

Smart Release®

Provides Improved Green Alternative for Hospital

Background

A state-of-the-art hospital in central Virginia has a number of sustainability initiatives to drive continuous improvement in the operation of their green facility. After weighing the alternatives, it became clear there was significant opportunity to minimize energy and water consumption and initial investigations were performed on ozone and other non-chemical treatment programs as a cooling tower corrosion and scale inhibitor. However, after performing trials, it became clear these technologies can only operate at low cycles and would therefore increase water consumption for the site. The hospital was also concerned about *Legionella*. CTI guidelines dictate that halogen-based biocides should be applied to mitigate the possibility of *Legionella* infestation. Therefore the hospital administrators decided to switch to a traditional liquid chemical water treatment program, which improved performance by keeping all tube and end plate surfaces free of

any corrosion or deposition. Additionally, the program conserved energy and reduced water consumption significantly by increasing cycles of concentration from 2.0 to 8.0. To meet the CTI guidelines for best practices, the microbiological program at this facility also used bromine (oxidizing) chemistry as the primary disinfectant and a non-oxidizing biocide, fed periodically, to introduce a different kill mechanism. This provided a complete, broad-spectrum program. The next continuous improvement project was to alleviate concerns of handling corrosive chemicals and reduce the carbon footprint created by routinely shipping large volumes of liquid product. Traditional liquid chemical treatments are typically formulated at very alkaline pH (>13.0) to maintain stability of the product, making them highly corrosive in their undiluted form. Handling and storing liquid oxidizer concentrates also presents concerns. While investigating options, the Hospital administrators did not want to give back the gains they made with respect to the conservation of water and energy and the preservation of their equipment.

Solution

Although the current treatment program worked exceptionally well and fell within the “green” guidelines in the conservation of energy and water, the facility wanted to continue to improve their green profile. To this end, the facility made the decision to switch to ChemTreat’s Smart Release® Technology. Smart Release® is a solid-grade inhibitor and biocide treatment program that combines superior protection with ease of use. The Smart Release® Technology offers the following benefits:

- Increases overall operating efficiency
- Ensures proper ratios of actives are delivered via semi-permeable membrane
- Helps facilities earn LEED points for their buildings
- Improves energy and water management
- Reduces water and carbon footprint
- Extends the life of capital assets
- Reduces chemical handling and storage
- Enhances Return-On-Investment (ROI)
- Promotes employee safety & minimizes risk
- Minimizes maintenance expenditures
- Complies with regulatory requirements
- Does not require high levels of caustic to stabilize the material

Results are examples only. They are not guaranteed. Actual results may vary



Results

The Smart Release® inhibitor treatment system was installed with canister feeders to apply the solid products to replace the liquid cooling tower inhibitors and the oxidizing and non-oxidizing biocides. Smart Release® provides the same proven water treatment chemistry in tablet form, with a patented polymer coating that osmotically controls the release over a 30-day period. Diffusion only occurs while the cooling tower is running and while the Smart Feeder has flow—when the flow stops, osmotic pressure will gradually equalize and stop diffusion of chemistry. Once flow is restored, osmotic pressure continues to diffuse the chemistry. This enables delivery of chemical inhibitors to the cooling system without using electrical pumps, maximizing energy efficiency.

There was a reduction of transportation fuel consumption with 100 lbs of Smart Release® products equivalent to over 650 lbs of the high performance liquid products previously applied. The products are contained in 100% recyclable packaging and the feeders are made from recycled materials. The use of Smart Release® products also improved the LEED rating for the facility.

The dry inhibitor was easier to transport by personnel than the liquid drums and provided safe handling of non-hazardous chemicals. With excellent consistency in chemical delivery, on-site testing frequency was reduced, which allowed reallocation of resources. Lastly, by improving the ability to deliver consistent product levels in the cooling system, performance was enhanced slightly.

Summary

The Smart Release® inhibitor treatment program provided the customer with more than just a green solution for their cooling water system. It provided them with the peace of mind their system is protected in the safest, greenest, most economical way possible. The hospital facility was so impressed with the results of switching this site to Smart Release® they made the decision to convert 5 other sites to this technology.

