2. Each inspection shall include a test for the presence of microbes in the water of the cooling tower. The department shall by rule establish (i) the targets and acceptable methods of microbial testing and laboratory analysis, (ii) the levels of microbes in cooling towers that are indicative of a maintenance deficiency requiring mitigation, including but not limited to maintenance to prevent potential health risks, and (iii) the levels of microbes in cooling towers that present a serious health threat and require immediate action and reporting.
   (a) Where the results of any such test indicate levels of microbes that are indicative of a maintenance deficiency requiring mitigation, including but not limited to maintenance to prevent potential health risks, the owner of the building that has such cooling tower shall, within 48 hours after such owner knows or reasonably should know of such results, clean and disinfect the cooling tower in accordance with the rules of the department.
   (b) Where the results of any such test indicate levels of microbes that present a serious health threat, the owner of the building that has such cooling tower shall, within 24 hours after such owner knows or reasonably should know of such results, (i) notify the department and (ii) clean and disinfect the cooling tower, including an additional application of biocide, in accordance with the rules of the department.

f. Inspections, cleaning and disinfection. All inspections, cleaning and disinfection required by this section shall be performed by or under the supervision of a qualified person.

g. Abatement. Where an owner does not clean and disinfect a cooling tower within the time and manner set forth in subdivision e, the department may serve an order on the owner requiring compliance within a specified time. If such order is not complied with the department may authorize any agency of the city to act as agent of the department in executing such order and may recover the costs of such execution from the owner in accordance with any of the methods set forth in §§17-149 through 17-158.

h. Recordkeeping. An owner shall keep and maintain records of all inspections and tests performed pursuant to this section for at least three years. An owner shall maintain a copy of the maintenance program and plan required by subdivision c of this section on the premises where a cooling tower is located. Such records and plan shall be made available to the department immediately upon request.

i. Enforcement.

1. An officer, employee or agent of the department may enter onto any property to inspect the cooling tower, and review and obtain a copy of any records or plan required to be

kept under subdivision h of this section, for compliance with the requirements of this section or any of the rules promulgated thereunder, in accordance with applicable law.

2. (i) Any owner of a building who violates any provision of this section or any of the rules promulgated thereunder shall be liable for a civil penalty of not more than $2,000 for a first violation, and not more than $5,000 for a second or subsequent violation, except that such owner shall be liable for a penalty of not more than $10,000 for any violation that is accompanied by or results in a fatality or serious injury.
   (ii) In addition to any civil penalties under this subdivision, a violation of an order pursuant to subdivision g of this section shall be a misdemeanor punishable by a fine of not more than $25,000 or imprisonment for not more than one year, or both.
   (iii) A notice of violation served for civil penalties pursuant to this section shall be returnable at the environmental control board or any tribunal established within the office of administrative trials and hearings.

j. Electronic reporting. The department may require any submission required by this section be submitted electronically.

Admin. Code, §28-317.1: General

All owners of cooling towers shall comply with this article and the rules of the department.

Admin. Code, §28-317.2: Definitions

As used in this article, the following terms shall have the following meanings:

COOLING TOWER. The term "cooling tower" means a cooling tower, evaporative condenser or fluid cooler that is part of a recirculated water system incorporated into a building's cooling, industrial process, refrigeration, or energy production system.

Admin. Code, §28-317.3: Registration

All owners of cooling towers shall register such towers with the department prior to initial operation in a form and manner as required by the commissioner and shall include, at a minimum, the following information:

1. Address of the building at which the cooling tower is located;
2. Intended use of cooling tower;
3. Name, address, telephone number and email address of owner;
4. Manufacturer of the cooling tower;
5. Model number of the cooling tower;
6. Specific unit serial number of the cooling tower;
7. Cooling capacity (tonnage) of the cooling tower;
8. Basin capacity of the cooling tower; and
9. Commissioning date of the cooling tower.

Exception: Owners of existing cooling towers shall register such towers within 30 days after the effective date of this section.

Admin. Code, §28-317.3.1: Discontinued use

The owner or operator of a cooling tower shall notify the department within 30 days after removing or permanently discontinuing use of a cooling tower. Such notice shall include a statement that such cooling tower has been drained and sanitized in compliance with the requirements of the department of health and mental hygiene for discontinuance of a cooling tower.

Admin. Code, §28-317.4: Inspecting, cleaning, disinfecting and testing

All cooling towers shall be inspected, tested, cleaned and disinfected in accordance with §17-194.1 of the administrative code and the rules of the Department of Health and Mental Hygiene.

Admin. Code, §28-317.5: Annual certification

The owner or operator of a cooling tower shall file a certification each year that such cooling tower was inspected, tested, cleaned and disinfected in compliance with §17-194.1 of the administrative code and the rules of the department of health and mental hygiene, and that a maintenance program and plan has been developed and implemented as required by such section. Such certification shall be submitted by Nov. 1, 2016 and by Nov. 1 of each year thereafter, or as otherwise specified in the rules of the department.

Admin. Code, §28-317.6: Fees

The department may charge filing fees for registration, discontinuing of use and annual certification as set forth in the rules of the department.

Admin. Code, §28-317.7: Enforcement

Failure to register a cooling tower or submit a certification or statement required by this article shall be classified as a major violation.

24 RCNY, CHAPTER 8 COOLING TOWERS

24 RCNY, §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.

24 RCNY, §8-02: Definitions

When used in this Chapter, the following terms mean:

"ANSI/ASHRAE 188-2015" means §§5, 6, and 7.2 of ANSI/ASHRAE Standard 188-2015 Legionellosis: Risk Management for Building Water Systems," a publication issued by the American National Standards Institute (ANSI)/American Society of Heating, Refrigeration and Air-Conditioning Engineers (ASHRAE), final approval date June 26, 2015, at pages 4–8.

"Bacteriological indicator" means a biological process control indicator that estimates microbial content in the circulating water of a cooling tower system, such as heterotrophic plate count (HPC) as measured in a water sample or by a dip slide.

"Biocidal indicator" means a direct or indirect measure of the effectiveness of biocide, consisting of free halogen residual concentration or oxidation reduction potential (ORP), as specified in the management program and plan.

"Building" means any structure used or intended for supporting or sheltering any use or occupancy. The term shall be construed as if followed by the phrase "structure, premises, lot or part thereof" unless otherwise indicated by the text.

"Cleaning" means physical, mechanical or other removal of biofilm, scale, debris, rust, other corrosion products, sludge, algae and other potential sources of contamination.

"Cooling tower" means a cooling tower, evaporative condenser or fluid cooler that is part of a recirculated water system incorporated into a building's cooling, industrial process, refrigeration, or energy production system.

"Cooling tower system" means one or more cooling towers and all of the recirculating water system components, process instruments and appurtenances through which water flows or comes into contact with key parts consisting of biocide, anti-scaling and anti-corrosion chemical applicators, valves, pumps, the tower superstructure, condensers and heat exchangers and other related components. The cooling tower system may comprise multiple cooling towers that share some or all superstructure components.

"Corrective actions" mean disinfection, cleaning, flushing, and other activities to remedy biofilm growth, Legionella proliferation, or other system mechanical problems identified through monitoring, inspections, or other means as may be determined by the Department.

"Compliance inspection" means the inspection, testing and other activities that are required on a regular basis (at least every 90 days) in accordance with the maintenance program and plan and this Chapter, including the completion of a written or electronic checklist, and must be conducted and certified by a qualified person.

"Dead legs" mean lengths of pipe normally closed at one end or ending in a fitting within the cooling tower system that limits water circulation and is likely to result in stagnant water in the system.

"Department" means the New York City Department of Health and Mental Hygiene.

"Dip slide" means a method to test for microorganisms (such as HPC) consisting of a sterile culture medium affixed to a sterile slide, that is dipped directly into the liquid that is to be sampled.

"Disinfection" means using one or more of the biocides registered with the New York State Department of Environmental Conservation at a defined concentration, under specific conditions and for an established period that will kill or inactivate pathogenic microorganisms.

"Drift eliminator" means a system of baffles or cells that cause separation of entrained water designed to remove aerosols from cooling tower exhaust.

"Heterotrophic plate count" or "HPC" means a measure of the concentration of microorganisms that require an external source of organic carbon for growth including bacteria, yeasts and mold in water samples.

"Idling" means turning off or limiting water circulation within the cooling tower system but not draining the system water.

"Immediate" or "immediately" means within 24 hours when used in regards to (i) actions required to be taken under this Chapter, or (ii) incidents or results required to be reported under this Chapter, or (iii) records required to be made available to the Department under this Chapter.

"Legionella" means the genus of bacteria which is ubiquitous in aqueous environments, including the recirculated water of cooling tower systems that are not properly or regularly maintained. There are more than 50 different species of Legionella, all of which are potentially pathogenic.

"Legionella sample" means water or other sample to be examined for the presence of viable Legionella bacteria using semi-selective culture media and procedures specific to the cultivation and detection of Legionella species, such as those outlined in International Organization for Standardization (ISO) Standards 11731-1:1998 and 11731-2:2004.

"Maintenance program and plan" or "plan" means a written set of measures describing monitoring, cleaning, disinfection and all other activities for the prevention and control of Legionella growth in a cooling tower system, that is in accordance with section 5, 6 and 7.2 of ANSI/ASHRAE 188-2015 and with the manufacturer's instructions, and is developed by a qualified person.

"Makeup water" means water added to the cooling tower system on a regular basis to replace water lost by evaporation, drift or leakage and to maintain optimal system operation and process control.

"Management and maintenance team" means the individual or individuals designated by a building owner to be responsible for the continued effective and safe operation of a cooling tower system.

"Owner" means any person, agent, firm, partnership, corporation or other legal entity having a legal or equitable interest in, or control of the premises.

"Process control measures" mean actions that must be taken to evaluate internal functioning of the cooling tower system, including monitoring conductivity, pH, biological indicators and other parameters, and observing phenomenon such as scaling, corrosion and biofilm.

"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.

"Responsible person" means a person employed or whose services are retained by an owner, who understands and is capable of performing the required daily water quality measurements, weekly system monitoring and operation and maintenance of a cooling tower system in accordance with the maintenance program and plan, and making recommendations for diagnosing anomalous conditions that require corrective actions, under the guidance of a qualified person. The responsible person should be capable of measuring water pH, temperature and disinfectant residual levels at proper locations/frequencies; checking biocide storage container levels; recording dates, amounts and times of biocide injection; and logging all other relevant data and comments.

"Risk management assessment" means a process for comprehensively identifying, describing and evaluating in detail all aspects of a cooling tower system that may potentially contribute to the growth and dissemination of Legionella bacteria.

"Routine monitoring" means evaluation and other activities that must be completed periodically in accordance with the maintenance program and plan and this Chapter.

"Stagnant water" means water that is confined, standing, experiencing a period of low flow or usage, and not being actively circulated through the cooling tower system.

"Standard methods" means accepted protocols for sampling, recording, laboratory testing, reporting and other procedures related to environmental and water quality sampling, including, but not limited to, those set forth in Standard Methods for the Examination of Water and Wastewater 22nd Edition, 2012, a publication issued jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation and the Standards Microbiological Methods (TC 147/SC4) published by the International Organization for Standardization, or successor editions.

"System shutdown" means shutting off or closing and draining the cooling tower system when cooling is no longer needed.

"System start-up" means commissioning a new system, or putting the cooling tower system into operation after system shutdown or idling.

"Water quality parameters" means temperature, pH, conductivity, biocidal indicator, bacteriological indicator and other chemical and physical indicators of system process control.

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24 RCNY, §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 §§5, 6, and 7.2 of ANSI/ASHRAE 188-2015, the manufacturer's instructions, and the requirements of this Chapter. 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. The plan must be kept in the building where a 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 must be made available to the Department for inspection upon and at the time of a request. At a minimum, the plan must include and describe:

(a) Management and maintenance team. Identification, including names and contact information (mail and email addresses and telephone numbers) and description of the function of each person on the cooling tower system management and maintenance team, including:
    (1) The owner of the building where each cooling tower system is located and any manager or other person designated by the owner as

responsible for compliance with the requirements of Administrative Code §17-194.1 and this Chapter.

(2) Any person designated by the owner as a responsible person, as defined in §8-02 of this Chapter.

(3) Every consultant, service company and qualified person who cleans, disinfects, delivers chemicals or services the cooling tower system.

(b) Cooling tower system. Identification, specifications and description of each cooling tower system and all components located at a specific address, including:

(1) The number of cooling towers in the cooling tower system.

(2) The location of each cooling tower in relation to the building and the building address, block and lot number.

(3) The dimensions and characteristics of the cooling tower system including total recirculating water volume, cooling tower tonnage, biocide delivery method, flow rate and other key characteristics.

(4) The purpose of the cooling tower system and seasonal or year-round operation including start and end date, if applicable. For systems with multiple cooling towers, conditional operation, such as cycling or scaling related to cooling demand, must also be noted.

(5) The New York City Department of Buildings registration number for each cooling tower.

(6) The cooling tower manufacturer, model number and serial number, if applicable.

(7) A flow diagram or schematic of the cooling tower system, identifying all of the principal components and appurtenances of the cooling tower system including makeup water and waste stream plumbing locations.

(c) Risk management assessment. The 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:

(1) Any dead legs or stagnant water in the recirculation system.

(2) 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.

(3) System parts that require continual operation throughout the year making regular, periodic offline cleaning and disinfection difficult.

(4) Any components that may add additional risk factors for organic material buildup and microbial growth such as strainers and out-of-use filters.

(5) Sources of elevated organic contamination, including, but not limited to windblown debris, bird waste and plant material.

(6) Design configurations that present risk of direct sun exposure on basin, deck or fill.

(7) Ventilation intakes or other routes for human exposure to cooling tower aerosols.

(8) System components adversely affecting water quality management procedures.

(9) Other risk or limiting factors or constraints in the cooling tower system's design and functioning.

(d) Cooling tower operation

(1) Control measures, corrective actions, documentation, including a written checklist for routine monitoring, and reporting that comply with §§8-04 through 8-08 of this Chapter and any routine maintenance activities recommended by the manufacturer's instructions, including performance measures, which may sufficiently demonstrate adequate implementation of the operation requirements described in the maintenance program and plan. Where there is a conflict between the requirements of this Chapter, Part 4 of the State Sanitary Code, §17-194.1 of the Administrative Code, and the manufacturer's instructions, the maintenance program and plan must reflect the most stringent requirement.

(2) Specific, detailed seasonal and temporary shutdown and start-up procedures.

(3) 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.

24 RCNY, §8-04: Process control measures

(a) Routine system monitoring. An owner must designate a responsible person as defined in §8-02 of this Chapter to monitor each cooling tower system at least weekly while such system is in use.

(1) The 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.

(2) The responsible person must possess the skills and have the knowledge necessary to be able to monitor the system under the guidance of

a qualified person, in accordance with the management program and plan.

(3) All wetted surfaces visible during cooling tower operation 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 (oil and grease), and other visible contaminants observed must be noted on the checklist.

(4) 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.

(5) Any system anomalies or problems must be recorded on the checklist and reported to the management and maintenance team for immediate corrective action.

(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:

(1) Presence of organic material, biofilm, algae, and other visible contaminants.

(2) General condition of the tower, the basin, packing material and drift eliminator.

(3) Quality of water makeup connections and control.

(4) Proper functioning of the conductivity control.

(5) Proper functioning of all dosing equipment (pumps, strain gauges).

(6) Review of routine maintenance records to ensure proper implementation of required activities and corrective actions as needed.

(c) Maintenance.

(1) Routine maintenance. Cooling tower systems must be maintained and operated in accordance with the maintenance program and plan. 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.

(2) Replacement in kind. Any replacement part or equipment used in a cooling tower must comply with the manufacturer's design and performance specifications. As applicable, replacement materials must be corrosion resistant and effectively prevent the penetration of sunlight. Any alteration or replacement of a cooling tower system must comply with the New York City Construction Codes.

(d) Cleaning. The cooling tower system must be cleaned whenever routine monitoring indicates a need for cleaning, but no less than twice a year, in accordance with the maintenance program and plan. Cleaning protocol indicated by the manufacturer's instructions or industry standards, and worker protective measures, as required by applicable law must be specified in the maintenance program and plan. 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.

(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. Owners must install and maintain drift eliminators in accordance with the manufacturer's specifications and the New York City Construction Codes. The calculated drift loss at maximum design water circulation must not exceed the manufacturer's tested value for maximum drift loss. 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.

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24 RCNY, §8-05: Water treatment

Prior to changing an existing chemical treatment system or introducing a new chemical treatment agent, cooling tower design, installation, operation, and maintenance must be evaluated by a qualified person to ensure compatibility between the chemicals and the cooling tower system's materials, and to minimize microbial growth and the 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.

(a) Daily automatic treatment while in operation. Water in a cooling tower system 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.

(b) Recirculating system. A 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 maintenance program and plan specifies in detail how the intended water treatment schedule will be carried out, and how effective biofilm and microor-

ganism control will be achieved when the whole or a part of the system is idle during the scheduled chemical injection.

(c) Chemicals and biocides. 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. Only New York State Department of Environmental Conservation approved oxidizing chemicals may be used as the primary biocide control. For systems where oxidizing chemicals cannot be used as the primary biocide to control the presence of Legionella building owners must submit an alternative plan for effective bacteriological control for approval by the Department.

(1) Biocide applications. Any person who performs cleaning and disinfection or applies biocides in a cooling tower system must be a commercial pesticide applicator or a pesticide technician certified in accordance with the requirements of Article 33 of the New York State Environmental Conservation Law and 6 NYCRR Part 325, or a pesticide apprentice under the supervision of a certified applicator.

(2) Registered biocides. Only biocide products registered with the New York State Department of Environmental Conservation may be used to meet the disinfection requirements of this Chapter.

(3) Records. Water treatment records must be kept for all chemicals and biocides added, noting the purpose of their use, the manufacturer's name, the brand name, the safety data sheet, the date and time of each addition, and the amount added each week.

(4) Chemical and biocide additions. 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. Water treatment chemicals and biocides must be used in accordance with the product label and manufacturer's instructions.

(d) Non-chemical water treatment devices restricted. Only biocide products registered with the New York State Department of Environmental Conservation may be used to meet the disinfection requirements of this Chapter. Non-chemical water treatment devices that employ alternative technologies to control biological growth may not be used in lieu of chemical biocide unless approved by the Department. Non-chemical water treatment devices may be installed as part of a cooling tower system as specified in the management program and plan, provided that the required chemical water treatment also being used adequately controls for Legionella.

(e) Makeup water. Owners using water derived from rainwater capture or recycling water systems as a source of cooling tower system makeup water must install a drift eliminator and test and treat water in accordance with a specific alternative source water plan. This plan is in addition to the maintenance program and plan required by §8-03 of this Chapter, and must be approved by the Department. The alternative water source plan must include provisions for adequate design of the treatment and control components and ongoing evaluation to eliminate any risk to public health.

(f) Water quality monitoring.

(1) Frequency. Water quality parameters, including but not limited to pH, temperature, conductivity and biocidal indicators, must be measured and recorded as specified in the management program and plan as follows:

(A) Manual measurements. At least three times each week, provided that no more than two days pass without such measurement when the cooling tower system is operating.

(B) Continuous, automated and/or remote measurements. When continuous, automated and/or remote measurements and recordings are used, the management program and plan must show how effective measurements of system process control are being monitored. Automated measurements must be properly recorded and results made immediately available to responsible and qualified persons and to Department inspectors when requested.

(2) Minimum weekly biological process control indicators. A bacteriological indicator to estimate microbial content of recirculating water must be collected and interpreted in accordance with Table 8-2 at least once each week while the cooling tower system is operating. Indicators must be taken 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.

(3) Legionella samples. Legionella culture testing must be conducted no less frequently than every 90 days during cooling tower

system operation. A Legionella sample must be analyzed by a US Centers for Disease Control and Prevention ELITE Program certified laboratory, by the New York State Department of Health Wadsworth Center or other laboratory approved by the Department. Test results of all Legionella species at or above the magnitude of level 4 as indicated in Table 8-1 must be reported to the Department within 24 hours of receiving the test results. Additional emergency Legionella sampling must be conducted if any of the following occur:

(A) Power failure of sufficient duration to allow for growth of bacteria;
(B) Loss of biocide treatment sufficient to allow for growth of bacteria;
(C) Failure of conductivity controls to maintain proper cycles of concentration;
(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;
(E) Any time two consecutive bacteriological indicator sample results are above Level 4 as indicated in Table 8-2; or
(F) Any other conditions specified by the Department.

(4) 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 collection of samples.

(5) Water quality corrective actions. The maintenance program and plan must identify the procedures, responsible parties, required response time(s) and notification protocol for corrective actions and must include, at a minimum, corrective actions that must be implemented according to the result levels in Table 8-1 and Table 8-2.

24 RCNY, Table 8-1: Corrective actions required for Legionella culture results

Level	*Legionella* Culture Result[1]	Process Triggered by *Legionella* Culture Results
1	<10 CFU/ml	Maintain water chemistry and biocide levels.
2	≥ 10 CFU/ml to <100 CFU/ml	Initiate immediate disinfection by increasing biocide concentration or using a different biocide within 24 hours: review treatment program; and retest water within 3–7 days. Subsequent test results must be interpreted in accordance with this Table until level 1 is reached.
3	≥ 100 CFU/ml to <1000 CFU/ml	Initiate immediate disinfection by increasing biocide concentration or using a different biocide (within 24 hours), reviewing treatment program, performing visual inspection to evaluate need to perform cleaning and further disinfection. Retest water within 3–7 days. Subsequent test results must be interpreted in accordance with this Table until level 1 is reached.
4	≥ 1000 CFU/ml	Initiate immediate disinfection by increasing biocides within 24 hours. Within 48 hours perform full remediation of the tower by hyperhalogenating[2], draining, cleaning, and flushing. Review treatment program, retest water within 3–7 days. Subsequent test results must be interpreted in accordance with this Table until level 1 is reached. For *Legionella* results at this level, notify Department within 24 hours of receiving test result.[3]

1. Performed by a CDC ELITE Laboratory, or NYSDOH Wadsworth Laboratory, or another laboratory approved by the Department. Combine all species of *Legionella* detected.
2. At a minimum, dose the cooling water system with 5 to 10 ppm Free Halogen Residual for at least 1 hour; pH 7.0 to 7.6.
3. In a manner as specified on the Department's website.

24 RCNY, Table 8-2: Corrective actions required for bacteriological indicator results

Level	Heterotrophic Plate Count[1] & Dip Slide Result	Process Triggered by Test Results
1	<10,000 CFU/ml	Maintain water chemistry and biocide levels.
2	≥ 10,000 CFU/ml to <100,000 CFU/ml	Initiate immediate disinfection by increasing biocide concentration or using a different biocide within 24 hours, review treatment program, retest water within 3–7 days. Subsequent test results must be interpreted in accordance with this Table until level 1 is reached.
3	≥ 100,000 CFU/ml to <1,000,000 CFU/ml	Initiate immediate disinfection by increasing biocide concentration or using a different biocide within 24 hours, reviewing treatment program, performing visual inspection to evaluate need to perform cleaning and further disinfection. Retest water within 3–7 days. Subsequent test results must be interpreted in accordance with this Table until level 1 is reached.
4	≥ 1,000,000 CFU/ml	Initiate immediate disinfection by increasing biocides within 24 hours. Within 48 hours perform remediation of the tower by hyperhalogenating[2], cleaning, and flushing. Review treatment program, retest water within 3–7 days. Subsequent test results must be interpreted in accordance with this Table until level 1 is reached.

1. Performed by an appropriately accredited Laboratory (e.g. NELAP, AALA).
2. At a minimum, dose the cooling water system with 5 to 10 ppm Free Halogen Residual for at least 1 hour; pH 7.0 to 7.6.

24 RCNY, §8-06: System shutdown and start-up; commissioning and decommissioning cooling towers

(a) Full system shutdown. 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) 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, in accordance with §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:

(1) Either fully clean and disinfect, drain to waste and disinfect, or sufficiently hyperhalogenate the recirculated water before startup; and

(2) 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

(3) Before seasonal startup of a system that has been fully shut down, perform a pre-startup inspection by a qualified person.

(c) 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.

(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.

24 RCNY, §8-07: Records

(a) 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 any maintenance, inspection, deficiency, corrective action, water treatment, test result, cleaning or disinfection performed on the tower.

(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. The certification must document any deviations from compliance with the maintenance program and plan and the corrective actions taken to address any deficiencies.

(c) Posting. The owner must post the Department of Buildings Cooling Tower Registration Number that has been assigned to that cooling tower on 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.

24 RCNY, §8-08: Modification

The Commissioner or designee may grant a modification when strict application of any provision of this Chapter presents practical difficulties or unusual hardships. The Commissioner in a specific instance may modify the application of such provision consistent with the general purpose of this Chapter and in compliance with Administrative Code §17-194.1 and upon such conditions as, in his or her opinion, are necessary to protect the health or safety of the public.

24 RCNY, §8-09: Penalties

The following 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.

Section of Law	Description	Penalty: First Violation	Repeat Violation(s)
24 RCNY §8-03	No maintenance program and plan	$1000	$2000
24 RCNY§8-03	Maintenance program and plan incomplete or not on premises	$500	$1000
24 RCNY §8-04(a)	Routine monitoring not conducted, documented at least once a week when tower is in use	$500	$1000
24 RCNY§8-04(b)	Compliance inspections not conducted, documented at least once every 90 days when the tower is in use	$500	$1000
24 RCNY §8-04(c)	Routine maintenance according to maintenance program and plan not conducted or documented	$500	$1000
24 RCNY§8-04(d)	Twice yearly or other required cleaning not conducted or documented	$500	$1000
24 RCNY §8-04(e)	Aerosol control do not meet manufacturer's design specifications or drift loss reduction requirements in new or existing towers when required	$1000	$2000
24 RCNY§8-05(a)	Daily automatic or approved alternative water treatment plan not provided;	$500	$1000
24 RCNY§8-05(b)	Cooling water system not continually recirculated and no acceptable alternative	$500	$1000
24 RCNY §8-05(c)(1)	Use of an unqualified biocide applicator	$500	$1000

24 RCNY, §8-09: Penalties (continued)

Section of Law	Description	Penalty: First Violation	Repeat Violation(s)
24 RCNY §8-05(c)(2)	Use of an unregistered biocide product	$500	$1000
24 RCNY §8-05(c)(3)	No records of all chemicals and biocides added	$500	$1000
24 RCNY §8-05(c)(4)	Sufficient quantities and combinations of chemicals not added as specified in the maintenance program and plan	$500	$1000
24 RCNY §8-05(d)	Using unacceptable alternative non-chemical water treatment device	$500	$1000
24 RCNY §8-05(e)	Use of captured rainwater or recycled water as makeup water not in accordance with approved alternative water source plan	$1000	$2000
24 RCNY §8-05(f)(1)	Minimum daily water quality measurements not taken or recorded	$500	$1000
24 RCNY §8-05(f)(2)	Failure to collect, analyze or record weekly biological process control indicators	$500	$1000
24 RCNY §8-05(f)(3)	*Legionella* samples not collected or analyzed, or results not recorded or reported to the Department as required	$1000	$2000
24 RCNY §8-05(f)(4)	Failure to monitor and sample from representative locations and times	$500	$1000
24 RCNY §8-05(f)(5)	Required corrective actions not taken based on bacteriological results	$1000	$2000
24 RCNY §8-06(a)	Improper or inadequate shutdown procedures	$500	$1000
24 RCNY §8-06(b)(1)	Improper or inadequate start-up procedures	$500	$1000
24 RCNY §8-06(b)(2)	*Legionella* samples not collected, analyzed before system start-up	$500	$1000
24 RCNY §8-06(c)	New cooling tower not or inadequately cleaned and disinfected prior to operating	$500	$1000
24 RCNY §8-07(a)	Failure to document all inspections, logs, tests, cleaning, and disinfection in accordance with the maintenance program and plan	$500	$1000
24 RCNY §8-07(a)	Failure to retain records for at least 3 years	$500	$1000
24 RCNY §8-07(a)	Required records not kept at the cooling tower premises	$500	$1000
24 RCNY §8-07(c)	Department of Buildings Cooling Tower Registration Number not posted as required	$500	$1000
24 RCNY §8-07(d)	Records not made immediately available to Department upon request	$500	$1000
State Sanitary Code Part 4	Miscellaneous provisions	$250	$250