

Health (Legionella) Regulations 2001

S.R. No. 13/2001

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STATUTORY RULES 2001

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Health Act 1958

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The Governor in Council makes the following Regulations:

Dated: 27 February 2001

Responsible Minister:

JOHN THWAITES
Minister for Health

HELEN DOYE
Clerk of the Executive Council

PART 1—PRELIMINARY

1. Objectives

The objectives of these Regulations are—

- (a) to prescribe procedures for the maintenance and testing of cooling tower systems and warm water systems; and
- (b) to require owners and persons who have the management or control of cooling tower systems and warm water systems to keep records on the maintenance and testing of those systems and to make those records available for inspection by an authorised officer on request; and

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(c) to enable the Secretary to the Department of Human Services to—

- (i) substitute different procedures in certain circumstances; and
- (ii) require additional procedures to be undertaken when a system is suspected or implicated in the spread of the prescribed infectious disease, legionellosis.

2. Authorising provisions

These Regulations are made under sections 146, 390 and 391 of the **Health Act 1958**.

3. Commencement

These Regulations come into operation on 1 March 2001.

4. Revocation

In the Health (Infectious Diseases) Regulations 1990¹, Division 3 of Part 5 is **revoked**.

5. Definitions

In these Regulations—

"biocide" means a physical or chemical agent capable of killing micro-organisms, including Legionella;

"clean" means to render free from visible sludge, foam, slime (including algae and fungi), rust, scale, dirt, and any deposit or accumulation of impurities or other foreign material;

"disinfect" means to carry out a process which—

- (a) is intended to kill or remove pathogenic micro-organisms, including Legionella; and

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- (b) in the case of a cooling tower system, consists of dosing the water of the system with—
- (i) a chlorine-based compound, equivalent to at least 10 mg/L of free chlorine for at least one hour, while maintaining the pH of the water between 7.0 and 7.6; or
 - (ii) a bromine-based compound, equivalent to at least 20 mg/L of free bromine for at least one hour, while maintaining the pH of the water between 7.0 and 8.5;

"heterotrophic colony count" means an estimate of the number of viable units of bacteria per millilitre of water made using the pour plate, spread plate or membrane filter test (also known as the total bacterial count, total plate count or viable bacterial count test) method;

"Legionella" means bacteria belonging to the genus *Legionella*;

"responsible person" means the person who owns, manages or controls the cooling tower system or warm water system;

"warm water system" means a piped water system, including any thermostatic mixing valve, which is designed to supply water at a temperature of between 30°C and 60°C.

6. Meaning of "cooling tower"

- (1) In these Regulations, a "cooling tower" is a device for lowering—
- (a) the temperature of recirculated water by bringing the water into contact with fan forced or fan induced atmospheric air; or

- (b) the temperature of water, a refrigerant or other fluid in a pipe or other container by bringing recirculated water and fan forced or fan induced atmospheric air into contact with the pipe or container.
- (2) An evaporative air cooler or evaporative air conditioner is not a cooling tower.

7. Meaning of "cooling tower system"

In these Regulations, a "cooling tower system" is—

- (a) a cooling tower, or a number of interconnected cooling towers that use the same recirculating water; and
 - (b) any machinery that is used to operate the tower or towers; and
 - (c) any associated tanks, pipes, valves, pumps or controls.
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**PART 2—MAINTENANCE AND TESTING OF COOLING
TOWER SYSTEMS**

8. *Maintenance*

The responsible person must ensure that any cooling tower system that the responsible person owns, manages or controls is maintained and tested in the manner set out in this Part, unless the system is shut down, or is otherwise not in use, and is completely drained of water.

9. *Water quality and treatment*

- (1) The responsible person must ensure that the water of the cooling tower system is maintained in a clean condition.

Penalty: 20 penalty units.

- (2) The responsible person must ensure that the water of the cooling tower system is continuously treated with—

- (a) one or more biocides to effectively control the growth of micro-organisms, including *Legionella*; and
(b) chemicals or other agents to minimise scale formation, corrosion and fouling.

Penalty: 20 penalty units.

10. *Disinfection, cleaning and re-disinfection*

The responsible person must ensure that a chlorine-compatible bio-dispersant is added to the recirculating water of the cooling tower system, and that the system is then disinfected, cleaned and re-disinfected—

- (a) immediately prior to initial start up following commissioning, or any shut down period of greater than one month; and
- (b) at intervals not exceeding 6 months.

Penalty: 20 penalty units.

11. *Routine inspections and testing*

- (1) The responsible person must ensure that the cooling tower system is inspected at least once each month to check that the system is operating without defects.

Penalty: 10 penalty units.

- (2) The responsible person must ensure that at least once each month a sample of the recirculating water of the cooling tower system is taken and is delivered to a laboratory for testing and reporting on for heterotrophic colony count.

Penalty: 20 penalty units.

12. *High heterotrophic colony count detected in cooling tower system*

- (1) Within 24 hours of receiving a report that any sample of water taken from the cooling tower system has a heterotrophic colony count exceeding 100 000 colony forming units per millilitre, the responsible person must ensure that the following procedure is implemented—

- (a) the water of the system must be manually treated with additional quantities of biocide, or with an alternative biocide; and
 - (b) the water treatment program, tower operation and maintenance program of the system must be reviewed; and
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(c) any faults must be corrected and any changes necessary to prevent a re-occurrence of those faults must be implemented.

Penalty: 20 penalty units.

(2) Between 2 and 4 days after the water has been treated under sub-regulation (1), the responsible person must ensure that a further sample of the recirculating water of the system is taken and is delivered to a laboratory for testing and reporting on for heterotrophic colony count.

Penalty: 20 penalty units.

(3) Within 24 hours of receiving a report that a sample taken in accordance with sub-regulation (2) has a heterotrophic colony count exceeding 100 000 colony forming units per millilitre, the responsible person must ensure that the water of the cooling tower system is disinfected, cleaned and re-disinfected.

Penalty: 20 penalty units.

(4) Between 2 and 4 days after the water has been re-disinfected under sub-regulation (3), the responsible person must ensure that a further sample of the recirculating water of the cooling tower system is taken and is delivered to a laboratory for testing and reporting on for heterotrophic colony count.

Penalty: 20 penalty units.

(5) If, after following the procedure in sub-regulations (1), (2), (3) and (4) the heterotrophic colony count still exceeds 100 000 colony forming units per millilitre, the responsible person must—

(a) ensure that the steps in sub-regulations (3) and (4) are repeated until the heterotrophic colony count does not exceed 100 000 colony forming units per millilitre in 2

consecutive water samples taken approximately one week apart; or

- (b) close the cooling tower system until the problem has been remedied.

Penalty: 60 penalty units.

13. *Legionella detected in cooling tower system*

- (1) Within 24 hours of receiving a report that Legionella has been detected in a water sample taken from a cooling tower system that is not associated with any suspected or known case of legionellosis, the responsible person must ensure that the following procedure is implemented—
 - (a) the cooling tower system must be disinfected; and
 - (b) the water treatment program, tower operation and maintenance program of the system must be reviewed; and
 - (c) any faults must be corrected and any changes necessary to prevent a re-occurrence of those faults must be implemented.

Penalty: 100 penalty units.

- (2) Between 2 and 4 days after the disinfection required by sub-regulation (1) (a) has been completed, the responsible person must ensure that a further sample of the recirculating water of the system is taken and is delivered to a laboratory for testing and reporting on for Legionella.

Penalty: 20 penalty units.

- (3) Within 24 hours of receiving a report that Legionella has been detected in a sample taken in accordance with sub-regulation (2), the responsible person must ensure that the water of the cooling tower system is disinfected, cleaned and re-disinfected.
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Penalty: 20 penalty units.

- (4) Between 2 and 4 days after the disinfection required by sub-regulation (3) has been completed, the responsible person must ensure that a further sample of the recirculating water of the system is taken and is delivered to a laboratory for testing and reporting on for Legionella.

Penalty: 20 penalty units.

- (5) If, after following the procedure in sub-regulations (1), (2), (3) and (4) Legionella is still detected, the responsible person must—

- (a) ensure that the steps in sub-regulations (3) and (4) are repeated until Legionella is not detected in 2 consecutive water samples taken approximately one week apart; or
- (b) close the cooling tower system until the problem has been remedied.

Penalty: 100 penalty units.

- (6) If, while following the procedure in this regulation Legionella is detected in 3 consecutive water samples taken from the same system, the responsible person must notify the Secretary of the detection of the presence of that organism—

- (a) immediately by telephone; and
- (b) by notice in writing within 3 days of the detection of the organism on the third occasion.

Penalty: 100 penalty units.

**PART 3—MAINTENANCE AND TESTING OF WARM
WATER SYSTEMS**

14. *Application*

- (1) This Part does not apply to a warm water system serving a single dwelling exclusively.
- (2) Regulations 17, 18 and 19 do not apply to thermostatic mixing valves.

15. *Maintenance*

The responsible person must ensure that any warm water system that the responsible person owns, manages or controls is maintained and tested in the manner set out in this Part, unless the system is shut down, or is otherwise not in use, and is completely drained of water.

16. *Start up procedures*

The responsible person must ensure that the warm water system is disinfected by heat or chlorination and cleaned immediately prior to initial start up following commissioning, or any shut down period of greater than one month.

Penalty: 10 penalty units.

17. *Routine disinfection*

The responsible person must ensure that the warm water system is disinfected by one or more of the following methods—

- (a) at least once each month by heat or chlorination; or
- (b) continuously by means of automatic low level chlorination; or

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- (c) continuously by means of ultra-violet light treatment; or
 - (d) a method approved in writing by the Secretary.

Penalty: 20 penalty units.

18. Routine testing

If the method of disinfection of a warm water system is by ultra-violet light treatment or a method approved under regulation 17(d), the responsible person must ensure that a sample of the water of the system is taken and is delivered to a laboratory for testing and reporting on for Legionella—

- (a) at intervals not exceeding one month for a period of 12 months; and
- (b) if Legionella is not detected in any sample taken and delivered to a laboratory for testing during the previous 12 months, at intervals not exceeding 3 months for so long as Legionella remains undetected in the system; and
- (c) if Legionella is detected in any sample taken and delivered to a laboratory for testing during the previous 12 months, and the procedure under regulation 22 or 25 has been followed, then according to the intervals specified in paragraph (a).

Penalty: 20 penalty units.

19. Additional testing for premises where overnight accommodation and health or welfare services are provided

If a warm water system serves premises where overnight accommodation and health, or welfare, services are provided, the responsible person must

ensure that samples of the water are taken from different outlets of the system and delivered to a laboratory for testing and reporting on for Legionella—

- (a) if the method of disinfection is by heat or chlorination or low level chlorination under regulation 17(a) or (b)—
 - (i) at intervals not exceeding 3 months for a period of 12 months; and
 - (ii) if Legionella is not detected in any sample taken and delivered to a laboratory for testing during the previous 12 months, at intervals not exceeding 6 months for so long as Legionella remains undetected in the system; and
 - (iii) if Legionella is detected in any sample taken and delivered to a laboratory for testing during the previous 12 months, and the procedure under regulation 22 or 25 has been followed, then according to the intervals specified in subparagraph (i);
- (b) if the method of disinfection is by ultra-violet light treatment or by a method approved under regulation 17(d), according to the intervals specified in regulation 18.

Penalty: 20 penalty units.

- (2) If the system is disinfected at least each month, the samples must be taken just prior to the disinfection.

20. Warm water outlets

- (1) The responsible person must ensure that at least once during each week all outlets of the warm water system not in use for 7 days or more are flushed at full flow.

Penalty: 20 penalty units.

- (2) The period of flushing referred to in sub-regulation (1) must be sufficient to remove all stagnant water leading to the outlet, and until the temperature at which the system is set is reached at the outlet.

21. Thermostatic mixing valves

The responsible person must ensure that all thermostatic mixing valves of warm water systems are cleaned and maintained at least once in each calendar year.

Penalty: 10 penalty units.

22. Legionella detected in warm water systems

- (1) Within 24 hours of receiving a report that Legionella has been detected in a water sample taken from a warm water system that is not associated with any suspected or known case of legionellosis, the responsible person must ensure that the following procedure is implemented—

- (a) the warm water system must be disinfected by heat or chlorination;
- (b) the warm water system operation, maintenance program and any water treatment must be reviewed; and
- (c) any faults must be corrected and any changes necessary to prevent a re-occurrence of those faults must be implemented.

Penalty: 100 penalty units.

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- (2) Between 2 and 4 days after the disinfection required by sub-regulation (1)(a) has been completed, the responsible person must ensure that a further sample of the water of the system is taken from the same sampling point as the sample referred to in sub-regulation (1) and is delivered to a laboratory for testing and reporting on for Legionella.

Penalty: 20 penalty units.

- (3) If, after following the procedure in sub-regulations (1) and (2), Legionella is still detected, the responsible person must—
- (a) ensure that the steps in those sub-regulations are repeated until Legionella is no longer detected in 2 consecutive water samples taken approximately one week apart; or
 - (b) close the warm water system until the problem has been remedied.

Penalty: 100 penalty units.

- (4) If, while following the procedure in this regulation Legionella is detected in 3 consecutive water samples taken from the same system, the responsible person must notify the Secretary of the detection of the presence of that organism—
- (a) immediately by telephone; and
 - (b) by notice in writing within 3 days of the detection of the organism on the third occasion.

Penalty: 100 penalty units.

PART 4—GENERAL PROVISIONS

23. Records

- (1) The responsible person must—
- (a) keep a maintenance log book in respect of each cooling tower system or warm water system that is owned, managed or controlled by the responsible person that records details of—
 - (i) all maintenance and corrective activities undertaken in relation to the system; and
 - (ii) all microbiological test results of samples taken from the system; and
 - (iii) any approval issued under regulation 24 in respect of the system; and
 - (b) keep the maintenance log book up to date and on the premises where the cooling tower system or warm water system is located.

Penalty: 20 penalty units.

- (2) The responsible person must produce the maintenance log book and any other records relevant to sub-regulation (1) for inspection on the request of an authorised officer.

Penalty: 20 penalty units.

24. Secretary may approve a different method of maintenance, testing and keeping of records

- (1) A person may apply to the Secretary for approval to use a method of maintaining and testing—
- (a) a cooling tower system that is different from the method specified in Part 2;

- (b) a warm water system that is different from the method specified in Part 3.
- (2) A person may apply to the Secretary for approval to use a method of keeping records of a cooling tower system or warm water system that is different from the method specified in regulation 23.
 - (3) The Secretary may approve the use of the different method referred to in sub-regulation (1) or (2) if the Secretary is of the opinion—
 - (a) that the use of the method will achieve results that are at least equivalent to the results that would be achieved using the method specified in Part 2 or 3 or regulation 23 (as the case may be); or
 - (b) that it is not practicable for the method specified in Part 2 or 3 or regulation 23 (as the case may be) to be used in the circumstances applying to the system in respect of which the application is made.
 - (4) In approving the use of a different method, the Secretary may impose any conditions in relation to the use of the system or the method that the Secretary considers to be appropriate.
 - (5) If the Secretary approves the use of a different method, the responsible person must ensure that any condition imposed by the Secretary in approving the use of the method is complied with while the method is being used.
- Penalty: 100 penalty units.
- (6) If the Secretary approves the use of a different method, the responsible person need not comply with Part 2 or 3 or regulation 23 (as the case may be) while the method is being used.
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25. *Water system suspected or implicated as the source of infection*

In any instance where the Secretary has informed the responsible person that the cooling tower system or warm water system is suspected or implicated as the source of infection in a case or an outbreak of legionellosis, that person must ensure that—

- (a) a water sample from the system is promptly taken and delivered to a laboratory for testing and reporting on for Legionella; and
- (b) the system is decontaminated in accordance with any reasonable directions given to that person by the Secretary.

Penalty: 100 penalty units.

ENDNOTES

¹ Reg 4: S.R. No. 85/1990. Reprinted to S.R. No. 108/1999.