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PRESS RELEASE

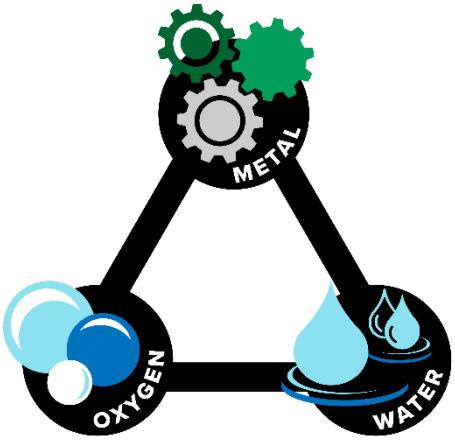
Winter Shutdown Strategies for Boilers and Cooling Towers in Warm, Humid Climates

Winter in the southern United States and other subtropical environments is usually much milder than in the frozen north—but that does not make the corrosion threat any less for offline boiler or cooling systems. In fact, the risk may be higher, thanks to weeks and months of sometimes extreme temperature swings in a high humidity environment. Cortec's Certified Water Technologist, Scott Bryan—a southern US resident himself—shared some of the concerns and how to address them.

Why Shut Down Boilers and Cooling Towers in Winter?

Cooling tower systems are more likely to be shut down in the winter than boilers—provided a drop in temperature is enough to reduce the demand for cooling and increase the demand for heating. However, industries that require steam for industrial heating or manufacturing purposes often have extra boilers for redundancy in case primary boilers go offline. While only

one redundant boiler may remain shut down in the dead of winter when temperatures are coldest, it is likely the facility will shut down additional boilers as temperatures climb and fluctuate even more in late winter to early spring.



What Increases the Risk of Corrosion During Shutdown?

While one might think that draining a boiler or cooling tower would reduce the corrosion risk by removing the electrolyte, this does not solve the problem. As Bryan commented, "Just because your system's drained doesn't mean it's not corroding." He explained that as temperatures rise and fall, the metal inside the boiler or cooling tower can "sweat" due to moisture condensation, which is especially severe in humid regions. When this repeats many times throughout the season, it can have serious corrosion consequences because of the perfect "corrosion triangle" it creates between metal, oxygen, and an electrolyte.

The 'Secret' Power of Vapor-Phase Chemistry

The best way to break this corrosion triangle is by introducing Vapor phase Corrosion Inhibitors. When trapped inside an enclosure, these corrosion inhibiting vapors adsorb on metal surfaces, forming a molecular protective layer that interferes with the normal corrosion reaction between metal, water, and oxygen.

For boilers, this chemistry can be applied as a fogging fluid (Cortec's Boiler Gecko™ for small boilers, Boiler Dragon™ for large boilers) or a water-soluble pouch (Boiler Lizard®) of corrosion inhibitors that vaporize and diffuse throughout the system.

For cooling towers, the Cooling Tower Frog® is the Boiler Lizard's counterpart. It must be used in a system that is fully enclosed so the corrosion inhibiting vapors cannot escape. The Cooling Loop Gator® can be used in cooling towers that remain open because, when circulated throughout the system, it leaves behind a long-lasting corrosion inhibiting film that continues emitting vapors into the air space. Bryan pointed out that this vapor-phase action can also fill in the protection gap when expansion and contraction cause chip scale to fall off and leave underlying metal surfaces exposed.

Navigating the Corrosion Risks of Mild Winters

Although relatively mild, winters in the southern US and other subtropical climates can present unexpected challenges for facility managers when it comes to maintaining boiler and cooling tower assets. Cortec's variety of water treatment solutions can help managers navigate the corrosion risks of temperature fluctuations, thanks to the adaptability of Vapor phase Corrosion Inhibitors. Contact Cortec® to learn more about how to protect your assets with effective rust prevention.

Keywords: winter shutdown strategies, winter cooling tower shutdown, boiler shutdown, risk of corrosion, Vapor phase Corrosion Inhibitors, boiler layup, cooling tower layup, winter layup tips, Cortec, Boiler Lizard

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