

IMPLEMENTING AND MANAGING A PRACTICAL CORPORATE WIDE *LEGIONELLA* RISK REDUCTION STRATEGY FOR INDUSTRIAL WATER SYSTEMS

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ABSTRACT

Experts believe that *Legionella* may be present in 25% of cooling towers at any time, even with normal water treatment programs in place. This could pose a risk to employees and others working near cooling towers, and it could pose a risk to neighboring facilities such as schools, hospitals, public facilities, other businesses, or residential communities. The goal is to reduce the risk of *Legionella*, more specifically *Legionella pneumophila*, which is the bacterium that causes a potentially fatal pneumonia known as Legionnaires' Disease or legionellosis. Reducing the risk of *Legionella* requires more than water treatment alone, it requires a strategic plan based on recommended industry best practices that considers the mechanical, operational, and chemical control of cooling water systems.

Implementing a corporate wide policy for *Legionella* risk reduction is challenging for waste-to-energy facility cooling towers. While a corporate policy for managing the risk due to *Legionella* is prudent, application of such a policy should not be wholly applied across all facilities or plant locations because not all water systems are equal or operated the same. Implementation starts with a plan that involves a multidisciplinary team including third party consultation and expertise. The first step of the *Legionella* risk reduction strategy is to evaluate current equipment and practices at each plant through a risk assessment process. The second step is to prepare a written Management Plan based on the risk assessment that clearly details risk reduction practices. The third step is to implement the management plan and monitor the system to ensure practices remain effective. And finally, all documentation should be periodically reviewed and adjustments made as necessary. This presentation will describe a process for implementing a corporate *Legionella* risk reduction policy, and it will highlight some of the major experiences learned.

INTRODUCTION

The health risk associated with the waterborne pathogen *Legionella* is well documented. Outbreaks of legionellosis, a potentially debilitating and fatal bacterial pneumonia, have been traced to engineered water systems all over the world and continues to occur (Atlas, 1999 and Fields et. al., 2002). Concerns of legionellosis and of public health have prompted regulators and industry experts around the world to formulate industry best practices for *Legionella* control and risk reduction. Interpreting and implementing these guidelines can be complex for facility owners who are responsible for facility industrial water systems. Implementation is even more complex for multinational

companies like VEOLIA Environmental Services. Veolia set a goal to implement a *Legionella* control strategy and policy for its North American facilities in 2006. Nalco Company was contracted to implement industrial water services including *Legionella* risk reduction practices. Implementing the *Legionella* risk reduction strategy was lead by Nalco's Environmental Hygiene Services (EHS) group, who specialize in risk reduction strategies for *Legionella*. This paper reviews an approach for implementing and managing a practical corporate wide *Legionella* risk reduction strategy for industrial water systems.