

# Definitions and Terms

When used in this document, in accordance with Title 24, Chapter 8 (Cooling Towers) of the Rules of the City of New York, the following terms have these meanings:

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

**Building** means any structure or premises 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.

**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 measurement of biocide in the cooling tower recirculating water, such as free halogen residual concentration or oxidation reduction potential (ORP).

**Building Identification Number (BIN)** means a unique 7-digit number, assigned by NYC City Planning, to a specific building.

**Chain of Command** means a supervisory structure for MPP personnel to follow in carrying out their duties.

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

**Cleaning Chemical Application Person** means the service provider who performs biannual and seasonal start-up (if applicable) cleaning and oversees application of daily or other approved chemical treatment procedures.

**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 cooling 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 and/or other activities as determined by the Department.

**Compliance Inspection** means the observations and other activities that are required on a regular basis (at least every 90 days) in accordance with the MPP and Chapter 8, including the completion of a written or electronic checklist, which 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 stagnation.

**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 biocides 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.

**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* species 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 (MPP)** 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.

**Make-up 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 individuals who are legally and practically 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 a building or other premises.

**Plan Preparer** means the lead author who is responsible for preparing this plan.

**Plan Model** means the document prepared above giving the major required elements of the MPP, to be modified by the plan preparer for each facility.

**Process Control Measures** mean actions that must be taken to evaluate internal functioning of the cooling tower system, including monitoring pH, temperature, biocidal indicator, bacteriological indicators, and other parameters, and observing phenomenon such as scaling, corrosion and biofilm.

**Qualified Person** means a New York State licensed 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 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 MPP, 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 the set of evaluation and other activities that must be completed periodically in accordance with the MPP and Chapter 8.

**Stagnant Water** means water that is confined, standing, experiencing 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 shutdown or idling.

**Water Quality Parameters** mean temperature, pH, conductivity, biocidal indicator, bacteriological indicator, and other chemical and physical indicators of system process control.