

ENERGY CONSERVATION TIPS FOR CHILLER

TOTAL
ENERGY
CONSULTANT

- ✓ Increase the chilled water temperature set point if possible.
- ✓ Use the lowest temperature condenser water available that the chiller can handle. (Reducing condensing temperature by 5.5 °C, results in a 20 - 25% decrease in compressor power consumption)
- ✓ Increase the evaporator temperature (5.5° C increase in evaporator temperature reduces compressor power consumption by 20 - 25%)
- ✓ Clean heat exchangers when fouled. (1 mm scale build-up on condenser tubes can increase energy consumption by 40%)
- ✓ Optimize condenser water flow rate and refrigerated water flow rate.
- ✓ Replace old chillers or compressors with new higher-efficiency models.
- ✓ Use water-cooled rather than air-cooled chiller condensers.
- ✓ Use energy-efficient motors for continuous or near-continuous operation.
- ✓ Specify appropriate fouling factors for condensers.
- ✓ Do not overcharge oil.
- ✓ Install a control system to coordinate multiple chillers.
- ✓ Study part-load characteristics and cycling costs to determine the most-efficient mode for operating multiple chillers.
- ✓ Run the chillers with the lowest energy consumption. It saves energy cost, fuels a base load.
- ✓ Avoid over sizing -- match the connected load.
- ✓ Isolate off-line chillers and cooling towers.
- ✓ Establish a chiller efficiency-maintenance program. Start with an energy audit and follow-up, then make a chiller efficiency-maintenance program a part of your continuous energy management program.