Hibernation of Mechanical Plant – COVID-19 Pandemic

Essential services in hospitals, food manufacturing, pharmaceuticals and data facilities will remain operational throughout the COVID-19 pandemic.

There are also some facilities (such as commercial buildings) facing temporary Government closures. With the temporary closure, it is imperative to consider steps taken to protect assets from long term damage and ensure human health is not impacted on start-up.

Cooling Tower Systems – Hibernation

Mechanical plant containing water must be continuously protected from corrosion, fouling and bacterial concerns such as Legionella.

Where the decision is to take plant offline, the best protection from corrosion and microbiological growth is to maintain protective water treatment.

Such systems require a minimum of one to two hours of circulation of water through the entire pipework in a 24-hour period.

- The passive corrosion inhibitor layer on metals requires continual replenishing
- Loss of inhibitor will lead to aggressive pitting of steel
- If biocides are not replenished there is potential for corrosion damage through Microbiologically Influenced Corrosion (MIC)
- Stagnant pipework presents a high risk of proliferation of Legionella throughout the system and surrounding environment upon start-up
- Operating circulating pumps are less likely to seize

Cooling Tower Systems – Drain Down

Larger more complex systems are more difficult to drain entirely. The option of draining systems is usually only possible for smaller, simple systems.

Issues to consider:

- Systems that are stored ‘dry’ will corrode due to water in the atmosphere
- Any components that remain filled will not contain sufficient chemical to prevent corrosion and bacterial growth (including Legionella)
- Potential for seized circulating pumps
- Regulations and Australian Standards require cleaning / disinfection of the cooling tower before start-up
- Shortages of skilled labour on start-up to undertake tower cleaning, disinfection, repair, and/or chemical cleaning

Closed Water Systems

Chilled, closed condenser loops, and heating hot water systems should remain full and circulated at least once a week. They should be monitored at least every three months to ensure the corrosion inhibitor has not been compromised.

Closed systems can experience microbial growth, but this is less an issue and the proposed monitoring time frame should limit any concern.