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Legionella Risks in Building Water Systems

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Special to the Legal

Well-publicized outbreaks of Legionnaires' disease over the last year have grabbed headlines and spurred regulatory action, highlighting potentially significant liability risks related to water quality in the hospitality, health care, senior housing, and commercial real estate sectors. To properly identify, evaluate, and mitigate such risks, the assessment and diligent maintenance of water quality in buildings is essential. Legionella assessments and prevention plans are critical, but often overlooked, components of pre-acquisition due diligence, property management, and environmental-risk management protocols.

Increased Public Attention

Legionnaires' disease and Pontiac Fever, referred to collectively as Legionellosis, are upper respiratory infections caused by aspirating Legionella bacteria. Although Pontiac Fever is nonfatal, Legionnaires' disease is characterized by a pneumonia-like infection in which 10 percent of cases result



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in death. Legionella bacteria are naturally occurring and ubiquitous in the environment at very low concentrations, but thrive in dark, warm, stagnant water. As a result, water systems within buildings can be fertile breeding grounds for Legionella bacteria, and are the most common source of Legionellosis outbreaks. Cooling towers associated with air conditioning systems, decorative water fountains, and whirlpools are the primary transmission vehicles

for Legionellosis, though domestic hot water systems also present a risk of exposure via shower heads and faucets. The sick, elderly, and those with compromised immune systems are most vulnerable to infection.

The first diagnosed cases of Legionnaires' disease were linked to a 1976 American Legion convention in Philadelphia, the event that lent its name to the bacteria and disease. The source of the outbreak was traced to the air conditioning system of the Bellevue-Stratford Hotel, where many of the convention attendees were staying. In all, more than 220 convention guests were afflicted, 34 of whom died. The negative publicity surrounding the outbreak caused the once opulent hotel's business to plummet, forcing it to close shortly after the outbreak was reported.

Forty years later, diagnosed cases of Legionellosis are on the rise. According to data published by the Centers for Disease Control (CDC), the national infection rate rose by 286 percent between the years 2000 and 2014. About 5,000 cases of Legionnaires' disease are reported in the United States each year, with up

to 18,000 hospitalizations annually blamed on the bacteria. The CDC has not identified a single overriding cause for the rise in reported cases, but cites to a number of factors, including more accurate diagnoses, an ageing and more vulnerable population, and weaker immune systems attributable to a rise in chronic ailments. Notably, Pennsylvania, New York, and New Jersey have the highest per capita rates of diagnosed Legionellosis in the country. The Pennsylvania Department of Environmental Protection (PADEP) recently published data indicating that, since 2010, nearly all microbial disease outbreaks associated with public drinking water systems have been caused by Legionella bacteria.

Late last summer, the news was dominated by an outbreak of Legionellosis in New York City that killed 12 people and hospitalized more than 100. The source of the outbreak was traced to a roof-top cooling tower at the Opera House Hotel in The Bronx. Notably, the hotel's HVAC system was only 2 years old, and many of those infected had not even stayed at the hotel. Public health officials reported that contaminated mist from the cooling tower could have travelled and infected people as far as a mile away. Two recent reports concerning the detection of Legionella bacteria in Pennsylvania are also notable. In early June, four residents of a Bucks County personal care facility tested positive for Legionellosis, and one died from the disease. Also this June, Allegheny General Hospital in Pittsburgh

reported that elevated concentrations of Legionella bacteria were discovered in two of its domestic hot water tanks. In this case, the testing was conducted pursuant to the hospital's Legionella prevention plan, and that no associated cases of Legionellosis have been reported. These cases highlight the potentially significant risks posed by water systems contaminated with Legionella bacteria, and the importance of prevention plans that include routine sampling.

Industry Standards and Regulatory Obligations

Last year the American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) issued a new standard (no. 188-2015) titled "Legionellosis: Risk Management for Building Water Systems." Although voluntary, it sets a new industry standard for monitoring and maintaining water quality within buildings, disinfecting potentially impacted water systems, and implementing best practices to prevent the growth of Legionella bacteria. While Legionella is difficult to identify because it has no smell or taste, treatment is relatively simple: sufficiently cold or hot water temperatures, chlorination, and copper-silver ionization systems can be used to inhibit its growth.

The ASHRAE standard is built upon the hazard analysis and critical control point risk management method, which focuses on system components or processes where potential hazards can be isolated and either eliminated or reduced to

acceptable level. Critical control points for Legionellosis prevention within building water systems include maintaining water temperatures that inhibit Legionella growth; regular inspections, maintenance, and treatment of cooling towers; and regular testing for the presence of Legionella bacteria. The ASHRAE standard further requires building owner/operators to develop and implement a Legionella prevention plan that establishes a building-specific program to address these issues.

Laws and regulations focused on the prevention of Legionellosis outbreaks are just beginning to emerge. Existing laws, however, are focused primarily on public health officials' response to outbreaks. For example, health care workers in Pennsylvania are required to report diagnosed Legionellosis cases to the Pennsylvania Department of Health, and some local health departments, such as the Allegheny County Department of Health, have issued nonmandatory guidelines for Legionellosis diagnosis, treatment, and prevention. PADEP has issued a proposed rule tightening disinfection standards for public drinking water systems, but to date it has not proposed any regulations that would address Legionella prevention or detection in building water systems.

In New York, however, regulations intended to prevent the growth of Legionella and outbreaks of Legionellosis were issued swiftly in response to last summer's Legionellosis outbreak. As of

February 2016, all cooling towers in New York state must be registered, and all owners of buildings which contain cooling towers, as well as general hospitals and residential health care facilities, are required to follow ASHRAE Standard 188-2015. These regulations may become a model for regulation by other state and local environmental and health agencies.

Implications for Owners and Operators

Legionella within building water systems represents an often overlooked source of potentially significant risk and liability. The recent rise in reported Legionellosis cases has led to a concomitant increase in personal injury lawsuits seeking damages for wrongful death, medical costs, lost wages, and pain and suffering. A quick internet search identifies numerous attorneys and law firms claiming to be experts in Legionella exposure claims, with advertisements of recent jury verdicts in excess of \$4 million for single plaintiffs.

Prospective purchasers of buildings, particularly those in the health care and hospitality industries, should consider incorporating Legionella assessments into their pre-acquisition due diligence protocols. Such assessments would include the identification of, and compliance review concerning, any applicable Legionella prevention regulations within the jurisdiction, an evaluation of whether the building or facility currently follows an ASHRAE-compliant Legionella



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prevention and maintenance plan, and the collection and analysis of water samples from cooling tower

standard provides the basic components of a Legionella prevention plan, and in our experience is not

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loops and domestic hot water systems. Implementation of such an assessment would provide a prospective purchaser and its legal counsel with the information necessary to identify and evaluate potential risks and liabilities associated with Legionella.

Given the increase in Legionellosis outbreaks and related personal injury lawsuits, the recent issuance of new industry standards, and the adoption of related regulations, building owners and operators would be wise to evaluate their water systems and implement the new ASHRAE standard. As discussed above, the ASHRAE

terribly burdensome or expensive to implement.

Compliance with the new ASHRAE standard likely will be viewed by courts as the standard of care in personal injury lawsuits involving exposure to Legionella. Adopting industry standard practices and complying with applicable law is the best defense. Conversely, failure to follow such standards and legal requirements could expose building owners and operators to potentially significant liability. •