







Amity University Haryana Minutes of Meeting on Policy Review

Amity University Haryana has a huge commitment towards environment and sustainability. A lot of teaching learning research and other activities revolve around this highly significant issue to make the planet a better place. A meeting was organized on 04.02.2021 with experts to review some major policies related to these aspects. The meeting was presided over by the honorable Pro Vice Chancellor Dr. Padmakali Banerjee with following members:

1. Member Secretary Dr. Ravi Manuja

Member Dr. Vikas Madhukar

3. Member Dr. Kushagra Rajendra

4. Member Dr. Pallavi Sharma

5. Member Dr. Seema R Pathak

6. Member Dr. Anil Kumar

Agenda 1: To review the policy to maximise water reuse across the university

Agenda 2: To review the Environmental and Sustainability Policy

Agenda 3: To review the policy for ensuring all renovations / new builds follow the energy efficiency standards

Agenda 4: To review the policy on divesting investments from carbon-intensive energy industries especially coal and oil

Resolution: The committee recommended that at this point of time, no changes to the policy are necessary. Hence AUH may maintain the same policies for the time being.

The meeting was adjourned after Vote of thanks to the Chair.

Registrar
Amity University Haryana
Manesar Gurgaon-122413

Registrar Amity University Haryana





AMITY UNIVERSITY HARYANA

Plan to Reduce Energy Consumption

Building Operating Plan

2016





Building Operating Plan

1.0 Basis of Design of Air Conditioning

A) Site Location

Manesar (Haryana)

Geographic Location

28.35 N & 76.93 E

B) Introduction

The centralized HVAC system has been designed, installed & commissioned to provide thermally controlled environment during summer and monsoon season for the Academic Blocks and partly to hostel.

C)	Outside design conditions	DBT °C WBT °C	
	Summer	43.30	23.90
	Monsoon	35.00	28.30
D)	Inside Design Conditions	DBT °C	
	Summer / Monsoon	26	
	Winter	No provision of winter heating is made.	

E) Filtration

Pre filters of efficiency 90% down to 10 micron particle size have been installed in all the AHU / FCU for AC application.

F) Exposed Roof

All exposed roof / terraces shall be provided with Brick Koba and insulation to getan overall heat transmission factor of 0.12 BTU/HR/SFT/°F.

G) Power Supply

Stabilized three phase four wire AC supply i.e. 415 Volts \pm 10 % & 50 Hz \pm 5 % with double earthing made available to AC Main Panels, Sub Panel for AHU / Fan. Single phase power supply with earthing provided near single phase AHUs & FCUs

H) Light Power Density

Light Power Density in the various areas has been taken as 0.5 watt per sqft.





2.0 **Design Parameters**

For Water cooled Chilling Machine A)

12.22 a) Temperature of chilled water entering the chillers °C

6.67 b) Temperature of chilled water leaving the chillers °C

c) Chilled water flow rate US GPM / TR 2.4

0.0001 d) Fouling factor of chillers (MKS)

e) Temperature of water to inlet of condenser °C 32.22

36.39 f) Temperature of water leaving the condenser °C

g) Condenser water flow rate US GPM / TR 4.0

0.0002 h) Fouling factor of Condenser MKS

i) Maximum water velocity MPS 2.5

B) For Air handlers

a) Maximum Face velocity across cooling coil MPM 152.0

152.0 b) Maximum face velocity across pre filter MPM:

c) Maximum water pressure drop across the coil in Mt. 4.6 :

d) Maximum water velocity through coil in MPS: 2.5

10.0 e) Maximum Fan outlet velocity MPS

C) For Ducting Work

Equal friction a) Method of Duct Design

550.0 b) Maximum air velocity in supply duct (AC) MPM 457.0

c) Maximum air velocity in return duct (AC) MPM 8.33

d) Friction loss in duct (Max.) MM Wg in 100 Mt run.

150.00 e) Maximum Velocity at supply air grill outlet (AC) MPM

For Piping Work D)

a) Friction loss (Maximum) Mt / 100 Mt lengths: 5.0

b) Flow velocity (Maximum) m/s 2.5

HVAC SYSTEM OPERATION AND MAINTENANCE ACTIVITY 3.0

The HVAC system comprising of centrally located chiller system shallbe operated and

maintained as per the following details:

A) Operation of Plant:

The plant comprising of chiller, pumps and cooling towers shall be perated from 09.00 AM - 05.00 PM

B) Operation of Air Handling Units:

Air Handling units shall be switched on / off by user depending on their requirement.

C) Operation of Fan Coil Units:

Fan coil units shall be switched on / off by room occupant depending ontheir requirement.

OBSERVED PARAMETERS

The below mentioned standard operating parameters shall be monitored by theplant operator during operation;

SOP for 600 TR chiller
 SOP for 600 TR chiller
 SOP for 800 TR chiller
 : As per Annexure - 2
 : As per Annexure - 3

SOP for pumps : As per Annexure - 4

SOP for cooling tower : As per Annexure - 5

The operation of chiller system shall be monitored and documented as under:

- Plant operating parameters capturing in Log book every two hours Temperature in the block measured and recorded on each operation day onsample basis in cyclic manner.
- Cooling tower water level monitoring on hourly basisContinuous monitoring for any abnormal noise

As per attached Annexure – 6 and 7.

4.0 MAINTENANCE SCHEDULE FOR EOUIPMENT

Maintenance of chiller and other equipment shall be carried out as per followingschedule

Daily general activity

External cleaning of all equipment

Check drainage system of plant room for proper functioning



CHILLERS:

OEM SCOPE

Maintenance service of chillers shall be carried out by OEM. In case of Troubleshooting in chiller, complaint is logged with OEM and is attended by OEM technical team.

OPERATION TEAM SCOPE

Physical checkup of chillers is carried out by operation team on weekly basis asper defined format (refer Attached annexure 8)

PUMPS

- Pumps are checked and maintained on weekly basis as per defined format
- Monthly checks and preventive maintenance on pumps are carried out as perdefined format
- Refer Attached Annexure

AHUs

- Preventive maintenance on air handling units is carried out once in threemonths as per defined format.
- Air filters are cleaned on monthly basis.
- Yearly preventive maintenance is carried out during off season (Dec to Feb).

COOLING TOWERS

- Cooling Towers are checked and maintained on weekly basis as per definedformat (Refer Attached Annexure 10)
- Sump water is drained and cleaned once in 15 days.
- Fresh water is filled after this cleaning.

COMPLAINT MANAGEMENT 5.0

The complaints received in relation to cooling with central plant shall be recorded and resolved by operation team.

Sqd. Ldr. S K Singh

Director Administration

Amity University Haryana

Son Ldr SK Singh



Annexure for Reference





Chiller Capacity	6007	ΓR
Chilled Water IN - Min	50	F
Chilled Water IN - Max	65	F
Chilled Water Out - Min	45	F
Chilled Water OUT - Max	60	F
Condensor Water IN - Min	70	F
Condensor Water IN - Max	91	F
Condensor Water Out - Min	75	F
Condensor Water OUT - Max	98	F
Condensor Approach temp - Max	10	F
Compressor Amps	530	Amps
Voltage Range	380-420	Volts

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Chiller Capacity		600TF	?
Chilled Water IN - Min		50	F
Chilled Water IN - Ma		65	F
Chilled Water Out - M	in	45	F
Chilled Water OUT - N	1ax	60	F
Condensor Water IN -	Min	70	F
Condensor Water IN -	Max	91	F
Condensor Water Out	- Min	75	F ,
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Condensor Approach	temp - Max	10	F
Compressor Amps		530 380-420	Amps
Voltage Range		JUU 720	4 0160





Chiller Capacity	800 T	R
Chilled Water IN - Min	50	F
Chilled Water IN - Max	65	F
Chilled Water Out - Min	45	F
Chilled Water OUT - Max	60	F
Condensor Water IN - Min	70	F
Condensor Water IN - Max	91	F
Condensor Water Out - Min	75	F
Condensor Water OUT - Max	98	F
Condensor Approach temp - Max	10	F
Compressor Amps	710	Amps
Voltage Range	380-420	Volts

July with the same of the same





Pumps

	DP Max	Amps Max
Chiller pump - 1	100	76.5
Chiller pump - 2	100	76.5
Chiller pump - 3	100	76.5

 Condenser Pump -1
 85
 76.5

 Condenser Pump -2
 85
 76.5

85

Condenser Pump -3

76.5



Annexure – 5

COOLING TOWER

Fan motor current max 12.5 amps

Sump water temperature max 90F

Bleed off water average 1%





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ARCONDITIONING PLANT AT. Annexure - 7

LOG BOOK

Alroon Technique Pvt. Ltd. 418, Pecket - C, Sector-19, Rohini, Delh. - 110089.

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PLANT CAPACITY:

PLANT MAKE

).	Work Description	W-1	W-2	W-3	W-4	
	Clean the equipments externally					
	Check foundation status					••••••
	Check oil level					
-	Check pressure gauges					
	Check ref. piping for vibrations					
6	Check ref. piping for signs of oil leaks					
	Ensure tightness of all connections and fittings					
8	Check starter connections					
(Check starter contactors					
10	Check starter operation					
11	Check for proper water flow in the evaporator					
12	Leak test for refrigerent					
	Signature of operator	+				

OPERATING PARAMETERS	-			
1 Evaporator Suction Temperature				
T Evaporato: Suction remperature				
2 Evaporator Refrigerent Pressure				
2 Evaporator Reingereit Pressure	<u> </u>			
3 Evaporator Approach		 		
- OL, Vaporato, Approacti	 			
4 Condensor Refrigerent Temperature	 			
	 	 		
5 Condensor Refrigerent Pressure				
6 Condensor Approach				
7 Chiller Water in Temp				
8 Chiller Water out Temp				
9 Chiller Water in Pressure				
10 Chiller Water out Pressure				
		ļ		
11 Condensor Water in Temp				
12 Condensor Water out Temp				-
12 Condensor Water out Temp	 	<u> </u>		
13 Condensor Water in Pressure	 -			
10 Condition Water in Fressure				
14 Condensor Water out Pressure	+			
	 1			
15 Lubrication Oil Tank Pressure	-	 		
		1		
16 Oil Tank Temperature				
		T		
17 Running Ampers	†			n
Signature of Operator	1	I	/2	





***************************************	Preventive Maintennce	Checklis	t for Pum	ps		***************************************
Job Na	ame;	Type: V	Veekly			
Pump	Model:	Sr. No.:				
Locatio	on:	Moter H	IP:			
Applica	ation : Condensor Water / chilled water	Month:				
	Dateof PPM:		T		T T	Remarks
Sr.No.	Description of Work	W-1	W-2	W-3	W-4	(If Any)
1	CLEAN THE MOTOR & PUMP IN GENERAL					, , , ,
***************************************	CHECK THE MOTOR COUPLINGS AND					
2	ALIGNMENT					
	CHECK & TIGHTEN ALL THE FOUNDATION					
3	BOLTS					
	ENSURE MOTOR AND PUMP BEARINGS ARE				_	
4	GREASED PROPERLY					
	CHECK/TIGHTEN ALL THE ELECTRICAL			_		
5	CONTACT POINTS					
6	CHECK COUPLING CONDITION					
7	CHECK THE GLAND PLATE FOR LEAKAGE					
8	CHECK CLEAN BUTTERFLY VALVES					
9	CHECK AND CLEAN NON RETURN VALVE					
10	ENSURE DRAIN IS NOT CLOGGED					
11	CHECK THE PRESSURE GAUGES					
12	CURRENT PER PHASE IN AMP.					
a	R-PHASE					
b	Y-PHASE					
С	B-PHASE					
13	CHECK PUMP DISCHARGE PRESSURE			***************************************		
Obser	vations:	***************************************		27111111111111111111111111111111111111	***************************************	
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	Preventive Maintennce Chec	***********				
Job Name		Туре				
Tower Mo	odel	Sr. No.				
Location		Capacity	у			
Date				T	T	Remarks
Sr.No.	Description of Work	W-1	W-2	W-3	W-4	(If Any)
Provide	CHECK COOLING TOWER FOR UNUSUAL NOISE / VIBRATION					
2	CHECK CONDITION OF MOTOR AND FAN ASSEMBLY					
3	CHECK TOWER SUMP FOR ANY DAMAGE					
4	CHECK SUCTION SCREENS PROPERLY FIXED					
5	CHECK FAN OPERATION					
6	CHECK THE ELECTRICAL CONTACT POINT AND TIGHTEN THE LOOSE POINTS					
7	CHECK FAN COUPLING BOLT AND ALIGNMENT					
8	CHECK AND CORRECT LOOSE CABLE					
9	ENSURE DRAIN IS NOT CLOGGED					
10						
Sr.No.	Observation	W-1	W-2	W-3	W-4	Remark
1	Current in Amps 1					
***************************************	2	ļ				
	3					
2	Sump Water Tempreture				_	
3	Ambient Air WB / DB Temp	 				
4	Water Inlet Temperture					
5	Water out Temperture					
	Sign of Supervisor:	Sign of	Supervisor			N-