DeCaIon Questionnaire for Aircon Application

Date : Confidential Company : **Remarks**

1 Chiller operating hours

Chiller operating hours		h/d
Chiller operating days		d /year

2 Chiller/Cooling system configuration

	WCPU	Chiller	C.Tower	
Unit capacity on duty				RT/unit
Quantity on duty in parallel				Units
Standby quantity				Units
% average operating load				%

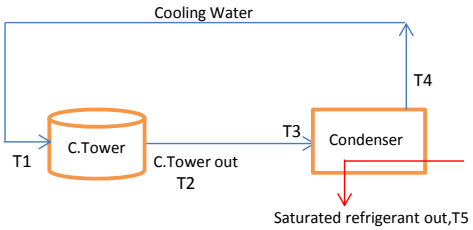
3 Chiller data

	Now	When New	
Chiller efficiency @ 100% load			Kw/RT

E = Compressor kW / Chiller RT

Chiller Age: Years

4 Temperature data @ above % chiller operating load



	Location	Now Temp °C	New Temp °C
T1	C.Tower -in		
T2	C.Tower -out		
T3	Condenser-in		
T4	Condenser-out		
T5	Sat Rfgt -out		

CAT	Now	When New
T5-T4		

°C = (F-32) x 5/9

CAT = Condenser Approach Temp

5 Cooling Tower

Cooling Tower water flowrate (recirculation)	US gpm ÷ 4.4 = m^3/h		m^3/h
Cycle Of Concentration (COC)			Cycles
Cooling Water blow-down			m^3/mth
Cooling tower make-up			m^3/h

6 Water analysis (ppm as $CaCO_3$ where applicable)

	Make up H_2O	Cooling H_2O
pH		
Ca^{2+}		
Mg^{2+}		
Cl^-		
T.Alkalinity		
$SO_4^=$		
SiO_2 as SiO_2		
Conductivity,uS/cm		

7 Present treatment chemicals used (if any) State currency: Local currency / mth

8 Heat exchanger/condenser tube yearly cleaning + maintenance cost: Local currency / year

9 Electricity cost (average): Local currency/kWh

10 Water cost: Local currency/m^3

11 Chiller/Cooling Tower and configuration flow schematic

Pse attach a sketch with this Questionnaire

Questionnaire for DeCaIon Application

Confidential

Date : Company : **Remarks**

1 Cooling operating hours

Annual operating days		d /year

2 Chiller/Cooling system configuration

	Chiller/WCPU (if any)	C.Tower	
Unit capacity on duty			RT/unit
Quantity on duty in parallel			Units
Standby quantity			Units
% Average Operating Load of chiller on duty			

3 Chiller data (if any)

	Now	When New	
Chiller efficiency (E) @ 100% load			kW/RT
Chiller Age			Years

E = Compressor kW / Chiller RT

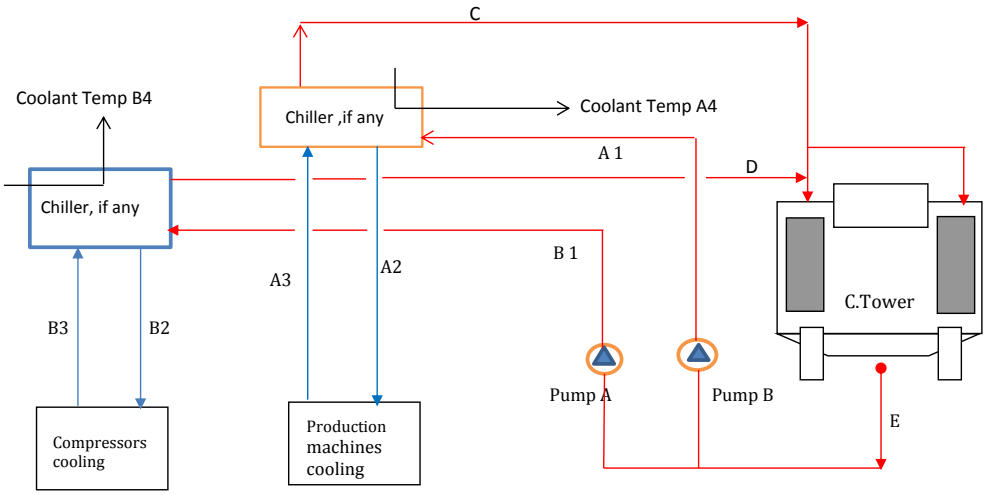
4 Purpose of cooling (pse tick)

[ ] Production machines cooling [ ] Others

[ ] Compressors cooling

5 Process schematics

If process is different from this,please provide a sketch



6 Water Temparature data [°C = (°F-32) x 5/9]

* Condenser (if any) inlet temp	A1	°C
* Condenser outlet temp/Production machine inlet temp	A2	°C
* Production machine outlet temp	A3	°C
* Saturated Refregirant (if any) temp	A4	°C
* Condenser (if any) inlet temp	B1	°C
* Compressor cooling inlet temp	B2	°C
* Compressor cooling outlet temp	B3	°C
* Saturated Refregirant (if any) temp	B4	°C
* Cooling Tower inlet temp	C	°C
* Cooling Tower inlet temp	D	°C
* Cooling Tower outlet temp	E	°C

7 Cooling Pump Data

	Pump A	Pump B	
No of pumps on duty			Unit(s)
Flowrate per pump, actual			m^3/h
Total pump flowrate,actual			m^3/h
Standby quantity			Unit(s)

8 Cooling Tower

Cooling Tower water flowrate (recirculation)	US gpm ÷ 4.4 = m^3/h		m^3/h
Cycle Of Concentration (COC)			Cycles
Cooling Water blow-down			m^3/mth
Cooling tower make-up			m^3/h

9 Water analysis (ppm as $CaCO_3$ where applicable)

	Make up H_2O	Cooling H_2O
pH		
Ca^{2+}		
Mg^{2+}		
Cl^-		
T.Alkalinity		
$SO_4^=$		
SiO_2 as SiO_2		
Conductivity,uS/cm		

10 Present treatment chemicals used (if any) State currency _____ Local currency/mth

11 Heat exchanger/condenser tube yearly cleaning + maintenance cost _____ Local currency/yr

12 Electricity cost (average) _____ Local currency/kWh

13 Water cost _____ Local currency/m^3

14 Cooling water flow schematic

Pse attach a sketch with this Questionnaire