

Cooling Water Treatment

Cooling tower may require these facilities.

- **Corrosion and Scale Control**

Chemical formulation is dosed continuously in the sump from dosing tank by dedicated metering dosing pumps. Transfer system for transferring formulation into the dosing tank is provided.

GTPL offers corrosion and scale inhibition based on efficient chemical treatment. Treatment with chemical formulations containing corrosion inhibitor, scale inhibitor and polymeric dispersant is done.

a) Dosing rate of formulation will be based on blow down rate. Dispersant may be dosed separately or can be combined with the inhibitor into a single formulation with the help of a stabilizer.

- **Microbiological Control**

GTPL offers microbiological control in the cooling water by chlorination and biocide dosing. Chlorination is done by chlorination system i.e. V-notch vacuum eductor type chlorinators to maintain free residual chlorine in the cooling tower return header. Alternately, ClO₂ dosing with in-situ non hypochlorite based ClO₂ generator is also offered.

Shock dosing of biocides is offered.

- **pH Control**

GTPL offers acid dosing system for maintaining pH of the circulating water by dosing Sulphuric Acid at regulated rate.

Following facilities are generally provided for dosing system:

- Storage tank
- Dosing vessel
- Unloading/transfer pump for unloading and dosing pumps for transferring from tank to dosing vessels.
- Dosing Pumps

Acid is taken from acid storage tank by unloading transfer pump to dosing drum to dose sulphuric acid by motorized dosing pumps into the cooling water sump. Transfer Pump offered is horizontal centrifugal driven by electric motor. Adequate facilities are provided to take care of spillage and accidental overflow of acid.

- **Control of Suspended Solids**

GTPL offers side stream filtration system to control suspended solids within the stipulated limits in the recirculating water.

- **Oil Ingress Abatement**

To nullify the effect of oil ingress in process cooling water system as and when it takes places, oil dispersant which can be dosed. Special oil skimming arrangement is provided to remove oil sludge from water.

- **Monitoring**

The treatment system is offered along with a sound and balanced monitoring scheme.

In a typical water treatment system, monitoring may be done for following parameters:

S. No	Parameters	Philosophy
1.	pH	once in 4 hrs
2.	TDS, turbidity, Oil, Alkalinity, CaH, TH, Cl, SiO ₂ , Fe, KMnO ₄ value, HEDP, Inorganic Polyphosphate	once in a day.
3.	Zinc	once a week
4.	Bacterial count	once a week
5.	Corrosion rate	standard solid plug CS test coupons in coupon testing rigs
6	Heat transfer coefficient of some heat exchangers	Every two days
7	Oil ingress	As required
8	Bio fouling	Every week