Partial Desalination

There are many applications where conductivity, or total dissolved solids (TDS), need to be partially reduced to meet a process target or comply with a discharge permit requirement. A common application is the removal of TDS from feed water to a cooling tower to reduce water/chemical usage and increase tower cycles.

Challenge

Cooling tower cycles, and consequently water usage, are limited by the quality of the feed water. In many cases, the feed water to the tower is contains so much hardness, alkalinity, and other salts that it must be made from corrosion resistant materials such as stainless. Evapco Inc., a global leader in cooling applications, is an exclusive global distributor for the Atlantis RDI for use in treating feed water for cooling towers and other heat transfer applications.

Solution

By reducing the salinity of the feed water to the cooling tower with the Atlantis RDI by approximately 50%, the cycles of the tower can double. Doubling the cycles will reduce chemical usage by as much as 50% and overall water usage by 20 - 30%.

Core Applications

- High hardness feed water
- High alkalinity feed water
- High chloride content
- Government incentives to reduce water usage
- Recycling/reuse of other waste water

Benefits

- Reduced water usage of cooling tower
- Reduced chemical usage of cooling tower
- LEED credit for water use reduction
- Low cost of ownership
- Low maintenance
- High clean water recovery
Process Flow

City Water Make-up

Totalizing Water Meter

Conductivity Probe

Isolation Valves

Flow Meters

Flow Control Valves

City Water Bypass

Permeate as Pretreatment to Tower

5 - 10% Reject to Drain

Overflow

Supply to Process

Blow Down

Totalizing Water Meter

Return to Cooling Tower

Inhibitor

Biocide

Heat Exchanger

RDI™ System

Cooling Tower