

# UNIVERSITY OF SHEFFIELD

## CONTROL OF LEGIONELLA BACTERIA WITHIN WATER SYSTEMS POLICY & PROCEDURES

### Contents:

- 1 Background**
- 2 Commitment statement**
- 3 Risk Assessment**
  - 3.1 Risk assessment policy
  - 3.2 Persons at risk
- 4 Control Methodology**
- 5 Training and Instruction**
- 6 Audit**
- 7 Control areas of risk**
  - 7.1 Cooling towers
  - 7.2 Showers
  - 7.3 Domestic Hot water systems
    - 7.3.1 System design
    - 7.3.2 Control regime
  - 7.4 Tank Fed Cold water systems
    - 7.4.1 System design
    - 7.4.2 Control regime
  - 7.5 Infrequently used outlets
  - 7.6 Drinking water distribution
    - 7.6.1 System design
    - 7.6.2 Control regime
  - 7.8 Laboratory equipment
  - 7.9 Humidifiers (Ultrasonic humidifiers, Fogging systems & water misting systems)
  - 7.10 Ornamental water fountains
  - 7.11 Residences
    - 7.13.1 Control regime
  - 7.12 Sports facilities
    - 7.14.1 Record books
  - 7.12 Fire Hose reels
  - 7.13 New equipment and alterations
    - 7.13.1 System design
    - 7.13.2 Control regime

- 8 Temperature Monitoring & Water Analysis**
  - 8.1 Temperature monitoring of Sentinel taps
  - 8.2 Temperature monitoring of General taps
  - 8.3 Water Analysis
  
- 9 Organisation and Responsibilities**
  - 9.1 Dutyholder
  - 9.2 Responsible Person and Deputy Responsible Persons
  - 9.3 Approved Persons Legionella (All)
  - 9.4 Residences Manager
  - 9.5 Principle Mechanical Engineer for design of heating & cooling systems
  - 9.6 Heads of Departments with water related equipment
  - 9.7 Engineering Clerks of Work / Planning Supervisors
  - 9.8 Contractor responsible for surveys, assessments, and treatment regimes
  - 9.9 Contractor responsible for treatment and cleaning regimes
  - 9.10 Contractor responsible for repairs and modifications
  - 9.11 University medical staff
  - 9.12 Legionella Control Steering Group
  - 9.13 University Public Relations and Communications
  
- 10 Guidance**
  
- 11 Consultation and Review**

**Appendix 1 Estate Services - Legionella Management Structure**

**There is an associated “Operational Procedures Manual with which all relevant personnel should be familiar. This document covers the following: -**

1. Legionella control documentation and reporting
2. Procedure for the Pasteurisation of a Calorifier
3. Procedures for flushing & purging infrequently used outlets
4. Procedure for Legionella Control in Laboratory equipment
5. Procedure for removal of fire hose reels
6. Procedure in the event of a positive Legionella sample
7. Procedure in the event of a suspected Legionellosis outbreak

# Control of Legionella Bacteria within Water Systems in the University of Sheffield

## Purpose of Document

To specify how the University manages the potential for Legionella contamination to comply with both legislation and good practice. The Registrar and Secretary as Duty Holder has overall responsibility for health and safety and will oversee through the appointment of a Responsible Person and Deputy Responsible Person the implementation and development of this Policy.

This Policy applies to all areas of the University except those areas where the University occupies buildings owned by others and where Legionella control is managed by others.

## **1 BACKGROUND**

- 1.1 Legionnaires' disease is a potentially fatal form of pneumonia which can affect anybody, but which principally affects those who are susceptible because of age, illness, immunosuppression, smoking etc. It is caused by the bacterium *Legionella pneumophila* and related bacteria. Legionella bacteria can also cause less serious illnesses, which are not fatal or permanently debilitating. The collective term used to cover the group of diseases caused by Legionella bacteria is Legionellosis. On average there are 200-300 reported cases in England and Wales each year.
- 1.2 Legionnaires disease is normally contracted by the individual inhaling Legionella bacteria either in tiny droplets of water or in droplet nuclei (particles left after the water has evaporated).
- 1.3 Incubation period is 2-10 days (usually 3-6 days).

## **2. UNIVERSITY COMMITMENT**

- 2.1 The University intends to adopt as far as reasonably practicable the principles of control and management identified in Health and Safety Executive (HSE) Approved Code of Practice and Guidance document "The Control of Legionella Bacteria in Water Systems" (ACOP L8), a copy of which is kept by Estates Services.
- 2.2 To comply with its legal duties the University will:
  - a) Identify and assess sources of risk
  - b) Prepare a scheme for preventing or controlling the risk
  - c) Implement, manage and monitor all precautionary control measures identified

- d) Keep records of routine monitoring, precautionary measures and Legionella incidents.
- e) Identify roles and responsibilities of relevant managers, employees and Contractors for the control of Legionella in the University of Sheffield.
- f) Establish a Legionella Control Steering Group to monitor current or potential Legionella issues for the University and advise the Health and Safety Committee accordingly.
- g) Communicate with the University as appropriate to build both specific competences and necessary general awareness.

### **3. RISK ASSESSMENT**

#### **3.1 Risk Assessment Policy**

3.1.1 University buildings and plant are considered to fall into five categories for the purposes of precautions against Legionella infection, these are:

***Class A*** - Buildings with cooling towers

***Class B*** - Complex buildings with spray outlets / showers.

***Class C*** - Simple buildings with spray outlets / showers

***Class D*** - Complex buildings without spray outlets / showers.

***Class E*** - Buildings off mains supplies with point-of-use immersion heaters.

The University will conduct risk assessments in respect of Legionella bacteria and have them updated every two years, or when refurbishment takes place, or when a new building is commissioned.

3.1.2 The University will employ professionally qualified and competent companies to carry out the risk assessment on its behalf, and ensure they are competent under the duty of care. The risk assessments are held centrally by Estate Services at 45 Victoria Street

3.1.3 The Responsible Person in accordance with this document will instigate a review.

3.1.4 A site survey of all water systems will be conducted culminating in a schematic drawing and logbook for each system, which will be instigated, held and updated by Estate Services.

## **3.2 Persons at Risk**

3.2.1 Risk assessment has identified that University staff, students, visitors and the general public using adjacent buildings and thoroughfares may be at risk.

Areas of risk where control is necessary:

- |                                |                               |
|--------------------------------|-------------------------------|
| 1. Cooling Towers              | 8. Humidifiers                |
| 2. Showers                     | 9. Ornamental water fountains |
| 3. Domestic hot water systems  | 10. Residences                |
| 4. Tank fed cold water systems | 11. Sports facilities         |
| 5. Infrequently used outlets   | 12. Fire hose reels           |
| 6. Drinking water distribution | 13. New equipment/alterations |
| 7. Laboratory equipment        |                               |

## **4 CONTROL METHODOLOGY**

4.1 Estate Services will arrange to assess the Legionella risks associated with all "areas of risk" indicated in section 3.2.1 above.

4.2 Estate Services will schedule, design, order and monitor all controls necessary to manage Legionella bacteria within the University.

4.3 Estate Services will carry out, procure and report on all controls necessary to manage Legionella bacteria within the University.

4.4 University Departments, Schools and Divisions which own water-related fixtures or equipment capable of harbouring Legionella, will ensure equipment under their control is serviced (including inspection, cleaning and disinfecting) and maintained to the standard required to control Legionella bacteria within the University, and ensure records of servicing and maintenance are kept.

4.5 Estate Services will produce a Water Systems logbook for each building (or Group of buildings) on campus that will contain all records of control measures implemented. These will be held within Estate Services at 45 Victoria Street and contain the following: -

- Risk Assessment for all the Water Systems in that building
- Schematic diagrams of the Water Systems
- Records of control checks taken
- Chlorination record certificates
- Records of any remedial work carried out

4.6 Independent audits of the systems will be undertaken.

## **5. TRAINING, INSTRUCTION AND GENERAL AWARENESS**

- 5.1 Staff in Estate Services and in other Departments involved in the management of water systems or Legionella control of laboratory equipment and facilities will be trained by a competent person, or otherwise receive adequate guidance, to carry out their responsibilities.
- 5.2 The services of a specialist water treatment/environmental services company will be retained to advise as appropriate.
- 5.3 Key members of staff involved in Legionella control are referred to in Section 9 and in Appendix 1, but a wider awareness will support that control and means to inform University personnel will be implemented through the Legionella Control Steering Group, including a Guidance note in Legionella control, on the Safety Services web site.

## **6. AUDIT**

- 6.1 The Responsible Person or the Deputy Responsible Person will commission an audit of this policy biannually to ensure compliance by an external consultant. The Responsible Person will hold a written report of the findings of this audit.

## **7. CONTROL OF AREAS OF RISK**

### **7.1 COOLING TOWERS ASSOCIATED WITH AIR CONDITIONING EQUIPMENT**

- 7.1.1 Water quality to be monitored, water use and biocide/chemical use assessed to ensure effectiveness of water treatment regime, including key chemical and microbiological parameters. Observations of internal conditions of pond, pack and water. Frequency - weekly to three monthly depending on risk. A suitably qualified Water Treatment or Environmental Service contractor shall carry out the work and complete the record sheets.
- 7.1.2 Monitor central control functions, conductivity sensor calibration, blowdown function, uniformity of water distribution, condition of sprays/troughs, eliminators, pack, pond, immersion heater, fans and sound attenuators. Frequency - monthly to three monthly, according to risk. A suitably qualified Water Treatment or Environmental Service contractor should carry out the work and complete the record sheets.
- 7.1.3 Clean and disinfect cooling towers/evaporative condensers, make-up tanks and associated systems, including all wetted surfaces, descaling as necessary. Packs should be removed and cleaned where practicable on a 6-month frequency. A suitably qualified Water Treatment or Environmental Service contractor should carry out the work and complete the record sheets.

7.1.4 Records are to be returned to Estate Services on the issued record sheet for filing in the building logbook. A method statement for all such work by contractors should be issued and filed in the log book.

## **7.2 SHOWERS, including emergency / drench showers with & without storage**

7.2.1 All shower Heads and connecting hoses must be flushed weekly, or as necessary based on an assessment of risk, if not in regular (at least weekly) use and this should be recorded. (Operational Procedure 3)

7.2.2 Each showerhead and associated hose should be cleaned and descaled on a quarterly basis. A suitably qualified Water Treatment or Environmental Service contractor should carry out the work and complete the record sheets.

7.2.3 Records are to be returned to Estate Services on the issued record sheet for filing in the building logbook. A method statement for all such work by contractors should be issued and filed in the log book.

## **7.3 DOMESTIC HOT WATER SYSTEMS**

### **7.3.1 System Design**

7.3.1.1 Systems should be designed to ensure domestic hot water is stored at 60°C (maximum) and distributed with a minimum flow return temperature of 50°C.

7.3.1.2 Storage calorifiers should all be fitted with a shunt pump set to operate via time switch to heat the full calorifier to 60°C for one hour per day.

7.3.1.3 Each system should be fitted with the circulation pump on the return leg.

7.3.1.4 Temperature of the flow and return legs of each hot water system should be monitored by the Approved Persons Legionella (or Deputy Responsible Person) and recorded to confirm the correct operation. Where monitoring is not constant, temperatures should be checked and logged at an appropriate frequency, but not greater than once per week. Deviations must be reported to Responsible Person Legionella or the Deputy Responsible Person Legionella.

7.3.1.5 University policy requires existing spray emission type taps to be removed and prohibits the installation of any new. Taps that produce a spray emission as a result of obstructions should be identified to Estates Services for replacement.

7.3.1.6 **Only Drinking Water Inspectorate (DWI) approved water fittings and materials are to be used.** Jointing materials such as natural rubber, hemp and linseed oil-based jointing compounds and fibre washers are excluded from use.

### **7.3.2 Calorifiers - Control Regime**

- 7.3.2.1 Water temperatures entering and leaving calorifiers are to be checked weekly via the Building Management System by the relevant Approved Person Legionella
- 7.3.2.2 Monthly temperatures are to be taken and recorded on the water storage temperature log sheet and returned to Estate Services testing section for filing in the building logbook.
- 7.3.2.3 Water should leave calorifiers at 60°C with a return temperature of 50°C or above.
- 7.3.2.4 Deadlegs” should, where possible, be removed or, where not possible, minimised in length.
- 7.3.2.5 Hot water pipework should be insulated to minimise heat loss.
- 7.3.2.6 Anomalies are to be reported immediately to Responsible Person Legionella or the Deputy Responsible Person Legionella.
- 7.3.2.7 An annual maintenance inspection of each domestic calorifier is carried out, during which microbiological sampling of the drain water for Legionella should take place.
- 7.3.2.8 The calorifier is isolated from the building circuit, the shell is drained down and the internal surface is inspected and cleaned. (See Operational Procedure 2).
- 7.3.2.9 Immediately prior to the calorifier being returned to service a full pasteurisation process is carried out and the operative records the process on the issued maintenance sheet which is then returned to Estates Services for recording in the building logbook.

## **7.4 TANK FED COLD WATER SYSTEMS**

### **7.4.1 System Design**

- 7.4.1.1 Cold water storage should be designed to be sufficient to meet peak demands and maximising turnover of water within tanks to minimise temperature gain.
- 7.4.1.2 New tanks should be partitioned or have an “inlet to outlet” bypass to facilitate cleaning and chlorination of the tanks without interrupting the cold water/hot water service to the building.
- 7.4.1.3 Tanks are filled with delayed action float valves, or in the case of pumped services conductivity rod operated switches, to allow for positive water displacement in the tank.

- 7.4.1.4 The inlet supply to the tank is at the opposite end to the discharge pipework.
- 7.4.1.5 Where new tanks are to be installed, GRP sectional tanks externally flanged with integral insulation, and ditched bottom drain for ease of cleaning are to be fitted.
- 7.4.1.6 All new tanks are fitted with 54mm drains to waste to ease the process of tank cleaning and draining.
- 7.4.1.7 Where partitioned tanks are installed the policy is to operate both tanks together except for chlorination and maintenance.
- 7.4.1.8 University policy requires existing spray emission type taps to be removed and prohibits the installation of any new. Taps that produce a spray emission as a result of obstructions should be identified to Estates Services for replacement.
- 7.4.1.9 “Deadlegs” should, where possible, be removed or, where not possible, minimised in length and non-essential standby equipment disconnected.
- 7.4.1.10 Cold water pipework should be insulated to minimise heat gain.
- 7.4.1.11 **Only DWI approved water fittings and materials are to be used.** Jointing materials such as natural rubber, hemp and linseed oil-based jointing compounds and fibre washers are excluded from use.

## **7.4.2 Control Regime**

- 7.4.2.1 Storage Tank -To be inspected annually by Estate Services staff or specialist contractor. Consider: -
- Condition inside/outside
  - Condition of thermal insulation
  - Is lid fitted correctly?
  - Is water clean and debris free?
  - Ball float valve operating correctly?
  - Condition of overflow pipe
  - Report and to be recorded on the issued record sheet and issued to Estate Services for filing in the building logbook.

## **7.5 INFREQUENTLY USED OUTLETS (including infrequently used disabled toilets)**

- 7.5.1 Water outlets that are unused for a week or more should be flushed through on a weekly basis, or as necessary based on assessment of risk, and this should be recorded. Those that are difficult to flush should only be returned to use after purging and this should be recorded. (Operational Procedure 3).

## **7.6 DRINKING WATER DISTRIBUTION**

## 7.6.1 System Design

- 7.6.1.1 All drinking water outlets and drinks dispensers should be serviced from a separate supply pipe direct from the incoming water mains service.
- 7.6.1.2 Drinking water outlets to be located in designated areas only.
- 7.6.1.3 All taps which are suitably supplied and positioned for potable water use are labelled "Drinking Water" or "Potable Water".
- 7.6.1.4 The drinking water main is to supply at its extremity a urinal-flushing cistern (or similar) programmed for 7-day operation in order to prevent water stagnation.

## 7.6.2 Control Regime

- 7.6.2.1 No alterations or additions to the drinking water supply to be made without written authorisation from Estate Services.
- 7.6.2.2 All plumbers working on University sites will be required to be a member of the Water Industry Approved Plumber scheme.
- 7.6.2.3 Any Department buying in equipment required to be connected to the existing service, MUST inform Estate Services.
- 7.6.2.4 **Only DWI approved water fittings and materials are to be used.** Jointing materials such as natural rubber, hemp and linseed oil-based jointing compounds and fibre washers are excluded from use.

## 7.7 LABORATORY EQUIPMENT

- 7.7.1 Departments shall identify and plan control measures for equipment or facilities which are not part of the estates water supply system which could harbour Legionella bacteria, i.e. which hold water at between 20°C and 45°C. Examples of such equipment are indicated in this Policy, e.g. water baths, but these examples do not represent an exhaustive list.
- 7.7.2 Water baths or recirculating cooling equipment. The following options are recommended as part of a prudent water quality maintenance regime for water baths or other equipment operating at temperatures between 20 and 50°C: -
  - 1 Thermally disinfect by heating the water up to 60°C once per month for a period of at least 5 minutes to kill off any bacterial contamination, or

- 2 Change the water at least monthly and clean contaminated surfaces to remove sediment, sludge, scale or organic material, which can act as a source of nutrient for Legionella, or
- 3 Treat the water with biocide tablets or chlorine. Further advice would be required to establish the correct type of biocide for the application, the dosage and frequency of dosing.

It is advised that an appropriate notice be displayed on or next to the equipment as a reminder of whichever treatment regime is adopted.

## **7.8 HUMIDIFIERS (Ultrasonic humidifiers, Fogging systems & water misting systems)**

Although humidifiers have not been specifically linked with outbreaks of Legionnaires' disease, they have been implicated in other forms of respiratory conditions. Steam jet humidifiers and those fed directly from a rising main are not thought to give rise to microbiological contamination risks. However, many humidifiers use water from storage tanks which can become contaminated.

- 7.8.1 No spray humidifiers may be newly installed.
- 7.8.2 Departments must notify Estate Services of the locations of all existing spray humidifiers.
- 7.8.3 Existing spray humidifiers must be regularly inspected, cleaned, disinfected and maintained.
- 7.8.4 Departments and institutions must notify Estate Services of the locations of all Ultrasonic humidifiers, Fogging systems and water misting systems.
- 7.8.5 It is the responsibility of the individual departments and Institutions to arrange for the inspection, cleaning, disinfecting and maintenance of all Ultrasonic humidifiers, Fogging systems and water misting systems to the standard necessary for the control of Legionella.

## **7.9 ORNAMENTAL WATER FOUNTAINS (INTERNAL OR EXTERNAL)**

- 7.9.1 In view of publicised cases of Legionnaires disease attributable to self-circulating water features/ornamental fountains, it is University policy to remove any existing and prohibit the installation of any new water fountains.

## **7.10 RESIDENCES**

- 7.10.1 All residences to have all proposed alterations to water systems approved by Estate Services prior to works commencing.

7.10.2 All projects to include costs for updating schematic drawings and issuing to Estate Services.

7.10.3 If a system is taken out of use for alterations or an area is unused for over 7 days the Project Manager must ensure that one of the following options are taken:

- Completely drain the system down followed by cleaning and disinfection prior to re-use.
- Instigate a regime of regular flushing of the risk systems during the out of use period followed by cleaning and disinfection prior to re-use.

7.10.4 The logbook for the systems will be held at 45 Victoria Street and contain the following:

- Risk Assessment for the system
- Schematic diagrams of the system
- Records of control checks taken
- Chlorination record certificates
- Records of any remedial work carried out

7.10.5 A specialist Water Treatment / Environmental Service Contractor undertakes the maintenance/monitoring tasks.

7.10.6 A planned maintenance docket is issued identifying the areas where the maintenance activities are to be undertaken and the appropriate logsheet / report sheet is then completed, dated and signed. The docket will be directed to the Residences Manager to expedite.

7.10.7 The Residences Manager must ensure that the completed log sheets/report sheets are returned to Estate Services at 45 Victoria Street.

## **7.11 SPORTS FACILITIES**

7.11.1 Record Books - The logbook for the systems will be held at 45 Victoria Street and contain the following:

- Risk Assessment for the system
- Schematic diagrams of the system
- Records of control checks taken
- Chlorination record certificates
- Records of any remedial work carried out

## **7.12 FIRE HOSE REELS**

7.12.1 Existing Fire hose reels will be removed as soon as practicable and the installation of new fire hose reels prohibited. Additional fire extinguishers will be installed where required by risk assessment. See Operational Procedure 5 for removal procedure.

7.12.2 Existing fire hose reels will be subject to flushing on a 3 monthly basis until they are removed (See Operational Procedure 5)

## **7.13 NEW EQUIPMENT & ALTERATIONS**

### **7.13.1 System Design**

7.13.1.1 All new systems or alterations should be designed and installed to minimize the risk of Legionella bacteria and facilitate compliance with the ACOP L8 document.

7.13.1.2 Only non-spray emission water taps are to be installed

7.13.1.3 Only shower heads that are designed to give large droplets should be installed.

7.13.1.4 All installed pipework to be insulated, including cold water services.

7.13.1.5 Water systems are to be designed so that there are no dead legs or pockets created.

7.13.1.6 All Hot water systems must be designed with a return on them or suitable trace heating provided.

7.13.1.7 Modifications to existing pipework, including removal of branches must include cutting back to the main, as it is totally unacceptable to leave pipework capped at the end and unused.

7.13.1.8 **Only DWI approved water fittings and materials are to be used.** Jointing materials such as natural rubber, hemp and linseed oil-based jointing compounds and fibre washers are excluded from use.

### **7.13.2 Control Regime**

7.13.2.1 All University departments to have all proposed alterations to water systems approved by Estate Services prior to works commencing.

7.13.2.2 All Projects to include costs for updating schematic drawings and issuing to Estate Services.

7.13.2.3 If a system is taken out of use for alterations or an area is unused for over 7 days the Project Manager must ensure that one of the following options are taken:

- Completely drain the system down followed by cleaning and disinfection prior to re-use.
- Instigate a regime of regular flushing of the risk systems during the out of use period followed by cleaning and disinfection prior to re-use.

## **8.0 TEMPERATURE MONITORING & WATER ANALYSIS**

### **8.1 Temperature monitoring of Sentinel taps**

- 8.1.1 Approved Persons Legionella will ensure tap temperature of the sentinel taps are taken monthly in each building in their area of responsibility.
- 8.1.2 All results are to be recorded on the issued water storage temperature log sheet and returned to the Estate Services for filing in the building log book.
- 8.1.3 Expectations at the furthest outlet: cold water temperatures below 20°C after running for 2 minutes and hot water temperatures above 50°C after running for 1 minute, with a maximum temperature of 55°C. If temperatures at or above 60°C are measured at the furthest outlets, then temperatures greater than 60°C can be expected at outlets nearer the hot water source. See 8.2.3 below.
- 8.1.4 Anomalies are to be reported immediately to the Responsible Person Legionella or the Deputy Responsible Person Legionella.

### **8.2 Temperature monitoring of General taps**

- 8.2.1 Annually Estate Services will record representative tap temperatures on a rotational basis, on each floor of the building.
- 8.2.2 All results are to be recorded on issued record log sheet and returned to Estate Services for filing in the building logbook.
- 8.2.3 Expectations: cold water temperatures below 20°C after running for 2 minutes and hot water temperatures above 50°C after running for 1 minute, with a maximum temperature of 55°C. If temperatures above 60°C are measured then "Caution: Hot Water" signs should be posted at all outlets likely to issue water at temperatures of greater than 60°C.
- 8.2.4 Anomalies are to be reported immediately to Responsible Person Legionella or the Deputy Responsible Person Legionella.

### **8.3 Water Analysis**

- 8.3.1 Water samples will be taken by a specialist Water Treatment / Environmental Service Contractor for analysis by a UKAS laboratory for the presence of Legionella whenever temperature are recorded inside the Legionella temperature hazard band (25°C to 45°C).
- 8.3.2 Results will be recorded and returned to Estate Services for filing in the building logbook.

8.3.3 The Water treatment / Environmental Service Contractor shall provide a standard of service described in the Code of Conduct for Service Providers produced by the British Association for Chemical Specialities and the Water Management Society and hold a current registration certificate issued by the same organisation. They shall attend the sites as required and take samples. The water samples shall be tested for:

<b>Tests</b>	<b>Control Limits</b>
Bacteria (total viable colony count)	(cfu = coliform faecal units)
1 day at 37°C	< 10 cfu/ml
3 days at 22°C	< 100 cfu/ml
Coliform/E.coli	< 1 cfu/ml
In practice	nil/100 ml

Detection of Coliform faecal bacteria above the control limits shall initiate a flushing, cleaning and disinfection programme based on the extent of the contamination, followed by a retest. A review of the system and control methods will be undertaken in the event of a second consecutive failure.

Legionella	
Theoretical detection limit	100 cfu/litre
First action level	100 cfu/litre to 1000 cfu/litre
Second action level	>1000 cfu/litre

8.3.4 Detection of Legionella bacteria at or above the first action level shall trigger Operational Procedure 6 and a review of the system and control methods. If there are detections at the second action level the Head of Safety Services (or his / her Deputy) must be informed.

## **9.0 ORGANISATION AND RESPONSIBILITIES**

### **9.1 The Dutyholder shall:**

- Appoint a suitable “Responsible Person” and “Deputy Responsible Person(s)”, who have the necessary competence, resources and authority at his or her disposal to fulfil the requirements of the role as required by the HSE document L8 “The Control of Legionella Bacteria in Water systems”.
- Nominate a “Legionella Control Steering Group” whose duties will be monitor the implementation and effectiveness of the University’s Policy and Procedures for the management of Legionella bacteria in water systems and advise the University Health and Safety Committee where changes are requires to the Policy and Procedures. The Group will consist of relevant officers and stakeholders within the University and include, as necessary, outside consultants.
- Report to the Health and Safety Committee on the status and progress of Legionella control measures in the University.

## **9.2 Responsible Person and Deputy Responsible Persons shall:**

- Be familiar with the requirements of the role as required by L8
- Accept management responsibility for Legionella control.
- Appoint suitable “Deputy Responsible Person(s)” as necessary, who have the necessary competence, resources and authority at their disposal to fulfil the requirements of the role as required by the HSE document L8 “The Control of Legionella Bacteria in Water systems”.
- With the assistance of the Legionella Control Steering Group (LCSG) prepare an operational policy on Legionella control.
- Appoint in writing a “Legionella Control Team” whose duties will be to implement and manage the University’s Management & Control Policy for Legionella
- Report to the LCSG the status of implementation and efficacy of the University’s Management & Control Policy for Legionella.
- Establish a Communication Plan, in liaison with LCSG, identifying key audiences, mechanisms and timetables for general awareness, transfer of specific information and for incidents of contamination or infection of personnel.
- Assess the training needs of staff involved in the control of Legionella.
- Ensure personnel records are kept up to date
- Ensure that risk assessments and two-yearly reviews of assessments on all water systems and air conditioning plant in all the University’s buildings are carried out, fully documented and current.
- Monitor the management arrangements for the control of Legionella and advise the LCSG as necessary where there is reason to believe the policy or procedure are inadequate and require amendment.
- Review the Policy annually with LCSG and submit any proposed amendments to the Health & Safety Committee for ratification.
- Ensure that the Health and Safety Committee are kept fully informed of the risks and of the financial implications of controlling, reducing and eliminating them as applicable in order to comply with legislation and guidance.
- Ensure Action Plans and Risk Reduction Schedules are prepared to control risks for those that cannot be reduced, reduce risks where feasible or where risks are deemed unacceptable, and eliminate risks where practicable.
- Ensure that appropriate planned maintenance regimes are devised and implemented and their outcomes fully documented.
- Ensure that appropriate control and preventative regimes are agreed with, and implemented by, other University users and building managers, and that all actions are fully documented.
- Ensure that corrective measures required as a result of the risk assessments or planned maintenance or user regimes are either taken without delay, or where there are significant financial implications, that the situation is made safe until such time as adequate funding is obtained.
- Ensure whenever necessary, that upon completion of any construction, refurbishment or minor works affecting water systems, that a risk

assessment (or re-assessment) is carried out and the results documented. This will apply to all works.

- Ensure that in conjunction with the Deputy Responsible Person(s), that procedures are implemented on all capital works to incorporate the requirements of this Policy and that required by legislation and guidance.
- Be responsible for the vetting of Legionella Control Contractors to ensure their competence to fulfil the work required by the University to a satisfactory standard. This will include checking appropriate insurances and accreditations from certification bodies.
- Ensure that arrangements are in place to keep all relevant records for a minimum of five years.
- Programme risk assessment surveys and reassessment surveys as required to comply with this Policy.
- Act as the principal point of liaison between the University and the Legionella Control Contractors.
- Keep all staff and the LCSG up to date with Legionella issues.

**9.3. Approved Persons Legionella (St George's, North Campus & Western Bank South, Western Bank North, Residences, Technical Services) shall:**

- Work with relevant Contractors to ensure Legionella risk assessments address all relevant risks in their areas of responsibility.
- Monitor the activities of the Contractors to ensure that they are performing all activities related to the treatment, sampling, testing, analysis and modifications to water systems to a satisfactory standard and that all relevant documentation is completed accurately and promptly.
- Liaise regularly with the Responsible Person and Deputy Responsible Person.
- Provide advice to others in the University with responsibilities for buildings or equipment with Legionella risks.
- Where applicable, audit the activities of others in the University with responsibilities for buildings or equipment with Legionella risks to ensure compliance with legislation and guidance on the control of Legionella.
- Ensure that all actions taken to control Legionella, or repair water systems are documented and filed appropriately.
- Assist the Responsible Person in the identification of training needs and assisting in the provision of training as necessary.
- Respond to complaints or concerns received from the Deputy Responsible Person or others relating to Legionella control.
- Be responsible for ensuring hot and cold water temperatures for water systems with the potential for creating Legionella risks are monitored, and for advising the Legionella Responsible Person or Deputy Responsible Person where temperatures fall outside set parameters
- Where applicable to advise other relevant Approved Persons Legionella of remedial measures which can be implemented to restore water systems to optimum conditions for Legionella control.
- Arrange appropriate remedial actions where it is believed Legionella control is unsatisfactory

- For buildings leased and occupied by the University of Sheffield for which owners are responsible for Legionella control, Legionella control activities undertaken by owners of buildings must be audited to ensure compliance with legislation and guidance on the control of Legionella. This will include the Student Village properties, New Spring House, Humphrey Davy House, etc (this list is not exhaustive)

**9.4 Residences Manager shall:**

- Ensure that all preventative and remedial actions necessary to control Legionella in buildings under his or her control are being undertaken, as required by risk assessment, to minimise risks from Legionella bacteria.
- Work closely with the Deputy Responsible Person or relevant Approved Persons Legionella to ensure compliance with relevant legislation and guidance.
- Fully document all actions undertaken deemed necessary for the control of Legionella for inclusion in the relevant risk assessment / file.

**9.5 Principle Mechanical Engineer (for design of heating and cooling systems, and hot and cold water systems) shall:**

- Ensure that all water systems and air conditioning plant are designed and installed to minimise Legionella risks in accordance with the requirements of this Policy and of the HSE document L8 “The control of Legionella in Water Systems”.
- Ensure that all relevant documentation relating to the design of the equipment / plant, and its means of controlling Legionella bacteria are fully documented and either incorporated into the Health and Safety File for CDM projects, and/or provided to the Legionella Responsible Person or Deputy Responsible Person.

**9.6 Heads of Department with water related equipment requiring Legionella control shall:**

- Ensure that all preventative and remedial actions necessary to control Legionella in equipment under their control are being undertaken, as required by risk assessment, to minimise risks from Legionella bacteria.
- Work closely with the Legionella Responsible Person or Deputy Responsible Person to ensure compliance with relevant legislation and guidance.
- Fully document all actions undertaken deemed necessary for the control of Legionella for inclusion in the relevant risk assessment and file.

**9.7 Engineering Clerks of Work/Planning Supervisors shall:**

- Ensure that all water systems and air conditioning plants are installed to minimise Legionella risks in accordance with the requirements of this Policy and of the HSE document L8 “The Control of Legionella in Water Systems”.
- Ensure that all relevant documentation relating to the design, installation, commissioning and testing of the equipment / plant, and its means of controlling Legionella bacteria are fully documented and either incorporated into the Health and Safety File for CDM projects, and/or

provided to the Legionella Responsible Person or Deputy Responsible Person.

**9.8 Contractors responsible for surveys and assessments shall:**

- Assess and document fully all risks associated with water systems, air conditioning plant and other equipment as advised, in all University buildings identified by the Legionella Responsible Person or Deputy Responsible Person.
- Make every effort to identify all pipework systems, including tanks and their associated pipework systems, and to provide detailed drawings indicating these systems on plans in electronic format in a format which is compatible with University IT systems as advised.
- Advise the Deputy Responsible Person or relevant Approved Persons Legionella in writing of any remedial measures to be taken to control, reduce or eliminate Legionella risks in water systems and air conditioning plant identified.
- Produce a fully documented planned preventative maintenance regime for the control of Legionella bacteria in all water systems and air conditioning plant identified.
- Minimise disruption to University operations through full communication and co-operation with University departments as necessary.
- Provide specialist advice on Legionella matters as requested.

**9.9 Contractors responsible for regular treatment & cleaning regimes shall:**

- Undertake to implement such disinfection, cleaning and testing of water systems as required by the risk assessment, legislation and guidance, under the authority of the Deputy Responsible Person or relevant Approved Persons Legionella, and to supply all relevant results to Deputy Responsible Person or relevant Approved Persons Legionella promptly.
- Undertake such measures as required, and as agreed with the Deputy Responsible Person or relevant Approved Persons Legionella, in the event of Legionella bacteria being detected in water systems or air conditioning plant belonging to the University.
- Provide specialist advice on Legionella matters as requested.

**9.10 Contractors responsible for repairs and other modifications to water related systems shall:**

- Ensure that all works performed by them or their subcontractors will be carried out or installed in such a way as to minimise the conditions for the proliferation of Legionella bacteria, that they comply fully with legislation and guidance for the control of Legionella, and that they comply fully with requirements for the installation of water pipes and fittings as required by the Drinking Water Inspectorate.
- Provide detailed drawings and descriptions of the works undertaken for inclusion in relevant risk assessments.
- Provide relevant certification and test results as required by legislation and guidance for inclusion in relevant risk assessments.

### **9.11 University Medical staff shall:**

14. Identify, document and implement procedures for the investigation and control of a Legionella outbreak in the University in conjunction with the Health Protection Agency. (See Operational Procedure 7)

### **9.12 The Legionella Control Steering Group shall:**

- Monitor and review the implementation, effectiveness and costs of the University's Policy and Procedures for the management of Legionella bacteria in water systems and prevention of Legionnaire's disease.
- Provide information, advice and guidance on Legionella management and control to all relevant management and staff at the University and other relevant stakeholders.
- Advise the University Health and Safety Committee on necessary changes to the Policy and Procedures.
- Implement and co-ordinate the University's actions in the event of a Legionella outbreak in the University.
- Consist of relevant officers and stakeholders within the University and include, as necessary, outside consultants/contractors. These are:
  - Responsible Person (Director of Estates Services)
  - Deputy Responsible Person(s)
  - Representative from Safety Services
  - Representative from Accommodation & Campus Services
  - Senior member of University Academic staff (Chairman)
  - Senior member of University Administration staff
  - Senior Mechanical Engineer from Estates Services

### **9.13 University Public Relations and Communications sections shall:**

- Be aware of the University Policy for Legionella Control, management procedures and key contacts at the University.
- In the event of Legionella contamination or infection, deal with all enquiries from the public or media.

## **10.0 Guidance**

This Policy and Procedures are based on the standards and requirements of the following documents: -

1. HSE Approved Code of Practice ACOP L8 (rev) "The Control of Legionella Bacteria in Water Systems".
2. BS 6700 - "Design, installation testing and maintenance of services supplying water for domestic use within buildings and their curtilages"
3. Health and Safety at Work Act etc 1974
4. Control of Substances Hazardous to Health Regulations 2002
5. Water Supply (Water Fittings) Regulations 1999
6. Water Supply (Water Quality) Regulations 2000
7. The Notification of Cooling Towers and Evaporative Condensers Regulations 1992

Acknowledgement is given to Bristol University for their permission to base this Policy document on their Policy document.

# Estates Services - Legionella Control Team

