Article Side

Boiler Chemical Treatment

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Here in the Phoenix metropolitan area, adverse water conditions require intelligent water strategies for maintaining adequate water cooling equipment. Proper management of the characteristics of cooling water tank, along with the tower to maintain good hygiene of the tower as a whole performs at least four positive things.

Let's discuss how a cooling tower operates to understand why proper water treatment is important.

Most residents in the valley are familiar with the evaporative cooler. Water from the tank evaporative cooler pump gaskets distributed by the evaporative cooler and the outside air drawn through the pads. As air is drawn through a wet pad of the water evaporates and cools the air. It is desirable to cool air is then sent into space, where cooling. In the process of cooling the air, water during recycling lining also cooled.

This is exactly the same principle is employed in cooling towers but in a much larger scale. Rejecting a lot of heat from the mechanical systems in buildings require a lot of water evaporated. For example, one-hundred-ton water-cooled, running at full capacity within 24 hours would require the evaporation of more than four thousand gallons of water. This brings us to the question of the characteristics to make water. Make-up water supply, which replaces the time the water evaporates in the cooling tower.

Here in the metro area, water is a different state, because our water comes from several wells and surface sources. Water quality can change rapidly in a short period of time, as various sources are used for water supply. Each well has different characteristics of water, and they often vary widely from one part of the city to another. Water that comes from surface sources such as Central Arizona Project, as a rule, have significantly different characteristics than water from wells. Surface water quality may also depend on weather conditions such as drought or increased runoff.

As the water evaporates in the cooling tower all the non-volatile components remain in the sump of the cooling tower. There is actually much more water than what we would call hardness (carbonates). There is also chlorides, suspended dust particles and biological organisms. As more and more water is added to replenish the water that is now evaporated, these dissolved and suspended components in a settling tank water continues to accumulate. If no measures are taken to control the concentration of these components in the water, the solution ultimately increases the concentration to the point where "Stuff" begins to comes out of solution. This "Stuff" in the result obtained is deposited on the surface of that water comes into contact with.

Did you see where the evaporative cooler pads have not changed for a long time? I have seen them so encrusted with mineral deposits, that the pump can no longer pull air through them. I have also seen them produce Bounty biological growth in septic tank water. This is exactly what happens in the cooling tower without adequate attention to hygiene and appropriate strategy for water purification. When the solids, which dissolve in water to leave the solution they are deposited on the first heat exchange surfaces and surfaces where the current water evaporates. Heat exchangers, water cooled condenser, drift eliminators, heat exchangers in a closed circuit cooling towers and fill in open cooling towers are some examples of surfaces where this occurs.

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