

## **Water Recycling**

Water is used for multiple purposes in an industrial plant and residential & commercial places – e.g., cooling, make up for plant processes, drinking and non-drinking applications. The quantity and quality for each such requirement are different. The quality varies from raw (as received) to clarified/filtered (removing suspended solids) and ultimately demineralized (removing dissolved salts), depending on the process requirement. The quantity also varies depending on the application – the most prominent being cooling water for condensers/heat exchangers in an industrial plant.

A multitude of treatment processes are available in the market e.g., clariflocculation, filtration, anaerobic/aerobic treatment for organic content, ion exchange/ RO for demineralization etc. Use of one or a combination of some of them for a specific project requires an analysis by experienced engineer. AEPL can play this role for their clients.

With limitation on availability of fresh water and emphasis on water conservation as a policy, new plants are planned with appropriate re-use directive. But the existing and particularly old plants, which were not designed in this manner find it difficult to adopt adequate arrangements for water re-use or zero liquid discharge (ZLD) with limited space and operation constraints. AEPL can offer their services for

- a) studying the existing water system,
- b) develop possible re-use options and installation plans,
- c) prepare project financial analysis and,
- d) finally implement the same once the finance is approved by the plant authorities.

As an interesting recent development, some US power plants are trying to use municipal waste water from an urban area within its proximity for condenser cooling purposes. Although Indian power stations are remotely located, mostly near the coal mines, such option may not be feasible but the possibility of recycling township waste water either within the township itself or in the adjacent power plant may easily be looked into. Similarly, rain water harvesting, sewage water treatment and recycling from plant offices and the township are other possibilities.

AEPL will be happy to receive enquiries from operating plants for such studies.