

## IMPLEMENTATION

Water-cooled systems consist of heat rejection equipment (cooling tower), which uses natural cooling effect from evaporation of water to remove heat from buildings or process. Cooling towers require considerable amount of water, the demand of which depends upon evaporation, bleed-off and losses.

This regulation requires all new buildings to use non-potable water source for all the water-based heat rejection systems used in the project. This non-potable water can be Treated Sewage Effluent (TSE), seawater, on-site recycled water (condensate as per *Regulation 601.03: Condensate Reuse*) or any secondary water source approved by Dubai Municipality or DEWA.

The project team must calculate the cooling tower make-up water requirement, during design by considering all factors (evaporation loss, drift loss and blowdown loss) and determine how this water demand could be met by specified non-potable water sources.

The availability of TSE from the Dubai Municipality or using seawater from the open ocean must be checked with Dubai Municipality, early in design stage. Design for cooling tower that uses seawater requires additional care, as salts in seawater are known to have some operational challenges, including salt deposition, packing blockage, corrosion etc. Hence, proper selection of materials and coatings or considering any treatment to increase the service life and performance of cooling tower is very important.

Make-up water supplied to each cooling tower must be separately metered using totalising meter. A typical schematic diagram of utilising totalising meter in cooling tower water use is shown in fig. 603.02(1). The facility operator should keep a daily log of water consumption and record the same in building logbook. Daily trends can assist in identifying performance evaluation. Meters must be calibrated as per manufacturer's recommended interval.

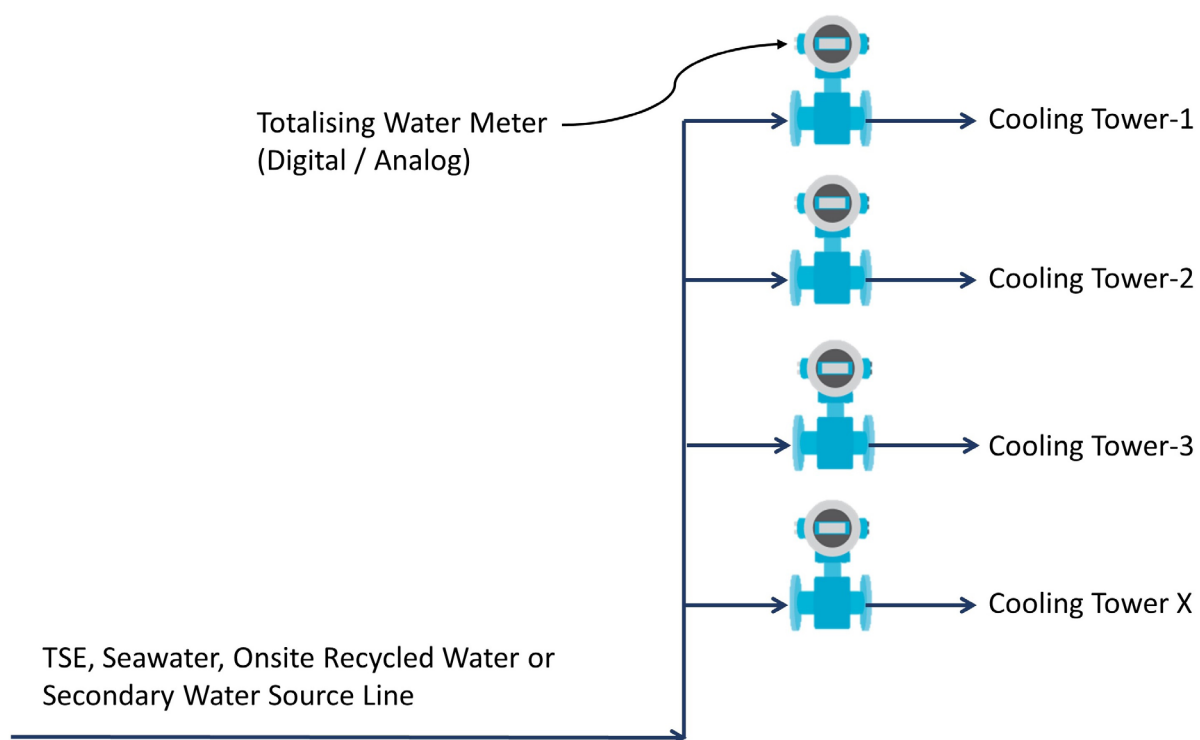


Fig. 603.02(1): Schematic For Totalising Meter In Cooling Tower Wateruse