

Legionella Awareness
By Jackson Read, Pace Chemicals Ltd.

Legionella pneumophila is a pathogenic strain of bacteria that is naturally present in many surface and ground water sources. It is named after an infamous 1976 Legionnaires convention at which 221 attendees fell ill with pneumonia-like symptoms. 34 people died as a result of this mysterious illness, all of whom were staying at the same hotel in Philadelphia. An investigation by the US Centre for Disease Control determined that the cause of the illness was the hotel's cooling tower. There was a high volume of Legionella pneumophila thriving in the cooling tower sump. There have been several other documented mass-infections of Legionnaire's Disease in England, the Netherlands, Spain, Quebec and New York City since the bacteria's initial discovery.

Legionnaire's Disease is contracted when Legionella pneumophila bacteria is inhaled into the lungs. Because Legionella is a waterborne bacterium, it is not present in the air or in water vapour, however it can exist in small water droplets that can be inhaled into the lungs.

Central air conditioning systems, cooling towers, evaporative condensers, humidifiers, and hot tubs are all potential breeding grounds for Legionella. If water contaminated with Legionella becomes aerosolized, the bacteria can be transmitted to humans via normal respiration.

It is important for every public building to have a systematic water safety plan in place to control the growth and spread of Legionella. For instance, open recirculating water systems (cooling towers, evaporative condensers, air washers and fountains) should have a biocide treatment program in place coupled with ongoing monitoring of bacterial growth counts using dip-slides. Regular dip-slide sampling provides a rough estimate of the number of bacteria in a water sample but does not give any indication of what types of bacteria are present. Additionally, Pace Chemicals recommends sampling and testing specifically for Legionella in open recirculating water systems.

There are several precautions that should be taken to minimize the risk of Legionella in a cooling tower and other open systems. Proper design, periodic cleaning, regular maintenance, effective water treatment, and Legionella monitoring are all parts of a comprehensive risk-reduction strategy that should be implemented. In the case of a Legionella outbreak, liability can fall upon the building owner or operators if it is proven that there is no effective water safety plan in place.

For more information about Legionella risk management, water safety plans, or water treatment, please contact a Pace Chemicals representative.

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Sources

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