



Estates Division
Facilities Management

London School of Economics & Political Science

Policy for the Control of Legionella Bacteria in Water Systems

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London School of Economics Policy Statement

The objective of the London School of Economics policy is to control, prevent and minimise the risk from Legionella to the public, staff and students, so far as reasonably practicable by designing, operating and maintaining plant and equipment in accordance with the Approved Code of Practice and Guidance Policy (ACOP)

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1. Introduction

This document sets out the London School of Economics and Political Science (hereafter referred to as LSE) policy, lists its objectives and the procedures and the processes it has put in place to provide guidance for designated staff responsible for implementing the Legionella Policy.

The Policy:

- Clearly defines roles and responsibilities.
- Confirms the LSE's resolve in preventing or minimising the risk from Legionella.
- Affirms LSE's commitment to have in place control measures that adhere to the risk assessment and comply with the Health and Safety Executive (HSE) Approved Code of Practice (ACOP) and Guidance L8.
- Requires The LSE to have a control assurance system in place to ensure the measures are being implemented, are effective, records are kept and the policy is reviewed on an annual basis

The LSE policy on Legionella is to be supported by the LSE scheme for safe working and a best practice which incorporates the action plan for incident management regarding Legionella.

2. Statutory Requirements - Legionnaires disease the control of Legionella bacteria in water systems ACOP L8

Statutory Requirements:

The Health and Safety at Work Act 1974 sets out the broad legal requirements for health, safety and welfare of employees and others(including visitors, contractors and the general public)

Beneath the Act are a series of regulations which describe more detailed obligations, such as the Control of Substances Hazardous to Health Regulations(COSHH) 2002

Further documents include Approved Code of Practice ACOPS) which serve to interpret the Regulations more specifically. In respect of this policy the Health and Safety Commission's ACOP L8 – Legionnaires Disease, The Control of Legionella Bacteria in Water Systems serves to explain the requirements of COSHH in respect of Legionella.

Legionella

The term Legionellosis covers Legionnaires disease Pontiac Fever and Lochgoilhead Fever. Legionnaires Disease is a Pneumonia that principally affects those who are susceptible due to age, illness, immunosuppression, smoking etc, and maybe fatal. Legionella can also cause less serious illnesses which are not fatal but which can affect all people.

Although Legionella bacteria are water-borne organisms, transmission of the disease is by inhaling water droplets in the form of an aerosol that contain the Legionella bacteria. Legionella are widespread in natural sources of water. They may enter man made systems or water services where they multiply under certain favourable conditions, i.e water held between 20c and 45c such as; running showers, spa bath equipment or cooling towers that can generate aerosols. Other sources include humidifiers and air washers.

The ACOP sets out the legal duties of those responsible for the premises and provides a basic framework for preventing further outbreaks of the disease by giving advice on the management and selection, training and competence of personnel, and sets out the responsibilities of manufacturers, installers of products and service providers, currently Initial Building Services and sub-contracted to Tritec Environmental Services Ltd.

The following present a risk of Legionellosis

- Water systems incorporating an evaporative type cooling tower
- Water systems incorporating an evaporative condenser
- Hot and cold water systems

A list of plant can be found at Appendix A

Other plant and systems containing water which are likely to exceed 20°C and may release a spray or aerosol during operation, when being maintained or tested may also present a risk.

For example fire-fighting systems that are permanently charged with water often forming long dead legs, may represent a risk when tested, e.g. Hose Reels.

The School will manage the risk of Legionella in accordance with ACOP and Guidance L8, Legionnaires disease the control of Legionella in water systems which came into effect on 8th January 2001.

Under ACOP and in accordance with COSHH regulations, there is a requirement to carry out an assessment to identify and assess the risk from Legionella associated with all water systems on site. It is then necessary to implement a Legionella management programme and demonstrate that all necessary steps to achieve and maintain adequate control have been considered and implemented as far as reasonably practicable.

ACOP L8 will be the guidance for the LSE Policy.

3. Objectives.

The LSE will have in place

- Regular Risk assessment: identify and assess sources of risk from Legionella.
- Action plan: Prepare a scheme, which puts in place control measures that take account of the risk assessment and prevents or minimises the risk from exposure to Legionella.
- Safe working practices: implement and manage the scheme of precautions and other measures in compliance of the Policy. Nominate a senior manager responsible to oversee and implement the scheme of precautions.
- Assurance of control: implement monitoring and recording procedures to ensure that the measures put in place are adequate and effective.
- Provide regular training of all personal involved, to ensure they have a level of knowledge and competence commensurate with their involvement in the control procedure.
- Review the risk assessment at least every two years or if any significant changes occur to the system
- Review Policy at least annually and earlier if any legislation has been implemented.
- Purchase and install equipment for new projects, scheme or replacement programmes, which prevents and or minimises the risk.

4. Roles and responsibilities

4.1 Management and responsibilities

It is essential that adequate management of financial resources are made available for prevention or minimising the risk arising from Legionella within the School. It is important that all personnel whether involved in assessing risk, carrying out precautionary measures, planned preventive maintenance and those

carrying out refurbishment or alterations are competent, trained and aware of their responsibilities.

4.2 Duty Holder: Director of Estates

- Responsible for the issue of the Legionella Policy.
- Has legal duty to ensure compliance with ACOP L8.
- The Duty Holder should have sufficient knowledge to be able to competently carry out this role and undertakes annual refresher training.
- Reports to the Estates Strategy Committee (ESC) which is a designated committee of the governing Council of LSE.

4.3 Responsible person - Director of Facilities

- Will be responsible for drafting the LSE Legionella Policy, will take a lead role in its implementation and will propose amendments to the LSE Policy that may be necessary in the future.
- Ensures provision of resources for implementing the requirements of the ACOP L8.
- Shall nominate in writing all Deputy responsible persons.
- Responsible for the issue of a Written Scheme of Control Measures.
- Ensure all the maintenance, capital development project team and measured term contractors comply with ACOP L8 and the schools Legionella Policy.
- Ensure all Estates operatives including project managers are competent and receive suitable training.
- The Responsible Person should have sufficient knowledge to be able to competently carry out this role and attend refresher courses once a year.

4.4 Deputy Responsible person - Head of Maintenance

- The Head of Maintenance shall draw support from UKAS accredited competent specialists such as water treatment consultants,

microbiologists, etc whose advice he may seek from time to time to fulfil his obligations / duties as a responsible person.

- Ensures that the LSE appoints a UKAS accredited consultancy or a reputable water treatment company to carry out a review of the risk assessment at least every two years and or when major changes to the use of the building are made, control measures are ineffective or if Legionnaires disease is associated with the system.
- Ensures the control measures resulting from the risk assessment and those contained in the LSE scheme are carried out in full and are recorded diligently.
- Ensures the maintenance department manages the operations and planned preventive maintenance activities of the LSE facilities and assets in regard to Legionella in accordance with all relevant regulations and the LSE Policy.
- Helps the duty holder to update and make amendments to the LSE Policy that may be necessary in the future.
- Operates as the focal point for Legionella related issues.
- Ensure regular meetings are carried out to discuss water treatment.
- Liaise and advise the Long Term Maintenance team (LTM) of water treatment issues, e.g. removal of dead legs, installation of new compliant plant.
- The Deputy Responsible Person should have in depth knowledge and attended refresher courses once a year.
- Ensure sample testing is undertaken by a UKAS accredited laboratory

4.5 Appointed Persons - Maintenance Contract Supervisor

- Deputise for the Head of Maintenance
- Is the person to take day-to-day responsibility for controlling any identified risk from Legionella bacteria
- The person/s nominated by the Head of Maintenance to manage the specialist contractors and to witness test, carryout audit checks under the terms of the contract.

- The Appointed Person's should have regular training and attended refresher courses once a year.
- Work with the Head of Maintenance reviewing risk assessments recommendations and the implementation of remedial action.
- Advise the Hall of Residence Managers and other designated hall's staff on all Legionella and water treatment related issues.
- Implements a water sampling programme for Legionella as advised by the water treatment specialist and reviews suitability at a frequency not greater than six monthly.
- Ensures the necessary action is taken if Legionella bacteria are isolated.
- Arrange any additional (not planned from the Planned Preventative Maintenance (PPM) schedule) chlorination's, remedial actions and the de-scale of outlets as required.
- Ensure all remedial action sheets are filled in by the designated parties, including sign off by LSE and the specialist contractor, and then placed into the relevant log books
- Attend regular meetings to discuss legionella and water treatment issues.

4.6 Nominated Person 1 – Specialist M&E Contractor

- A specialist contractor is the person or organization designated by the management to be responsible for the supply installation, validation and verification of hot and cold water services, and for the conduct of the installation checks and tests. In relation to the control of Legionella, it is essential to ensure that potential contractors have suitable qualifications.
- Ensures that basins, baths, WC cisterns showers etc that are not regularly used on a daily basis are flushed for at least three minutes weekly and a log of compliance is maintained. The record / log shall be kept within the Estates Division. The Maintenance Supervisor shall ensure that this task is carried out as a routine.
- Monitors hot and cold water service temperatures at each designated location at specified periods or as and when required.
- Checks, cleans and de-scales shower fittings on a quarterly basis or as required. This is to be performed at the halls only.

- Inform the Appointed Persons in writing in the event of removal of surplus to requirement showers, taps, sinks, baths and any appliances connected to the hot or cold water services, e.g., items identified in the risk assessment
- Inform the Appointed Persons about incorrect temperatures of water issuing from taps, discoloration or unusual smell from the hot or cold water supply.
- The Nominated Person's should have regular training and attended refresher courses once a year.

4.7 Nominated Person 2 – Campus Cleaning Contractor

- Ensures that basins, baths, WC cisterns showers etc that are not regularly used on a daily basis are flushed for at least three minutes weekly and a log of compliance is maintained. The record / log shall be kept within the Estates Division. The Maintenance Supervisor shall ensure that this task is carried out as a routine.
- Report to Estates Help Desk any problems with the hot and cold water services from the taps when carry out cleaning services.
- Checks, cleans and de-scales shower fittings on a quarterly basis or as required. This is to be performed at the Campus only.
- The Nominated Person's should have regular training and attended refresher courses once a year.

4.8 Nominated Person 3 – Campus - In-House Technical team -

- Carryout regularly flushing of known dead legs or infrequent used outlets on a daily basis for at least three minutes weekly and a log of compliance is maintained. The record / log shall be kept within the Estates Division. The Maintenance Supervisor shall ensure that this task is carried out as a routine.
- Monitors the hot and cold water service temperatures at each designated location at specified periods or as and when required. This includes the main boiler plant and building management system regularly.
- Checks, cleans and de-scales shower fittings on a quarterly basis or as required.

- Inform the Appointed Persons in writing in the event of removal of surplus to requirement showers, taps, sinks, baths and any appliances connected to the hot or cold water services, e.g., items identified in the risk assessment
- Inform the Appointed Persons about incorrect temperatures of water issuing from taps, discoloration or unusual smell from the hot or cold water supply.
- The Nominated Person's should have regular training and attended refresher courses once a year.

4.9 Nominated Person 4 – Halls and Sports Ground Staff

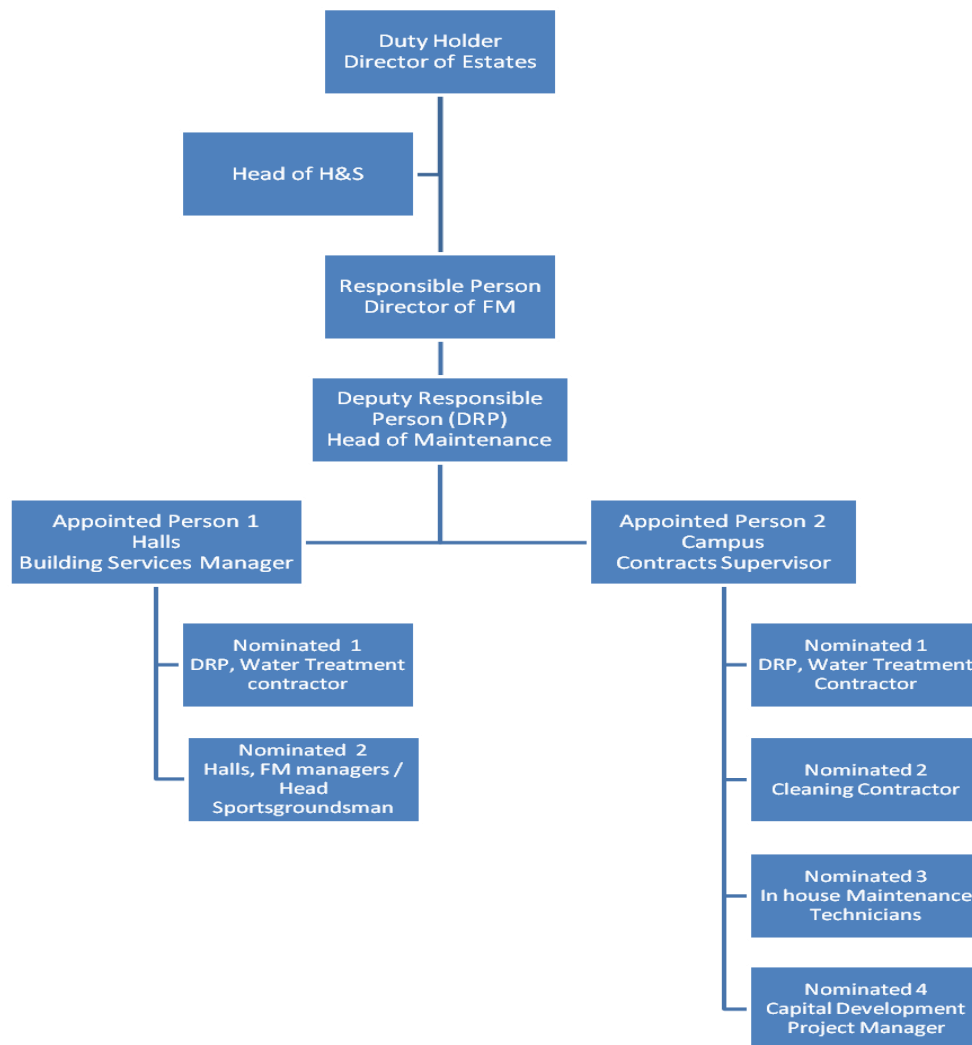
- Ensures that basins, baths, WC cisterns showers etc that are not regularly used on a daily basis are flushed for at least three minutes weekly and a log of compliance is maintained. The record / log shall be kept within the building log books. The Halls Managers shall ensure that this task is carried out as a routine.
- Checks the specialist Mechanical and Electrical (M&E) contractor is carrying out the de-scaling of shower fittings on a quarterly basis or as required. This is to be performed at the hall's only.
- Inform the Appointed Persons in writing in the event of removal of surplus to requirement showers, taps, sinks, baths and any appliances connected to the hot or cold water services, e.g., items identified in the risk assessment
- Inform the Appointed Persons about incorrect temperatures of water issuing from taps, discoloration or unusual smell from the hot or cold water supply.
- Ensures the necessary action is taken if Legionella bacteria are isolated
- Ensure all remedial action sheets are filled in by the designated parties, including sign off by LSE and the specialist contractor, and then placed into the relevant log books
- The Nominated Person's should have regular training and attended refresher courses once a year.

4.10 Nominated Person 5 – Capital Development Project Managers

- Ensure systems are designed to ensure compliance with the ACOP L8 Document.
- Ensure systems are installed to ensure compliance with the ACOP L8 document
- Ensure compliance with the LSE control of Legionella bacteria within water systems policy and procedures during installation.
- Ensure all necessary documentation is completed and returned to testing
- The Nominated Person's should have regular training and attended refresher courses once a year.

5. Management Structure for the Control of Legionella

The following diagram illustrates the lines of responsibility for the control of Legionella.



6. Policy Review

This policy will be reviewed annually, or as new knowledge on the subject evolves and subsequent guidance is issued.

Appendix 1 Named Individuals – Roles and Responsibilities

| Position | Name | Responsibility |
|---|--|--|
| Duty Holder | Julian Robinson | Legal duty of compliance reporting to ESC |
| Head of Health and Safety | Ann O'Brien | Main contact for investigations Appointed officer for outbreaks. |
| Responsible Person | Allan Blair | Draft, implementation and update of the policy |
| Deputy Responsible Person | Paul Franklin | Ensure that the maintenance section manages the operation / PPM Operates as focal point for Legionella issues |
| Appointed Person 1, building service manager | Chris Roots | Day to day responsibility for the Halls of Residence |
| Appointed Person 2, contract supervisor | Dave Felstead | Day to day responsibility for the campus |
| Nominated Person 1, or specialist water treatment contractor | Kim Goodayle Initial Building Services | Halls; Shower descaling, PPM etc |
| Nominated Person 2 | Campus Cleaning Contractor | Campus; Flushing, de-scaling and reporting Campus; regularly flushing, Recording and monitoring temps Campus; Ensure systems are designed and installed to ensure compliance with the ACOP L8 |
| Nominated Person 3 | In-House Maintenance Technicians | |
| Nominated Person 4 | Capital Development Project Managers | |
| Nominated Person 4 | Sarah Jons Richard Anderson Stephen Butter | Halls of Residence and LSE Sports Ground. Carry out remedial action as and when required |

Date 27/01/2012

Appendix 2.

Action in the event of a Legionella Detection

Table 2 - HSC L8

Evaporative Cooling Systems (Cooling Towers)

| Legionella bacteria (cfu/litre) | Action required |
|-------------------------------------|--|
| 100 or Less | System under control |
| More than 100 and up to 1000 | Review program operation- A review of the control measures and risk assessment should be carried out to identify any remedial actions and the count should be confirmed by immediate re-sampling. |
| MORE THAN 1000 | Implement corrective action- The system should immediately be re-sampled. It should then be "shot-dosed" with an appropriate biocide, as a precaution. The risk assessment and control measures should be reviewed to identify remedial actions. |

Table 3 - HSC L8

Domestic Water Services (Hot and Cold Water)

| Legionella bacteria (cfu/litre) | Action required |
|---|---|
| More than 100 but less than 1000 | Either: (a) If only one or two samples are positive, the system should be re-sampled. If a similar count is found again, a review of the control measures and risk assessment should be carried out to identify any remedial actions. (b) If the majority of samples are positive, the system may be colonised, albeit at a low level, with Legionella. Disinfection of the system should be considered but an immediate review of control measures and a risk assessment should be carried out to identify any other remedial action required. |
| MORE THAN 1000 | The system should be re-sampled and an immediate review of the control measures and risk assessment carried out to identify any remedial actions, including possible disinfection of the system. |

Appendix 3. Action in the event of an outbreak

HSC L8

An outbreak is defined by the Public Health Laboratory Service (PHLS) as two or more confirmed cases of Legionellosis occurring in the same locality within a six-month period. Location is defined in terms of the geographical proximity of the cases and requires a degree of judgement. It is the responsibility of the proper officer for the declaration of an outbreak. The proper officer is appointed by the local authority under public health legislation and is usually a consultant in communicable disease control.

Whoever receives an enquiry or notification regarding an outbreak of legionellosis alleged to be connected with School premises or plant must immediately notify the Head of Health and Safety, who will notify the Head of Maintenance, Director of Facilities, Director of Business Continuity and other relevant persons. The Director of Business Continuity will decide whether the MIIRP needs to be activated.

The LSE Head of Health and Safety will be the main contact for the investigating appointed officer.

The local authority will have established incident plans to investigate major outbreaks of infectious disease including Legionellosis. These are activated by the proper officer who invokes an outbreak committee, whose primary purpose is to protect public health and prevent further infection. This will normally be set up to manage the incident and will involve representatives of all agencies involved. HSE or the local authority EHO may be involved in the investigation of outbreaks, their aim being to pursue compliance with health and safety legislation.

The local authorities Consultant in Communicable Disease Control (CCDC) or Environmental Health Officer (EHO) acting on behalf (often with the relevant officer from enforcing authorities either HSE or local authority) may make a site visit.

As part of an outbreak investigation and control, the following requests and recommendations may be made by enforcing authority:

- To shut down any processes which are capable of generating and disseminating airborne water droplets and keep them shut down until sampling procedures and any remedial cleaning or other work has been done. Final clearance to restart the system may be required.
- To take water samples from the system before any emergency disinfection being undertaken. This will help the investigation of the cause of illness. Investigating officers from the local authority may take samples or require

them to be taken.

- To provide staff health records to discern whether there are any further undiagnosed cases of illness, and to help it prepare case histories of the people affected.
- To cooperate fully in an investigation of any plant that may be suspected of being involved in the cause of the outbreak. This may involve for example
 - Tracing of all pipework runs
 - Detailed scrutiny of all operational records
 - Statements from plant operatives and managers
 - Statements from water treatment contractors or consultants

The Director of Facilities in conjunction with the Head of Health and Safety will be responsible for ensuring that the requests and recommendations made by the enforcing authority are implemented.

The Head of Health and Safety will notify the press office of any enquiry or notification of legionellosis in connected with School premises.

The Head of Health and Safety will notify the School's legal advisers if the enforcing authority indicates that an outbreak is linked to School premises and convey any advice received to the Director of Facilities.

Any infringements of relevant legislation may be subject to a formal investigation by the appropriate enforcing authority.