Protecting patients, protecting water: BMP for water conservation and Legionella

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Do you need a Legionella Management Plan?

Who needs a Legionella Water Plan?

- Answer these questions:

1. Is your building a healthcare facility? CMS directive
2. Does your building primarily house people older than 65 years?
3. Does your building have multiple housing units and a centralized hot water system?
4. Does your building have more than 10 stories (including basement levels)?

Do you need a Legionella Management Plan?

5. Does your building have a cooling tower ?

6. Does your building have a hot tub that is not drained between each use?

7. Does your building have a decorative fountain?

8. Does your building have a centrally-installed mister, atomizer, air washer, or humidifier?

If you answered YES to any of the above questions, a water management plan is needed.

Water System Components

Water system components that can potentially harbor and disperse legionella:

- Hot and cold water storage tanks
- Water heaters
- Water-hammer arrestors
- Pipes, valves, and fittings
- Expansion tanks
- Water filters
- Electronic and manual faucets

Aerators

Faucet flow restrictors

Showerheads and hoses

Ice machines

Medical devices

Nonsteam aerosol-generating humidifiers

Eyewash stations

Additional Building Components

- Centrally-installed misters, atomizers and humidifiers
- Hot tubs and saunas
- Decorative fountains
- Cooling towers

What is a cooling tower?

NSF P453: Cooling Tower Water Systems – Treatment, Operation, and Maintenance to Prevent Legionellosis

Internal Building Plumbing

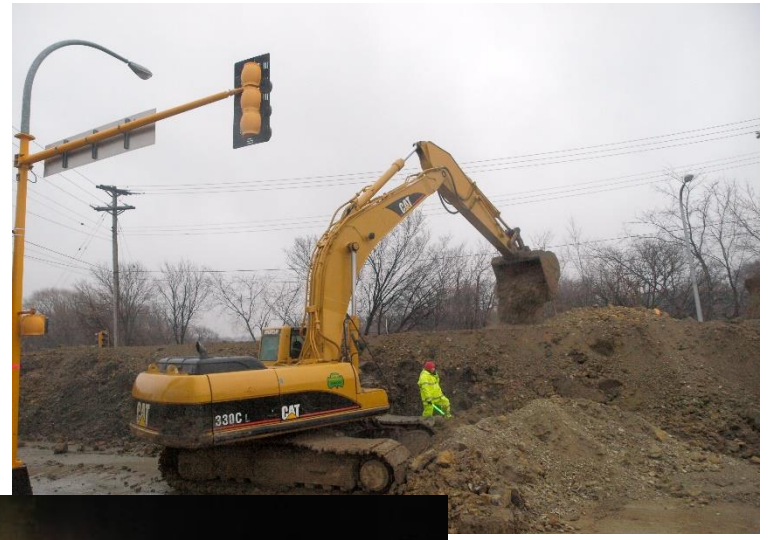
Internal factors that promote Legionella growth:

- Biofilm
- Low flow rates
- Scale and sediment
- Water temperature fluctuations
- Water pressure changes
- pH
- Inadequate disinfection
- Water stagnation

External Factors

External Factors to Building Plumbing:

- Construction that effects the public water supply
- Water main breaks
- Changes to municipal water quality



Developing a Water Management Plan

Center for Disease Control (CDC) Guidance recommends:

A water management plant with the following elements:

1. Establish your water management program team
2. Describe the building water systems using flow diagrams and written description
3. Identify areas where Legionella could grow and spread.
4. Decide where you need to apply control measures and how to monitor them.

Developing a Water Management Plan

Elements:

5. Establish ways to intervene when control limits are not met.

6. Make sure the program is running as designed and is effective.

7. Document and communicate all your activities.

Other Legionella Control Options

- Adding treatment to the building entry point

  Considered an individual public water supply

- Alternatives to Legionella testing

  Sporadic testing for Legionella may not be useful

  If testing, must be on a regular basis

  Other daily monitoring – temperature, chlorine residuals, and pH - may be more useful

Necessary control options that do affect water conservation

- Regularly flush plumbing system and cooling towers
- Regularly drain and clean plumbing components and cooling towers
- Have some plumbing components that are not low-flow, and/or remove aerators, to allow for adequate water velocity when flushing
- Consider automated flushing components (may include shower heads and faucets)
- Avoid water reuse where water can be aerosolized

Control options that don’t affect water conservation

- Remove dead legs in plumbing system
- Avoid rubber or plastic components or gaskets
- Insulate and/or tape hot water lines
- Use smaller water heaters
- Limit length of hot water recirculating lines
- Consider point of use water heaters for low-use lines
- Keep hot water > 140 degrees F and install anti-scald devices

Other Recommendations

Communicate regularly with your public water system to be aware of:

- Nearby water main construction and repairs
- Nearby water main breaks
- Changes to CPWS water quality

References

- Center for Medicare and Medicaid Services (CMS) – Memorandum Requirement to Reduce Legionella
- ASHRAE Standard 188 - establishes minimum legionellosis risk management requirements for building water systems.
- Center for Disease Control (CDC) – Toolkit: Developing a Water management Program to Reduce Legionella Growth and Spread in Buildings
- NSF International – Cooling Towers Guidance

DEPARTMENT OF HEALTH

Thank you!

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Drinking Water Protection

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