% Effectiveness of Catalytic Treatment

Not all calcium carbonate in a system forms scale.

If you were to analyze water coming from a hot water heater you will still find a lot of calcium in it even though the water heater will also have scale in it. Only 20-40 % of the calcium present in water actually scales. The rest stays in solution.

When you see our Expert 5 program results and it shows 96% effectiveness that means that our catalytic unit is treating 96% of the particles effectively this means that we will have treated all the particles that are likely to form scale.

So the 20-40% calcium that would have scaled will have been treated to prevent it from scaling.

Cycles of Concentration

Every feed water analysis we ask for contains a measurement called Chlorides.

When water is in a recirculation system with a cooling tower some of that water will evaporate and so all the minerals remaining are more concentrated.

A simple example: In 1 liter of water there are 300ppm of calcium..so the concentration of calcium is said to be 300 ppm.

Now boil that water so you only have ½ a liter left following evaporation. There will still be 300 ppm of calcium in the remaining water but as there is only ½ a liter of water the concentration of calcium has effectively doubled from 300ppm/liter to 300 ppm in ½ a liter which is now a concentration level of 600ppm.

Because the concentration level of calcium has doubled because there is the same amount of calcium in half the amount of water so we say that the cycles of concentration (COC) is 2.

Now in most systems when cycles of concentration increase so calcium starts to deposit so measuring the calcium in the feed water will not give an accurate reading for cycles of concentration.

However, the chloride level will give an accurate reading as chlorides do not form scale and remain diluted in the water. So if the chlorides in the feed water are 50ppm and the chlorides in the recirculation system are 150ppm so you know that the system is operating at 3 cycles of concentration.