



CIRSA HAZARD ALERT

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SAFER TOGETHER

Hazard Alert: Legionella Risk in Building Water Systems



Legionella is a naturally occurring bacterium found in freshwater environments that can grow and spread in building water systems. When inhaled through aerosolized water droplets, it can cause Legionnaires' disease, a severe form of pneumonia, or Pontiac fever, a milder illness. Facilities with complex plumbing systems are at increased risk if water conditions allow bacterial growth.

WHERE LEGIONELLA MAY BE FOUND

Legionella can proliferate in:

- Cooling towers and evaporative condensers
- Domestic hot and cold-water systems
- Storage tanks and water heaters
- Decorative fountains and water features
- Showers, faucets, and hose bibs
- Humidifiers and misters

Conditions that promote growth include stagnant water, temperatures between 45° F and 113° F, scale, sediment, and inadequate disinfectant levels.

Legionella Risk in Building Water Systems (cont.)

HEALTH EFFECTS

Exposure occurs by inhaling contaminated water droplets. Symptoms of Legionnaires' disease include:

- Cough, shortness of breath
- Fever, chills
- Muscle aches, headaches

Legionnaires' disease can be serious, especially for older adults, smokers, or those with weakened immune systems.

PREVENTATIVE MEASURES

Facilities maintenance staff should:

- Maintain hot water temperatures at or above 140° F in storage and at least 122° F at outlets
- Ensure cold water remains below 68° F
- Regularly flush infrequently used outlets
- Clean and disinfect cooling towers per manufacturer and regulatory guidance
- Monitor disinfectant residuals (e.g., chlorine levels)
- Remove scale, sediment, and biofilm buildup
- Implement and follow a written Water Management Program (WMP) consistent with ASHRAE Standard 188 and CDC guidance

INSPECTION AND MONITORING

- Conduct routine inspections of all water system components
- Document temperature checks, flushing activities, and maintenance
- Perform periodic Legionella testing where required or indicated

RESPONSE ACTIONS

If Legionella is suspected or confirmed:

- Notify facility management and public health authorities as required
- Restrict access to affected systems
- Initiate disinfection procedures (e.g., hyperchlorination or thermal treatment)
- Communicate risks and mitigation steps to building occupants
- Review and update the Water Management Program

RESPONSIBILITIES

Maintenance supervisors are responsible for ensuring staff are trained and procedures are followed. All personnel must report irregularities such as low disinfectant levels, unusual odors, or system stagnation.

The information and suggestions in this Hazard Alert should not be regarded as exhaustive and may not be universally applicable to every organization or domestic building water system. Accordingly, organizations should consult with qualified

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professionals when assessing public health risks and implementing protective measures tailored to their specific operations and infrastructure.

RESOURCES

CDC: DEVELOPING A WATER MANAGEMENT PROGRAM TO REDUCE LEGIONELLA GROWTH

- <https://www.cdc.gov/control-legionella/media/pdfs/toolkit.pdf>

ASHRAE STANDARD 188: LEGIONELLOSIS RISK MANAGEMENT FOR BUILDING WATER SYSTEMS

- https://webstore.ansi.org/standards/ashrae/ANSIASHRAEStandard1882021?ad_acct=0000&gad_source=1&gad_campaignid=22903872881&gclid=Cj0KCQjwjiPSBhCCARIsABGyK7vDS7jiTt4aC3n20rOQFIIfHE2pdykrzrQcPFs-4f4Yy10LbDNylw0waAkoHEALw_wcB

OSHA WEB PAGE: LEGIONNAIRES' DISEASE AND PONTIAC FEVER

- <https://www.osha.gov/legionnaires-disease/control-prevention>