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Subject: Recommended Operating Guidelines for YCAL Chillers		

GENERAL

By observing a few recommended operating guidelines, compressor cycling can be reduced and optimum chilled liquid temperature control can be achieved when operating YCAL chillers in both water and brine systems.

MINIMUM WATER VOLUME

Minimum water volume in the chilled water system should be 5.0 gallons per ton. Chilled liquid volumes below this minimum will definitely suffer from chilled liquid temperature control problems and compressor cycling. Chilled liquid volumes in the range of 7-11 gallons/ton are generally recommended as the industry standard and will provide the best chilled liquid temperature control with minimum compressor cycling.

MINIMUM LEAVING CHILLED LIQUID CONTROL RANGE PROGRAM SETTINGS

For optimum chilled liquid temperature control, and reduced compressor cycling, leaving chilled liquid setpoint control range settings should be equal to or greater than the minimum ranges specified in the Table 1 below. These recommended settings vary according to the number of compressors in the chiller and the chilled liquid differential actually measured across the evaporator when the chiller is fully loaded. Typically, chilled liquid system designs utilize an evaporator temperature differential design of 10 °F, but measurements should be made to assure that the chiller flows meet design and if not, the minimum control range may need to be varied accordingly. Use the table below for programming the control range when “leaving” chilled liquid control is selected.

<u>Number of Compressors In the Chiller</u>	<u>Recommended Programmed Leaving Chilled Liquid Setpoint Control Range</u>		
	5 °F Evap Diff	10 °F Evap Diff	15 °F Evap Diff
2	± 2.0 °F	± 2.2 °F	± 2.5 °F
3	± 1.8 °F	± 2.0 °F	± 2.5 °F
4	± 1.4 °F	± 1.8 °F	± 2.5 °F
6	± 1.4 °F	± 1.4 °F	± 1.8 °F

TABLE 1 - MINIMUM SETPOINT RANGES