

ENERGY CONSERVATION TIPS FOR COOLING TOWER

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- ✓ Control cooling tower fans based on leaving water temperatures.
- ✓ Control to the optimum water temperature as determined from cooling tower and chiller performance data.
- ✓ Use two-speed or variable-speed drives for cooling tower fan control if the fans are few.
- ✓ Stage the cooling tower fans with on-off control if there are many.
- ✓ Turn off unnecessary cooling tower fans when loads are reduced.
- ✓ Cover hot water basins (to minimize algae growth that contributes to fouling).
- ✓ Balance flow to cooling tower hot water basins.
- ✓ Periodically clean plugged cooling tower water distribution nozzles.
- ✓ Install new nozzles to obtain a more-uniform water pattern.
- ✓ Replace splash bars with self-extinguishing PVC cellular-film fill.
- ✓ On old counter flow cooling towers, replace old spray-type nozzles with new square-spray ABS practically-non-clogging nozzles.
- ✓ Replace slat-type drift eliminators with high-efficiency, low-pressure-drop, self-extinguishing, PVC cellular units.
- ✓ If possible, follow manufacturer's recommended clearances around cooling towers and relocate or modify structures, signs, fences, dumpsters, etc. that interfere with air intake or exhaust.
- ✓ Optimize cooling tower fan blade angle on a seasonal and/or load basis.
- ✓ Correct excessive and/or uneven fan blade tip clearance and poor fan balance.
- ✓ Use a velocity pressure recovery fan ring.
- ✓ Divert clean air-conditioned building exhaust to the cooling tower during hot weather.
- ✓ Re-line leaking cooling tower cold water basins.
- ✓ Check water overflow pipes for proper operating level.
- ✓ Optimize chemical use.
- ✓ Consider side stream water treatment.
- ✓ Restrict flows through large loads to design values.
- ✓ Shut off loads that are not in service.
- ✓ Take blow down water from the return water header.
- ✓ Optimize blow down flow rate.
- ✓ Automate blow down to minimize it.

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- ✓ Send blow down to other uses (Remember, the blow down does not have to be removed at the cooling tower. It can be removed anywhere in the piping system.)
- ✓ Implement a cooling tower winterization plan to minimize ice build-up.
- ✓ Install interlocks to prevent fan operation when there is no water flow.
- ✓ Establish a cooling tower efficiency-maintenance program. Start with an energy audit and follow-up, then make a cooling tower efficiency-maintenance program a part of your continuous energy management program.

