Ozone as a Green Option for Cooling Tower Water Treatment and Conservation

In these times of new "Green" ideas coming out of every outlet and alleyway, it is important to know which technologies work and which are smoke and mirrors; which are said to be "Green" and which are truly beneficial alternatives to traditional chemical treatment programs that are Green. There is a lot of mystery and hype out there and there are some very good alternatives that have extended tract records. The biggest key will always be the track record – how successful has the technology been and for how long. It is also very important that the provider of the technology has a background and understanding so that he can provide the technical expertise necessary to back up the technology – the best equipment or program in the world provide zero benefit to the customer if it has no backing.

While there is a lot of bad technology out there – and a few outright frauds – I believe the best way to help the industry is to provide information on a technology that has a proven track record and one that I am very familiar with. This would be Corona Discharge Ozone Generation Equipment – in particular the USGBC "Green Spec" listed Clean Streams™ system manufactured by Zentox Corporation. Corona Discharge is the key to effectively and efficiently producing Ozone on site. Zentox has been manufacturing Ozone treatment systems for over 15 years and has systems that have been in continuous effective service for more than 12 years.

Methods used to treat water in a "Green" fashion range from metal ions, to magnetic fields to Electro-Magnetic, to Elector-Static. There are even "Green" chemical programs. Facts are, to be truly "Green" a program should not include any chemicals (even metal ions), should conserve energy, and should reduce water consumption. Of all of the mentioned treatment alternatives, only Ozone fills all of these categories. Most use some kind of chemical in the program. Whether it is copper/silver ions, zinc, iodine, perchlo-acetic acid, or others, there is some additive being used that will negatively affect the environment into which it is discharged. Even "low impact" chemicals designed to biodegrade will have limited affect treating the tower and some impact when discharged.

Other non-chemical treatment devices generally are only effective when you limit the cycles of concentration to levels lower that those seen with chemical treatment programs. This may qualify as "non-chemical", but increasing water consumption instead of reducing it is not "Green". You will not be burdening the environment with chemicals, but the goal is to conserve and this means looking to reduce water usage.

Of all of the systems I have investigated over the years, only Ozone has filled the bill of essentially chemical free treatment that also conserves water. Ozone has been is use for over 100 years for disinfecting water. There is not a biocide in existence that is as effective as Ozone. As an oxidizer, it has been found to be more than five times more effective than chlorine without the hazardous by-products. In fact that is one of the keys to ozone's effectiveness and environment friendliness. With a half life of less than

20 minutes, what Ozone is not used reacting with bacteria and environmental debris is breaking down to oxygen and being released into the atmosphere. The discharge water contains zero residual chemicals that could impact the environment into which it is discharged.