The Problem:
Legionnaire’s Disease - A Drastic Health Threat - Worldwide, Every Day
Legionnaire’s Disease, also known as legionellosis, is a bacterial disease caused by the buildup of bacteria and toxic chemicals in cooling towers.

This disease is a form of atypical pneumonia caused by a bacteria called Legionella. It often begins 2–10 days after exposure. There is no vaccine. Prevention requires good maintenance of water systems. Legionnaire’s disease is treated with antibiotics. Hospitalization is often required and about 10% of those who are infected die.

Legionnaire Bacteria (Legionella) is produced by Cooling Tower operating conditions. Chemials are used to control the growth of bacteria inside cooling towers. These chemcals are poisonus and destroy the breathing function of bacteria and other microorganisms. In most cases the bacteria survives and spreads two ways along with the poisons.

1- Cooling Tower Clouds

Plumes (Fogs and Mists) spread over the vast areas carrying Legionella, as well as other microbes and poisons. Due to a low dew point condition, the plumes also cause corrosion in the area as well.

2- Cooling Tower Blowdown

Blowdown carries a concentrated form of Legionella, microorganisms, various soluble and unsoluble salts and poisons. This liquid is discharged to waterways. This can cause serious health issues due to contamination of the food chain. Most likely, this is already happening!

There are over two million Cooling Towers in the USA and an estimated ten million in the world.
Legionnaires Disease
The Cause and The Solution

Legionnaire Microbes and Cooling Tower Chemicals (Poisons)

Legionella, Microbes and Cooling Tower Chemicals (Poisons) are wide spread throughout vast areas. These poisons are very destructive in nature and attack the immune system. As the immune system is affected, the human body is subject to attack by infectious microorganisms that cause diseases. It is possible that people may be infected and not even know it.

Diseases are on the rise, even cancer. Based on our projections, ten to one hundred million people are being infected by this deadly bacteria and are also impacted by related poisons in the Northern Hemisphere and a billion people around the world. These infections and poisons are also responsible for other diseases.

Legionnaire Disease causes further complications and affects the electrolyte balance in the body making it subject to other life threatening diseases.

According to the BBC, there are trillions of microorganisms moving and floating in the air and water all around the globe. Why add more in the urban and rural areas?

The Best Way forward is elimination and prevention. We believe that the creation of Legionella and associated microbes in abundance, along with the poisons from cooling towers are impacting people of all ages. These poisons are worse than rat poison because rat poison is not dispersed into the air or directly into waterways.

This is causing unnecessary sickness, complicating existing conditions, and suffering. loss of lives every single day, as well as increasing Legionella medical costs.

Based on our overall projections, this is causing one billion dollars per day in medical costs as people are subjected to other diseases due to lowering immune systems.

Unfortunately, the Impact of Legionnaire’s Disease (and Related Poisons) is on nobody’s radar.
Part 1

Legionnaire’s Disease
The Cause and The Solution

The Spread of Legionnaire Microbes and Cooling Tower Chemicals (Poisons)
Legionnaire’s Disease
The Cause and The Solution

Cooling Tower Water

Cooling Tower Operation is Considered to be a Low Cost Way to Reject Heat and Cool the Water within the Cooling Tower.

This is Not True! Here are the Facts.

• Cooling Tower Chemicals are used to control bacteria, fungus and lethal microbes.
• Cooling Tower Chemicals are Poisons.
• Legionellla and Cooling Tower Chemicals (Poisons) are spread in two ways:
  1. Via Cooling Tower Clouds produced by water evaporation areas by cooling tower fans.
  2. Cooling Tower Blowdown carries Legionellla (in concentrated form), lethal microbes and Chemicals (poisons) along with precipitate salts (due to water evaporation) with inverted solubility properties.

• Fouling and Hard Scale Buildup
  After decades of R&D to prevent Fouling and Scale Buildup, unwanted situations happen. Fouling in the heat exchangers, pipes and related equipment not only require frequent cleaning but also consequently cause loss of system efficiency as well as corriosion.

• Danger of External Corrosion of Cooling Towers
  Cooling Tower Water Clouds (Plumes & Fogs) move in the direction of winds over the unit operations. These clouds are of an acidic nature and condense because they have low and ambient dew points. This causes external corrosion and surface corrosion behind the insulation which directly impacts safety in the area.

After few months of operation of several units, the external color of equipment starts changing to light brown, then medium brown and finally dark brown. This due to corrosion.
UTC Systems Benefits

1. 1) Elimination of cooling tower systems and chemicals (Poisons).
2. No chance to grow Legionnaire bacteria or other lethal microbes.
3. Legionnella and Cooling Tower Chemicals (Poisons) are spread in two ways:
4. Absolutely No Fouling - Maintaining Highest Efficiencies
5. Improve Safety to the highest level
6. No external Corrosion
7. Lowest Capex & Opex Costs

To improve Safety, Water and Air Quality and Eliminate the Medical Crisis of Legionnaire’s Disease, it is necessary to have the Involvement of:

• US, State and City Government Officials
• EPA, State Air & Water Quality Authorities
• Medical Institutions

Please consider this issue a national health emergency – Even the suffering of one person is too many.

An Interesting Point . . .

The Car you are driving does not have a cooling tower, just a simple fan.

Being simple is far more reliable and efficient.

Please review Part 2 for details.
Illinois Institute of Technology
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Advanced Studies in Biomedical Engineering
(Body Composition and Electrolyte Functions)

Global Recognition
Nominated for the World Nature Award 2007-2008
Environment friendly technologies and systems to reduce the energy of existing and new power plants by more than 45%.

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