

# NEWCASTLE UNDER LYME SCHOOL

## Policy for the Management and Control of Legionella Bacteria in Water Systems

### SCOPE

Legionella is a naturally occurring bacterium found in water, which can produce a pneumonia-like illness when it is inhaled into the lungs. This can happen when it finds its way into the droplets of water-forming aerosols which are produced in certain hot & cold water systems and air conditioning systems.

Newcastle under Lyme School recognises its responsibilities for the management of Legionella both as the employer (where this is the case) and also in discharging its duty of care to the pupils, visitors, contractors, suppliers and other users of the school facilities.

The School has no management responsibility for any active "Notifiable Devices" as defined under the Notification of Cooling Towers and Evaporative Condensers Regulations 1992. This policy brings the School's control of Legionella bacteria in water systems into line with the requirements of the Control of Substances Hazardous to Health Regulations 2002. All previous documents on the control of Legionella are superseded by this policy document.

### STANDARDS

As a minimum standard the School will comply with the requirements of The Health and Safety at Work etc. Act 1974 which extends to the risk from Legionella bacteria arising from work activities. So far as is reasonably practicable, it will ensure that pupils, employees and others who may be affected by the School's undertaking are not put at risk from legionellosis. It will also be mindful of the duties of any designers, manufacturers, importers, suppliers, installers and contractors involved in the specification, design, installation, maintenance and repair of systems for which the School is responsible.

Risk assessments will be undertaken as required under the Management of Health and Safety at Work Regulations 1999 and the Control of Substances Hazardous to Health Regulations 2002, to determine the presence and extent of the risk and to inform the control strategy. Control measures will be implemented and maintained in accordance with the Approved Code of Practice (L8) (ACOP) on the Control of Legionella Bacteria in Water Systems which lays down the standards required to achieve compliance. All works will conform to the current approved practices and standards.

In all aspects of Legionella management the School will take account of current best practice and strive to continually improve the management system.

### TRAINING AND INFORMATION

All parties involved in the management of the buildings and water systems will be adequately informed of their role, responsibilities and the actions required of them to maintain the Legionella control arrangements.

Appropriate training will be provided to ensure the competence of all personnel involved in the Legionella management system and to maintain an up-to-date knowledge base.

Information and advice will be available through the Estates Bursar as required.

### PLANNING

Legionella will be managed through a process of risk assessment, control, monitoring, and review. The Legionella Management Plan is at Appendix 4.

The process for Legionella management comprises the key roles of Statutory Duty Holder and Responsible Person and these will be supported by the Caretaking Staff, Maintenance Operatives and Service Providers.

## **ROLES AND RESPONSIBILITIES**

### **Duty Holder**

The duty falls to the Chair of the Board of Governors to ensure the risk from Legionella is adequately managed for the school premises and to ensure that adequate resources are provided for the full and effective operation of this policy.

The ACOP requires the Duty Holder to ensure that effective mechanisms are in place and to appoint a person to be managerially responsible for the implementation and monitoring of the relevant control measures.

### **Responsible Person**

The Responsible Person should be a manager or have similar status and sufficient authority, competence and knowledge of the installation to ensure that the specified control measures are implemented and maintained and all operational procedures are carried out in a timely and effective manner.

For Newcastle under Lyme School, the Responsible Person will be the Estates Bursar. The Estates Bursar will be supported in the execution of this role by Caretaking Staff, School Support Staff and Service Providers.

The Estates Bursar will be identified as the Responsible Person within the School's Health and Safety Policy. Departmental arrangements for Legionella management will be detailed within the Written Scheme.

### **Caretaking Staff, Maintenance Staff and Laboratory Technicians**

Nominated members of the Support Staff will support the Responsible Person by carrying out checks and controls and monitoring the conditions and activities on-site to ensure that all on-site checks and maintenance activities in relation to water systems are being carried out and documented in accordance with the Legionella Management Plan.

### **Service Providers**

Clearwater Technology Ltd completed a Risk Assessment and Water Survey Hygiene Report in September 2014.

## **EMERGENCY PROCEDURES**

This will result in the shutting down of any suspected systems until sampling, remedial cleaning or other work has been carried out. Clearance testing will be required. Further investigations into staff health may be required to identify undiagnosed cases of the illness.

## **POLICY REVIEW**

This document is to be regularly reviewed and updated following any significant changes in legislation, codes of practice, guidance or working practices.

## APPENDIX 1 – BACKGROUND INFORMATION

### What is Legionella?

Legionella bacteria are common and can be found naturally in environmental water sources such as rivers, lakes and reservoirs, usually in low numbers. Legionella bacteria can survive under a wide variety of environmental conditions and have been found in water at temperatures between 6°C and 60°C. Water temperatures in the range 20°C to 45°C seem to favour growth. The organisms do not appear to multiply below 20°C and will not survive above 60°C. They may, however remain dormant in cool water and multiply only when water temperatures reach a suitable level. Temperatures may also influence; Legionella bacteria held at 37°C have greater virulence than the same Legionella bacteria kept at a temperature below 25°C.

Legionella bacteria also require a supply of nutrients to multiply. Sources can include, for example, commonly encountered organisms within the water system itself such as algae, amoebae and other bacteria. The presence of sediment, sludge, scale and other material within the system, together with bio-films, are also thought to play an important role in harbouring and providing favourable conditions in which the Legionella bacteria may grow. A bio-film is a thin layer of micro-organisms which may form slime on the surfaces in contact with water. Such bio-films, sludge and scale can protect Legionella bacteria from temperatures and concentrations of biocide that would otherwise kill or inhibit these organisms if they were freely suspended in the water.

### Health Risks

Legionnaires' disease was first identified following a large outbreak of pneumonia among people who attended an American Legion Convention in Philadelphia in 1976. A previously unrecognized bacterium was isolated from lung tissue samples and was subsequently named Legionella pneumophila. Not everyone exposed will develop symptoms of the disease and those that do, may not develop a severe case. The incubation period is between 2-10 days (usually 3-6 days). The initial symptoms of Legionnaires' disease include high fever, chills, headache and muscle pain. Patients may develop a dry cough and most suffer difficulty with breathing. About one third of patients infected also develop diarrhoea or vomiting and about half become confused or delirious.

*L. pneumophila* is also responsible for a short feverish form of the illness without pneumonia, known as Pontiac fever. Its incubation period is typically between 2-3 days. Another species of Legionella, *L. micdadei*, is responsible for a similar form of the illness without pneumonia called Lochgoilhead fever after an outbreak in Lochgoilhead, Scotland. The incubation period can be up to 9 days. A high percentage of those exposed to this agent tend to be affected. However, there have been no recorded deaths associated with either Pontiac or Lochgoilhead fevers.

Infection with Legionella bacteria can be fatal in approximately 12% of reported cases. This rate can be higher in a more susceptible population; for example immuno-suppressed patients or those with other underlying disease. Certain groups of people are known to be at higher risk of contracting Legionnaires' disease; for example, men appear more susceptible than women, as do those over 45 years of age, smokers, alcoholics, diabetics and those with cancer or chronic respiratory or kidney disease.

It is normally contracted by inhaling Legionella bacteria, either in tiny droplets of water (aerosols), or in droplet nuclei (the particles left after the water has evaporated) contaminated with Legionella, deep into the lungs. The Public Health Laboratory Services data showed that the 24% of outbreaks between 1980 -1998 resulted from wet cooling systems, with 25% associated with hot water systems and 3% attributed to both cold water systems and whirlpool spas the remainder came from unknown sources. There is evidence that the disease may also be contracted by inhaling Legionella bacteria following the ingestion of contaminated water by susceptible individuals. Person-to-person spread of the disease has not been documented. Legionnaires' disease can be treated effectively with appropriate antibiotics.

## APPENDIX 2 – LEGISLATION

### **Management of Health and Safety at Work Regulations 1999 (MHSWR)**

As well as requiring risk assessments and control the MHSWR also require employers to have access to competent help in applying the provisions of the law and co-operation and co-ordination where workplaces are shared by two or more employers or self-employed people. Arrangements are also required for dealing with emergency situations.

### **The Control of Substances Hazardous to Health Regulations 2002 (as amended) (COSHH)**

Harmful bacteria such as *Legionella pneumophila* (biological agents) are subject to controls of the COSHH. The COSHH framework provides actions designed to control the risk and requires that

- risk assessments are carried out;
- steps are taken to prevent exposure where total removal of the hazardous substance is not reasonably practicable;
- maintenance, examination and testing of control measures, e.g. automatic dosing equipment for delivery of biocides and other treatment chemicals;
- provision of information, instruction and training for employees; and
- where it is appropriate that health surveillance is carried out.

### **The Notification of Cooling Towers and Evaporative Condensers Regulations 1992**

Anyone who controls a premise which has equipment that includes a cooling tower and evaporative condensers must inform the Local Authority in writing with details of the 'notifiable devices' on the appropriate forms which are available from Local Authorities of the Health and Safety Executive. There is an exception to this requirement to notify where the systems contain water that is not exposed to the air and the water and electricity supply are not connected.

### **Legionnaires' Disease - The Control of Legionella Bacteria in Water Systems Approved Code of Practice L8 (ACOP L8) (Fourth Edition).**

ACOP L8 applies to the control of Legionella bacteria in any undertaking involving work activity and to premises controlled in connection with trade or business whose activity gives rise to a risk of harmful exposure to Legionella bacteria. There is a reasonably foreseeable risk of harmful exposure to Legionella bacteria in any premise where water is used or stored and where there is a means of creating and transmitting water droplets which may be inhaled these include the following:

- water systems incorporating a cooling tower;
- water systems incorporating an evaporative condenser
- hot and cold water systems; and
- other plant and systems containing water which is likely to exceed 20°C and which may release a spray or aerosol during operation or maintenance such as vehicle washers, humidifiers and spa baths.

ACOP L8 provides a basic framework for preventing further outbreaks of the disease, giving advice on how to comply with the requirements of the Health and Safety at Work etc. Act 1974 and COSHH. It places responsibility on employers and others to:

- identify and assess risks of legionellosis
- avoid the use of systems that give rise to a foreseeable risk of legionellosis or, where this is not reasonably practicable, prepare a written scheme for minimising the risk from exposure;

- implement and manage the scheme of precautions including the appointment of a person, persons, to take managerial responsibility and to provide supervision; and
- keep appropriate records.

It also gives advice on the management, selection, training and competence of personnel.

#### **HSG 274 Legionnaires' disease: Technical guidance (2013)**

This document is split into three parts and provides technical guidance for duty holders to comply with L8 (Fourth Edition) in respect of:

- Part 1 – evaporative cooling systems.
- Part 2 – hot and cold water systems.
- Part 3 – other risk systems.

### APPENDIX 3 – ROLES AND RESPONSIBILITIES SCHEDULE

Role	Name	Responsibilities
Duty Holder	(Chair of the Board of Governors)	<ul style="list-style-type: none"> <li>• Formally appoint the Responsible Person (Legionella).</li> <li>• Ensure compliance with ACOP L8.</li> <li>• Ensure a suitable and sufficient risk assessment is undertaken to identify and assess the risk of exposure to legionella bacteria.</li> <li>• Provide the Responsible Person with a clear understanding of duties and overall safety management policy and structure.</li> <li>• Issue the Legionella Policy.</li> </ul>
Responsible Person	G J Calvert (Estates Bursar)	<ul style="list-style-type: none"> <li>• Draft the Legionella Policy and propose amendments that may be necessary in the future.</li> <li>• Ensure the Legionella Management Plan is fully implemented and take the lead in monitoring its progress.</li> <li>• Issue a written scheme of control measures and monitor to ensure they remain effective.</li> <li>• Ensure maintenance and inspections are completed and recorded in the log book.</li> <li>• Review records of inspection and test to identify, prioritise and action any anomalies.</li> <li>• Provide guidance to all staff involved in the achievement of the management plan and ensure Nominated Persons receive suitable training.</li> <li>• Ensure all maintenance staff, contractors and suppliers comply with the ACOP L8 and this policy.</li> <li>• Operate as the focal point for legionella related issues.</li> <li>• Appoint a competent organisation to review the risk assessments in line with the ACOP L8 guidance.</li> </ul>
Nominated Persons	D Gregory K Hallam K Birks G Morgan (Caretakers) K Doyle M Breeze J Horrocks (Maintenance Staff) L Field GD Moore S Danby L Dale	<ul style="list-style-type: none"> <li>• Ensure 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.</li> <li>• Report to the Estates Bursar any problems (incorrect temperatures, discolouration, unusual smells etc.) with the hot and cold water services when undertaking duties.</li> <li>• Witness test, where required, specialist contractors undertaking water temperature checks.</li> <li>• Assist the Estates Bursar in monitoring the scheme of control measures.</li> </ul>

	<p>P Hurst (Laboratory Technicians) A Trever (Cleaning Supervisor) S Goulding J Horton (Kitchen Managers) S Dobson S Thomas (Design &amp; Technology Assistants)</p>	
Service Provider	<p>Clearwater Technology Ltd (Service Provider)</p>	<ul style="list-style-type: none"> <li>• Undertake (in accordance with the contract) monthly, quarterly, six monthly and annual ACOP L8/HSG274 compliance tasks.</li> <li>• Thermostatic Mixer Valve (TMV) testing as necessary – outside contract scope.</li> <li>• Legionella Sampling and testing as necessary – outside contract scope.</li> </ul>
Employees		<p>All staff and pupils are responsible for conducting their activities in a safe, competent manner and in accordance with this policy and associated policies and guidance. This includes:</p> <ul style="list-style-type: none"> <li>• Cooperation with the Responsible Person, Nominated Persons and line managers to ensure safe working practices are employed at all times to prevent exposure to legionella bacteria.</li> <li>• Not interfering with or damaging water system infrastructure or equipment which contains water.</li> <li>• Not purposefully creating a water aerosol which may result in risk of exposure to Legionella bacteria through the inhalation of water droplets.</li> <li>• Reporting any incident at work, which results in significant exposure to legionella bacteria, using the recognised reporting procedures.</li> <li>• Reporting near misses which under different circumstances may have resulted in significant exposure to legionella bacteria.</li> <li>• Reporting any actual or perceived unsafe working conditions which may lead to significant exposure to Legionella bacteria.</li> <li>• The use of respiratory protection and the wearing of other personal protective equipment in designated areas.</li> </ul>

## **APPENDIX 4 – MANAGEMENT PLAN**

### **Identification**

Risk arises in water systems such as hot and cold water systems, cooling towers, evaporative condensers and other plant or systems containing water which is likely to exceed 20°C and which may release a spray or aerosol.

Risk assessments will be carried out on all relevant water systems on the school premises. A risk assessment was completed in September 2014 and will be reviewed in March 2015 to check progress made on closing out the remedial works detailed in the Risk Assessment and Water Survey Hygiene Report.

Thereafter, the risk assessment will be reviewed every 2 years or sooner:

- when there is any significant change to the system in use,
- when there are changes to the use of the building,
- when the result of checks indicate that control measures are no longer effective; and
- if for any other reason it is believed that the original assessment may no longer be valid.

### **Evaluation and control**

On the basis of the Risk Assessment and Water Survey Hygiene Report, the Responsible Person will ensure that a programme of remedial works is instigated to ensure High Risks are removed or reduced to an acceptable level. Medium and Low Risks shall be monitored to ensure the risks remain at an acceptable level. Where the risk assessment indicates that risk is unlikely, no further action need be taken other than a review of the risk assessment as indicated above.

Where the risk assessment shows that there is a reasonably foreseeable risk and this cannot be eliminated, the ACOP requires that a written scheme is produced including schematic drawings of the systems in each building. This will specify control measures to be taken to ensure that risk remains at an acceptable level. These control measures will be specific to the water systems in place in each particular building. The written scheme will be held on-site and will form the basis of the Legionella Management Plan for each water system.

### **Monitoring**

The frequency and extent of the routine monitoring will depend on the operating characteristics of the system.

The Responsible Person will ensure that the daily, weekly, monthly and annual checks and tasks detailed in the written scheme are carried out.

The Responsible Person will be responsible for ensuring the integrity of control measures for Legionella and the condition of the water systems at all times.

### **Annual Check and Chlorination**

The Responsible Person will ensure that the annual check is carried out and any chlorination of the systems required is completed.

### **Training**

The Responsible Person will ensure that nominated persons are given appropriate instruction and information so that they understand the requirements of this Policy and the Legionella Management Plan as it applies to the School premises.

The Responsible Person will ensure that any staff who have been delegated roles or tasks forming part of the Legionella management system are adequately informed or trained to carry out the role competently.

## **Use of Competent Service Providers/Contractors**

Where the Responsible Person chooses to engage a third party to assist them in meeting their obligations, they must be asked to provide proof of minimal level of competence in this area of work. The level of service provided by Water Treatment Specialists must meet the Code of Conduct developed jointly by the Water Management Society and the British Association for Chemical Specialities.

Analysis of water samples for Legionella must be carried out by a UKAS accredited laboratory which takes part in the PHLS Water Microbiology External Quality Assessment Scheme for the Isolation of Legionella from Water. The interpretation of any results should be carried out by experienced microbiologists.

## **Documentation and Data Control**

The master schedule of the assignment of roles is included in this policy.

A master copy of each Legionella survey report and risk assessment will be kept by the Estates Bursar.

Records of temperature checks, chlorination certificates, water sample test results etc. undertaken by the authorised Service Provider will be held electronically on the Clearwater Technology Ltd Website, which can be accessed by the Responsible Person through the Web Based Client Portal.

General monitoring checks and tasks carried out on-site will be recorded within the Legionella Action Plan by the Responsible Person. All records will be signed by those performing the various tasks assigned to them. These records shall be retained by the Responsible Person for five years.

## **Control of Contractors**

Any Contractor coming onto site will be shown the Legionella Management Plan and made aware of its requirements, in relation to the prevention of Legionella risk on site.

## **Emergency Procedures**

This will result in the shutting down of any suspected systems until sampling, remedial cleaning or other work has been carried out. Clearance testing will be required. Further investigations into staff health may be required to identify undiagnosed cases of the illness.

## **Management Review**

The policy will be monitored on an on-going basis and reviewed within 3 years by the Statutory Duty Holder, or sooner in the event of any changes in legislation or Approved Code of Practice or other policy or re-organisation likely to affect it.

## APPENDIX 5 – REFERENCES

- Health and Safety at Work etc. Act 1974.
- Approved Code of Practice L8 – The Control of Legionella Bacteria in Water Systems – Fourth Edition 2013.
- HSG274 Part 2 - Legionnaires' Disease. The control of legionella bacteria in hot and cold water systems.
- HSG274 Part 3 – Legionnaires' Disease: Technical Guidance. The control of legionella bacteria in other risk systems.
- Notification of Cooling Towers and Evaporative Condensers Regulations 1992.
- Control of Substances Hazardous to Health Regulations 2002 (as amended).
- Management of Health and Safety at Work Regulations 1999.
- The Water Supply (Water Fittings) Regulations 1999.
- Water fittings and materials directory - Water Regulations Advisory Scheme.
- BS6700:1997 – Specification for Design, Installation, Testing and Maintenance of Services Supplying water for Domestic Use within buildings and their curtilages.
- BS 8580:2010 – Water Quality – The Risk Assessment for Legionella control – Code of Practice.
- CIBSE TM13 (2000) – Technical memorandum offering collective engineering advice on the minimisation of risk from Legionnaires Disease within water systems within buildings.
- The control of legionella: A recommended Code of Conduct for Service Providers – The Legionella Control Association 2013.

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Next Review Due: February 2022