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Large Cooling Water Systems with 'Green' Nonchemical Devices Need Monitoring

Legionella Expert to Present Pitt Study Results at CTI Conference

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40 percent to 60 percent of all cooling water systems tested contain Legionella--the bacterium that causes Legionnaires' disease. Nonchemical devices failed to control this bacterium in model cooling water towers according to an ASHRAE-funded study.

To avoid a potential health hazard, equipment operators, building owners, and engineers should monitor large cooling water systems that use nonchemical "green" devices to control Legionella, says Dr. Janet Stout, who will present results from a recent American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)-funded study on the effectiveness of NCDs at the Cooling Technologies Industry (http://www.cti.org) conference in San Antonio, February 6-10.

“Large cooling systems are energy efficient and, if properly treated, very safe, but our study results show that nonchemical devices alone may not control microbial growth,” says Stout, director of Special Pathogens Laboratory (http://www.specialpathogenslab.com), and research associate professor in civil and environmental engineering at the University of Pittsburgh Swanson School of Engineering. Stout conducted the Pitt (http://www.pitt.edu) study with environmental engineering chair and lead investigator Radisav Vidic (http://webster.engr.pitt.edu/civil/facstaff/vidic radisav.html), William Kepler Whiteford Professor, and then-graduate student Scott Duda, project manager, Special Pathogens Laboratory.

Cooling towers for hospitals, hotels, and other large commercial buildings provide the perfect environment for bacterial growth. These conditions include: water temperature; biofilm caused by scale and other organic material; stagnant water; pooled water in fittings, piping, and, gaskets. To date, most of these cooling water systems aren’t tested for Legionella—the bacterium that causes Legionnaires’ disease. According to numerous studies, of those water systems that have been tested 40 percent to 60 percent contained Legionella. http://en.wikipedia.org/wiki/Legionellosis.

Stout, a leading expert in detection and prevention strategies for Legionnaires’ disease, recommends adding chemical treatment, when needed, as one possible measure to control microbial growth and prevent a potential health hazard.

Currently, both CTI and ASHRAE (http://www.ashrae.org) are reviewing the adoption of standards for Legionella. At the CTI conference, attendees will discuss CTI Standard 159 – Legionellosis: Related Practices for Evaporative Cooling Water Systems.