Legionella Culture Results – Cooling Towers
New York STATE

(Excerpt from New York State *Protection Against Legionella* 7/6/16 – this summary is for convenience and is not a substitute for the express terms of the regulation)

***Legionella* Test Results (CFU/mL[1])**	**Response/Action**
<20 (No detection)	Maintain treatment program and *Legionella* monitoring in accordance with the maintenance program and plan

≥20 but **<1000**	• Review treatment program
	• Institute immediate ***online disinfection***[2] to help with control
	• Re-test the water in 3-7 days
	  ○ Continue to re-test at the same time interval until one sample re-test result is **<20** CFU/mL. With receipt of result <20 CFU/mL, resume ***routine maintenance*** program and plan.
	  ○ If re-test is **≥20** CFU/mL but **<100** CFU/mL, repeat ***online disinfection***[2] and re-test until <20 CFU/mL is attained.
	  ○ If re-test is **≥100** CFU/mL but **<1000** CFU/mL, further investigate the water treatment program and immediately perform ***online disinfection***[2]. Re-test and repeat attempts at control strategy until <20 CFU/mL is attained.
	  ○ If re-test **is ≥1000** CFU/mL, undertake ***control strategy*** as noted below.

≥1000	• Review the treatment program and provide appropriate notifications per section 4-1.6 of Subpart 4-1 of the New York State *Legionella* Regulations.
	• Institute immediate ***online decontamination***[3] to help with control.
	• Re-test the water in 3-7 days.
	  ○ Continue to re-test at the same time interval until one sample re-test result is **<20** CFU/mL. With receipt of result <20 CFU/mL, resume ***routine maintenance*** program and plan.
	  ○ If any re-test is **≥20** CFU/mL but **<100** CFU/mL, repeat ***online disinfection***[2] and re-test until <20 CFU/mL is attained.
	  ○ If any re-test is **≥100** CFU/mL but **<1000** CFU/mL, further investigate the water treatment program and immediately perform ***online disinfection***[2]. Re-test and repeat attempts at control strategy until <20 CFU/mL is attained.
	  ○ If any re-test is **≥1000** CFU/mL, carry out ***system decontamination***[4].

[1] CFU/mL, colony forming unit per milliliter

[2] **Online disinfection**: dose the cooling tower water system with either a different biocide or a similar biocide at an increased concentration than currently used.

[3] **Online decontamination:** dose the recirculation water with a halogen-based compound (chlorine or bromine) equivalent to at least 5 milligrams per liter (mg/L) or parts per million (ppm) free residual halogen for at least one hour.

[4] **System decontamination:** maintain between 5 to 10 mg/L (ppm) free residual halogen for a minimum of one hour; drain and flush with disinfected water; clean wetted surface; refill and dose to 1-5 mg/L (ppm) of free residual halogen and circulate for 30 minutes. Refill, re-establish treatment, and re-test for verification of treatment. For chlorine treatment, the pH range should be 7.0 to 7.6; for bromine treatment, the pH range should be 7.0 to 8.7. At higher pH values, the treatment times may need to be extended.

NOTE: Stabilized halogen products should not be used for online decontamination or system decontamination as defined in footnotes 3 & 4.

Legionella Culture Results – Covered Facilities
New York STATE

(Excerpt from New York State *Protection Against Legionella* 7/6/16 – this summary is for convenience and is not a substitute for the express terms of the regulation)

Percentage of Positive *Legionella* Test Sites	Response
<30%	Maintain environmental assessment and *Legionella* monitoring in accordance with the sampling and management plan.

≥30%	• Immediately institute short-term control measures[2] in accordance with the direction of a qualified professional[3], and notify the department.
	• The water system shall be re-sampled no sooner than 7 days and no later than 4 weeks after disinfection to determine the efficacy of the treatment.
	  o Retreat and re-test. If re-test is ≥30% positive, repeat short-term control measures[2].
	  o With receipt of results <30% positive[4], resume monitoring in accordance with the sampling and management plan.
	• For persistent results, as determined by the department, showing ≥30% positive sites, long-term control measures[5] shall be implemented in accordance with the direction of a qualified professional[3] and the department.

[1] In the event that one or more cases of legionellosis are, or may be, associated with the facility, the sampling interpretation shall be in accordance with the direction of a qualified professional and the department.
[2] Short-term control measures are temporary interventions that may include, but are not limited to, heating and flushing the water system, hyperchlorination, or the temporary installation of treatment such as copper silver ionization (CSI).
[3] Control measures shall be conducted in accordance with the direction of a qualified professional. A qualified professional is a New York State licensed professional engineer; certified industrial hygienist, certified water technologist; environmental consultant or water treatment professional with training and experience performing assessments and sampling in accordance with current standard industry protocols.
[4] Positive samples should be minimized.
[5] Long-term control measures may include supplemental disinfection treatments.