



AMITY
UNIVERSITY
HARYANA

NAAC 'A'
GRADE
ACCREDITED UNIVERSITY



AFFORDABLE AND CLEAN ENERGY





Amity University Haryana
Minutes of Meeting on SDG s held on 5th March
2023

A meeting on Sustainable Development Goals was held on 5th March 2023 at 11.00 AM. The objective of the meeting was to review the existing policies. The meeting was chaired by Hon'ble Prof. Dr. Vikas Madhukar, Pro-Vice Chancellor, Amity University Haryana along with the board members to assess, evaluate, revise and approve the Sustainable Development Goals.

Following members present in the meeting

- | | |
|---------------------|------------------------------|
| 1. Chairperson | Prof. Dr. Vikas Madhukar |
| 2. Member | Dr. Anil Kumar Yadav |
| 3. Member | Rear Admiral Kishan K Pandey |
| 4. Member | Dr. Vidhi Bhargav |
| 5. Member | Dr. Pooja Rana |
| 6. Member Secretary | Dr. Ravi Manuja |

Agenda – Policy Review Meeting

1. Review of Existing Policy:

Examine the current policy framework to assess its relevance, clarity, and effectiveness in supporting organizational objectives.

2. Evaluation of Operational & Compliance Factors:

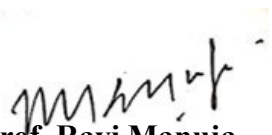
Discuss practical implementation feedback and regulatory requirements to determine whether any amendments or updates are necessary.

3. Decision on Policy Continuity or Revision:

Conclude on whether the existing policy needs modification or should continue without changes based on collective inputs.

Conclusion

The committee thoroughly reviewed the existing policy and found it effective, compliant, and operationally suitable. No revisions are required at this time, and the policy will remain unchanged. The meeting was adjourned after Vote of thanks to the Chair


Prof. Ravi Manuja,
Registrar
Amity University Haryana



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 |
| 2. 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

NAAC 'A'
GRADE
ACCREDITED UNIVERSITY



AMITY UNIVERSITY HARYANA

Carbon Reduction and Emission Reduction Process

Plan for Carbon Management and Reduction of Emission

2016



NARRATIVE AND DETAILS OF MECHANICAL & LIGHTING SYSTEM

Academic Block of Amity University Haryana is air-conditioned through water cooled Centrifugal chillers, installed in the Plant room which also consists of Pumping system with constant volume of chilled water flow mechanism. The plant room is a combination of automatic controls in the pumping side and chiller controls. Manually adjusted valves and distribution system.

For Low side systems, air-conditioned areas in the building are mainly classified as academic and administration areas. Hence, the building comprises of areas including lecture halls, classrooms, tutorial rooms, office spaces, seminar halls, labs, staff rooms, lecture theater etc. All areas in Academic Block are air-conditioned through AHUs which are dedicated to the designated areas.

Space usage and Controls: Major occupancy type is students who keep shuffling into various spaces at different time of the day as per the respective lecture/activity schedule. Many of the building areas (like seminar halls, labs, lecture theaters etc.) are also occasionally occupied. The controls inside the rooms are automatic through thermostat and temperature setting, hence air-conditioning of the space not-in-use gets automatically controlled during non-occupancy hours of a respective space.

Fresh Air Intake: A typical floor comprises of classrooms and/or other occupied areas that are accessed through corridors. The HVAC design has inline fans placed at the end of corridors for fresh air intake. These fans are connected with ducts to feed each AHU for the desired requirement of fresh air inside all the occupied spaces.

There is no provision of domestic hot water and space heating in this building.

Climate of Manesar where project is located has annual average RH level of 54-55 %. Moreover, air-conditioning systems have cooling coils and air passing through the fan section will have controlled RH.

Details of Mechanical system:

All air-conditioned areas in the building are occupied during the day from 9:00 a.m. to 5:00 p.m. with periodic breaks.

Chiller:

All the chillers are Centrifugal machines with following details:

- Configuration and Sizing : 600TR X 2 Nos. + 800TR X 1 No.
- Make : Carrier
- Chilled water Entering : 50 Deg.F ~ 10 Deg.C
- Chilled water out : 45 Deg.F ~ 7.2 Deg.C



- Condenser water entering : 91 Deg.F ~ 32.78 Deg C
- Condenser water out : 98 Deg.F ~ 36.67 Deg C

Pumps:

- 3 Nos. chiller pumps : 100 DP Max
- 3 Nos. condenser pumps : 85 DP Max

Cooling Tower :

- Number of Cooling Towers : 3 Nos.
- Max. Fan motor current : 12.5 Amps
- Max. Sump water temperature : 90 Deg. F
- Average bleed off water : 1%

Piping:

The Piping arrangement is made such that the Plant room has common header for entire capacity of the air-conditioning high side equipments. Each building is equipped with valve arrangement for chilled water distribution on floors and air-conditioned areas. The valves are manually adjusted for constant flow in the scheme of distribution.

- Friction Loss : 5 Mt/ 100Rmt
- Flow velocity : 2.5 mps

Thermal Insulation:

Pipes' and ducts' insulation is with closed cell Nitrile Rubber for avoiding thermal losses during transmission. Air side and water side as well.

- Chilled water Pipe Insulation : 25 mm thick to 75 mm thick
- Pipe Size : 25 mm to 500 mm
- Duct Insulation : 9 mm to 13 mm
- Class : 'O' (CFC free with an ODP of zero)
- Density : 50kg/m³

Air Handling Units : (All ceiling suspended units)

- Make : Edge Tech/ Flaktwoods
- Face Velocity : 152 mpm
- Max face velocity across pre filters : 152 mpm
- Max water pressure drop across coil : 4.6 m
- Fan outlet velocity : 10 mps

DETAILS OF LIGHTING SYTEMS & CONTROLS

Different areas of Academic Block are installed with two types of light fixtures i.e. T5 and LED. The light fixtures installed in the building are majorly T5 along with a few LEDs that were installed as replacement to old fixtures. As per Amity Policy, any future replacement of old lighting fixture must bedone with LED fixtures only.



Lighting controls: Every space has its own local manual lighting controls which are controlled by the respective occupants.

HVAC SYSTEM OPERATION AND MAINTENANCE ACTIVITY

The HVAC system comprising of centrally located chiller system shall be operated and maintained as per the following details:

A) Operation of Plant :

The plant comprising of chiller, pumps and cooling towers shall be operated 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 on their requirement.

OBSERVED PARAMETERS

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

- SOP for 600 TR chiller : As per Annexure - 1
- SOP for 600 TR chiller : As per Annexure - 2
- SOP for 800 TR chiller : 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 on sample basis in cyclic manner.
- Cooling tower water level monitoring on hourly basis Continuous monitoring for any abnormal noise

As per attached Annexure – 6 and 7.



MAINTENANCE SCHEDULE FOR EQUIPMENT

Maintenance of chiller and other equipment shall be carried out as per following schedule:

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 Trouble shooting 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 as per 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 per defined format
- Refer Attached Annexure- 9

AHUs

- Preventive maintenance on air handling units is carried out once in three months 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 defined format (Refer Attached Annexure 10)
- Sump water is drained and cleaned once in 15 days.
- Fresh water is filled after this cleaning.

COMPLAINT MANAGEMENT

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



STEPS TO REDUCE CO₂ EMISSION

Usage of Environment friendly Refrigerant

The project uses Centrifugal chillers with R-134a refrigerant which minimize or eliminate emission of compounds contributing to ozone depletion and climate change. Refrigerant (R-134a) used in the chillers has minimal emission of compounds that contribute to ozone depletion and climate change. The building HVAC equipment's combined contributions to ozone depletion and global warming potential calculations is shown below:

REFRIGERANT CALCULATIONS	
Project name	Amity University Haryana
Project location	Manesar
Unit Manufacturer	Carrier
Refrigerant type	R-134a
Equipment type	Centrifugal chiller
Capacity, Ton (Q unit)	2000
Refrigerant charge, Kgs	550
Refrigerant charge, Kgs/KW (Rc)	0.27
Leak rate, % of charge per year (Lr)	2.0%
Equipment life (Life)	25
End-of-life refrigerant loss, % of charge (Mr)	10.0%
Global warming potential of refrigerant (GWPr)	1320
Ozone depletion potential of refrigerant (ODPr)	0
Life-cycle direct global warming potential (LCGWP)	8.7
Life-cycle ozone depletion potential (LCODP)	0
OPD & GWP Factor (per kW)	8.7
OPD & GWP Factor × capacity	17424

Alternative Commuting -Transportation

Amity Group incorporates comprehensive transportation management for all their campuses across the nation in order to reduce commuting through single occupancy vehicles and also to provide hassle-free commuting facility to the regular commuters. As a regular practice, this plan has been implemented for Amity University Haryana as well. The plan includes having private buses for carrying Students and Faculty Members coming to the project.

The campus is designed such that 60% of the campus population lives in the campus and walk to reach academic buildings. The campus buses have been provided to reduce single occupancy vehicles and catering approx. 11%. The balance population coming to the campus use their own vehicles.



Indoor Air Quality Auditing

An indoor air quality (IAQ) audit is performed annually at the Amity University Haryana at Manesar to identify and remedy any potential indoor air quality problems.

The project team assigned one of their team members, Mr. Saini, as the IAQ manager to conduct the audit and to be responsible for communicating IAQ-related issues with building occupants. IAQ MANAGER reviews the “Indoor Air Quality Building Education and Assessment Model (I-BEAM)”, including:

- Fundamentals of IAQ in Buildings
- Diagnosing and Solving Problems
- Renovation and New Construction
- Managing for Indoor Air Quality
- Training Supervisors and Staff
- Establishing Written Plans and Protocols
- Establishing a Communications Program.

IAQ Audit is performed for the following:

1. Building Exterior

The building exterior portion of the audit focused on:

- identifying flaws in the building shell
- problems with outdoor air intake and dampers in air handling units (AHU)
- general odors’ or pollutants emitted from outdoor sources

2. HVAC Systems

The HVAC component of the audit assessed:

- the mixing plenum and dampers in HU
- cooling coils and condensate pans in AHU
- mechanical room
- air ducts and air plenums
- diffusers, grilles, and registers
- fans and fan chambers
- exhaust fans
- chiller



3. Building Interiors

The indoor space portion highlighted general conditions, such as:

- air flow and temperature
- acoustics
- floor and ceiling quality
- furnishings

IAQ management inspects the building exterior, HVAC systems, and indoor spaces on an annual basis to monitor the status of documented problems and evaluate new IAQ issues.

IV. Results

Aside from a few minor and easily-remedied issues (like leakage from a few ducts which was sealed properly), the IAQ systems were in very good shape and there were no abnormal noises or odours found. The equipment and indoor and exterior spaces were free of algae, mold and other pollutants.

Sqd. Ldr. S K Singh
Director Administration
Amity University Haryana

Sqn Ldr SK Singh
Director Admin
AIH Manesar



Annexure - 1

Chiller Capacity	600TR	
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



Annexure - 2

Chiller Capacity

600TR

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



Annexure - 3

Chiller Capacity

800 TR

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



Annexure - 4

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
Condenser Pump -3	85	76.5



Annexure – 5

COOLING TOWER

Fan motor current	max	12.5 amps
Sump water temperature	max	90F
Bleed off water	average	1%



Annexure - 6

LOG BOOK

ALLOCATION/ISSUE PLAN - I

Paper assigned: **PMK**
 Ch Bar 1: **Total Project 167**
 Ch Bar 2:
 Ch Bar 3:

Date: _____

Date	Time	C-1 (17-18)			C-2 (19-20)			C-3 (21-22)			C-4 (23-24)			C-5 (25-26)		
		Task No.	Task Title	Task Status	Task No.	Task Title	Task Status	Task No.	Task Title	Task Status	Task No.	Task Title	Task Status	Task No.	Task Title	Task Status
01/01/2023	09:00 AM	1	Task 1	Completed	2	Task 2	Completed	3	Task 3	Completed	4	Task 4	Completed	5	Task 5	Completed
02/01/2023	09:00 AM	6	Task 6	Completed	7	Task 7	Completed	8	Task 8	Completed	9	Task 9	Completed	10	Task 10	Completed
03/01/2023	09:00 AM	11	Task 11	Completed	12	Task 12	Completed	13	Task 13	Completed	14	Task 14	Completed	15	Task 15	Completed
04/01/2023	09:00 AM	16	Task 16	Completed	17	Task 17	Completed	18	Task 18	Completed	19	Task 19	Completed	20	Task 20	Completed
05/01/2023	09:00 AM	21	Task 21	Completed	22	Task 22	Completed	23	Task 23	Completed	24	Task 24	Completed	25	Task 25	Completed
06/01/2023	09:00 AM	26	Task 26	Completed	27	Task 27	Completed	28	Task 28	Completed	29	Task 29	Completed	30	Task 30	Completed
07/01/2023	09:00 AM	31	Task 31	Completed	32	Task 32	Completed	33	Task 33	Completed	34	Task 34	Completed	35	Task 35	Completed
08/01/2023	09:00 AM	36	Task 36	Completed	37	Task 37	Completed	38	Task 38	Completed	39	Task 39	Completed	40	Task 40	Completed
09/01/2023	09:00 AM	41	Task 41	Completed	42	Task 42	Completed	43	Task 43	Completed	44	Task 44	Completed	45	Task 45	Completed
10/01/2023	09:00 AM	46	Task 46	Completed	47	Task 47	Completed	48	Task 48	Completed	49	Task 49	Completed	50	Task 50	Completed
11/01/2023	09:00 AM	51	Task 51	Completed	52	Task 52	Completed	53	Task 53	Completed	54	Task 54	Completed	55	Task 55	Completed
12/01/2023	09:00 AM	56	Task 56	Completed	57	Task 57	Completed	58	Task 58	Completed	59	Task 59	Completed	60	Task 60	Completed
13/01/2023	09:00 AM	61	Task 61	Completed	62	Task 62	Completed	63	Task 63	Completed	64	Task 64	Completed	65	Task 65	Completed
14/01/2023	09:00 AM	66	Task 66	Completed	67	Task 67	Completed	68	Task 68	Completed	69	Task 69	Completed	70	Task 70	Completed
15/01/2023	09:00 AM	71	Task 71	Completed	72	Task 72	Completed	73	Task 73	Completed	74	Task 74	Completed	75	Task 75	Completed
16/01/2023	09:00 AM	76	Task 76	Completed	77	Task 77	Completed	78	Task 78	Completed	79	Task 79	Completed	80	Task 80	Completed
17/01/2023	09:00 AM	81	Task 81	Completed	82	Task 82	Completed	83	Task 83	Completed	84	Task 84	Completed	85	Task 85	Completed
18/01/2023	09:00 AM	86	Task 86	Completed	87	Task 87	Completed	88	Task 88	Completed	89	Task 89	Completed	90	Task 90	Completed
19/01/2023	09:00 AM	91	Task 91	Completed	92	Task 92	Completed	93	Task 93	Completed	94	Task 94	Completed	95	Task 95	Completed
20/01/2023	09:00 AM	96	Task 96	Completed	97	Task 97	Completed	98	Task 98	Completed	99	Task 99	Completed	100	Task 100	Completed
21/01/2023	09:00 AM	101	Task 101	Completed	102	Task 102	Completed	103	Task 103	Completed	104	Task 104	Completed	105	Task 105	Completed
22/01/2023	09:00 AM	106	Task 106	Completed	107	Task 107	Completed	108	Task 108	Completed	109	Task 109	Completed	110	Task 110	Completed
23/01/2023	09:00 AM	111	Task 111	Completed	112	Task 112	Completed	113	Task 113	Completed	114	Task 114	Completed	115	Task 115	Completed
24/01/2023	09:00 AM	116	Task 116	Completed	117	Task 117	Completed	118	Task 118	Completed	119	Task 119	Completed	120	Task 120	Completed
25/01/2023	09:00 AM	121	Task 121	Completed	122	Task 122	Completed	123	Task 123	Completed	124	Task 124	Completed	125	Task 125	Completed
26/01/2023	09:00 AM	126	Task 126	Completed	127	Task 127	Completed	128	Task 128	Completed	129	Task 129	Completed	130	Task 130	Completed
27/01/2023	09:00 AM	131	Task 131	Completed	132	Task 132	Completed	133	Task 133	Completed	134	Task 134	Completed	135	Task 135	Completed
28/01/2023	09:00 AM	136	Task 136	Completed	137	Task 137	Completed	138	Task 138	Completed	139	Task 139	Completed	140	Task 140	Completed
29/01/2023	09:00 AM	141	Task 141	Completed	142	Task 142	Completed	143	Task 143	Completed	144	Task 144	Completed	145	Task 145	Completed
30/01/2023	09:00 AM	146	Task 146	Completed	147	Task 147	Completed	148	Task 148	Completed	149	Task 149	Completed	150	Task 150	Completed
31/01/2023	09:00 AM	151	Task 151	Completed	152	Task 152	Completed	153	Task 153	Completed	154	Task 154	Completed	155	Task 155	Completed
01/02/2023	09:00 AM	156	Task 156	Completed	157	Task 157	Completed	158	Task 158	Completed	159	Task 159	Completed	160	Task 160	Completed
02/02/2023	09:00 AM	161	Task 161	Completed	162	Task 162	Completed	163	Task 163	Completed	164	Task 164	Completed	165	Task 165	Completed
03/02/2023	09:00 AM	166	Task 166	Completed	167	Task 167	Completed	168	Task 168	Completed	169	Task 169	Completed	170	Task 170	Completed

Signature: _____

Date: _____



Annexure - 7

AIRCONDITIONING PLANT AT.....

LOG BOOK

Aircon Technique Pvt. Ltd. 418 Pocket - C, Sector-19, Rohini, Delhi - 110089.

TIME HRS	Condenser Water Pumps												Chiller Water Pumps												C.T. Fan Cooling Tower Motor											
	Amps			Water Pr			Inlet			Water Pr Outlet			Amps			Water Pr Inlet			Water Pr Outlet			Amps														
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	5	6	7	8	9	10	11	12
06.00 A.M.																																				
08.00 A.M.																																				
10.00 A.M.																																				
12.00 P.M.																																				
02.00 P.M.																																				
04.00 P.M.																																				
06.00 P.M.																																				
08.00 P.M.																																				
10.00 P.M.																																				
12.00 A.M.																																				
02.00 A.M.																																				
04.00 A.M.																																				
Power consumed KW																																				
Total Power Consumed :																																				
Supervisor / Operator :																																				
Failures / Interruptions & Breakdown :																																				
Mechanical :																																				
Electrical :																																				
Instrumentation/Electronic :																																				
Spares Used :																																				
Environment Waste record																																				
Refrigerent																																				
Lub Oil																																				
Contaminated water																																				
others																																				



Annexure - 8

INSTALLATION LOCATION :

PREVENTIVE MAINTENANCE OF WATERCOOLED CHILLERS

PLANT CAPACITY :

PLANT MAKE :

S NO.	Work Description	W-1	W-2	W-3	W-4
1	Clean the equipments externally				
2	Check foundation status				
3	Check oil level				
4	Check pressure gauges				
5	Check ref. piping for vibrations				
6	Check ref. piping for signs of oil leaks				
7	Ensure tightness of all connections and fittings				
8	Check starter connections				
9	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				
2	Evaporator Refrigerent Pressure				
3	Evaporator Approach				
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				
11	Condensor Water in Temp				
12	Condensor Water out Temp				
13	Condensor Water in Pressure				
14	Condensor Water out Pressure				
15	Lubrication Oil Tank Pressure				
16	Oil Tank Temperature				
17	Running Ampers				
	Signature of Operator				



Annexure - 9

Preventive Maintenance Checklist for Pumps						
Job Name:		Type: Weekly				
Pump Model:		Sr. No.:				
Location:		Moter HP :				
Application : Condensor Water / chilled water		Month :				
Date of PPM:						Remarks
Sr.No.	Description of Work	W-1	W-2	W-3	W-4	Remarks (If Any)
1	CLEAN THE MOTOR & PUMP IN GENERAL					
2	CHECK THE MOTOR COUPLINGS AND ALIGNMENT					
3	CHECK & TIGHTEN ALL THE FOUNDATION BOLTS					
4	ENSURE MOTOR AND PUMP BEARINGS ARE GREASED PROPERLY					
5	CHECK/TIGHTEN ALL THE ELECTRICAL 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					
c	B-PHASE					
13	CHECK PUMP DISCHARGE PRESSURE					
Observations:						
Sign. Of Technician		Sign of supervisor				



Annexure - 10

Preventive Maintenance Checklist Cooling Tower						
Job Name			Type			
Tower Model			Sr. No.			
Location			Capacity			
Date						
Sr.No.	Description of Work	W-1	W-2	W-3	W-4	Remarks (If Any)
1	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				
		3				
		4				
2	Sump Water Temperature					
3	Ambient Air WB / DB Temp					
4	Water Inlet Temperature					
5	Water out Temperature					
Sign of Supervisor:		Sign of Supervisor				