Typical Problems and Trouble Shooting for Cooling Towers

Problem / Difficulty	Possible Causes	Remedies/Rectifying Action
Excessive absorbed current / electrical load	1. Voltage Reduction	Check the voltage
	2a. Incorrect angle of axial fan blades	Adjust the blade angle
	2b. Loose belts on centrifugal fans (or speed reducers)	Check belt tightness
	3. Overloading owing to excessive air flow-fill has minimum water loading per m^2 of tower section	Regulate the water flow by means of the valve
	4. Low ambient air temperature	The motor is cooled proportionately and hence delivers more than name plate power
Drift/carry-over of water outside the unit	1. Uneven operation of spray nozzles	Adjust the nozzle orientation and eliminate any dirt
	2. Blockage of the fill pack	Eliminate any dirt in the top of the fill
	3. Defective or displaced droplet eliminators	Replace or realign the eliminators
	4. Excessive circulating water flow (possibly owing to too high pumping head)	Adjust the water flow-rate by means of the regulating valves. Check for absence of damage to the fill
Loss of water from basins/pans	1. Float-valve not at correct level	Adjust the make-up valve
	2. Lack of equalizing connections	Equalise the basins of towers operating in parallel
Lack of cooling and hence increase in temperatures owing to increased temperature range	1. Water flow below the design valve	Regulated the flow by means of the valves
	2. Irregular airflow or lack of air	Check the direction of rotation of the fans and/or belt tension (broken belt possible)
	3a. Recycling of humid discharge air	Check the air descent velocity
	3b. Intake of hot air from other sources	Install deflectors
	4a. Blocked spray nozzles (or even blocked spray tubes)	Clean the nozzles and/or the tubes
	4b. Scaling of joints	Wash or replace the item
	5. Scaling of the fill pack	Clean or replace the material (washing with inhibited aqueous sulphuric acid is possible but long, complex and expensive)