



The RDI™ Technology

Radial deionization – RDI™ – is a proprietary form of capacitive deionization (CDI). In radial deionization, an aqueous stream containing salt is passed between two oppositely charged supercapacitors. As the liquid passes through the dielectric spacer separating the capacitors, ions are attracted to the oppositely-charged capacitor layers. The ions leave the water within the dielectric layer, pass through a charge specific membrane coating, and are adsorbed onto the surface area of the carbon supercapacitor.

When the capacitors have filled with ions, the polarity is reversed and the ions are discharged back into the dielectric spacer and removed from the system. A 3-way valve is situated at the outlet of the device(s), directing brine away from the cleaned water.

TDS Shaving

There are many applications where **total dissolved solids (TDS)** need to be reduced by a small fraction in order to meet a process optimization target or comply with a discharge permit requirement. A common application is the reduction of TDS from a municipal water or wastewater source, which only needs to be reduced by a few hundred parts per million (ppm). This small reduction is referred as TDS shaving.

Challenge

Existing technologies such as reverse osmosis can remove TDS but cannot target specific TDS effluent without multiple stages and blending. It is complex and expensive to set up partial TDS reduction.

Solution

The RDI™ Desalination System can be programmed to remove a targeted amount of salt with the ease of entering the target TDS into the programmable controller. The RDI process can make the economics become very attractive.

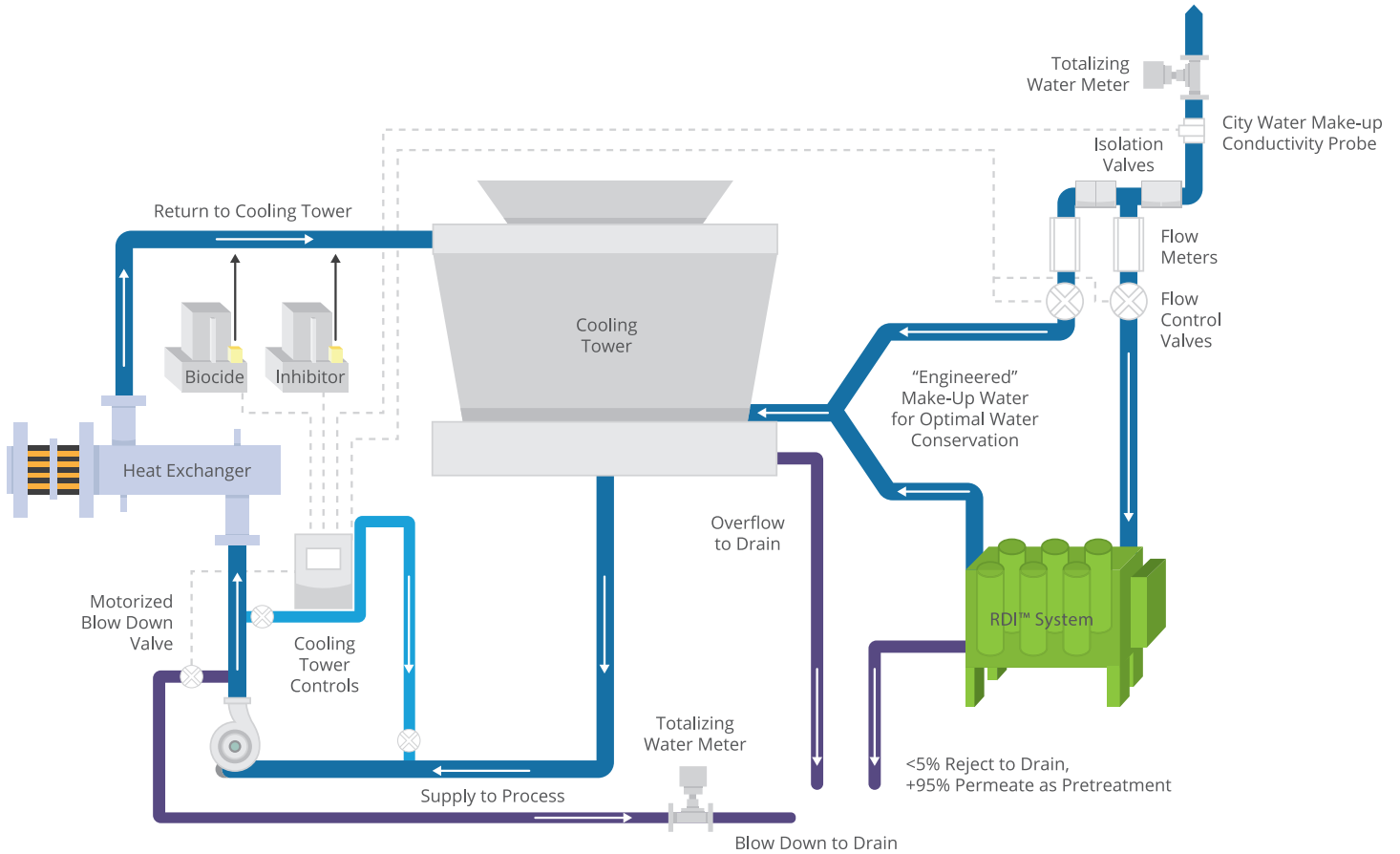
Core Applications

- Cooling Towers
- Groundwater
- RO Reject
- Wastewater Effluent

Benefits

- Low Cost of Ownership
- Low Maintenance
- Modular Design
- Remove Impurities to 99%
- High Clean Water Recovery
- Process Water With Up to 100,000 ppm Salinity
- Reduced Brine Solution Disposal Costs

Process Flow



Atlantis Technologies

Cost-effective Wastewater Desalination

32932 Pacific Coast Highway, #14-226
Dana Point, CA 92629

Phone 949-429-2818

Fax 949-257-0037

Email info@atlantis-water.com

MENA mena@atlantis-water.com