



# Water management solutions for data centers

Maximizing availability and efficiency in your operations

**WATER TECHNOLOGIES**

# Innovative solutions to improve efficiencies in data centers

At Veolia, we understand the need to maintain “five 9s”<sup>1</sup> of availability while improving both your Power Usage Effectiveness (PUE) and Water Usage Effectiveness (WUE). With up to 40% of your data center’s energy usage used for cooling, you need a partner who understands your mission-critical operation.<sup>2</sup> Veolia has the most comprehensive combination of chemicals, software, and industry expertise to maintain and improve efficiency, water use, and energy use in a sustainable way for your data center’s operations.

## Maintaining Availability

One recent study estimated the cost of an unplanned outage at nearly \$9,000 per minute.<sup>3</sup> Even if you’re maintaining five 9s of availability, this is still a significant cost to incur. Veolia offers several technologies to help you avoid any costly downtime associated with cooling and chiller system outages.

- **Patented GenGard\* Chemistry** – Designed for critical cooling applications, GenGard’s Stress Tolerant Polymer (STP) will maintain cleaner system surfaces and form the smallest dispersed particle sizes of any treatment available to ensure cooling systems operate without any interruptions.
- **Spectrus\* Targeted Delivery Biocides** – Encapsulated biocide technology will control biological growth and biofilm directly at the cooling surface more efficiently and effectively than traditional chemistries, preventing constriction and clogging of critical cooling systems.
- **InSight\* Asset Performance Management** – This solution combines advanced data and analytics to help prevent unplanned downtime, increase asset reliability, extend asset life, and optimize operations. By aggregating and analyzing data points from throughout your operation, InSight provides great visibility and transparency at a plant level or across the entire enterprise.



## Optimizing Power Usage Effectiveness (PUE)

Only 0.01 inches of deposits could cost you a 9% loss in energy efficiency.<sup>4</sup> With cooling operations consuming a large portion of the energy at your data center, maintaining and improving efficiency in these systems can dramatically effect PUE. Veolia can help you maintain maximum reliability with proprietary technologies.

- **GenGard Chemistry Technology** – This solution decreases the amount of phosphate required for cooling water treatment by up to 70%. This significantly reduced the risk of deposition in the chiller and cooling systems.
- **Ferroquest\* Cleaning Technology** – Designed to be used either online or offline, Ferroquest restores cooling operating efficiencies to peak performance levels. Veolia has a broad offering of Ferroquest cleaning agents which range from neutral pH cleaners to organic acid-based. These products are ideally suited to cleaning and passivation and in commissioning of your cooling systems.
- **Chiller Check** – Chiller Check software offers a “window” into your chiller operation, constantly working in the background to track and understand online chiller performance. Chiller Check can be used in chiller plants with redundancy to help evaluate chiller rotational strategies. Chiller Check will help you stay ahead of system issues and intelligently offer operational enhancement solutions that resolve any issues before they negatively affect system performance, even as system conditions naturally vary or drastically change.



## Improving Water Usage Effectiveness (WUE)

We know data center operators urgently need to consume less water while maintaining more efficient operations, and this means potentially using compromised and challenging water sources such as tertiary treated wastewater, reclaimed water, or Title 22<sup>5</sup> water. Veolia can successfully operate your system with minimal water use while maintaining maximum efficiency when using challenging water sources.

- **GenGard Series Technology** – GenGard 8000 Series products, used in hard water applications, and GenGard 7000 Series products, used in corrosive waters, allow you to increase cycles on concentration, even in cooling systems with the most challenging water sources, resulting in a direct decrease in water use, while reducing or eliminating the need for acid addition. The patented and unique actives that make this possible, such as AEC, STP, and Halogen Resistant Azole (HRA), are only available from Veolia.
- **CorrShield\* 5500 Series Technology** – Designed specifically to ensure cleanliness and reliability of microchannel-sized cooling in critical server, microchip, and data center cooling applications, the SV5500 series of products can be added directly to closed-loop applications as a complete coolant solution, without the need for ultrapure water generation, or confusing dosage requirements that result in fill-drain-refill situations to meet target dosage.
- **TrueSense\* for Cooling Ready-Set-GO (RSG)** – This plug and play control system manages corrosion, scale/deposition, and micro-biological activity in open evaporative recirculating cooling systems. The system includes an option for connectivity with our world-class remote data management, monitoring and diagnostic capabilities of our InSight asset performance management platform.
- **TrueSense for Cooling** – The TrueSense family of technologies combines the most advanced technologies in water chemistry, with innovation in automation and process control. TrueSense operates, manages, and optimizes open evaporative recirculating cooling water systems.
- **PaceSetter\* Technology** – Without ultra-reliable chemical feed and control systems, your system could experience a loss of chemical feed, at best requiring an immediate increase in water usage to prevent failures. PaceSetter technology has been demonstrated to provide reliable feed and control with automated redundancy to prevent failures and water use increases.
- **Minimizing the Risk of Legionella** - Veolia offers cooling water treatment and services, which in combination with system design, location, customer's operations, and maintenance are important in minimizing the risk of Legionella bacteria in cooling systems.



### Sources

<sup>1</sup>In computers, 99.999 (called five 9s) refers to a desired percentage of availability of a given computer system.

<sup>2</sup>Song, Z., Zhang, X., & Eriksson, C. (2015). Data Center Energy and Cost Saving Evaluation. Energy Procedia, 75, 1255. Doi:10.1016/j.egypro.2015.07.178

<sup>3</sup>[https://www.vertivco.com/globalassets/documents/reports/2016-cost-of-data-center-outages-11-11\\_51190\\_1.pdf](https://www.vertivco.com/globalassets/documents/reports/2016-cost-of-data-center-outages-11-11_51190_1.pdf)

<sup>4</sup>McDonald, M (2009, March/April). Cooling System Filtration: Accessory or Necessity? Facilities Engineering Journal.

<sup>5</sup>In reference to Title 22 do California's Water Recycling Criteria state guidelines for how treated and recycled water is discharged and used.

Resourcing the world

**Veolia Water Technologies**  
Please contact us via:  
[www.veoliawatertechnologies.com](http://www.veoliawatertechnologies.com)