

WEST NEWCASTLE ACADEMY.

2022/2023

**Water Services Hygiene, Legionellosis
and Scalding**

Policy, Strategy & Management Procedures

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1.0 Legionellosis and Scalding Risk Management Policy Statement

The Policy of West Newcastle Academy(WNA) is to:

- Maintain a safe and healthy environment in premises where WNA is the landlord or has responsibilities for water services hygiene, including prevention of legionellosis and scalding under the terms of a lease or licence.
- Comply with all statutory requirements, regulations concerning the control of legionellosis and scalding.
- Manage the risks relating to legionellosis and scalding where they remain in buildings in order that they are minimised as far as reasonably practicable.
- Remove, or reduce to an acceptable level, the legionellosis risk where the risk to building users is assessed as being unacceptable.
- Implement procedures through awareness to ensure legionellosis and other water hygiene risks are minimised.
- Ensure that all WNA sites are risk assessed with regard to legionellosis and scalding and that these risk assessments are reviewed at least every two years.
- Ensure that a Water Services Hygiene, Legionellosis and Scalding group meets regularly to make sure the policy statement is being complied with and regularly reviewed. The hygiene and scalding group is comprised of:
 - o WNA responsible person
 - o Service Provider competent person(s)
 - o Service Provider Technical Services Manager
 - o WNA H&S team representative(s)
- Review all policies and procedures on an annual basis as a minimum.

2.0 Introduction

2.1 Purpose of Policy:

The purpose of this policy and logbook is to communicate to site staff the importance of water hygiene, their responsibility for maintaining water hygiene, the role and precautions which site staff are required to implement and the responsibility for record keeping.

It is important that the reader understands fully the actions necessary to control the risk and their role in the control process. If there is any doubt about the content or implications of this logbook, the reader should first refer to Section 7 Management Procedures and, if still in doubt, refer to the appropriate contact.

Failure to adopt appropriate measures for the minimisation of legionellosis risk (in accordance with the Health and Safety at Work etc Act 1974, the Management of Health and Safety at Work Regulations 1999, the Control of Substances Hazardous to Health Regulations 2002, BS8580:2010 Risk assessments for Legionella control code of practice and the Health and Safety Executive document HSG 274 part 2 – Legionnaires’ disease Part 2: The control of legionella bacteria in hot and cold water - the control of legionella bacteria in water systems) renders Heads of Establishment/Facilities Manager, WNA staff and others liable to prosecution.

There is a legal duty to adopt measures of the type presented in this policy document.

The following information must be retained in the site logbook:

- Copy of the risk assessment;
- Any correspondence relating to water hygiene;
- Any certificates relating to water hygiene;
- Copy of the site plan showing the location of boiler and heater plant, hot

and cold water outlets etc;

- Details of any water treatment systems;
- Copies of all record keeping sheets.

3.0 Background to Legionellosis:

3.1 What is Legionellosis and Legionnaires' Disease?

Legionnaires' disease is an uncommon form of pneumonia caused by the legionella bacterium. The majority of cases are reported as single (isolated) cases but outbreaks can occur. All ages can be affected but the disease mainly affects people over 50 years of age, and generally men more than women. Smokers and the immuno-compromised are at a higher risk.

The early symptoms of **Legionnaires' disease** include a 'flu-like' illness with muscle aches, tiredness, headaches, dry cough and fever. Sometimes diarrhoea occurs and confusion may develop. Deaths occur in 10-15% of the general population and may be higher in some groups of hospital patients. The incubation period can range from 2 to 10 days with a median of 6 to 7 days after exposure.

Pontiac fever is a mild flu-like illness caused by legionella bacteria, often affecting previously healthy and young individuals. Symptoms can include fever, headaches and muscle aches but, unlike Legionnaires' disease, Pontiac fever does not cause pneumonia. The illness will usually clear up without treatment within two to three days.

Between 400 to 500¹ cases of legionellosis are reported in England and Wales each year, compared with 180,000 cases of pneumonia from all causes. The collective term used to cover the group of illnesses caused by legionella bacteria is legionellosis.

3.2 How is it caught?

People become infected when they inhale legionella bacteria which have been released into the air in aerosolised (mist/spray) form from a contaminated water source. Once in the lungs the bacteria multiply and cause either pneumonia or a less serious flu like illness (Pontiac fever).

There is no evidence to show that the disease can be contracted from someone who is already infected or from drinking water containing the bacterium.

3.3 What is the Risk?

It principally affects those who are susceptible due to age, illness, immuno-suppression, smoking etc and can be fatal. Most cases have been diagnosed in people aged between 40-70. Legionellae can also cause less serious illnesses which are not fatal or permanently debilitating but which can affect all people.

A number of factors are required to create a risk of acquiring legionellosis, such as:

- the presence of legionella bacteria;
- conditions suitable for multiplication of the organisms e.g. suitable water temperature (20°C-45°C) and a source of nutrients e.g. sludge, scale, rust, algae and other organic matter;
- a means of creating and disseminating breathable droplets e.g. the aerosol generated by a cooling tower or shower; spray tap, spa pool etc and
- the presence (and numbers) of people who may be exposed, especially in premises where occupants are particularly vulnerable, e.g. the elderly, people with underlying illness and those who are immuno-compromised.

1 HPA (2010) General Information and FAQs available online from

<http://www.hpa.org.uk/Topics/InfectiousDiseases/InfectionsAZ/LegionnairesDisease/GeneralInformation/>

3.4 How is it Controlled?

The aim is to reduce the risk to an acceptable level by controlling the conditions necessary for proliferation of the legionella bacterium and all other common water borne bacteria. In practice this means:

- Keeping the hot water storage temperature at greater than 60°C or fitting a water treatment system;
- Ensuring hot water distribution temperatures are above 50°C or fitting a water treatment system;
- Maintaining cold water temperatures at less than 20°C;
- Keeping water systems clean and in good condition;
- Cleaning shower heads and hoses regularly;
- Maintaining TMVs;
- Controlling contamination of the water systems;
- Preventing stagnation due to the unnecessary storage of water;
- Where fitted, maintaining and keeping in good working order any water treatment systems installed.

4.0 Background to safe hot water and surface temperatures

4.1 What is Scalding?

Hot Water Scalding is a burn to the skin or flesh caused by very hot water and hot vapours such as steam.

4.2 What is the Risk?

School properties are used by people who are more vulnerable to the risk of scalding or burns. The risk will be greater for the following groups of people:

- young children;
- older people;
- people with reduced mental capacity, mobility or temperature sensitivity;
- people who cannot react appropriately, or quickly enough, to prevent injury.

4.2.1 Hot water

If hot water used for showering or bathing is above temperatures in Table 1 (see 4.4.1) there is increased risk of serious injury or fatality. Where large areas of the body are exposed to high temperatures, scalds can be very serious and have led to fatalities.

4.2.2 Hot surfaces

Contact with surfaces above 43 °C can lead to serious injury. Prolonged contact often occurs because people have fallen and are unable to move, or are trapped by furniture. Incidents often occur in areas where there are low levels of supervision, for example in residential accommodation, bathrooms and some communal areas.

Engineering controls can include:

- thermostatic mixing valves (TMVs);
- BEAB CARE approved showers;
- temperature-restricted, instant water heaters.

TMVs should be located as close as possible to the outlet, where they are necessary. For ease of implementation, all thermostatic mixing valves in WNA properties will be TMV3. Further information on TMVs can be obtained from the Thermostatic Mixing Valve Association (TMVA) or at www.beama.org.uk. Regular safety testing and servicing should ensure that the equipment remains safe at all times.

Where TMVs are not fitted to baths or showers other equally effective controls should be in place.

The WNA require 'healthcare standard' showers to be fitted in settings used by vulnerable persons to prevent unsafe hot water temperatures under all conditions. Although domestic electric showers are likely to have temperature regulation features, water temperatures above 41 °C may still occur if there are fluctuations in flow or pressure.

4.4.2 Hot surfaces

Many radiators and associated pipework are likely to operate at temperatures which may present a burn risk. Where assessment identifies that vulnerable people may come into prolonged contact, such equipment should be designed or covered so that the maximum accessible surface temperature does not exceed 43 °C.

The risk of burns from hot surfaces may be reduced by:

- providing low surface temperature heat emitters;
- locating sources of heat out of reach;
- guarding the heated areas (e.g. providing radiator covers, covering exposed pipework);
- reducing the flow temperatures, although this should not reduce their effectiveness or increase risk from legionella.

5.0 Legal Requirements

5.1 Legislation

There are statutory duties to manage the risks of exposure to Legionella bacteria in the work place, specifically:

- The Health and Safety at Work Act 1974 (sections 2,3,4 & 6)
- The Management of Health and Safety at Work Regulations 1999 (regulation 3 & 5)
- The Control of Substances Hazardous to Health regulations 2002 (as amended) (regulation 6, 7, 8, 9 & 12)

In 2013 / 2014 the Health and Safety Executive published HSG 274 Parts 1, 2 & 3.

- Part 1 Controlling legionella bacteria in evaporative cooling tower systems,
- Part 2 The control of legionella bacteria in hot and cold water systems
- Part 3 Controlling legionella bacteria in other risk systems.

HSG 274 identifies the need for the following key actions:

- A suitable and sufficient assessment must be carried out to identify and assess the risk of legionellosis from work activities and water sources and any necessary precautions;
- Produce an action plan for the management of risk in the form of a written risk minimisation scheme;
- Implement and manage the precautions to control risk (both WNA and the Heads of Establishment are responsible for this action);
- Ensure that adequate records are maintained.

5.2 The Private Water Supplies Regulations 2009

Where water is supplied to site via a borehole or other private water supply then these regulations apply. A risk assessment to ensure the water supply is wholesome must be completed by the relevant local authority and subsequently every five years thereafter.

Check and Audit monitoring must be completed at appropriate time intervals as detailed in schedule 1 and 2 of the regulations², results of this sampling must be made available to all relevant parties as detailed in Figure 2.

5.3 Water Supply (Water Fittings) Regulations 1999

5.3.1 What are the Water Regulations?

The Water Supply (Water Fittings) Regulations 1999 are a statutory instrument that amends the Water Industry Act of 1991. These regulations lay down how water systems within buildings should be installed and operated. In most cases the regulations are not retrospective and hence should a system have been installed prior to 1999 and the installation complied with the former water bylaws then such a system will be deemed to be up to standard.

5.3.2 WNA Water regulations Policy

It is WNA policy that any new installations or system modifications must also comply with the 1999 Regulations and must only be installed by engineers approved under the Water Regulation Advisory Scheme (WRAS) approved plumber scheme.

Regulation 9 of the Water Regulations enables the water undertaker (in this case Thames Water) to enter premises and carry out inspections to ensure sites comply with the regulations.

5.3.3 Northumbrian Water(NWL) Enforcement of the Water Regulations

Northumbrian Water have routinely visited other properties and, in several cases, have served enforcement notices to the sites stipulating that remedial works must be undertaken to ensure compliance with the regulations. These notices are legally binding and, if ignored, can result in legal action being taken against the site by Northumbrian Water.

The areas in which Northumbrian Water have typically found non-compliance include:

- Water cisterns and tanks
- Food preparation and kitchen areas including connections of domestic appliances
- Toilet connections
- School Laboratory Areas
- Laundries
- Fire hose reels and systems

Should a site receive such a letter they should not ignore it as legal proceedings will follow if they do so. Further advice can be obtained by phoning WRAS on 01495248454 or visiting the WRAS website on <http://www.wras.co.uk/> and Northumbrian Water themselves can provide sites with guidance on how to comply with the regulations.

If/when you do receive such a letter please acknowledge receipt to Thames Water and immediately seek specialist advice. Non-school properties must contact the Property Helpdesk.

6.0 WNA Strategic Approach

WNA has been actively managing risk minimisation for both legionellosis and scalding since opening. WNA has conducted the following actions with the aid of specialist water hygiene consultants.

6.1 Risk Assessment

A Risk assessment has been carried out on the WNA premises by Northumbrian Water and will be reviewed annually or when major changes to the system are made.

The risk assessment comprises of a systematic questionnaire applied to the water systems with particular reference to the factors which influence proliferation of the bacterium (i.e. cleanliness, condition, temperature, etc.). The survey results are used to produce recommendations for the control of the bacterium.

6.2 Schematic Drawings

Schematic line diagrams will be prepared as part of the risk assessment in accordance with HSG 274 part2. Schematics must be reviewed at the time of the risk re-assessment. If there has been any change to the system since the previous assessment then the schematic drawing shall be updated.

For each water system that presents a risk from Legionella bacteria, a schematic or drawing shall be held showing:

- Origin of water supply;
- General layout of the system;
- How the system operates;
- All associated storage and header tanks;
- All standby equipment;
- Any parts of the system that may be out of use temporarily;
- Any problem areas such as deadlegs;
- Regular operation and test points such as nearest and furthest outlets to the CWS tanks and hot water sources.

These schematics/drawings may also show:-

- All system plant, e.g. water softeners, filters, strainers, pumps, non-return valves and all outlets, for example showers, wash hand basins etc;
- All associated pipework and piping routes.

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6.3 Prioritisation

The remedial measures are prioritised in terms of 'Risk', 'Cost' and 'Difficulty' and, where applicable, are broken down into delegated and non-delegated items. Details are included in the risk assessment for each property.

6.4 Implementation

The high risk low cost items are to be addressed first, followed by high risk high cost items in order to reduce, remove or manage any risk. The majority of low risk items are effectively controlled through management, not remedial work. A data-base is used to monitor implementation progress and to identify and coordinate remedial works that are carried out.

A legionellosis risk management group has been set up with representatives from OCC and SP. This group meets every 8 weeks.

6.5 Records

A **Water Services Hygiene, Legionellosis and Scalding Logbook** was developed and will be used to aid temperature monitoring and to ensure adequate records are kept on site.

Records are to be maintained for a period of five years.

6.6 Training

WNA conduct regular CPD accredited training to ensure that personnel have the necessary instruction, information, training and resources to carry out their legionella control tasks competently and safely.

7.0 Management Procedures

7.1 Action to be carried out by WNA Property & Facilities and Service Provider

A person is appointed to be managerially responsible and to provide supervision for the implementation of precautions. Guidance is available to enable WNA to achieve these requirements in the form of two documents:

- HSG 274 Legionnaires' disease Part 2: The control of legionella bacteria in hot and cold water systems.
- Health Technical Memorandum 04-01 – The control of Legionella, hygiene, "safe" hot water, cold water and drinking water systems issued by DH Estates and Facilities.

The **responsible person** will be appointed from WNA staff to take day-to-day responsibility for the implementation of the water hygiene, legionella and scalding precautions. The **responsible person** will be supported by a **competent person**.

• Records of temperature checks are maintained and recorded in the Service Providers **Water Services Hygiene, Logbook**

- Records are freely available for inspection;
- That hot and cold water temperatures are monitored and the temperatures recorded
- Hot water systems are operated at the correct temperatures as identified on the record sheets;
- Cold water systems are maintained at or below the correct temperatures as identified on the record sheets;
- Infrequently used showers are removed or run weekly for at least 2 minutes;
- Regularly used shower heads are cleaned quarterly as a minimum;
- That, to avoid stagnation of water in pipework, all outlets are run on a regular basis (at least weekly for a minimum of 3 minutes). If a basin or other outlet is no longer used, consider removal of the item;
- That contamination of the water systems is avoided;
- That the creation of unnecessary aerosols of water is avoided;
- That any water treatment systems fitted are operated and maintained as instructed;

7.2 Action to be taken by Schools

Heads of Establishments are responsible for ensuring:

- That a person is nominated to be responsible for maintaining records of temperature checks as specified in the **Water Services Hygiene, Legionellosis and Scalding Logbook**
 - Records are freely available for inspection;
 - Hot water systems are operated at the correct temperatures as identified on the record sheets;
 - Cold water systems are maintained at or below the correct temperatures as identified on the record sheets;
 - Infrequently used showers should preferably be identified to the SP for removal or be run weekly for at least 3 minutes;
 - Regularly used shower heads are cleaned quarterly as a minimum;
 - That, to avoid stagnation of water in pipework, all outlets are run on a regular basis (at least weekly for a minimum of 3 minutes).
 - That contamination of the water systems is avoided;
 - That the creation of unnecessary aerosols of water is avoided;
- That the WNA are informed of any activity or occurrence which you believe may jeopardise water hygiene;
 - That hot and cold water temperatures are monitored and the temperatures recorded (See Section 4.0 of the 'Water Hygiene Logbook' - Temperature Monitoring Records).

7.3 Action to be taken by the Nominated Responsible Person

The **responsible person** ensures the following essential practical maintenance/ management actions are taken:

- Where non-compliant water storage temperatures are identified the cause is rectified and, where necessary, the system subsequently subjected to a full clean and chlorination.
 - Hot water systems are operated at or above the approved minimum temperature. Storage temperature is greater than 60°C (unless the report indicates otherwise). Outlet (tap) temperatures are greater than 50°C (unless fitted with a point-of-use temperature reduction mixer).
 - Cold water systems are maintained at or below the approved maximum water temperature. Cold water storage and outlet temperatures are maintained below 20°C. It is permitted for the temperature to be 2°C greater than the incoming mains water temperature. However, this temperature should not exceed 25°C;
 - Infrequently used showers and outlets are identified by the Head of the Establishment/Facilities Manager for removal if no longer required for operational reasons. If retained, the showers should be run weekly for at least 3 minutes to avoid water stagnating in pipework;
 - To avoid potential contamination of the water systems e.g. storage of substances on top of cold water tanks;
 - To avoid the creation of unnecessary aerosols of water; and
 - Clean and disinfect the system if any activity or occurrence has jeopardized water hygiene, when recommended by the risk action plan or if bacteriological analysis requires it.
- Installation of local point-of-use thermostatic mixing valves (see section 9.5);and
 - The fitting of low surface temperature radiators or protective guards to pipe work and heat emitting surfaces.

7.4 Summary of the Allocation of Management Responsibilities

The responsibility for design, operation and maintenance of water systems and procedures for the control of legionellosis is divided between a range of individuals and organisations and is summarised below:

Table 2 Allocation of Responsibilities Action	Person(s) Responsible
Setting Policy with regards to legionellosis risk	Responsible Person
Provision of general guidance on legionellosis	Responsible Person
Management of risk assessment programme	Competent Person
Approval of programme and budget	Responsible Person
Risk management actions	Competent person
Decision regarding approved operating temperatures	Responsible Person
Operation under approved temperatures and conditions	Competent person

8.0 The Course of Action if an Outbreak of Legionnaires' Disease is Suspected in an WNA Property or for any other Water Hygiene or Scald Related Accident or Incident

8.1 Proper Officer

It is the responsibility of the 'Proper Officer', who is appointed by the relevant local authority under public health legislation for an outbreak to be declared.

8.2 What is an Outbreak?

An outbreak is defined 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.

8.3 Course-of-Action (Outbreak of Legionnaires' Disease).

In the event of an outbreak the following chart will apply:



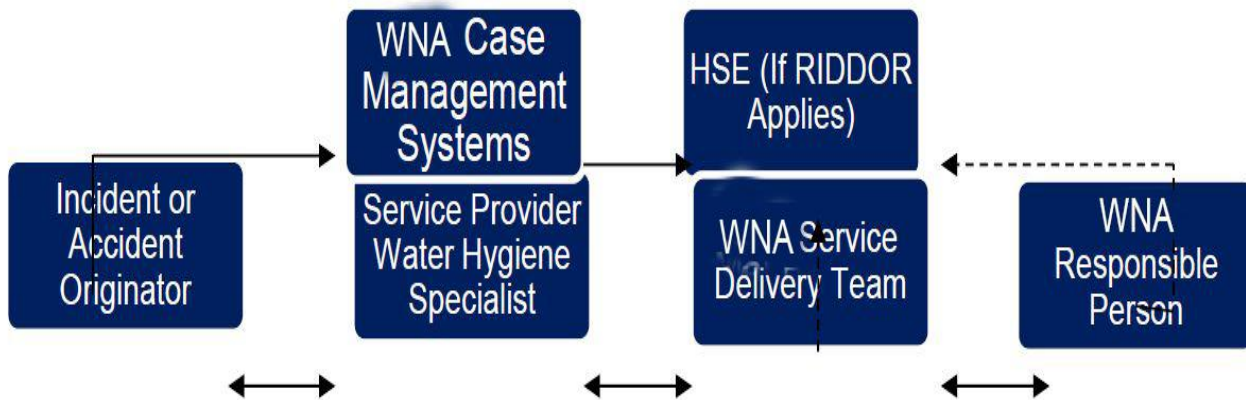
Figure 1 Outbreak Communication Flow Chart

WNA will comply with any requirements of the Proper Officer. The Service provider liaises with WNA, the HSE representative and the onsite personnel, as to the best approach for preventing any further cases. As part of the outbreak investigation, the following is carried out:

- Contact site to stop the use of water from the suspected risk areas;
- Isolate all hot and cold water systems identified from the risk assessment report and restrict access to any areas where outlets are located;
- Continue to isolate services until sampling procedures and any remedial action has been carried out;
- Take water samples before disinfection takes place;

- Review current risk assessment and monitoring procedures;
- Carry out a full chemical disinfection of all water systems in the suspect premises. This must allow 50 ppm chlorine to come into contact with all wet surfaces for at least one hour;
- Re-sampling takes place immediately on completion of chlorination and one week after;
- Conduct a formal risk assessment on the premises and implement any remedial works as a matter of priority;
- Provide staff health records to discern whether there are any further undiagnosed cases of illness and to help prepare case histories of the people affected;
- Carry out a review of the above procedures subject to the analytical results

8.4 Course-of-Action for all other water hygiene or scald related accidents or incidents
Figure 2 Accident or Incident Communication Flow Chart



Any accident or reportable incident must be reported by the originator as they will have the relevant information. The system requires nomination of an "approver" which would be a manager or the responsible person on site.

9.0 Domestic Hot & Cold Water Systems

9.1 Cold Water Cisterns and Cold Feed Tanks

All new domestic cold water storage cisterns and tanks must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 for cold water storage. All tanks are subject to a cleaning and disinfection regime before being put into service.

All cold water storage tanks will be inspected on 6 monthly basis and water temperatures taken at the ball valve and remote from the ball valve. On an annual basis visually inspect the cold water storage tanks and carry out remedial works where required. .

Routine microbiological monitoring of hot and cold water systems is not necessary as they will be fed with water that is fit to drink and the systems will be enclosed. However, monitoring for legionella (and TVCs, coliforms & E Coli) is recommended when:

- Water systems are treated with biocides and the water storage and distribution temperatures are reduced from those recommended for controlling legionella bacteria by the control of temperature.
- Control levels of the treatment regime are routinely not being met (temperature and biocide levels).
- An outbreak is suspected or has been identified.
- Premises have 'at risk patients – e.g. those immunologically compromised'

Bacteriological sampling, when including sampling for legionella bacteria, must comply with BS 7592:2008, Sampling for Legionella bacteria in water systems – Code of Practice. Samples must be taken by competent personnel, using a sterile bottle containing an

appropriate agent for removing chlorine (such as sodium thiosulphate). Analysis must be completed in a United Kingdom Accreditation Service (UKAS) accredited laboratory and certificates of analysis must detail the date of sampling, the date of delivery to the laboratory and the date of analysis.

Certificates of analysis must be from the analysing laboratory and not retyped and must contain details of the laboratories UKAS accreditation.

The supply temperature from the cold water storage tank is checked on a monthly basis and recorded in the Service Provider/School Water Services Hygiene Logbook. Any failures to satisfy the temperature are either reported to SP or rectified by the Establishment.

WNA's policy is that drinking water outlets must be supplied from the mains cold water service.

9.2 Cold Water Services - Pressurisation / Supply Pumps

Where two or more pumps have been fitted for pressurisation systems in a duty/standby configuration, the pumps must be sequenced to automatically allow each pump to run alternately on a daily basis. This avoids stagnation in the pump in 'standby' status.

9.3 Procedure for Cold Water Tanks Following the Identification of Water Temperature Greater Than 20°C

If the cold water tank temperature rises above 20°C (and the incoming mains is below 20°C), the SP/School is responsible for resolving the issue.

The policy is to investigate the cause of temperature increase, carry out remedial work to prevent its recurrence and clean and disinfect the system.

9.4 Domestic Hot Water Systems

In general the hot water treatment method used by WNA is that of full temperature control as advocated in HTM 04-01, this requires the storage and flow temperature of hot water to be maintained at 60°C, and distributed to all outlets (or to thermostatic mixing valves) at a minimum of 50°C.

There is scope within L8 to use an alternative method of water treatment from full temperature.

Where an alternative water treatment regime is used WNA establishes the efficacy of the system in its control of Legionella for each site by:

- Achieving a control level; and
- Providing the assurance that the control level is maintained by sampling and reviewing on an annual basis.

Service Provider/School ensures that all that is reasonably practicable is done to keep hot water below 44°C in properties which accommodate people vulnerable to scalding (see [section 9.5](#)). This involves the reduction of outlet temperature in high risk areas either by the reduction of storage temperature (possibly along with an alternative means of legionella control) or, preferably, by the use of thermostatic mixing valves (TMV's).

9.5 Thermostatic Mixing Valves (TMV)

At temperatures above those stated in section 4.2 table 1 there is a danger of scalding which increases with temperature. The risk depends on temperature and time of contact and will be greater for the following groups of people:

- Young children of primary school age;
- The elderly;
- Persons with sensory impairment.
- People with a learning difficulty.

In sites used by such vulnerable groups TMVs **must** be used at outlets to control any scalding risk. Where TMVs are used they should be sited in as short a distance as possible from the terminal fitting but no more than one metre from the outlet and each TMV should only feed one sink or outlet. TMV's are not used to serve low volume spray taps in buildings with susceptible populations.

It is particularly important that where TMVs are provided they are maintained to at least the standard recommended by the manufacturer. As a minimum the fail-safe of each device must be tested 6-monthly and results recorded in the Logbook. Failed valves and associated outlets must be taken out of service immediately until the failed valve is repaired or replaced and the outlet is safe to use again.

A documented maintenance schedule (Section 5.4, Form F of the School Logbook) which takes into account local conditions (e.g. hard water) and the risk of valve failure, should be followed and recorded. Any variation in the monthly temperature testing of outlets fitted with TMVs may indicate that a fault has occurred and should be investigated. This may require further temperature checks.

The new standard for thermostatic mixing valves is supported by a testing system managed by the Water Research Council. WNA requires that TMVs used for baths and showers should have a certificate of testing under this 'TMV Scheme'.

BuildCert (<http://www.buildcert.com/TMV/default.html>) currently provide an independent third party certification scheme for thermostatic mixing valves against the requirements of the NHS Estates Model Engineering Specification D 08 (TMV 3 approval). WSHL&SP Page 21 P&F 2014/V18

9.6 Monitoring Requirements

A monthly check of the outlets is undertaken by the SP/School and recorded in the SP/School **Water Services Hygiene Logbook**. Where a mixing valve is fitted, the nearest unmixed outlet is tested to assess the actual temperatures of the unblended supply of hot and cold water. Records of temperature checks are retained for a minimum of five years.

9.7 Distribution Pumps

Normally only one domestic hot water distribution pump is installed near the calorifier to assist the distribution of water around the system. This should be sized appropriately to ensure all outlets are capable of delivering hot water at 50°C or above.

9.8 Pressurisation/Booster Units

Where there are two or more pressurisation/booster units these are set up to operate in sequence so as to prevent any accumulation of stagnant water within the system. The sequence ensures all pipe work is flushed at least daily.

9.9 Low Volume Hot Water Systems. e.g. Point-of-Use Hot Water Heaters

Point-of-use heaters, i.e. water heaters of 15 litres or less, will be set at 50°C for legionella control. In buildings used by young children of nursery and foundation stage age; the elderly; persons with sensory impairment or people with a learning difficulty a TMV will be installed prior to the terminal fitting for scald control to reduce the temperature to that stated in section 4.2 table 1.

9.10 Showers and Unused Outlets

Showers and unused outlets which are infrequently used should be removed or run weekly for 3 minutes. Showerheads should be cleaned and descaled at least quarterly.

9.11 Fire Hose Reels

Fire hose reels should not be fitted unless specifically requested by Northumberland Fire and Rescue Service.

In agreement with Northumberland Fire and Rescue Service existing fire hose systems should be removed from site and the pipe work capped off so as not to create a deadleg. Alternative suitable portable fire fighting equipment must be provided.

Where a wet riser system remains in place, the domestic cold water service to the building should be protected from it with double check valves. WSHL&SP Page 22 P&F 2014/V18

9.12 Cleaning and Disinfection of Domestic Water Systems

Domestic water systems will be chemically disinfected where the conditions below are applicable:

- If the risk assessment conducted by the specialist third party consultant shows that this is necessary;
- If inadequate bacteriological water quality results are obtained;
- If physical contamination or extremely dirty tanks are identified, the tank and system must be cleaned and disinfected as soon as is practicable.
- When a building has been closed for more than 60 days in accordance with HSG 274 part 2 & BS6700: 2006 + A1: 2009.

9.13 Protection of Maintenance Personnel

The disinfection procedures presented for cold water storage tanks, domestic hot water vessels and water systems are designed to minimise the risk to staff and others that may come into contact with water which may have been contaminated with Legionella sp. In all instances of draining, water should be drained in such a way as to avoid the creation of an aerosol.

The contractor must submit a method statement outlining all relevant safety measures that are implemented to carry out the work for approval by the Service Provider/School.

If plant is located in confined spaces, procedures for confined space entry are to be included in the method statement.

Because water treatment chemicals, including chlorine-containing chemicals and solutions, are often toxic or corrosive they are to be used cautiously to ensure that they do not endanger the users or other occupants of the building. Water treatment is carried out by, or under the direction of, people who are suitably qualified and experienced in accordance with the method statement.

The use of water treatment chemicals are subject to a COSHH assessment which is included in the method statement submitted for approval. This may take the form of a generic assessment or site specific where necessary.

Permission is required from the water authority prior to any discharge to sewers, storm water drains and watercourses. Where necessary the Environment Agency is contacted prior to direct discharge to watercourses.

10.0 Other Risk Systems

10.1 Swimming Pools /Hydrotherapy Pools

A detailed log would need to be kept recording the treatment method, filter cleaning and results of tests for pH, free residual halogen and other key parameters. WSHL&SP Page 23 P&F 2014/V18
All information on condition, cleanliness, servicing and monitoring is recorded in a pool log book. Monitoring is conducted by the Service Provider in accordance with WNA's procedures for the Management of Health and Safety in Swimming pools. Swimming pools are monitored by the independent specialist contractor twice annually. Hydrotherapy pools are monitored by the independent specialist contractor every 2 months.

However WNA does not at the present moment have a Swimming Pool or Hydrotherapy pool of any description on it's premises.

7 Health and Safety Management in Swimming Pools WOXPC70

10.2 Hot Tubs/Jacuzzis/Spa Pools

Spa pools (also known as hot tubs, whirlpool spas, whirlpools and commonly as Jacuzzis) are designed to allow users to sit together in warm water which is pumped around the pool often along with water or air jets which can generate breathable aerosols. The system water is not replaced after each use but disinfected and recirculated. If these systems are not managed properly they can be the cause of infections including Legionnaires' disease.

Spa pools are a recognised source of Legionnaires' disease and thus the Health Protection Agency (HPA) and Health and Safety Executive (HSE) have published separate guidance which sets out the specific responsibilities of those who manage spa pools to ensure both staff working with the pool and pool users are protected.⁸

WNA recommends that these systems are NOT installed or used on WNA premises; however, where they are installed, they must be operated and managed in strict accordance with the guidance published by the HPA and HSE and a separate legionella and scald risk assessment should also be completed prior to use.

10.3 Reclaimed Water Systems (Rainwater & Greywater Systems).

The use of any reclaimed water system as part of a new build project will need to be subject to a risk assessment for each application. Rainwater systems should be installed in accordance with BS 8515: 2009 Rainwater Harvesting Systems – Code of Practice. The risk assessment will need to take into account:

- Purposes for which the water is to be used;
- Storage arrangements;
- Temperature of stored water (Below 20°C);
- Health implications to persons using the site;
- Cost benefits;
- Discharge of surplus water.

In addition Service Provider/School should ensure: WSHL&SP Page 24 P&F 2014/V18

- That pipework is clearly labelled in accordance with the Water Supply (Water Fittings) Regulations 1999;
- That water quality standards meet requirements laid down in BS 8515: 2009.

10.4 Ornamental Water Fountains

The risk of legionella growth within ornamental fountains is dependent on two factors:

- Temperature of the water (above 20°C) and / or
- A biofilm build up within the unit which will provide a source of nutrient.

The risk of contracting legionellosis should the water become infected is dependent on an aerosol being created that is inhaled by a susceptible person.

To reduce the risk of exposure the following precautionary procedures should be adopted:

- When purchasing an ornamental water feature choose one that is very unlikely to produce an aerosol. e.g. A cascading type of water feature rather than a fountain;
- Keep the unit free of bio film growth. Check on a weekly basis and if a build-up is noticed the unit should be drained down and all accessible parts cleaned with detergent and a mild abrasive such as a nylon scourer. The unit should then be flushed clean, taking care not to create an aerosol, and then refilled with clean water ready for use. This process should be repeated as necessary;
- To keep the growth of bio film to a minimum a water clarifying solution such as a pond clear solution may be used. The manufacturers guidance on the use of such agents must be clearly followed and in particular any requirements relating to the Control of Substances Hazardous to Health Regulations;
- Details of the checking and cleaning should be recorded within the site **Water Services Hygiene Logbook** stating the date and any action taken using a form similar to the one used for shower head cleaning records;
- The temperature of the water should be monitored weekly. If the temperature of the stored water is above 20°C the unit should be drained down and refilled with clean cold water. If the temperature of the water cannot be maintained below 20°C specialist advice is to be sought.

Details of the temperature monitoring should be recorded within the site **Water Services Hygiene Logbook** stating the date and any action taken using a form similar to the one used for temperature records for cold water outlets.

10.5 Fire Drill practice CWS Tanks

All fire drill practice water storage cisterns and tanks must comply with the requirements of the Water Supply (Water Fittings) Regulations 1999 for cold water storage. All tanks are subject to a cleaning and disinfection regime before being put into service. Fire drill practice tanks, wherever possible, should be kept drained when not in use. WSHL&SP Page 25 P&F 2014/V18

All cold water storage tanks (including fire drill practice tanks) should be inspected on an annual basis. Bacteriological samples taken, a visual inspection made and the temperature taken. A judgement based on the information in [Table 2](#) is then made to determine if a clean and disinfection is required.

¹⁰ CIBSE Technical Memorandum 13 – Minimising the risk of Legionnaires' Disease

The water in fire drill practice tanks should be stored below 20°C. If the stored temperature rises above 20°C (and the incoming mains is below 20°C), specialist advice is to be sought.

An investigation must take place to identify the cause of temperature increase, carry out remedial work to prevent its reoccurrence and clean and disinfect the system.

11.0 Cooling Water Systems

11.1 Evaporative Wet Cooling Towers and Systems

The current WNA policy is to not have any wet evaporative cooling systems such as cooling towers or evaporative condensers in place to remove the risk of Legionnaires' disease. Should a school wish to install such a piece of equipment they should seek permission from Newcastle City Council before doing so.

Currently there are no evaporative cooling towers in use on WNA owned property. Site specific procedures will be required for safe operation should a change in policy occur and systems be used in the future.

11.2 Adiabatic & Eco-cooling Systems

It is the policy of WNA that Eco-cooling devices and adiabatic coolers with a wet pre-cool system will be treated as evaporative wet cooling systems ([refer to section 11.1 above](#)).

11.3 Air Conditioning Plant

Air conditioning, humidifiers, ventilation plant and duct-work is inspected at the access point(s) on an annual basis in order to check cleanliness and general condition¹⁰. If found dirty the system is cleaned. Any remedial work is reported during the risk assessment.

All information on condition, cleanliness etc. is recorded in a log book, with any non-compliance or incidents being identified to the responsible engineer. Investigate the cause of contamination and/or failure and remedial action carried out.

12.0 Risk of Scalding: Safe Hot Water Temperatures and Radiant Surfaces (radiators)

12.1 Thermostatic Mixing Valves (TMV)

In sites used by such vulnerable groups Thermostatic Mixing Valves **must** be used at outlets to control any scalding risk ([See Section 9.5](#)). WSHL&SP Page 26 P&F 2014/V18

12.2 Radiators and Radiant Surfaces

Hot surfaces such as radiators and other such unsafe radiant surfaces are identified as part of the scalding risk assessment.

On site assessments identify the need for low surface temperature radiators and/or encasing of pipe work. 11

¹¹ HTM 04-01 The control of Legionella, hygiene, "safe" hot water, cold water and drinking water systems.

If there is change of occupancy in the building a further risk assessment must be carried out to determine if the scalding risk has changed.

13.0 Changes to Premises and Occupation of New Premises

13.1 Building Change of Use

Where a change of use of a building is planned a risk assessment must be carried out to determine whether new building users will be more vulnerable to exposure to viable Legionella from the new activity.

13.2 New Build, Alterations, Extensions, Refurbishment and Maintenance

Ensure system is disinfected and cleaning is completed in accordance with HSG 274 part 2 and BS6700: 2006 + A1: 2009 and that a certificate of disinfection is forwarded as part of the handover documentation. The responsibility for maintaining the water system remains with the contractor until handover. After handover and up to occupation the responsibility lies with WNA.

At the point of handover all relevant information on system performance together with as-fitted drawings and design criteria of the domestic hot water systems and cold water services will be stored at the site for use by the Service Provider /School.

Occupancy of the new property is as soon after handover as possible to prevent further costs being incurred due to the need for re-chlorination of the water systems.

13.2.1 WNA Policy for New Build, Alterations, Extensions, Refurbishment and Maintenance

The policy is that all new water systems in buildings and refurbishments are designed in accordance with HSG 274 part2 to prevent the risk from legionellosis and scalding during the future use of the building.

13.2.2 Building Handover - Documentation

When a **NEW BUILDING** is completed or **ACQUIRED** the Service Provider/Consultant must create a water hygiene logbook prior to occupation. WSHL&SP Page 27 P&F 2014/V18

When any **ALTERATIONS, REFURBISHMENTS** or **EXTENSIONS** at **EXISTING ESTABLISHMENTS** add to or change the hot and cold water systems, the Service Provider/School must update the water hygiene logbook prior to occupation.

14.0 Procedure in the Event of Building Closure

14.1 Background

Where a property or building is to be closed for an extended period of time, the Service Provider/School must ensure that the following procedures detailed in section 14.3 -14.6 are implemented and recorded in the **Water Services Hygiene Logbook**

14.2 Period of Closure

It is essential to establish the period of closure as early as possible as this affects the measures that have to be taken and the cost implications of such actions.

14.3 Closure of Less Than 60 Days

14.3.1 Non-School Properties

Where a closure is less than 60 days for non-domestic properties a nominated individual is identified to run every tap for a period of three (3) minutes and flush every toilet once per week.

Before the property is re-occupied it may be necessary to carry out an inspection and bacteriological test of the water systems. Results are reported to the Responsible Person (Legionella) identifying any remedial works that may be required.

It is the responsibility of the Head of Establishment/Facilities Manager to notify the Service Provider of their intention to re-open a temporarily closed building. This does not apply to systems that are on timed circuits.

14.3.2 School Closures During Holiday Periods

In most schools the domestic hot water systems are switched off during holiday periods. This creates temperatures at which legionella can breed. School domestic hot water systems must be taken up-to operating temperature at least 7 days prior to re-occupation and all taps nearest and furthest to any CWS tanks, hot water calorifiers and incoming mains water taps are then run each day to create good circulation prior to re-occupation.

14.4 Closure of Greater than 60 Days

DO NOT DRAIN DOWN. Any work carried out must comply with the requirements of HSG274 part2.

14.5 Re-occupation of an Area Closed for Greater than 60 Days

In the event of re-occupation of a building or property closed for greater than 60 days, WNA Service Provider will require the following information: WSHL&SP Page 28 P&F 2014/V18

- The planned re-opening date;
- Any proposed changes of use of the building;
- Any areas that are not to be used.

Before the water system is put back into service, any necessary modifications and maintenance are carried out prior to the cleaning of the system in accordance with the requirements of HSG 274 part2.

Review Date:-	Reviewed By:-	Verified by:-
28 th January 2022		
16 th February 2023		

WNA Vision: All children will achieve their full potential, with holistic support, whilst they enjoy, own and drive their learning, gaining self-respect, self-esteem and self-belief.

