

Electrocoagulation:

Water Recovery and Reuse

Cooling Towers

Blowdown Water

With the use of clean electricity, electrocoagulation efficiently removes a wide range of contaminants with a single system. The result is water that is available for reuse and the separated solids available for resale, reuse, or for simple removal to a non-hazardous landfill.

Industry Applications

Nuclear power plants, coal fire plants, alcohol plants, cooling tower service companies, hospitals, office and industrial buildings, boilers blowdown

Challenges

- Build up of solids greatly minimize the efficiency of the cooling system.
- Continual purging of the system is needed (blowdown).
- Traditional treatment concentrate (chelating chemicals) adds to the disposal challenge.
- Effluents from cooling tower is costly to dispose.

Solution

Electrocoagulation:

- Is a pre-treatment for water entering cooling towers.
- Treats blowdown water to remove algae, suspended solids, calcium, and magnesium buildup.
- Cleans the treated water for reuse, saving the cost of purchasing new replacement water including drought years.
- Maintenance and downtime for cleaning and de-scaling is dramatically reduced.

Contaminant	Before mg/l	After mg/l	Removal Rate %* +
TSS (clay, coal, silt, etc.)	5,620	25	99+
Calcium	1,321	21.4	98.5
Magnesium	221	0.14	99+
Radioisotope Contaminant	Before	After	Removal Rate %*
Americium-241	71.99 pCi/l	0.57 pCi/l	99+
Plutonium-239	29.8500 pCi/l	.29 pCi/l	99+
Radium	1093 pCi/l	0.1	99+
Uranium	0.13 mg/l	0.0002	99+

*These published test results are specific examples of the patented Powell EC™ and were conducted by a qualified independent laboratory or government facility.

The US presently consumes and estimated 100 billion gallons of cooling tower make-up water per day.

